



2024 NATIONAL REPAIR & REMODELING ESTIMATOR

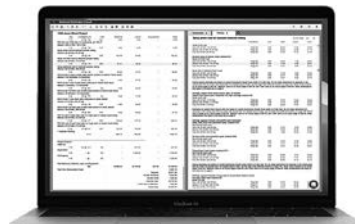
\$98.50

Albert S. Paxton & Joshua K.J. Paxton

47th Edition



**The National
Estimator Cloud**



This manual is also available as a Web app, *National Estimator Cloud*, that makes it easy to compile and print estimates, bids and invoices for nearly any type of construction project.

Generate professional estimates from your internet browser. Includes 10 Craftsman cost databases. It's never been easier. No disk and no download needed!



- Turn your estimate into a bid.
- Turn your bid into a contract.
- ConstructionContractWriter.com



Craftsman Book Company

6058 Corte del Cedro, Carlsbad, CA 92011

Preface

The authors have corresponded with manufacturers and wholesalers of building material supplies and surveyed retail pricing services. From these sources, they have developed Average Material Unit Costs which should apply in most parts of the country.

Wherever possible, the authors have listed Average Labor Unit Costs which are derived from the Average Manhours per Unit, the Crew Size, and the Wage Rates used in this book. Please read How to Use This Book for a more in-depth explanation of the arithmetic.

If you prefer, you can develop your own local labor unit costs. You can do this by simply multiplying the Average Manhours per Unit by your local crew wage rates per hour. Using your actual local labor wage rates for the trades will make your estimate more accurate.

What is a realistic labor unit cost to one reader may well be low or high to another reader, because of variations in labor efficiency. The Average Manhours per Unit figures were developed by time studies at job sites around the country. To determine the daily production rate for the crew, divide the total crew manhours per day by the Average Manhours per Unit.

The subject topics in this book are arranged in alphabetical order, A to Z. To help you find specific construction items, there is a complete alphabetical index at the end of the book, and a main subject index at the beginning of the book.

This manual shows crew, manhours, material, labor and equipment cost estimates based on Large or Small Volume work, then a total cost and a total including overhead and profit. No single price fits all repair and remodeling jobs. Generally, work done on smaller jobs costs more per unit installed and work on larger jobs costs less. The estimates in this book reflect that simple fact. The two estimates you find for each work item show the authors' opinion of the likely range of costs for most contractors and for most jobs. So, which cost do you use, High Volume or Low Volume?

The only right price is the one that gets the job and earns a reasonable profit. Finding that price always requires estimating judgment. Use Small Volume cost estimates when some or most of the following conditions are likely:

- The crews won't work more than a few days on site.
- Better quality work is required.
- Productivity will probably be below average.
- Volume discounts on materials aren't available.
- Bidding is less competitive.
- Your overhead is higher than most contractors.

When few or none of those conditions apply, use Large Volume cost estimates.

About the Authors

Albert Paxton (AlbertSPaxton@gmail.com) is a California licensed General Contractor (B1-425946) and a Certified Professional Estimator with the *American Society of Professional Estimators*. He has served as the National Project Director at *Unified Building Sciences, Inc. (UBS)* (www.UnifiedGroup.com) in Dallas, Texas, since 2012, retiring from UBS in December 2022. Mr. Paxton is active as an Insurance Policy Appraiser and Umpire and as an Arbitration Neutral.

Joshua Paxton (JoshuaP@UnifiedGroup.com) has served as a Senior Consultant at *Unified Building Sciences, Inc.* since 2017 and is located in Los Angeles, California.

The UBS staff is comprised of estimators, engineers, and project managers who are also building appraisers, expert witnesses, and arbitrators in residential and commercial construction, both new and repair and remodeling work. UBS operates nationwide, with clients including property insurance carriers, financial institutions, self-insureds, and private individuals.

In addition to daily claims involving commercial and industrial structures, Joshua Paxton's UBS assignments have included catastrophe claims related to fires, hurricanes, floods, etc.

Main Subject Index

Abbreviations	20	Insulation	258
Acoustical treatment	21	Batt or roll / Loose fill / Rigid	
Adhesives	24	Lighting fixtures	268
Air conditioning and ventilating systems ...	28	Indoor / Outdoor	
Bath accessories	37	Mantels, fireplace	271
Bathtubs (includes whirlpool)	44	Marlite paneling	271
Cabinets	52	Masonry	272
Kitchen / Vanity		Brick / Concrete block / Glass block	
Canopies	67	Glazed tile / Quarry tile / Veneer	
Carpet	70	Molding and trim	287
Caulking	72	Pine / Hardwood / MDF / Resin	
Ceramic tile	75	Painting and cleaning	300
Countertop / Floors / Walls		Interior / Exterior	
Closet door systems	78	Paneling	314
Bi-folding / Mirror / Sliding		Plaster and stucco	318
Columns	87	Range hoods	322
Concrete, cast-in-place	89	Resilient flooring	324
Footings / Forms / Foundations / Reinforcing		Linoleum / Vinyl	
Countertops	98	Roofing	329
Ceramic tile / Concrete / Engineered stone /		Aluminum / Built-up / Clay tile / Composition	
Formica / Granite / Quartz / Wood		Mineral surface / Wood shakes or shingles	
Cupolas	104	Sheet metal	345
Demolition	105	Flashing / Gravel stop / Roof edging / Vents	
Concrete / Masonry / Rough carpentry		Shower and tub doors	349
Dishwashers	121	Shower bases or receptors	354
Door frames	122	Shower stalls	356
Door hardware	124	Shower tub units	359
Doors	126	Shutters	360
Exterior / Interior		Siding	363
Drywall	145	Aluminum / Hardboard / Vinyl / Wood	
Electrical	147	Sinks	375
Entrances	154	Bathroom / Kitchen / Utility	
Excavation	155	Skylights	398
Fences	156	Spas	404
Board / Chain link / Gates / Split rail		Stairs	407
Fiberglass panels	162	Stair parts / Shop fabricated stairs	
Fireplaces	164	Suspended ceilings	411
Food centers	165	Toilets, bidets, urinals	415
Framing (rough carpentry)	166	Trash compactors	417
Beams / Joists / Rafters / Trusses		Ventilation	418
Garage doors	214	Flue piping / Chimney vent	
Garage door operators	217	Wallpaper	421
Garbage disposers	218	Water filters	422
Glass and glazing	220	Water heaters	423
Glu-lam products	223	Electric / Gas / Solar	
Beams / Purlins / Sub-purlins / Ledgers		Water softeners	431
Gutters and downspouts	248	Windows	432
Hardwood flooring	250	Aluminum / Horizontal slide / Wood / Garden	
Block / Parquetry / Strip		Index	449
Heating	253		
Boilers / Forced air / Space heaters			

How to Use This Book

1	2	3	4	5	6	7	8	9	10	11	12
Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P

The descriptions and cost data in this book are arranged in a series of columns, which are described below. The cost data is divided into two categories: Costs Based On Large Volume and Costs Based On Small Volume. These two categories provide the estimator with a pricing range for each construction topic.

The Description column (1) contains the pertinent, specific information necessary to make the pricing information relevant and accurate.

The Operation column (2) contains a description of the construction repair or remodeling operation being performed. Generally the operations are Demolition, Install, and Reset.

The Unit column (3) contains the unit of measurement or quantity which applies to the item described.

The Volume column (4) breaks jobs into Large and Small categories. Based on the information given regarding volume (on page 2), select your job size.

The Crew Size column (5) contains a description of the trade that usually installs or labors on the specified item. It includes information on the labor trade that installs the material and the typical crew size. Letters and numbers are used in the abbreviations in the crew size column. Full descriptions of these abbreviations are in the Crew Compositions and Wage Rates table, beginning on page 15.

The Manhours per Unit column (6) is for the listed operation and listed crew.

The units per day in this book don't take into consideration unusually large or small quantities. But items such as travel, accessibility to work, experience of workers, and protection of undamaged property, which can favorably or adversely affect productivity, have been considered in developing Average Manhours per Unit. For further information about labor, see "Notes — Labor" in the Notes Section of some specific items.

Crew Output per Day (7) is based on how many units, on average, a crew can install or demo in one 8-hour day.

Crew Output per Day and Average Material Unit (8) Cost should assist the estimator in:

1. Checking prices quoted by others.
2. Developing local prices.

The Average Material Unit Cost column contains an average material cost for products (including, in many cases, the by-products used in installing the products) for both large and small volume. It doesn't include an allowance for sales tax, delivery charges, overhead and profit. Percentages for waste, shrinkage, or coverage have been taken into consideration unless indicated. For other information, see "Dimensions" or "Installation" in the Notes Section.

If the item described has many or very unusual by-products which are essential to determining the Average Material Unit Cost, the author has provided examples of material pricing. These examples are placed throughout the book in the Notes Section.

You should verify labor rates and material prices locally. Though the prices in this book are average material prices, prices vary from locality to locality. A local hourly wage rate should normally include taxes, benefits, and insurance. Some contractors may also include overhead and profit in the hourly rate.

The Average Labor Unit Cost column (9) contains an average labor cost based on the Average Manhours per Unit and the Crew Compositions and Wage Rates table. The average labor unit cost equals the Average Manhours per Unit multiplied by the Average Crew Rate per hour. The rates include fringe benefits, taxes, and insurance. Examples that show how to determine the average labor unit cost are provided in the Notes Section.

The Average Equipment Unit Cost column (10) contains an average equipment cost, based on both the average daily rental and the cost per day if owned and depreciated. The costs of daily maintenance and the operator are included.

The Average Total Unit Cost column (11) includes the sum of the Material, Equipment, and Labor Cost columns. It doesn't include an allowance for overhead and profit.

The Average (Total) Price Including Overhead and Profit column (12) results from adding an overhead and profit allowance to Total Cost. This allowance reflects the author's interpretation of average fixed and variable overhead expenses and the labor intensiveness of the operation vs. the costs of materials for the operation. This allowance factor varies throughout the book, depending on the operation. Each contractor interprets O&P differently. The range can be from 15 percent to 80 percent of the Average Total Unit Cost.

Estimating Techniques

Estimating Repair/Remodeling Jobs: The unforeseen, unpredictable, or unexpected can ruin you.

Each year, the residential repair and remodeling industry grows. It's currently outpacing residential new construction due to increases in land costs, labor wage rates, interest rates, material costs, and economic uncertainty. When people can't afford a new home, they tend to remodel their old one. And there are always houses that need repair, from natural disasters or accidents like fire. The professional repair and remodeling contractor is moving to the forefront of the industry.

Repair and remodeling spawns three occupations: the contractor and his workers, the insurance company property claims adjuster, and the property damage appraiser. Each of these professionals shares common functions, including estimating the cost of the repair or remodeling work.

Estimating isn't an exact science. Yet the estimate determines the profit or loss for the contractor, the fairness of the claim payout by the adjuster, and the amount of grant or loan by the appraiser. Quality estimating must be uppermost in the mind of each of these professionals. And accurate estimates are possible only when you know exactly what materials are needed and the number of manhours required for demolition, removal, and installation. Remember, profits follow the professional. To be profitable you must control costs — and cost control is directly related to accurate, professional estimates.

There are four general types of estimates, each with a different purpose and a corresponding degree of accuracy:

- The guess method: "All bathrooms cost \$5,000." or "It looks like an \$8,000 job to me."
- The per measure method: (I like to call it the surprise package.) "Remodeling costs \$60 per SF, the job is 500 SF, so the price is \$30,000."

These two methods are the least accurate and accomplish little for the adjuster or the appraiser. The contractor might use the methods for qualifying customers (e.g., "I thought a bathroom would only cost \$2,000."), but never as the basis for bidding or negotiating a price.

- The piece estimate or stick-by-stick method.
- The unit cost estimate method.

These two methods yield a detailed estimate itemizing all of the material quantities and costs, the labor manhours and wage rates, the subcontract costs, and the allowance for overhead and profit.

Though time-consuming, the detailed estimate is the most accurate and predictable. It's a very satisfactory

tool for negotiating either the contract price or the adjustment of a building loss. The piece estimate and the unit cost estimate rely on historical data, such as manhours per specific job operation and recent material costs. The successful repair and remodeling contractor, or insurance/appraisal company, maintains records of previous jobs detailing allocation of crew manhours per day and materials expended.

While new estimators don't have historical data records, they can rely on reference books, magazines, and newsletters to estimate manhours and material costs. It is important to remember that **the reference must pertain to repair and remodeling**. This book is designed *specifically* to meet this requirement.

The reference material must specialize in repair and remodeling work because there's a large cost difference between new construction and repair and remodeling. Material and labor construction costs vary radically with the size of the job or project. Economies of scale come into play. The larger the quantity of materials, the better the purchase price should be. The larger the number of units to be installed, the greater the labor efficiency.

Repair and remodeling work, compared to new construction, is more expensive due to a normally smaller volume of work. Typical repair work involves only two or three rooms of a house, or one roof. In new construction, the job size may be three to five complete homes or an entire development. And there's another factor: a lot of repair and remodeling is done with the house occupied, forcing the crew to work around the normal, daily activities of the occupants. In new construction, the approach is systematic and logical — work proceeds from the ground up to the roof and to the inside of the structure.

Since the jobs are small, the repair and remodeling contractor doesn't employ trade specialists. Repairers employ the "jack-of-all-trades" who is less specialized and therefore less efficient. This isn't to say the repairer is less professional than the trade specialist. On the contrary, the repairer must know about many more facets of construction: not just framing, but painting, finish carpentry, roofing, and electrical as well. But because the repairer has to spread his expertise over a greater area, he will be less efficient than the specialist who repeats the same operation all day long.

Another factor reducing worker efficiency is poor access to the work area. With new construction, where building is an orderly "from the ground up" approach, workers have easy access to the work area for any given operation. The workers can spread out as much as needed, which facilitates efficiency and minimizes the manhours required to perform a given operation.

The opposite situation exists with repair and remodeling construction. Consider an example where the work area involves fire damage on the second floor. Materials either go up through the interior stairs or through a second

story window. Neither is easy when the exterior and interior walls have a finished covering such as siding and drywall. That results in greater labor costs with repair and remodeling because it takes more manhours to perform many of the same tasks.

If, as a professional estimator, you want to start collecting historical data, the place to begin is with daily worker time sheets that detail:

1. total hours worked by each worker per day
2. what specific operations each worker performed that day
3. how many hours (to the nearest tenth) each worker used in each operation performed that day.

Second, you must catalog all material invoices daily, being sure that quantities and unit costs per item are clearly indicated.

Third, maintain a record of overhead expenses attributable to the particular project. Then, after a number of jobs, you'll be able to calculate an average percentage of the job's gross amount that's attributable to overhead. Many contractors add 45% for overhead and profit to their total direct costs (direct labor, direct material, and direct subcontract costs). But that figure may not be right for your jobs.

Finally, each week you should reconcile in a job summary file the actual costs versus the estimated costs, and determine why there is any difference. This information can't immediately help you on this job since the contract has been signed, but it will be invaluable to you on your next job.

Up to now I've been talking about general estimating theory. Now let's be more specific. On page 8 is a Building Repair Estimate form. Each line is keyed to an explanation. A filled-out copy of the form is also provided, and on page 10, a blank, full-size copy that you can reproduce for your own use.

You can adapt the Building Repair Estimate form, whether you're a contractor, adjuster, or appraiser. Use of the form will yield a detailed estimate that will identify:

- The room or area involved, including sizes, dimensions and measurements.
- The kind and quality of material to be used.
- The quantities of materials to be used and verification of their prices.
- The type of work to be performed (demolish, remove, install, remove and reset) by what type of crew.
- The crew manhours per job operation and verification of the hourly wage scale.
- All arithmetical calculations that can be verified.
- Areas of difference between your estimate and others.

- Areas that will be a basis for negotiation and discussion of details.

Each job estimate begins with a visual inspection of the work site. If it's a repair job, you've got to see the damage. Without a visual inspection, you can't select a method of repair and you can't properly evaluate the opinions of others regarding repair or replacement. With either repair or remodeling work, the visual inspection is essential to uncover the "hiders" — the unpredictable, unforeseen, and unexpected problems that can turn profit into loss, or simplicity into nightmare. You're looking for the many variables and unknowns that exist behind an exterior or interior wall covering.

Along with the Building Repair Estimate form, use this checklist to make sure you're not forgetting anything.

Checklist

- Site accessibility: Will you store materials and tools in the garage? Is it secure? You can save a half hour to an hour each day by storing tools in the garage. Will the landscaping prevent trucks from reaching the work site? Are wheelbarrows or concrete pumpers going to be required?
- Soil: What type and how much water content? Will the soil change your excavation estimate?
- Utility lines: What's under the soil and where? Should you schedule the utilities to stake their lines?
- Soundness of the structure: If you're going to remodel, repair or add on, how sound is that portion of the house that you're going to have to work around? Where are the load-bearing walls? Are you going to remove and reset any walls? Do the floor joists sag?
- Roof strength: Can the roof support the weight of another layer of shingles. (Is four layers of composition shingles already too much?)
- Electrical: Is another breaker box required for the additional load?

This checklist is by no means complete, but it is a start. Take pictures! A digital camera will quickly pay for itself. When you're back at the office, the picture helps reconstruct the scene. Before and after pictures are also a sales tool representing your professional expertise.

During the visual inspection always be asking yourself "what if" this or that happened. Be looking for potential problem areas that would be extremely labor intensive or expensive in material to repair or replace.

Also spend some time getting to know your clients and their attitudes. Most of repair and remodeling work occurs while the house is occupied. If the work will be messy, let the homeowners know in advance. Their satisfaction is your ultimate goal — and their satisfaction will provide you a pleasant working atmosphere. You're there to communicate with them. At the end of an estimate and visual inspection, the homeowner should have a clear idea of what you can or can't do, how it will be

done, and approximately how long it will take. Don't discuss costs now! Save the estimating for your quiet office with a print-out calculator and your cost files or reference books.

What you create on your estimate form during a visual inspection is a set of rough notes and diagrams that make the estimate speak. To avoid duplications and omissions, estimate in a *systematic sequence of inspection*. There are two questions to consider. First, where do you start the estimate? Second, in what order will you list the damaged or replaced items? It's customary to start in the room having either the most damage or requiring the most extensive remodeling. The sequence of listing is important. Start with either the floor or the ceiling. When starting with the floor, you might list items in the following sequence: Joists, subfloor, finish floor, base — listing from bottom to top. When starting with the ceiling, you reverse, and list from top to bottom. The important thing is to be consistent as you go from room to room! It's a good idea to figure the roof and foundation separately, instead of by the room.

After completing your visual inspection, go back to your office to cost out the items. Talk to your material supply houses and get unit costs for the quantity involved. Consult your job files or reference books and assign crew manhours to the different job operations.

There's one more reason for creating detailed estimates. Besides an estimate, what else have your notes given you? A material take-off sheet, a lumber list, a plan and specification sheet — the basis for writing a job summary for comparing estimated costs and profit versus actual costs and profit — and a project schedule that minimizes down time.

Here's the last step: Enter an amount for overhead and profit. No matter how small or large your work volume is, be realistic — everyone has overhead and every business entity works to make a fair and reasonable profit. An office, even in your home, costs money to operate. If family members help out, pay them. Everyone's time is valuable!

If you expect there will be a supervising general contractor on the job, and the overhead and profit is computed as a percentage of the job, then overhead and profit dollars automatically adjust to the job size and the job complexity.

Don't forget to charge for performing your estimate. A professional expects to be paid. You'll render a better product if you know you're being paid for your time. If you want to soften the blow to the owner, say the first hour is free or that the cost of the estimate will be deducted from the job price if you get the job.

In conclusion, whether you're a contractor, adjuster, or appraiser, you're selling your personal service, your ideas, and your reputation. To be successful you must:

- Know yourself and your capabilities.
- Know what the job will require by ferreting out the "hiders."
- Know your products and your work crew.
- Know your productivity and be able to deliver in a reasonable manner and within a reasonable time frame.
- Know your client and make it clear that all change orders, no matter how large or small, will cost money.

National Estimator Cloud

This manual is also available by subscription on the Web. *National Estimator Cloud* includes all ten of Craftsman's 2024 construction cost estimating references. Each of these manuals has about 400 pages of current labor and material costs for construction — all neatly organized and indexed. Use these costs to build estimates and bids for nearly any type of project. Your work is kept secure on the Web. *National Estimator Cloud*:

- Prints estimates, bids and invoices as Word, Excel or PDF documents.
- Runs as a secure app on the Web so you can write estimates anywhere you have a Web connection.
- Exports invoices to QuickBooks, either desktop or the online.
- Bids and invoices can show as much or as little detail as you want.
- Material costs are updated regularly as prices change.
- Costs only a few dollars a month. Cancel any time you want.

Building Repair Estimate

Insured 1

Loss Address 4

City

Bldg. R.C.V. 7

Insurance Required R.C.V. (10 %) A.C.V.(11)%

John Q. Smith

123 A. Main St.

Anywhere, Anystate 00010

100,000 Bldg. A.C.V. 80,000

R.C.V. (80%) A.C.V.(80%)

Claim or Policy No. 2

Home Ph.

Bus. Ph.

Insurance Amount 9

Unit Cost or Material Price Only 12

Date 33

Cause of Loss 5

Other Ins. Y N 6

Labor Price Only 16

Description of Item

Unit

Unit Price

Total (Col. A)

Hours

Rate

Total Col. B)

20

13

14

15

17

18

19

Install 1/2" sheetrock (standard,) on walls, including tape and finish 400 (page 146)

400

0.74

296.00

8.4

56.71

476.36

Paint walls, roller, smooth finish

600

0.28

168.00

3.6

59.01

212.44

1 coat sealer 600 (page 304)

600

0.33

198.00

6

59.01

354.06

2 coats latex flat 600 (page 307)

THIS IS NOT AN ORDER TO REPAIR TOTALS

21

22

The undersigned agrees to complete and guarantee repairs at a total of \$

29

Repairer 30

31

23

Street

City

By 32

24

Adjuster 34

25

26

Adj. License No. (If Any)

35

27

Service Office Name 36

28

Grand Total

27

Note: This form does not replace the need for field notes, sketches and measurements.

Building Repair Estimate

Insured John Q. Smith

Loss Address 123 A. Main St.

City Anywhere, Anystate 00010

Bldg. R.C.V. 100,000 Bldg. A.C.V. 80,000

Insurance Required R.C.V. (80%) A.C.V.(80%)

Claim or Policy No. DP 0029

Home Ph. 555-1241

Bus. Ph. 555-1438

Insurance Amount \$100,000

Unit Cost or Material Price Only

Date

Cause of Loss

Other Ins. Y N

Labor Price Only

Description of Item

Unit

Unit Price

Total (Col. A)

Hours

Rate

Total Col. B)

Install 1/2" sheetrock (standard,) on walls, including tape and finish 400 (page 146)

400

0.74

296.00

8.4

56.71

476.36

Paint walls, roller, smooth finish

600

0.28

168.00

3.6

59.01

212.44

1 coat sealer 600 (page 304)

600

0.33

198.00

6

59.01

354.06

2 coats latex flat 600 (page 307)

THIS IS NOT AN ORDER TO REPAIR TOTALS

658.00

1042.86

The undersigned agrees to complete and guarantee repairs at a total of \$

658.00

Repairer ABC Construction

316 E. 2nd Street

City Anywhere Phone

By Jack Williams

23

Adjuster Stan Jones

24

25

Adj. License No. (If Any) 561-84

26

27

Service Office Name Phoenix

28

Grand Total

2163.49

Note: This form does not replace the need for field notes, sketches and measurements.

Keyed Explanations of the Building Repair Estimate Form

1. Insert name of insured(s).
2. Insert claim number or, if claim number is not available, insert policy number or binder number.
3. Insert the page number and the total number of pages.
4. Insert street address, city and state where loss or damage occurred.
5. Insert type of loss (wind, hail, fire, water, etc.)
6. Check YES if there is other insurance, whether collectible or not. Check NO if there's only one insurer.
7. Insert the present replacement cost of the building. What would it cost to build the structure today?
8. Insert present actual cash value of the building.
9. Insert the amount of insurance applicable. If there is more than one insurer, insert the total amount of applicable insurance provided by all insurers.
10. If the amount of insurance required is based on replacement cost value, circle RCV and insert the percent required by the policy, if any.

Note: (regarding 10 and 11) if there is a non-concurrency, i.e., one insurer requires insurance to 90% of value while another requires insurance to 80% of value, make a note here. Comment on the non-concurrency in the settlement report.
11. If the amount of insurance required is based on actual cash value, circle ACV and insert the percent required by the policy, if any.

Note: (regarding 10 and 11) if there is a non-concurrency, i.e., one insurer requires insurance to 90% of value while another requires insurance to 80% of value, make a note here. Comment on the non-concurrency in the settlement report.
12. The installed price and/or material price only, as expressed in columns 13 through 15, may include any of the following (expressed in units and unit prices):
 - Material only (no labor)
 - Material and labor to replace
 - Material and labor to remove and replace
Unit Cost is determined by dividing dollar cost by quantity. The term cost, as used in unit cost, is not intended to include any allowance, percentage or otherwise, for overhead or profit. Usually, overhead and profit are expressed as a percentage of cost. Cost must be determined first. Insert a line or dash in a space(s) in columns 13, 14, 15, 17, 18 or 19 if the space is not to be used.
13. The *units* column includes both the quantity and the unit of measure, i.e., 100 SF, 100 BF, 200 CF, 100 CY, 20 ea., etc.
14. The *unit price* may be expressed in dollars, cents or both. If the units column has 100 SF and if the unit price column has \$.10, this would indicate the price to be 100 per SF.
15. The *total* column is merely the dollar product of the quantity (in column 13) times the price per unit measure (in column 14).
16. 16-19. These columns are normally used to express labor as follows: hours times rate per hour. However, it is possible to express labor as a unit price, i.e., 100 SF in column 13, a dash in column 17, \$.05 in column 18 and \$5.00 in column 19.
20. Under *description of item*, the following may be included:
 - Description of item to be repaired or replaced (studs 2" x 4" 8'0" #2 Fir, Sheetrock 1/2", etc.)
 - Quantities or dimensions (20 pcs., 8'0" x 14'0", etc.)
 - Location within a room or area (north wall, ceiling, etc.)
 - Method of correcting damage (paint - 1 coat; sand, fill and finish; R&R; remove only; replace; resize; etc.)
- 21-22. Dollar totals of columns A and B respectively.
- 23-27. Spaces provided for items not included in the body of the estimate (subtotals, overhead, profit, sales tax, etc.)
28. Total cost of repair.
29. Insert the agreed amount here. The agreement may be between the claim representative and the insured or between the claim rep and the repairer. If the agreed price is different from the grand total, the reason(s) for the difference should be itemized on the estimate sheet. If there is no room, attach an additional estimate sheet.
30. PRINT the name of the insured or the repairer so that it is legible.
31. PRINT the address of the insured or repairer legibly. Include phone number.
32. The insured or a representative of the repairer should sign here indicating agreement with the claim rep's estimate.
33. Insured or representative of the repairer should insert date here.
34. Claim rep should sign here.
35. Claim rep should insert date here.
36. Insert name of service office here.

[illegible]

Wage Rates Used in This Book

Wage rates listed here and used in this book were compiled in the fall of 2023 and projected to mid-2024. Wage rates are in dollars per hour.

“Base Wage Per Hour” (Col. 1) includes items such as vacation pay and sick leave which are normally taxed as wages. Nationally, these benefits average 5.65% of the Base Wage Per Hour. This amount is paid by the Employer in addition to the Base Wage Per Hour.

“Liability Insurance and Employer Taxes” (Cols. 3 & 4) include national averages for state unemployment insurance (4.00%), federal unemployment insurance (0.60%), Social Security and Medicare tax (7.65%), li-

bility insurance (2.29%), and Workers’ Compensation Insurance which varies by trade. This total percentage (Col. 3) is applied to the sum of Base Wage Per Hour and Taxable Fringe Benefits (Col. 1 + Col. 2) and is listed in Dollars (Col. 4). This amount is paid by the Employer in addition to the Base Wage Per Hour and the Taxable Fringe Benefits.

“Non-Taxable Fringe Benefits” (Col. 5) include employer-sponsored medical insurance and other benefits, which nationally average 4.99% of the Base Wage Per Hour.

“Total Hourly Cost Used In This Book” is the sum of Columns 1, 2, 4, & 5.

	1	2	3	4	5	6
Trade	Base Wage Per Hour	Taxable Fringe Benefits (5.65% of Base Wage)	Liability Insurance & Employer Taxes %	\$	Non-Taxable Fringe Benefits (4.99% of Base Wage)	Total Hourly Cost Used in This Book
Air Tool Operator	\$35.43	\$2.00	25.16%	\$9.42	\$1.77	\$48.62
Bricklayer or Stone Mason	\$30.71	\$1.73	24.24%	\$7.86	\$1.53	\$41.83
Bricktender	\$22.80	\$1.29	24.24%	\$5.84	\$1.14	\$31.07
Carpenter	\$28.89	\$1.63	29.82%	\$9.10	\$1.44	\$41.06
Cement Mason	\$29.23	\$1.65	22.44%	\$6.93	\$1.46	\$39.27
Drywall Installer	\$29.95	\$1.69	22.62%	\$7.16	\$1.49	\$40.29
Drywall Taper	\$30.27	\$1.71	22.62%	\$7.23	\$1.51	\$40.72
Electrician, Journeyman Wireman	\$34.25	\$1.93	19.33%	\$6.99	\$1.71	\$44.88
Equipment Operator	\$34.58	\$1.95	24.16%	\$8.83	\$1.73	\$47.09
Fence Erector	\$31.25	\$1.76	24.94%	\$8.23	\$1.56	\$42.80
Floor Layer: Carpet, Linoleum, Soft Tile	\$28.09	\$1.59	22.99%	\$6.82	\$1.40	\$37.90
Floor Layer: Hardwood	\$29.49	\$1.67	22.99%	\$7.16	\$1.47	\$39.79
Glazier	\$29.16	\$1.65	24.59%	\$7.58	\$1.45	\$39.84
Laborer, General Construction	\$23.25	\$1.31	30.92%	\$7.59	\$1.16	\$33.31
Lather	\$30.00	\$1.69	20.65%	\$6.54	\$1.50	\$39.73
Marble Setter	\$27.79	\$1.57	20.72%	\$6.08	\$1.39	\$36.83
Millwright / Finish Carpenter	\$29.39	\$1.66	20.62%	\$6.40	\$1.47	\$38.92
Mosaic & Terrazzo Setter	\$29.48	\$1.66	20.72%	\$6.45	\$1.47	\$39.06
Mosaic & Terrazzo Setter Helper	\$22.55	\$1.27	20.72%	\$4.94	\$1.13	\$29.89
Painter, Brush	\$31.00	\$1.75	23.98%	\$7.85	\$1.55	\$42.15
Painter, Spray-Gun	\$31.93	\$1.80	23.98%	\$8.09	\$1.59	\$43.41
Paperhanger	\$32.55	\$1.84	23.98%	\$8.25	\$1.62	\$44.26
Plasterer	\$29.58	\$1.67	27.11%	\$8.47	\$1.48	\$41.20
Plasterer Helper	\$23.28	\$1.31	27.11%	\$6.67	\$1.16	\$32.42
Plumber	\$35.42	\$2.00	23.55%	\$8.81	\$1.77	\$48.00
Reinforcing Ironworker	\$31.05	\$1.75	27.27%	\$8.94	\$1.55	\$43.29
Roofer, Foreman	\$32.57	\$1.84	41.02%	\$14.12	\$1.62	\$50.15
Roofer, Journeyman	\$29.61	\$1.67	41.02%	\$12.83	\$1.48	\$45.59
Roofer, Hot Mop Pitch	\$30.50	\$1.72	41.02%	\$13.22	\$1.52	\$46.96
Roofer, Wood Shingles	\$31.09	\$1.76	41.02%	\$13.48	\$1.55	\$47.88
Sheet Metal Worker	\$33.97	\$1.92	24.94%	\$8.95	\$1.69	\$46.53
Tile Setter	\$29.77	\$1.68	20.72%	\$6.52	\$1.49	\$39.46
Tile Setter's Helper	\$22.55	\$1.27	20.72%	\$4.94	\$1.13	\$29.89
Truck Driver	\$25.29	\$1.43	25.16%	\$6.72	\$1.26	\$34.70

Area Modification Factors

Construction costs are higher in some areas than in other areas. Add or deduct the percentages shown on the following pages to adapt the costs in this book to your job site. Adjust your cost estimate by the appropriate percentages in this table to find the estimated cost for the site selected. Where 0% is shown, it means no modification is required.

Modification factors are listed alphabetically by state and province. Areas within each state are listed by the first three digits of the postal zip code. For convenience, one representative city is identified in each three-digit zip or range of zips. Percentages are based on the average of all data points in the table.

Factors listed for each state and province are the average of all data points in that state or province.

Alabama Average -3%			Herlong	961.....	1%
Anniston	362.....	-5%	Inglewood	902-905	10%
Auburn	368.....	-3%	Irvine	926-927	14%
Bellamy	369.....	-1%	Lompoc	934.....	1%
Birmingham	350-352	5%	Long Beach	907-908	11%
Dothan	363.....	-3%	Los Angeles	900-901	9%
Evergreen	364.....	-6%	Marysville	959.....	2%
Gadsden	359.....	-6%	Modesto	953.....	1%
Huntsville	358.....	3%	Mojave	935.....	6%
Jasper	355.....	-9%	Novato	949.....	17%
Mobile	365-366	-3%	Oakland	945-947	19%
Montgomery	360-361	1%	Orange	928.....	13%
Scottsboro	357.....	-1%	Oxnard	930.....	3%
Selma	367.....	-5%	Pasadena	910-912	10%
Sheffield	356.....	0%	Rancho		
Tuscaloosa	354.....	-5%	Cordova	956-957	8%
Alaska Average 14%			Redding	960.....	2%
Anchorage	995.....	17%	Richmond	948.....	20%
Fairbanks	997.....	20%	Riverside	925.....	3%
Juneau	998.....	13%	Sacramento	958.....	8%
Ketchikan	999.....	7%	Salinas	939.....	3%
King Salmon	996.....	13%	San Bernardino	923-924	4%
Arizona Average -4%			San Diego	919-921	8%
Chambers	865.....	-17%	San Francisco	941.....	28%
Douglas	855.....	-10%	San Jose	950-951	26%
Flagstaff	860.....	-8%	San Mateo	943-944	25%
Kingman	864.....	-3%	Santa Barbara	931.....	3%
Mesa	852.....	5%	Santa Rosa	954.....	12%
Phoenix	850.....	5%	Stockton	952.....	7%
Prescott	863.....	-4%	Sunnyvale	940.....	26%
Show Low	859.....	-9%	Van Nuys	913-916	9%
Tucson	856-857	-5%	Whittier	906.....	9%
Yuma	853.....	4%	Colorado Average 1%		
Arkansas Average -7%			Aurora	800-801	9%
Batesville	725.....	-8%	Boulder	803-804	7%
Camden	717.....	-6%	Colorado		
Fayetteville	727.....	-3%	Springs	808-809	2%
Fort Smith	729.....	-7%	Denver	802.....	11%
Harrison	726.....	-13%	Durango	813.....	-6%
Hope	718.....	-10%	Fort Morgan	807.....	-3%
Hot Springs	719.....	-13%	Glenwood		
Jonesboro	724.....	-2%	Springs	816.....	5%
Little Rock	720-722	-2%	Grand Junction	814-815	-4%
Pine Bluff	716.....	-11%	Greeley	806.....	5%
Russellville	728.....	-6%	Longmont	805.....	3%
West Memphis	723.....	0%	Pagosa Springs	811.....	-7%
California Average 9%			Pueblo	810.....	-3%
Alhambra	917-918	10%	Salida	812.....	-1%
Bakersfield	932-933	0%	Connecticut Average 8%		
El Centro	922.....	0%	Bridgeport	66.....	9%
Eureka	955.....	-1%	Bristol	60.....	11%
Fresno	936-938	0%	Fairfield	64.....	10%
			Hartford	61.....	10%

Figures for three-digit zips are the average of all five-digit zips in that area, and are the weighted average of factors for labor, material and equipment.

The *National Estimator Cloud* program at <https://craftsman-book.com/national-estimator-cloud> will apply an area modification factor for any five-digit zip you select. Click the Area Cost Modification icon on the program tool bar. Area modifications in *National Estimator Cloud* are updated regularly and may differ from figures on the following pages.

These percentages are composites of many costs and will not necessarily be accurate when estimating the cost of any particular part of a building. But when used to modify costs for an entire structure, they should improve the accuracy of your estimates

New Haven	65.....	7%	Hawaii Average		17%
Norwich	63.....	3%	Aliamanu	968.....	19%
Stamford	068-069	15%	Ewa	967.....	16%
Waterbury	67.....	7%	Halawa Heights	967.....	16%
West Hartford	62.....	2%	Hilo	967.....	16%
Delaware Average		2%	Honolulu	968.....	19%
Dover	199.....	-1%	Kailua	968.....	19%
Newark	197.....	4%	Lualualei	967.....	16%
Wilmington	198.....	2%	Mililani Town	967.....	16%
District of Columbia			Pearl City	967.....	16%
Washington	200-205	11%	Wahiawa	967.....	16%
Florida Average		-4%	Waianae	967.....	16%
Altamonte			Wailuku (Maui)	967.....	16%
Springs	327.....	-2%	Idaho Average		-8%
Bradenton	342.....	-5%	Boise	837.....	-1%
Brooksville	346.....	-6%	Coeur d'Alene	838.....	-6%
Daytona Beach	321.....	-9%	Idaho Falls	834.....	-10%
Fort Lauderdale	333.....	3%	Lewiston	835.....	-12%
Fort Myers	339.....	-6%	Meridian	836.....	-6%
Fort Pierce	349.....	-9%	Pocatello	832.....	-9%
Gainesville	326.....	-7%	Sun Valley	833.....	-8%
Jacksonville	322.....	-1%	Illinois Average		4%
Lakeland	338.....	-8%	Arlington Heights	600.....	13%
Melbourne	329.....	-6%	Aurora	605.....	14%
Miami	330-332	-1%	Belleville	622.....	2%
Naples	341.....	-3%	Bloomington	617.....	1%
Ocala	344.....	-11%	Carbondale	629.....	-9%
Orlando	328.....	0%	Carol Stream	601.....	14%
Panama City	324.....	-8%	Centralia	628.....	-5%
Pensacola	325.....	-6%	Champaign	618.....	-1%
Saint Augustine	320.....	-3%	Chicago	606-608	14%
Saint Cloud	347.....	-1%	Decatur	623.....	-4%
St Petersburg	337.....	-5%	Galesburg	614.....	-3%
Tallahassee	323.....	-7%	Granite City	620.....	0%
Tampa	335-336	0%	Green River	612.....	1%
W. Palm Beach	334.....	1%	Joliet	604.....	12%
Georgia Average		0%	Kankakee	609.....	3%
Albany	317.....	-5%	Lawrenceville	624.....	-3%
Athens	306.....	2%	Oak Park	603.....	16%
Atlanta	303.....	21%	Peoria	615-616	6%
Augusta	308-309	-1%	Peru	613.....	5%
Buford	305.....	0%	Quincy	602.....	14%
Calhoun	307.....	-1%	Rockford	610-611	4%
Columbus	318-319	-3%	Springfield	625-627	-3%
Dublin/			Urbana	619.....	-4%
Fort Valley	310.....	-8%	Indiana Average		-3%
Hinesville	313.....	4%	Aurora	470.....	-7%
Kings Bay	315.....	-10%	Bloomington	474.....	-3%
Macon	312.....	0%	Columbus	472.....	0%
Marietta	300-302	7%	Elkhart	465.....	-2%
Savannah	314.....	-1%	Evansville	476-477	-1%
Statesboro	304.....	3%			
Valdosta	316.....	-5%			

Fort Wayne	467-468	-2%	Maine Average	-5%	Meridian	393	-1%	New Mexico Average	-10%			
Gary	463-464	4%	Auburn	42	-3%	Tupelo	388	-2%	Alamogordo	883	-13%	
Indianapolis	460-462	6%	Augusta	43	-4%	Missouri Average	-4%	Albuquerque	870-871	-2%		
Jasper	475	-4%	Bangor	44	-4%	Cape Girardeau	637	-2%	Clovis	881	-17%	
Jeffersonville	471	-7%	Bath	45	-5%	Caruthersville	638	-4%	Farmington	874	-5%	
Kokomo	469	-8%	Brunswick	039-040	1%	Chillicothe	646	-5%	Fort Sumner	882	-1%	
Lafayette	479	-2%	Camden	48	-8%	Columbia	652	-4%	Gallup	873	-13%	
Muncie	473	-8%	Cutler	46	-10%	East Lynne	647	-5%	Holman	877	-11%	
South Bend	466	-3%	Dexter	49	-6%	Farmington	636	-9%	Las Cruces	880	-10%	
Terre Haute	478	-6%	Northern Area	47	-10%	Hannibal	634	-8%	Santa Fe	875	-7%	
Iowa Average	-3%		Portland	41	-4%	Independence	640	-5%	Socorro	878	-20%	
Burlington	526	-5%	Maryland Average	3%	Jefferson City	650-651	-5%	Truth or Consequences	879	-10%		
Carroll	514	-4%	Annapolis	214	-9%	Joplin	648	-6%	Tucumcari	884	-10%	
Cedar Falls	506	0%	Baltimore	210-212	5%	Kansas City	641	-5%	New York Average	6%		
Cedar Rapids	522-524	1%	Bethesda	208-209	13%	Kirksville	635	-12%	Albany	120-123	6%	
Cherokee	510	-2%	Church Hill	216	-3%	Knob Noster	653	-8%	Amityville	117	10%	
Council Bluffs	515	-2%	Cumberland	215	-8%	Lebanon	654-655	-13%	Batavia	140	-1%	
Creston	508	-9%	Elkton	219	3%	Poplar Bluff	639	-10%	Binghamton	137-139	0%	
Davenport	527-528	2%	Frederick	217	3%	Saint Charles	633	0%	Bronx	104	12%	
Decorah	521	-4%	Laurel	206-207	8%	Saint Joseph	644-645	0%	Brooklyn	112	7%	
Des Moines	500-503	1%	Salisbury	218	-6%	Springfield	656-658	-8%	Buffalo	142	-1%	
Dubuque	520	1%	Massachusetts Average	13%	St Louis	630-631	7%	Elmira	149	-2%		
Fort Dodge	505	0%	Ayer	015-016	7%	Montana Average	-2%	Flushing	113	13%		
Mason City	504	-1%	Bedford	17	20%	Billings	590-591	0%	Garden City	115	13%	
Ottumwa	525	-9%	Boston	021-022	29%	Butte	597	3%	Hicksville	118	12%	
Sheldon	512	-1%	Brockton	023-024	22%	Fairview	592	4%	Ithaca	148	-7%	
Shenandoah	516	-14%	Cape Cod	26	7%	Great Falls	594	-1%	Jamaica	114	12%	
Sioux City	511	-3%	Chicopee	10	6%	Havre	595	-5%	Jamestown	147	-7%	
Spencer	513	-7%	Dedham	19	16%	Helena	596	-3%	Kingston	124	-2%	
Waterloo	507	-3%	Fitchburg	14	14%	Kalispell	599	-5%	Long Island	111	33%	
Kansas Average	-7%		Hingham	20	21%	Miles City	593	-8%	Montauk	119	9%	
Colby	677	-3%	Lawrence	18	19%	Missoula	598	-3%	New York (Manhattan)	100-102	34%	
Concordia	669	-13%	Nantucket	25	13%	Nebraska Average	-7%	New York City	100-102	34%		
Dodge City	678	-9%	New Bedford	27	8%	Alliance	693	-11%	Newcomb	128	3%	
Emporia	668	-10%	Northfield	13	1%	Columbus	686	-5%	Niagara Falls	143	-2%	
Fort Scott	667	-8%	Pittsfield	12	0%	Grand Island	688	-8%	Plattsburgh	129	2%	
Hays	676	-11%	Springfield	11	5%	Hastings	689	-3%	Poughkeepsie	125-126	1%	
Hutchinson	675	-8%	Michigan Average	1%	Lincoln	683-685	-4%	Queens	110	15%		
Independence	673	-4%	Battle Creek	490-491	-1%	McCook	690	-11%	Rochester	144-146	-1%	
Kansas City	660-662	4%	Detroit	481-482	7%	Norfolk	687	-6%	Rockaway	116	8%	
Liberal	679	-13%	Flint	484-485	-1%	North Platte	691	-8%	Rome	133-134	-4%	
Salina	674	-7%	Grand Rapids	493-495	4%	Omaha	680-681	0%	Staten Island	103	8%	
Topeka	664-666	-3%	Grayling	497	-4%	Valentine	692	-17%	Stewart	127	10%	
Wichita	670-672	-4%	Jackson	492	-1%	Nevada Average	2%	Syracuse	130-132	2%		
Kentucky Average	-6%		Lansing	488-489	3%	Carson City	897	-2%	Tonawanda	141	-2%	
Ashland	411-412	-8%	Marquette	498-499	-5%	Elko	898	2%	Utica	135	-4%	
Bowling Green	421	-3%	Pontiac	483	9%	Ely	893	-2%	Watertown	136	-3%	
Campton	413-414	-14%	Royal Oak	480	7%	Fallon	894	4%	West Point	109	3%	
Covington	410	2%	Saginaw	486-487	-1%	Las Vegas	889-891	4%	White Plains	105-108	12%	
Elizabethtown	427	-6%	Traverse City	496	-1%	Reno	895	4%	North Carolina Average	-1%		
Frankfort	406	-5%	Minnesota Average	1%	New Hampshire Average	4%	Charlestown	36	-3%	Asheville	287-289	-4%
Hazard	417-418	-13%	Bemidji	566	-2%	Concord	34	2%	Charlotte	280-282	6%	
Hopkinsville	422	-5%	Brainerd	564	-3%	Dover	38	7%	Durham	277	5%	
Lexington	403-405	6%	Duluth	556-558	0%	Lebanon	37	-1%	Elizabeth City	279	-7%	
London	407-409	-4%	Fergus Falls	565	-5%	Littleton	35	7%	Fayetteville	283	-5%	
Louisville	400-402	0%	Magnolia	561	-7%	Manchester	032-033	6%	Goldsboro	275	3%	
Owensboro	423	-8%	Mankato	560	2%	New Boston	030-031	12%	Greensboro	274	3%	
Paducah	420	-7%	Minneapolis	553-555	12%	New Jersey Average	10%	Hickory	286	-4%		
Pikeville	415-416	-11%	Rochester	559	0%	Atlantic City	080-084	4%	Kinston	285	-7%	
Somerseset	425-426	-10%	St Cloud	563	7%	Brick	87	2%	Raleigh	276	6%	
White Plains	424	-4%	St Paul	550-551	9%	Dover	78	11%	Rocky Mount	278	-3%	
Louisiana Average	1%		Thief River Falls	567	-1%	Edison	088-089	14%	Wilmington	284	-4%	
Alexandria	713-714	-8%	Willmar	562	1%	Hackensack	76	11%	Winston-Salem	270-273	0%	
Baton Rouge	707-708	11%	Mississippi Average	-1%	Monmouth	77	13%	North Dakota Average	0%			
Houma	703	7%	Clarksdale	386	0%	Newark	071-073	9%	Bismarck	585	-1%	
Lafayette	705	4%	Columbus	397	-2%	Passaic	70	11%	Dickinson	586	5%	
Lake Charles	706	5%	Greenville	387	-6%	Paterson	074-075	8%	Fargo	580-581	3%	
Mandeville	704	6%	Greenwood	389	0%	Princeton	85	10%	Grand Forks	582	-1%	
Minden	710	-8%	Gulfport	395	0%	Summit	79	16%				
Monroe	712	-9%	Jackson	390-392	3%	Trenton	86	8%				
New Orleans	700-701	5%	Laurel	394	2%							
Shreveport	711	-6%	McComb	396	-5%							

Jamestown	584.....-3%
Minot	587.....-1%
Nekoma	583.....-12%
Williston	588.....13%

Ohio Average

0%

Akron	442-443.....2%
Canton	446-447.....0%
Chillicothe	456.....-6%
Cincinnati	450-452.....4%
Cleveland	440-441.....2%
Columbus	432.....6%
Dayton	453-455.....0%
Lima	458.....-3%
Marietta	457.....-7%
Marion	433.....6%
Newark	430-431.....5%
Sandusky	448-449.....2%
Steubenville	439.....-3%
Toledo	434-436.....4%
Warren	444.....-4%
Youngstown	445.....-3%
Zanesville	437-438.....-2%

Oklahoma Average

-8%

Adams	739.....-4%
Ardmore	734.....-8%
Clinton	736.....-9%
Durant	747.....-8%
Enid	737.....-9%
Lawton	735.....-12%
McAlester	745.....-11%
Muskogee	744.....-5%
Norman	730.....-4%
Oklahoma City	731.....-3%
Ponca City	746.....-7%
Poteau	749.....-13%
Pryor	743.....-7%
Shawnee	748.....-8%
Tulsa	740-741.....-4%
Woodward	738.....-14%

Oregon Average

-2%

Adrian	979.....-14%
Bend	977.....3%
Eugene	974.....-3%
Grants Pass	975.....-5%
Klamath Falls	976.....-9%
Pendleton	978.....-2%
Portland	970-972.....14%
Salem	973.....-1%

Pennsylvania Average

-3%

Allentown	181.....2%
Altoona	166.....-9%
Beaver Springs	178.....-8%
Bethlehem	180.....5%
Bradford	167.....-11%
Butler	160.....-3%
Chambersburg	172.....-4%
Clearfield	168.....-3%
DuBois	158.....-11%
East Stroudsburg	183.....-8%
Erie	164-165.....-8%
Genesee	169.....-9%
Greensburg	156.....-3%
Harrisburg	170-171.....-1%
Hazleton	182.....-4%
Johnstown	159.....-10%
Kittanning	162.....-8%
Lancaster	175-176.....-1%
Meadville	163.....-14%
Montrose	188.....-4%

New Castle	161.....-5%
Philadelphia	190-191.....11%
Pittsburgh	152.....2%
Pottsville	179.....-6%
Punxsutawney	157.....-10%
Reading	195-196.....-2%
Scranton	184-185.....-3%
Somerset	155.....-9%
Southeastern	193.....10%
Uniontown	154.....-9%
Valley Forge	194.....15%
Warminster	189.....9%
Warrendale	150-151.....2%
Washington	153.....2%
Wilkes Barre	186-187.....-3%
Williamsport	177.....-8%
York	173-174.....0%

Rhode Island Average

4%

Bristol	28.....4%
Coventry	28.....4%
Cranston	29.....4%
Davisville	28.....4%
Narragansett	28.....4%
Newport	28.....4%
Providence	29.....4%
Warwick	28.....4%

South Carolina Average

-1%

Aiken	298.....2%
Beaufort	299.....-1%
Charleston	294.....3%
Columbia	290-292.....-1%
Greenville	296.....1%
Myrtle Beach	295.....-5%
Rock Hill	297.....-4%
Spartanburg	293.....-2%

South Dakota Average

-7%

Aberdeen	574.....-6%
Mitchell	573.....-4%
Mobridge	576.....-16%
Pierre	575.....-13%
Rapid City	577.....-7%
Sioux Falls	570-571.....0%
Watertown	572.....-6%

Tennessee Average

2%

Chattanooga	374.....5%
Clarksville	370.....8%
Cleveland	373.....4%
Columbia	384.....-6%
Cookeville	385.....-6%
Jackson	383.....7%
Kingsport	376.....-3%
Knoxville	377-379.....2%
McKenzie	382.....-4%
Memphis	380-381.....7%
Nashville	371-372.....9%

Texas Average

-1%

Abilene	795-796.....-7%
Amarillo	790-791.....-4%
Arlington	760.....7%
Austin	786-787.....9%
Bay City	774.....10%
Beaumont	776-777.....4%
Brownwood	768.....-7%
Bryan	778.....-2%
Childress	792.....-13%
Corpus Christi	783-784.....0%
Dallas	751-753.....8%
Del Rio	788.....-12%
El Paso	798-799.....-10%
Fort Worth	761-762.....7%
Galveston	775.....7%
Giddings	789.....0%
Greenville	754.....3%

Houston	770-772.....8%
Huntsville	773.....5%
Longview	756.....-6%
Lubbock	793-794.....-6%
Lufkin	759.....-4%
McAllen	785.....-12%
Midland	797.....7%
Palestine	758.....-4%
Plano	750.....8%
San Angelo	769.....-3%
San Antonio	780-782.....0%
Texarkana	755.....-9%
Tyler	757.....-7%
Victoria	779.....-3%
Waco	765-767.....-3%
Wichita Falls	763.....-5%
Woodson	764.....-3%

Utah Average

-3%

Clearfield	840.....1%
Green River	845.....-7%
Ogden	843-844.....-6%
Provo	846-847.....-6%
Salt Lake City	841.....3%

Vermont Average

-4%

Albany	58.....-6%
Battleboro	53.....-5%
Beecher Falls	59.....-6%
Bennington	52.....-7%
Burlington	54.....3%
Montpelier	56.....-3%
Rutland	57.....-7%
Springfield	51.....-6%
White River Junction	50.....0%

Virginia Average

-3%

Abingdon	242.....-7%
Alexandria	220-223.....12%
Charlottesville	229.....-2%
Chesapeake	233.....-1%
Culpeper	227.....-5%
Farmville	239.....-8%
Fredericksburg	224-225.....-4%
Galax	243.....-9%
Harrisonburg	228.....-6%
Lynchburg	245.....-5%
Norfolk	235-237.....1%
Petersburg	238.....-1%
Radford	241.....-8%
Reston	201.....10%
Richmond	232.....1%
Roanoke	240.....-3%
Staunton	244.....-5%
Tazewell	246.....-12%
Virginia Beach	234.....-1%
Williamsburg	230-231.....2%
Winchester	226.....-7%

Washington Average

0%

Clarkston	994.....-1%
Everett	982.....3%
Olympia	985.....0%
Pasco	993.....0%
Seattle	980-981.....13%
Spokane	990-992.....3%
Tacoma	983-984.....3%
Vancouver	986.....1%
Wenatchee	988.....-5%
Yakima	989.....-7%

West Virginia Average

-8%

Beckley	258-259.....-8%
Bluefield	247-248.....-12%
Charleston	250-253.....2%
Clarksburg	263-264.....-4%
Fairmont	266.....-14%

Huntington	255-257.....-4%
Lewisburg	249.....-15%
Martinsburg	254.....-9%
Morgantown	265.....-7%
New Martinsville	262.....-12%
Parkersburg	261.....-7%
Romney	267.....-9%
Sugar Grove	268.....-14%
Wheeling	260.....1%

Wisconsin Average

1%

Amery	540.....2%
Beloit	535.....3%
Clam Lake	545.....-6%
Eau Claire	547.....-1%
Green Bay	541-543.....3%
La Crosse	546.....-3%
Ladysmith	548.....4%
Madison	537.....6%
Milwaukee	530-534.....6%
Oshkosh	549.....7%
Portage	539.....1%
Prairie du Chien	538.....-3%
Wausau	544.....-3%

Wyoming Average

-5%

Casper	826.....-3%
Cheyenne/Laramie	820.....-4%
Gillette	827.....-3%
Powell	824.....-9%
Rawlins	823.....-3%
Riverton	825.....-7%
Rock Springs	829-831.....1%
Sheridan	828.....-6%
Wheatland	822.....-10%

CANADIAN AREA MODIFIERS

These figures assume an exchange rate of \$1.00 Canadian to \$0.76 U.S.

Alberta	13%
Calgary	.....14%
Edmonton	.....14%
Fort McMurray	.....12%

British Columbia	7%
Fraser Valley	.....6%
Okanagan	.....6%
Vancouver	.....9%

Manitoba	0%
North Manitoba	.....0%
South Manitoba	.....0%
Selkirk	.....0%
Winnipeg	.....0%

New Brunswick	-13%
Moncton	.....-13%

Nova Scotia	-8%
Amherst	.....-8%
Nova Scotia	.....-7%
Sydney	.....-8%

Newfoundland/Labrador	-3%
------------------------------	------------

Ontario	7%
London	.....7%
Thunder Bay	.....6%
Toronto	.....7%

Quebec	-1%
Montreal	.....-1%
Quebec City	.....-1%

Saskatchewan	4%
La Ronge	.....3%
Prince Albert	.....2%
Saskatoon	.....5%

Crew Compositions & Wage Rates

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
AB	1 Air tool operator	8.00	\$48.62	\$388.96		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$655.44	\$40.97	\$57.35
AD	2 Air tool operators	16.00	\$48.62	\$777.92		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$1,044.40	\$43.52	\$60.92
BD	3 Bricklayers	24.00	\$41.83	\$1,003.92		
	2 Bricktenders	16.00	\$31.07	\$497.12		
	TOTAL	40.00		\$1,501.04	\$37.53	\$53.29
BK	1 Bricklayer	8.00	\$41.83	\$334.64		
	1 Bricktender	8.00	\$31.07	\$248.56		
	TOTAL	16.00		\$583.20	\$36.45	\$51.76
BO	2 Bricklayers	16.00	\$41.83	\$669.28		
	2 Bricktenders	16.00	\$31.07	\$497.12		
	TOTAL	32.00		\$1,166.40	\$36.45	\$51.76
2C	2 Carpenters	16.00	\$41.06	\$656.96	\$41.06	\$57.48
CA	1 Carpenter	8.00	\$41.06	\$328.48	\$41.06	\$57.48
CH	1 Carpenter	8.00	\$41.06	\$328.48		
	1/2 Laborer	4.00	\$33.31	\$133.24		
	TOTAL	12.00		\$461.72	\$38.48	\$53.87
CJ	1 Carpenter	8.00	\$41.06	\$328.48		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$594.96	\$37.19	\$52.06
CN	2 Carpenters	16.00	\$41.06	\$656.96		
	1/2 Laborer	4.00	\$33.31	\$133.24		
	TOTAL	20.00		\$790.20	\$39.51	\$55.31
CS	2 Carpenters	16.00	\$41.06	\$656.96		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$923.44	\$38.48	\$53.87
CT	1 Mosaic & terrazzo setter	8.00	\$39.06	\$312.48	\$39.06	\$55.47
CU	4 Carpenters	32.00	\$41.06	\$1,313.92		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	40.00		\$1,580.40	\$39.51	\$55.31
CW	2 Carpenters	16.00	\$41.06	\$656.96		
	2 Laborers	16.00	\$33.31	\$532.96		
	TOTAL	32.00		\$1,189.92	\$37.19	\$52.06
CX	4 Carpenters	32.00	\$41.06	\$1,313.92	\$41.06	\$57.48

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
CY	3 Carpenters	24.00	\$41.06	\$985.44		
	2 Laborers	16.00	\$33.31	\$532.96		
	1 Equipment operator	8.00	\$47.09	\$376.72		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	56.00		\$2,161.60	\$38.60	\$54.04
CZ	4 Carpenters	32.00	\$41.06	\$1,313.92		
	3 Laborers	24.00	\$33.31	\$799.44		
	1 Equipment operator	8.00	\$47.09	\$376.72		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	72.00		\$2,756.56	\$38.29	\$53.60
DD	2 Cement masons	16.00	\$39.27	\$628.32		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$894.80	\$37.28	\$52.94
DF	3 Cement masons	24.00	\$39.27	\$942.48		
	5 Laborers	40.00	\$33.31	\$1,332.40		
	TOTAL	64.00		\$2,274.88	\$35.55	\$50.47
DI	1 Drywall installer	8.00	\$40.29	\$322.32	\$40.29	\$56.41
DJ	1 Drywall installer	8.00	\$40.29	\$322.32		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$588.80	\$36.80	\$51.52
DK	1 Drywall installer	8.00	\$40.29	\$322.32		
	1 Drywall taper	8.00	\$40.72	\$325.76		
	TOTAL	16.00		\$648.08	\$40.51	\$56.71
DL	2 Drywall installers	16.00	\$40.29	\$644.64		
	1 Drywall taper	8.00	\$40.72	\$325.76		
	TOTAL	24.00		\$970.40	\$40.43	\$56.61
DM	2 Drywall installers	16.00	\$40.29	\$644.64	\$40.29	\$56.41
DT	1 Drywall taper	8.00	\$40.72	\$325.76	\$40.72	\$57.01
DU	2 Drywall tapers	16.00	\$40.72	\$651.52	\$40.72	\$57.01
EA	1 Electrician	8.00	\$44.88	\$359.04	\$44.88	\$65.08
EB	2 Electricians	16.00	\$44.88	\$718.08	\$44.88	\$65.08
ED	1 Electrician	8.00	\$44.88	\$359.04		
	1 Carpenter	8.00	\$41.06	\$328.48		
	TOTAL	16.00		\$687.52	\$42.97	\$62.31
FA	1 Floorlayer	8.00	\$37.90	\$303.20	\$37.90	\$53.06
FB	2 Floorlayers	16.00	\$37.90	\$606.40		
	1/4 Laborer	2.00	\$33.31	\$66.62		
	TOTAL	18.00		\$673.02	\$37.39	\$52.35
FC	1 Floorlayer (hardwood)	8.00	\$39.79	\$318.36	\$39.79	\$56.51

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
FD	2 Floorlayers (hardwood)	16.00	\$39.79	\$636.71		
	1/4 Laborer	2.00	\$33.31	\$66.62		
	TOTAL	18.00		\$703.33	\$39.07	\$55.49
GA	1 Glazier	8.00	\$39.84	\$318.72	\$39.84	\$56.57
GB	2 Glaziers	16.00	\$39.84	\$637.44	\$39.84	\$56.57
GC	3 Glaziers	24.00	\$39.84	\$956.16	\$39.84	\$56.57
HA	1 Fence erector	8.00	\$42.80	\$342.42	\$42.80	\$60.78
HB	1 Fence erector	8.00	\$42.80	\$342.42		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$608.90	\$38.06	\$54.04
HD	2 Fence erectors	16.00	\$42.80	\$684.84		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$951.32	\$39.64	\$56.29
1L	1 Laborer	8.00	\$33.31	\$266.48	\$33.31	\$46.63
LB	2 Laborers	16.00	\$33.31	\$532.96	\$33.31	\$46.63
LC	2 Laborers	16.00	\$33.31	\$532.96		
	1 Carpenter	8.00	\$41.06	\$328.48		
	TOTAL	24.00		\$861.44	\$35.89	\$50.25
LD	2 Laborers	16.00	\$33.31	\$532.96		
	2 Carpenters	16.00	\$41.06	\$656.96		
	TOTAL	32.00		\$1,189.92	\$37.19	\$52.06
LG	5 Laborers	40.00	\$33.31	\$1,332.40		
	1 Carpenter	8.00	\$41.06	\$328.48		
	TOTAL	48.00		\$1,660.88	\$34.60	\$48.44
LH	3 Laborers	24.00	\$33.31	\$799.44	\$33.31	\$46.63
LJ	4 Laborers	32.00	\$33.31	\$1,065.92	\$33.31	\$46.63
LK	2 Laborers	16.00	\$33.31	\$532.96		
	2 Carpenters	16.00	\$41.06	\$656.96		
	1 Equipment operator	8.00	\$47.09	\$376.72		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	48.00		\$1,833.12	\$38.19	\$53.47
LL	3 Laborers	24.00	\$33.31	\$799.44		
	1 Carpenter	8.00	\$41.06	\$328.48		
	1 Equipment operator	8.00	\$47.09	\$376.72		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	48.00		\$1,771.12	\$36.90	\$51.66
LR	1 Lather	8.00	\$39.73	\$317.84	\$39.73	\$56.42
MB	1 Millwright finish carpenter	8.00	\$38.92	\$311.36	\$38.92	\$55.27
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$577.84	\$36.12	\$51.28

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
ML	2 Bricklayers	16.00	\$41.83	\$669.28		
	1 Bricktender	8.00	\$31.07	\$248.56		
	TOTAL	24.00		\$917.84	\$38.24	\$54.31
MR	1 Millwright finish carpenter	8.00	\$38.92	\$311.36	\$38.92	\$55.27
NA	1 Painter (brush)	8.00	\$42.15	\$337.20	\$42.15	\$59.01
NC	1 Painter (spray)	8.00	\$43.41	\$347.28	\$43.41	\$60.77
PD	2 Plasterers	16.00	\$41.20	\$659.20		
	1 Plasterer helper	8.00	\$32.42	\$259.36		
	TOTAL	24.00		\$918.56	\$38.27	\$54.35
PE	3 Plasterers	24.00	\$41.20	\$988.80		
	2 Plasterer helpers	16.00	\$32.42	\$518.72		
	TOTAL	40.00		\$1,507.52	\$37.69	\$53.52
QA	1 Paperhanger	8.00	\$44.26	\$354.08	\$44.26	\$64.18
2R	2 Roofers (journeyman)	16.00	\$45.59	\$729.44	\$45.59	\$67.02
RG	2 Roofers (journeyman)	16.00	\$45.59	\$729.44		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$995.92	\$41.50	\$61.00
RJ	2 Roofers (wood shingles)	16.00	\$47.88	\$766.09	\$47.88	\$70.38
RL	2 Roofers (journeyman)	16.00	\$45.59	\$729.44		
	1/2 Laborer	4.00	\$33.31	\$133.24		
	TOTAL	20.00		\$862.68	\$43.13	\$63.41
RM	2 Roofers (wood shingles)	16.00	\$47.88	\$766.09		
	1/2 Laborer	4.00	\$33.31	\$133.24		
	TOTAL	20.00		\$899.33	\$44.97	\$66.10
RQ	2 Roofers (wood shingles)	16.00	\$47.88	\$766.09		
	7/8 Laborer	7.00	\$33.31	\$233.17		
	TOTAL	23.00		\$999.26	\$43.45	\$63.87
RS	1 Roofer (foreman)	8.00	\$50.15	\$401.21		
	3 Roofers (pitch)	24.00	\$46.96	\$1,127.00		
	2 Laborers	16.00	\$33.31	\$532.96		
	TOTAL	48.00		\$2,061.17	\$42.94	\$63.12
RT	2 Roofers (pitch)	16.00	\$46.96	\$751.33		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$1,017.81	\$42.41	\$62.34
SA	1 Plumber	8.00	\$48.00	\$384.00	\$48.00	\$69.60
SB	1 Plumber	8.00	\$48.00	\$384.00		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$650.48	\$40.66	\$58.95

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
SC	1 Plumber	8.00	\$48.00	\$384.00		
	1 Electrician	8.00	\$44.88	\$359.04		
	TOTAL	16.00		\$743.04	\$46.44	\$67.34
SD	1 Plumber	8.00	\$48.00	\$384.00		
	1 Laborer	8.00	\$33.31	\$266.48		
	1 Electrician	8.00	\$44.88	\$359.04		
	TOTAL	24.00		\$1,009.52	\$42.06	\$60.99
SE	2 Plumbers	16.00	\$48.00	\$768.00		
	1 Laborer	8.00	\$33.31	\$266.48		
	1 Electrician	8.00	\$44.88	\$359.04		
	TOTAL	32.00		\$1,393.52	\$43.55	\$63.14
SF	2 Plumbers	16.00	\$48.00	\$768.00		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$1,034.48	\$43.10	\$62.50
SG	3 Plumbers	24.00	\$48.00	\$1,152.00		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	32.00		\$1,418.48	\$44.33	\$64.27
TB	1 Tile setter (ceramic)	8.00	\$39.46	\$315.68		
	1 Tile setter helper (ceramic)	8.00	\$29.89	\$239.14		
	TOTAL	16.00		\$554.82	\$34.68	\$49.24
UA	1 Sheet metal worker	8.00	\$46.53	\$372.24	\$46.53	\$66.07
UB	2 Sheet metal workers	16.00	\$46.53	\$744.48	\$46.53	\$66.07
UC	2 Sheet metal workers	16.00	\$46.53	\$744.48		
	2 Laborers	16.00	\$33.31	\$532.96		
	TOTAL	32.00		\$1,277.44	\$39.92	\$56.69
UD	1 Sheet metal worker	8.00	\$46.53	\$372.24		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$638.72	\$39.92	\$56.69
UE	1 Sheet metal worker	8.00	\$46.53	\$372.24		
	1 Laborer	8.00	\$33.31	\$266.48		
	1/2 Electrician	4.00	\$44.88	\$179.52		
	TOTAL	20.00		\$818.24	\$40.91	\$58.10
UF	2 Sheet metal workers	16.00	\$46.53	\$744.48		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	24.00		\$1,010.96	\$42.12	\$59.82
VB	1 Equipment operator	8.00	\$47.09	\$376.72		
	1 Laborer	8.00	\$33.31	\$266.48		
	TOTAL	16.00		\$643.20	\$40.20	\$56.28

Abbreviations Used in This Book

ABS	acrylonitrile butadiene styrene	F.H.A.	Federal Housing Administration	PSI	per square inch
ACR	average crew rate	fl. oz.	fluid ounce	PVC	polyvinyl chloride
AGA	American Gas Association	flt	flight	Qt.	quart
AMP	ampere	ft.	foot	R.E.	rounded edge
Approx.	approximately	ga.	gauge	R/L	random length
ASME	American Society of Mechanical Engineers	gal	gallon	RS	rapid start (lamps)
auto.	automatic	galv.	galvanized	R/W/L	random width and length
Avg.	average	GFI	ground fault interrupter	S4S	surfaced-four-sides
Bdle.	bundle	GPH	gallons per hour	SF	square foot
BTU	British thermal unit	GPM	gallons per minute	SL	slimline (lamps)
BTUH	British thermal unit per hour	H	height or high	Sq.	1 square or 100 square feet
C	100	HP, hp	horsepower	S.S.B.	single strength, B quality
cc	center to center or cubic centimeter	Hr.	hour	std.	standard
CF	cubic foot	HVAC	heating, ventilating, air conditioning	SY	square yard
CFM	cubic foot per minute	i.d.	inside diameter	T	thick
CLF	100 linear feet	i.e.	that is	T&G	tongue and groove
Const.	construction	Inst	install	U	thermal conductivity
Corr.	corrugated	I.P.S.	iron pipe size	U.I.	united inches
CSF	100 square feet	KD	knocked down	UL	Underwriters Laboratories
CSY	100 square yards	KW, kw	kilowatts	U.S.G.	United States Gypsum
Ctn	carton	L	length or long	VLF	vertical linear feet
CWT	100 pounds	lb, lbs.	pound(s)	W	width or wide
CY	cubic yard	LF	linear feet	yr.	year
Cu.	cubic	LS	lump sum		
d	penny	M	1000		
D	deep or depth	Mat'l	material		
Demo	demolish	Max.	maximum		
dia.	diameter	MBF	1000 board feet		
D.S.A.	double strength, A grade	MBHP	1000 boiler horsepower		
D.S.B.	double strength, B grade	Mi	miles		
Ea	each	Min.	minimum		
e.g.	for example	MSF	1000 square feet		
etc.	et cetera	O.B.	opposed blade		
exp.	exposure	oc	on center		
FAS	First and Select grade	o.d.	outside dimension		
		oz.	ounce		
		pcs.	pieces		
		pkg.	package		

Symbols

/	per
%	percent
"	inches
'	foot or feet
x	by
o	degree
#	number or pounds
\$	dollar
+/-	plus or minus

For crew abbreviations, please see Crew Compositions & Wage Rates chart, pages 15 to 19.

Acoustical and insulating tile

1. Dimensions

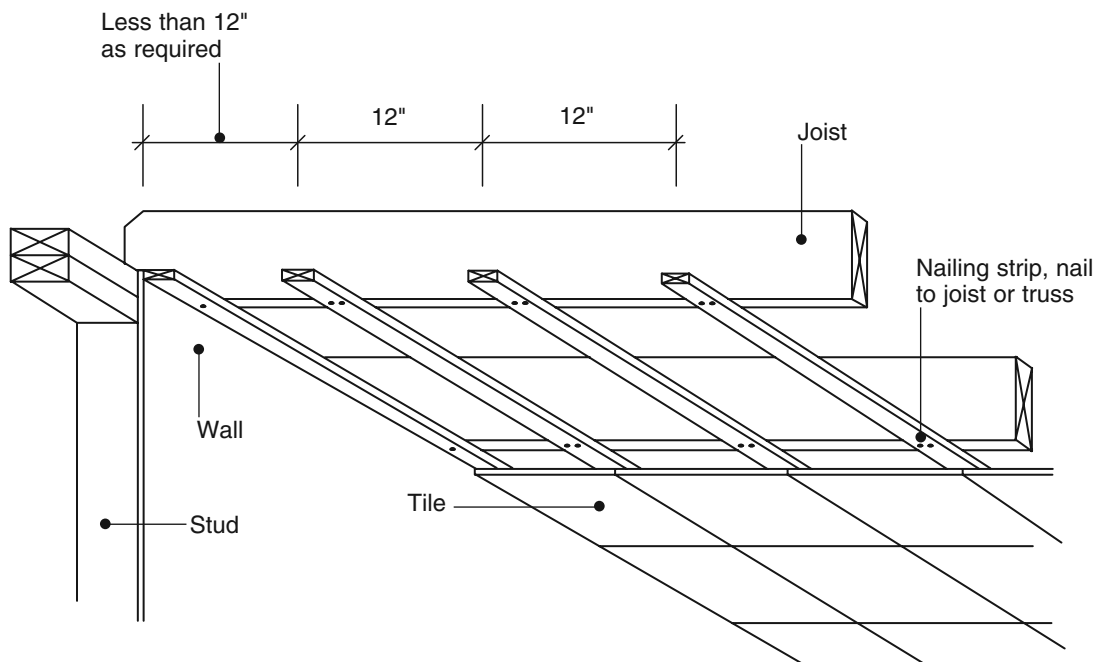
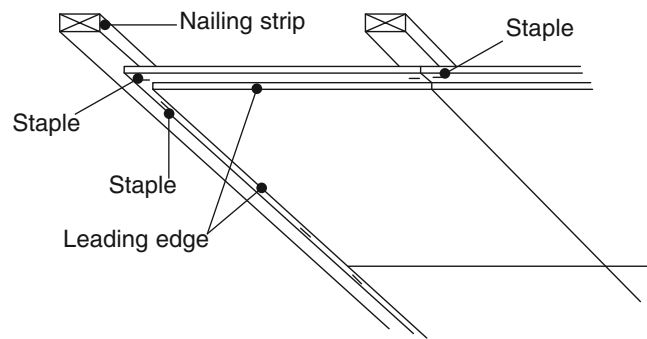
- Acoustical tile. $\frac{1}{2}$ " thick x 12" x 12", 24".
- Insulating tile, decorative. $\frac{1}{2}$ " thick x 12" x 12", 24"; $\frac{1}{2}$ " thick x 16" x 16", 32".

2. **Installation.** Tile may be applied to existing plaster (if joist spacing is suitable) or to wood furring strips. Tile may have a square edge or flange. Depending on the type and shape of the tile, you can use adhesive, staples, nails or clips to attach the tile.

3. **Estimating Technique.** Determine area and add 5 percent to 10 percent for waste.

4. **Notes on Material Pricing.** A material price of \$33.10 a gallon for adhesive was used to compile the Average Material Cost/Unit on the following pages. Here are the coverage rates:

12" x 12"	1.25 Gal/CSF
12" x 24"	0.95 Gal/CSF
16" x 16"	0.75 Gal/CSF
16" x 32"	0.55 Gal/CSF



Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Acoustical treatment

See also *Suspended ceiling systems*, page 412

Ceiling and wall tile

Adhesive set

Tile only, no grid system; includes dumpster

Demo	SF	Lg	LB	.012	1300	---	.40	.07	.47	.63
Demo	SF	Sm	LB	.018	910.0	---	.60	.08	.68	.92

Tile on furring strips; includes dumpster

Demo	SF	Lg	LB	.009	1710	---	.30	.09	.39	.51
Demo	SF	Sm	LB	.013	1197	---	.43	.10	.53	.71

Mineral fiber, vinyl coated, tile only

Applied in square pattern by adhesive to solid backing; 5% tile waste

1/2" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.018	880.0	2.30	.74	---	3.04	3.68
	Inst	SF	Sm	2C	.026	616.0	2.54	1.07	---	3.61	4.42
Standard, random perforated	Inst	SF	Lg	2C	.018	880.0	3.11	.74	---	3.85	4.61
	Inst	SF	Sm	2C	.026	616.0	3.42	1.07	---	4.49	5.43
Designer, swirl perforation	Inst	SF	Lg	2C	.018	880.0	3.35	.74	---	4.09	4.89
	Inst	SF	Sm	2C	.026	616.0	3.69	1.07	---	4.76	5.74
Deluxe, sculptured face	Inst	SF	Lg	2C	.018	880.0	3.59	.74	---	4.33	5.16
	Inst	SF	Sm	2C	.026	616.0	3.95	1.07	---	5.02	6.04

5/8" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.018	880.0	2.71	.74	---	3.45	4.15
	Inst	SF	Sm	2C	.026	616.0	2.99	1.07	---	4.06	4.93
Standard, random perforated	Inst	SF	Lg	2C	.018	880.0	3.72	.74	---	4.46	5.31
	Inst	SF	Sm	2C	.026	616.0	4.10	1.07	---	5.17	6.21
Designer, swirl perforation	Inst	SF	Lg	2C	.018	880.0	4.03	.74	---	4.77	5.67
	Inst	SF	Sm	2C	.026	616.0	4.44	1.07	---	5.51	6.60
Deluxe, sculptured face	Inst	SF	Lg	2C	.018	880.0	4.32	.74	---	5.06	6.00
	Inst	SF	Sm	2C	.026	616.0	4.76	1.07	---	5.83	6.97

3/4" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.018	880.0	2.97	.74	---	3.71	4.45
	Inst	SF	Sm	2C	.026	616.0	3.27	1.07	---	4.34	5.25
Standard, random perforated	Inst	SF	Lg	2C	.018	880.0	4.09	.74	---	4.83	5.74
	Inst	SF	Sm	2C	.026	616.0	4.50	1.07	---	5.57	6.67
Designer, swirl perforation	Inst	SF	Lg	2C	.018	880.0	4.43	.74	---	5.17	6.13
	Inst	SF	Sm	2C	.026	616.0	4.88	1.07	---	5.95	7.11
Deluxe, sculptured face	Inst	SF	Lg	2C	.018	880.0	4.76	.74	---	5.50	6.51
	Inst	SF	Sm	2C	.026	616.0	5.25	1.07	---	6.32	7.53

Applied by adhesive to furring strips ADD

Inst	SF	Lg	2C	.002	---	---	---	.08	---	.08	.11
Inst	SF	Sm	2C	.002	---	---	---	.08	---	.08	.11

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Stapled

Tile only, no grid system	Demo	SF	Lg	LB	.014	1170	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.020	819	---	.67	---	.67	.93
Tile on furring strips	Demo	SF	Lg	LB	.010	1540	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.015	1078	---	.50	---	.50	.70

Mineral fiber, vinyl coated, tile only

Applied in square pattern by staples, nails, or clips; 5% tile waste

1/2" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.017	960.0	1.69	.70	---	2.39	2.92
	Inst	SF	Sm	2C	.024	672.0	1.86	.99	---	2.85	3.52
Standard, random perforated	Inst	SF	Lg	2C	.017	960.0	2.49	.70	---	3.19	3.84
	Inst	SF	Sm	2C	.024	672.0	2.74	.99	---	3.73	4.53
Designer, swirl perforation	Inst	SF	Lg	2C	.017	960.0	2.73	.70	---	3.43	4.12
	Inst	SF	Sm	2C	.024	672.0	3.01	.99	---	4.00	4.84
Deluxe, sculptured face	Inst	SF	Lg	2C	.017	960.0	2.97	.70	---	3.67	4.39
	Inst	SF	Sm	2C	.024	672.0	3.27	.99	---	4.26	5.14

5/8" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.017	960.0	2.10	.70	---	2.80	3.39
	Inst	SF	Sm	2C	.024	672.0	2.31	.99	---	3.30	4.04
Standard, random perforated	Inst	SF	Lg	2C	.017	960.0	3.11	.70	---	3.81	4.55
	Inst	SF	Sm	2C	.024	672.0	3.42	.99	---	4.41	5.31
Designer, swirl perforation	Inst	SF	Lg	2C	.017	960.0	3.41	.70	---	4.11	4.90
	Inst	SF	Sm	2C	.024	672.0	3.76	.99	---	4.75	5.70
Deluxe, sculptured face	Inst	SF	Lg	2C	.017	960.0	3.70	.70	---	4.40	5.23
	Inst	SF	Sm	2C	.024	672.0	4.08	.99	---	5.07	6.07

3/4" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.017	960.0	2.35	.70	---	3.05	3.68
	Inst	SF	Sm	2C	.024	672.0	2.59	.99	---	3.58	4.36
Standard, random perforated	Inst	SF	Lg	2C	.017	960.0	3.47	.70	---	4.17	4.97
	Inst	SF	Sm	2C	.024	672.0	3.82	.99	---	4.81	5.77
Designer, swirl perforation	Inst	SF	Lg	2C	.017	960.0	3.81	.70	---	4.51	5.36
	Inst	SF	Sm	2C	.024	672.0	4.20	.99	---	5.19	6.21
Deluxe, sculptured face	Inst	SF	Lg	2C	.017	960.0	4.15	.70	---	4.85	5.75
	Inst	SF	Sm	2C	.024	672.0	4.57	.99	---	5.56	6.64

Applied by staples, nails or clips to furring strips ADD

	Inst	SF	Lg	2C	.017	960.0	---	.70	---	.70	.98
	Inst	SF	Sm	2C	.024	672.0	---	.99	---	.99	1.38

Tile patterns, effect on labor

Herringbone, Increase manhours

	Inst		Lg	2C	25.0	---	---	---	---	---	---
	Inst		Sm	2C	25.0	---	---	---	---	---	---
Diagonal, Increase manhours	Inst		Lg	2C	20.0	---	---	---	---	---	---
	Inst		Sm	2C	20.0	---	---	---	---	---	---
Ashlar, Increase manhours	Inst		Lg	2C	30.0	---	---	---	---	---	---
	Inst		Sm	2C	30.0	---	---	---	---	---	---

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Furring strips, 8% waste included

Over wood

1" x 3", 12" oc	Inst	SF	Lg	2C	.010	1600	.43	.41	---	.84	1.07
	Inst	SF	Sm	2C	.014	1120	.48	.57	---	1.05	1.36
1" x 3", 16" oc	Inst	SF	Lg	2C	.008	1920	.33	.33	---	.66	.84
	Inst	SF	Sm	2C	.012	1344	.37	.49	---	.86	1.12
1" x 4", 12" oc	Inst	SF	Lg	2C	.010	1600	.51	.41	---	.92	1.16
	Inst	SF	Sm	2C	.014	1120	.56	.57	---	1.13	1.45
1" x 4", 16" oc	Inst	SF	Lg	2C	.008	1920	.39	.33	---	.72	.91
	Inst	SF	Sm	2C	.012	1344	.43	.49	---	.92	1.18

Over plaster

1" x 3", 12" oc	Inst	SF	Lg	2C	.013	1280	.43	.53	---	.96	1.24
	Inst	SF	Sm	2C	.018	896	.48	.74	---	1.22	1.59
1" x 3", 16" oc	Inst	SF	Lg	2C	.010	1600	.33	.41	---	.74	.95
	Inst	SF	Sm	2C	.014	1120	.37	.57	---	.94	1.23
1" x 4", 12" oc	Inst	SF	Lg	2C	.013	1280	.51	.53	---	1.04	1.33
	Inst	SF	Sm	2C	.018	896	.56	.74	---	1.30	1.68
1" x 4", 16" oc	Inst	SF	Lg	2C	.010	1600	.39	.41	---	.80	1.02
	Inst	SF	Sm	2C	.014	1120	.43	.57	---	1.00	1.30

Adhesives

Better quality, gun-applied in continuous bead to wood or metal framing or furring members.

Per 100 SF of surface area including 6% waste.

Panel adhesives

Subfloor adhesives, on floors

12" oc members

1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	3.80	3.08	---	6.88	8.57
	Inst	CSF	Sm	CA	.101	79.50	4.19	4.15	---	8.34	10.50
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	15.20	3.08	---	18.28	21.30
	Inst	CSF	Sm	CA	.101	79.50	16.70	4.15	---	20.85	24.50
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	34.20	3.08	---	37.28	42.60
	Inst	CSF	Sm	CA	.101	79.50	37.70	4.15	---	41.85	48.00
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	60.50	3.08	---	63.58	72.10
	Inst	CSF	Sm	CA	.101	79.50	66.70	4.15	---	70.85	80.50

16" oc members

1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	3.04	2.30	---	5.34	6.62
	Inst	CSF	Sm	CA	.075	107.3	3.35	3.08	---	6.43	8.06
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	12.10	2.30	---	14.40	16.80
	Inst	CSF	Sm	CA	.075	107.3	13.40	3.08	---	16.48	19.30
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	27.40	2.30	---	29.70	33.90
	Inst	CSF	Sm	CA	.075	107.3	30.10	3.08	---	33.18	38.10
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	48.40	2.30	---	50.70	57.40
	Inst	CSF	Sm	CA	.075	107.3	53.30	3.08	---	56.38	64.00

Adhesives

					Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
24" oc members											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	2.28	2.14	---	4.42	5.54
	Inst	CSF	Sm	CA	.069	115.5	2.52	2.83	---	5.35	6.79
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	9.09	2.14	---	11.23	13.20
	Inst	CSF	Sm	CA	.069	115.5	10.00	2.83	---	12.83	15.20
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	20.50	2.14	---	22.64	26.00
	Inst	CSF	Sm	CA	.069	115.5	22.60	2.83	---	25.43	29.30
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	36.30	2.14	---	38.44	43.60
	Inst	CSF	Sm	CA	.069	115.5	40.00	2.83	---	42.83	48.80
Wall sheathing or shear panel wall adhesive on walls, floors or ceilings											
12" oc members											
1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	7.71	4.11	---	11.82	14.40
	Inst	CSF	Sm	CA	.133	60.00	8.50	5.46	---	13.96	17.20
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	30.70	4.11	---	34.81	40.20
	Inst	CSF	Sm	CA	.133	60.00	33.90	5.46	---	39.36	45.60
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	69.30	4.11	---	73.41	83.40
	Inst	CSF	Sm	CA	.133	60.00	76.40	5.46	---	81.86	93.20
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	123.00	4.11	---	127.11	143.00
	Inst	CSF	Sm	CA	.133	60.00	135.00	5.46	---	140.46	159.00
16" oc members											
1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	6.16	3.74	---	9.90	12.10
	Inst	CSF	Sm	CA	.121	66.00	6.79	4.97	---	11.76	14.60
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	24.60	3.74	---	28.34	32.80
	Inst	CSF	Sm	CA	.121	66.00	27.10	4.97	---	32.07	37.30
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	55.50	3.74	---	59.24	67.40
	Inst	CSF	Sm	CA	.121	66.00	61.10	4.97	---	66.07	75.40
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	98.10	3.74	---	101.84	115.00
	Inst	CSF	Sm	CA	.121	66.00	108.00	4.97	---	112.97	128.00
24" oc members											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	4.63	3.45	---	8.08	10.00
	Inst	CSF	Sm	CA	.112	71.25	5.10	4.60	---	9.70	12.20
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	18.40	3.45	---	21.85	25.50
	Inst	CSF	Sm	CA	.112	71.25	20.30	4.60	---	24.90	29.20
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	41.60	3.45	---	45.05	51.40
	Inst	CSF	Sm	CA	.112	71.25	45.80	4.60	---	50.40	57.80
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	73.60	3.45	---	77.05	87.30
	Inst	CSF	Sm	CA	.112	71.25	81.10	4.60	---	85.70	97.30
Polystyrene or polyurethane foam panel adhesive, on walls											
12" oc members											
1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	5.92	4.11	---	10.03	12.40
	Inst	CSF	Sm	CA	.133	60.00	6.52	5.46	---	11.98	15.00
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	23.60	4.11	---	27.71	32.20
	Inst	CSF	Sm	CA	.133	60.00	26.00	5.46	---	31.46	36.70
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	53.20	4.11	---	57.31	65.30
	Inst	CSF	Sm	CA	.133	60.00	58.60	5.46	---	64.06	73.30
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	94.10	4.11	---	98.21	111.00
	Inst	CSF	Sm	CA	.133	60.00	104.00	5.46	---	109.46	124.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Mat'l	Labor	Equip	Total	Price
					Unit	Day	Unit	Unit	Unit	Unit	Incl
							Cost	Cost	Cost	Cost	O&P
16" oc members											
1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	4.73	3.74	---	8.47	10.50
	Inst	CSF	Sm	CA	.121	66.00	5.22	4.97	---	10.19	12.80
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	18.90	3.74	---	22.64	26.40
	Inst	CSF	Sm	CA	.121	66.00	20.80	4.97	---	25.77	30.20
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	42.50	3.74	---	46.24	52.90
	Inst	CSF	Sm	CA	.121	66.00	46.90	4.97	---	51.87	59.50
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	75.30	3.74	---	79.04	89.50
	Inst	CSF	Sm	CA	.121	66.00	83.00	4.97	---	87.97	99.90
24" oc members											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	3.55	3.45	---	7.00	8.80
	Inst	CSF	Sm	CA	.129	62.00	3.91	5.30	---	9.21	11.80
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	14.10	3.45	---	17.55	20.70
	Inst	CSF	Sm	CA	.129	62.00	15.60	5.30	---	20.90	24.90
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	31.90	3.45	---	35.35	40.60
	Inst	CSF	Sm	CA	.129	62.00	35.20	5.30	---	40.50	46.80
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	56.50	3.45	---	59.95	68.10
	Inst	CSF	Sm	CA	.129	62.00	62.20	5.30	---	67.50	77.10
Gypsum drywall adhesive, on ceilings											
12" oc members											
1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	2.12	4.11	---	6.23	8.12
	Inst	CSF	Sm	CA	.133	60.00	2.33	5.46	---	7.79	10.30
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	8.42	4.11	---	12.53	15.20
	Inst	CSF	Sm	CA	.133	60.00	9.28	5.46	---	14.74	18.00
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	19.00	4.11	---	23.11	27.00
	Inst	CSF	Sm	CA	.133	60.00	20.90	5.46	---	26.36	31.10
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	33.60	4.11	---	37.71	43.40
	Inst	CSF	Sm	CA	.133	60.00	37.00	5.46	---	42.46	49.10
16" oc members											
1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	1.69	3.74	---	5.43	7.12
	Inst	CSF	Sm	CA	.121	66.00	1.86	4.97	---	6.83	9.04
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	6.73	3.74	---	10.47	12.80
	Inst	CSF	Sm	CA	.121	66.00	7.42	4.97	---	12.39	15.30
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	15.20	3.74	---	18.94	22.20
	Inst	CSF	Sm	CA	.121	66.00	16.70	4.97	---	21.67	25.70
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	26.90	3.74	---	30.64	35.30
	Inst	CSF	Sm	CA	.121	66.00	29.60	4.97	---	34.57	40.10
24" oc members											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	1.26	3.45	---	4.71	6.24
	Inst	CSF	Sm	CA	.112	71.25	1.39	4.60	---	5.99	7.99
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	5.05	3.45	---	8.50	10.50
	Inst	CSF	Sm	CA	.112	71.25	5.56	4.60	---	10.16	12.70
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	11.40	3.45	---	14.85	17.60
	Inst	CSF	Sm	CA	.112	71.25	12.60	4.60	---	17.20	20.50
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	20.20	3.45	---	23.65	27.40
	Inst	CSF	Sm	CA	.112	71.25	22.20	4.60	---	26.80	31.30

12" oc members

1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	2.12	4.11	---	6.23	8.12
	Inst	CSF	Sm	CA	.133	60.00	2.33	5.46	---	7.79	10.30
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	8.42	4.11	---	12.53	15.20
	Inst	CSF	Sm	CA	.133	60.00	9.28	5.46	---	14.74	18.00
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	19.00	4.11	---	23.11	27.00
	Inst	CSF	Sm	CA	.133	60.00	20.90	5.46	---	26.36	31.10
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	33.60	4.11	---	37.71	43.40
	Inst	CSF	Sm	CA	.133	60.00	37.00	5.46	---	42.46	49.10

1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	1.69	3.74	---	5.43	7.12
	Inst	CSF	Sm	CA	.121	66.00	1.86	4.97	---	6.83	9.04
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	6.73	3.74	---	10.47	12.80
	Inst	CSF	Sm	CA	.121	66.00	7.42	4.97	---	12.39	15.30
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	15.20	3.74	---	18.94	22.20
	Inst	CSF	Sm	CA	.121	66.00	16.70	4.97	---	21.67	25.70
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	26.90	3.74	---	30.64	35.30
	Inst	CSF	Sm	CA	.121	66.00	29.60	4.97	---	34.57	40.10

1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	1.26	3.45	---	4.71	6.24
	Inst	CSF	Sm	CA	.112	71.25	1.39	4.60	---	5.99	7.99
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	5.05	3.45	---	8.50	10.50
	Inst	CSF	Sm	CA	.112	71.25	5.56	4.60	---	10.16	12.70
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	11.40	3.45	---	14.85	17.60
	Inst	CSF	Sm	CA	.112	71.25	12.60	4.60	---	17.20	20.50
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	20.20	3.45	---	23.65	27.40
	Inst	CSF	Sm	CA	.112	71.25	22.20	4.60	---	26.80	31.30

12" oc members

1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	5.28	4.11	---	9.39	11.70
	Inst	CSF	Sm	CA	.133	60.00	5.82	5.46	---	11.28	14.20
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	21.10	4.11	---	25.21	29.30
	Inst	CSF	Sm	CA	.133	60.00	23.20	5.46	---	28.66	33.60
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	47.50	4.11	---	51.61	58.90
	Inst	CSF	Sm	CA	.133	60.00	52.30	5.46	---	57.76	66.30
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	84.00	4.11	---	88.11	99.90
	Inst	CSF	Sm	CA	.133	60.00	92.60	5.46	---	98.06	111.00

1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	4.22	3.74	---	7.96	9.96
	Inst	CSF	Sm	CA	.121	66.00	4.65	4.97	---	9.62	12.20
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	16.80	3.74	---	20.54	24.10
	Inst	CSF	Sm	CA	.121	66.00	18.60	4.97	---	23.57	27.70
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	38.00	3.74	---	41.74	47.80
	Inst	CSF	Sm	CA	.121	66.00	41.90	4.97	---	46.87	53.80
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	67.20	3.74	---	70.94	80.50
	Inst	CSF	Sm	CA	.121	66.00	74.10	4.97	---	79.07	89.90

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

24" oc members

1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	3.18	3.45	---	6.63	8.39
	Inst	CSF	Sm	CA	.112	71.25	3.50	4.60	---	8.10	10.40
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	12.60	3.45	---	16.05	19.00
	Inst	CSF	Sm	CA	.112	71.25	13.90	4.60	---	18.50	22.00
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	28.50	3.45	---	31.95	36.70
	Inst	CSF	Sm	CA	.112	71.25	31.40	4.60	---	36.00	41.60
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	50.40	3.45	---	53.85	61.30
	Inst	CSF	Sm	CA	.112	71.25	55.60	4.60	---	60.20	68.70

Air conditioning and ventilating systems

System components separate.

See below for complete systems (exterior, roof, wall/window packages).

Air Handler units

Heat element only

2 ton	Inst	Ea	Lg	SB	21.3	0.75	866.00	866.00	---	1732.00	2250.00
	Inst	Ea	Sm	SB	26.7	0.60	955.00	1090.00	---	2045.00	2530.00
3 ton	Inst	Ea	Lg	SB	22.9	0.70	1070.00	931.00	---	2001.00	2580.00
	Inst	Ea	Sm	SB	28.6	0.56	1180.00	1160.00	---	2340.00	2870.00
4 ton	Inst	Ea	Lg	SB	24.6	0.65	1340.00	1000.00	---	2340.00	2990.00
	Inst	Ea	Sm	SB	30.8	0.52	1470.00	1250.00	---	2720.00	3290.00
5 ton	Inst	Ea	Lg	SB	26.7	0.60	1710.00	1090.00	---	2800.00	3540.00
	Inst	Ea	Sm	SB	33.3	0.48	1880.00	1350.00	---	3230.00	3850.00

A/C Coil only

2 ton	Inst	Ea	Lg	SB	21.3	0.75	902.00	866.00	---	1768.00	2290.00
	Inst	Ea	Sm	SB	26.7	0.60	994.00	1090.00	---	2084.00	2570.00
3 ton	Inst	Ea	Lg	SB	22.9	0.70	1130.00	931.00	---	2061.00	2650.00
	Inst	Ea	Sm	SB	28.6	0.56	1240.00	1160.00	---	2400.00	2930.00
4 ton	Inst	Ea	Lg	SB	24.6	0.65	1480.00	1000.00	---	2480.00	3150.00
	Inst	Ea	Sm	SB	30.8	0.52	1630.00	1250.00	---	2880.00	3440.00
5 ton	Inst	Ea	Lg	SB	26.7	0.60	1700.00	1090.00	---	2790.00	3530.00
	Inst	Ea	Sm	SB	33.3	0.48	1880.00	1350.00	---	3230.00	3840.00

Heat and A/C Coil

2 ton	Inst	Ea	Lg	SB	21.3	0.75	1060.00	866.00	---	1926.00	2480.00
	Inst	Ea	Sm	SB	26.7	0.60	1170.00	1090.00	---	2260.00	2740.00
3 ton	Inst	Ea	Lg	SB	22.9	0.70	1290.00	931.00	---	2221.00	2830.00
	Inst	Ea	Sm	SB	28.6	0.56	1420.00	1160.00	---	2580.00	3110.00
4 ton	Inst	Ea	Lg	SB	24.6	0.65	1640.00	1000.00	---	2640.00	3330.00
	Inst	Ea	Sm	SB	30.8	0.52	1800.00	1250.00	---	3050.00	3620.00
5 ton	Inst	Ea	Lg	SB	26.7	0.60	1860.00	1090.00	---	2950.00	3720.00
	Inst	Ea	Sm	SB	33.3	0.48	2050.00	1350.00	---	3400.00	4020.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Condensing units

Air cooled, compressor, standard controls

1.0 ton	Inst	Ea	Lg	SB	8.00	2.00	1130.00	325.00	---	1455.00	1770.00
	Inst	Ea	Sm	SB	10.0	1.60	1240.00	407.00	---	1647.00	1830.00
1.5 ton	Inst	Ea	Lg	SB	9.14	1.75	1270.00	372.00	---	1642.00	2000.00
	Inst	Ea	Sm	SB	11.4	1.40	1400.00	464.00	---	1864.00	2070.00
2.0 ton	Inst	Ea	Lg	SB	10.7	1.50	1410.00	435.00	---	1845.00	2250.00
	Inst	Ea	Sm	SB	13.3	1.20	1550.00	541.00	---	2091.00	2340.00
2.5 ton	Inst	Ea	Lg	SB	12.8	1.25	1440.00	520.00	---	1960.00	2410.00
	Inst	Ea	Sm	SB	16.0	1.00	1580.00	651.00	---	2231.00	2530.00
3.0 ton	Inst	Ea	Lg	SB	16.0	1.00	1750.00	651.00	---	2401.00	2960.00
	Inst	Ea	Sm	SB	20.0	0.80	1930.00	813.00	---	2743.00	3110.00
4.0 ton	Inst	Ea	Lg	SB	21.3	0.75	1850.00	866.00	---	2716.00	3390.00
	Inst	Ea	Sm	SB	26.7	0.60	2040.00	1090.00	---	3130.00	3620.00
5.0 ton	Inst	Ea	Lg	SB	32.0	0.50	2350.00	1300.00	---	3650.00	4590.00
	Inst	Ea	Sm	SB	40.0	0.40	2590.00	1630.00	---	4220.00	4950.00

Condenser pad

24" x 24"	Inst	Ea	Lg	SB	0.8	20.00	36.10	32.50	---	68.60	88.70
	Inst	Ea	Sm	SB	1.0	16.00	39.80	40.70	---	80.50	98.80
36" x 36"	Inst	Ea	Lg	SB	0.8	20.00	53.90	32.50	---	86.40	109.00
	Inst	Ea	Sm	SB	1.0	16.00	59.40	40.70	---	100.10	118.00
<i>Minimum Job Charge</i>											
	Inst	Job	Lg	SB	5.33	3.00	---	217.00	---	217.00	314.00
	Inst	Job	Sm	SB	6.67	2.40	---	271.00	---	271.00	393.00

Dampers, motorized

Motorized, variable volume modulating

8" diameter or less	Inst	Ea	Lg	UA	0.80	10.00	133.00	37.20	---	170.20	206.00
	Inst	Ea	Sm	UA	1.00	8.00	146.00	46.50	---	192.50	212.00
9" - 14" diameter	Inst	Ea	Lg	UA	1.33	6.00	184.00	61.90	---	245.90	300.00
	Inst	Ea	Sm	UA	1.67	4.80	203.00	77.70	---	280.70	314.00
15" - 18" diameter	Inst	Ea	Lg	UA	2.00	4.00	212.00	93.10	---	305.10	376.00
	Inst	Ea	Sm	UA	2.50	3.20	234.00	116.00	---	350.00	399.00
Thermostat, ADD	Inst	Ea	Lg	UA	1.33	6.00	50.40	61.90	---	112.30	146.00
	Inst	Ea	Sm	UA	1.67	4.80	55.60	77.70	---	133.30	166.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Diffusers / Grills

Circular

6" diameter	Inst	LF	Lg	UA	.267	30.00	14.10	12.40	---	26.50	33.90
	Inst	LF	Sm	UA	.333	24.00	15.60	15.50	---	31.10	37.60
8-10" diameter	Inst	LF	Lg	UA	.296	27.00	22.30	13.80	---	36.10	45.20
	Inst	LF	Sm	UA	.370	21.60	24.60	17.20	---	41.80	49.10
12-15" diameter	Inst	LF	Lg	UA	.333	24.00	38.40	15.50	---	53.90	66.20
	Inst	LF	Sm	UA	.417	19.20	42.40	19.40	---	61.80	69.90
18" diameter	Inst	LF	Lg	UA	.400	20.00	69.80	18.60	---	88.40	107.00
	Inst	LF	Sm	UA	.500	16.00	76.90	23.30	---	100.20	110.00

Perforated, 24" x 24" panel size

6" x 6"	Inst	Ea	Lg	UA	.500	16.00	21.20	23.30	---	44.50	57.40
	Inst	Ea	Sm	UA	.625	12.80	23.40	29.10	---	52.50	64.70
8" x 8"	Inst	Ea	Lg	UA	.571	14.00	33.50	26.60	---	60.10	76.30
	Inst	Ea	Sm	UA	.714	11.20	36.90	33.20	---	70.10	84.10
10" x 10"	Inst	Ea	Lg	UA	.667	12.00	57.70	31.00	---	88.70	110.00
	Inst	Ea	Sm	UA	.833	9.60	63.50	38.80	---	102.30	119.00
12" x 12"	Inst	Ea	Lg	UA	.800	10.00	105.00	37.20	---	142.20	173.00
	Inst	Ea	Sm	UA	1.00	8.00	115.00	46.50	---	161.50	181.00
18" x 18"	Inst	Ea	Lg	UA	1.00	8.00	126.00	46.50	---	172.50	211.00
	Inst	Ea	Sm	UA	1.25	6.40	138.00	58.20	---	196.20	221.00

Rectangular, one- to four-way blow

6" x 6"	Inst	Ea	Lg	UA	.500	16.00	17.70	23.30	---	41.00	53.40
	Inst	Ea	Sm	UA	.625	12.80	19.50	29.10	---	48.60	60.80
12" x 6"	Inst	Ea	Lg	UA	.571	14.00	27.90	26.60	---	54.50	69.80
	Inst	Ea	Sm	UA	.714	11.20	30.80	33.20	---	64.00	77.90
12" x 9"	Inst	Ea	Lg	UA	.667	12.00	48.10	31.00	---	79.10	99.30
	Inst	Ea	Sm	UA	.833	9.60	53.00	38.80	---	91.80	108.00
12" x 12"	Inst	Ea	Lg	UA	.800	10.00	87.30	37.20	---	124.50	153.00
	Inst	Ea	Sm	UA	1.00	8.00	96.20	46.50	---	142.70	162.00
24" x 12"	Inst	Ea	Lg	UA	1.00	8.00	97.70	46.50	---	144.20	178.00
	Inst	Ea	Sm	UA	1.25	6.40	108.00	58.20	---	166.20	190.00

T-bar mounting, 24" x 24" lay in frame

6" x 6"	Inst	Ea	Lg	UA	.500	16.00	68.80	23.30	---	92.10	112.00
	Inst	Ea	Sm	UA	.625	12.80	75.80	29.10	---	104.90	117.00
9" x 9"	Inst	Ea	Lg	UA	.571	14.00	75.70	26.60	---	102.30	125.00
	Inst	Ea	Sm	UA	.714	11.20	83.40	33.20	---	116.60	131.00
12" x 12"	Inst	Ea	Lg	UA	.667	12.00	79.10	31.00	---	110.10	135.00
	Inst	Ea	Sm	UA	.833	9.60	87.20	38.80	---	126.00	142.00
15" x 15"	Inst	Ea	Lg	UA	.800	10.00	82.50	37.20	---	119.70	148.00
	Inst	Ea	Sm	UA	1.00	8.00	91.00	46.50	---	137.50	157.00
18" x 18"	Inst	Ea	Lg	UA	1.00	8.00	86.00	46.50	---	132.50	165.00
	Inst	Ea	Sm	UA	1.25	6.40	94.80	58.20	---	153.00	177.00

Minimum Job Charge

Inst	Job	Lg	UA	2.29	3.50	---	107.00	---	107.00	151.00
Inst	Job	Sm	UA	2.86	2.80	---	133.00	---	133.00	189.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Registers, air supply

One- or two-way deflection, adjustable curved face bars, enameled metal

10" x 6"	Inst	Ea	Lg	UA	.333	24.00	8.84	15.50	---	24.34	32.20
	Inst	Ea	Sm	UA	.417	19.20	9.74	19.40	---	29.14	37.30
12" x 5"	Inst	Ea	Lg	UA	.364	22.00	9.72	16.90	---	26.62	35.20
	Inst	Ea	Sm	UA	.455	17.60	10.70	21.20	---	31.90	40.80
12" x 6"	Inst	Ea	Lg	UA	.364	22.00	9.28	16.90	---	26.18	34.70
	Inst	Ea	Sm	UA	.455	17.60	10.20	21.20	---	31.40	40.30
12" x 8"	Inst	Ea	Lg	UA	.400	20.00	11.10	18.60	---	29.70	39.10
	Inst	Ea	Sm	UA	.500	16.00	12.20	23.30	---	35.50	45.20
14" x 6"	Inst	Ea	Lg	UA	.444	18.00	10.20	20.70	---	30.90	41.00
	Inst	Ea	Sm	UA	.556	14.40	11.20	25.90	---	37.10	47.90

Minimum Job Charge

	Inst	Job	Lg	UA	2.29	3.50	---	107.00	---	107.00	151.00
	Inst	Job	Sm	UA	2.86	2.80	---	133.00	---	133.00	189.00

Cold Air Return, enameled metal

14" x 6"	Inst	Ea	Lg	UA	.400	20.00	8.99	18.60	---	27.59	36.80
	Inst	Ea	Sm	UA	.500	16.00	9.90	23.30	---	33.20	42.90
16" x 8"	Inst	Ea	Lg	UA	.444	18.00	14.00	20.70	---	34.70	45.40
	Inst	Ea	Sm	UA	.556	14.40	15.40	25.90	---	41.30	52.10
24" x 8"	Inst	Ea	Lg	UA	.444	18.00	20.70	20.70	---	41.40	53.20
	Inst	Ea	Sm	UA	.556	14.40	22.80	25.90	---	48.70	59.60
24" x 14"	Inst	Ea	Lg	UA	.500	16.00	28.30	23.30	---	51.60	65.50
	Inst	Ea	Sm	UA	.625	12.80	31.10	29.10	---	60.20	72.40

Ductwork**Fabricated rectangular, includes fittings, joints, supports**

Aluminum alloy

Under 100 lbs	Inst	Lb	Lg	UF	.343	70.00	3.19	14.50	---	17.69	24.20
	Inst	Lb	Sm	UF	.429	56.00	3.51	18.10	---	21.61	29.20
100 to 500 lbs	Inst	Lb	Lg	UF	.267	90.00	2.55	11.30	---	13.85	18.90
	Inst	Lb	Sm	UF	.333	72.00	2.81	14.00	---	16.81	22.70
500 to 1,000 lbs	Inst	Lb	Lg	UF	.218	110.0	1.91	9.18	---	11.09	15.20
	Inst	Lb	Sm	UF	.273	88.00	2.11	11.50	---	13.61	18.40
Over 1,000 lbs	Inst	Lb	Lg	UF	.185	130.0	1.27	7.79	---	9.06	12.50
	Inst	Lb	Sm	UF	.231	104.0	1.40	9.73	---	11.13	15.20

Galvanized steel

Under 400 lbs	Inst	Lb	Lg	UF	.120	200.0	3.11	5.05	---	8.16	10.80
	Inst	Lb	Sm	UF	.150	160.0	3.42	6.32	---	9.74	12.40
400 to 1,000 lbs	Inst	Lb	Lg	UF	.112	215.0	2.49	4.72	---	7.21	9.56
	Inst	Lb	Sm	UF	.140	172.0	2.74	5.90	---	8.64	11.10
1,000 to 2,000 lbs	Inst	Lb	Lg	UF	.104	230.0	1.86	4.38	---	6.24	8.36
	Inst	Lb	Sm	UF	.130	184.0	2.05	5.48	---	7.53	9.83
2,000 to 5,000 lbs	Inst	Lb	Lg	UF	.100	240.0	1.24	4.21	---	5.45	7.41
	Inst	Lb	Sm	UF	.125	192.0	1.37	5.27	---	6.64	8.85
Over 10,000 lbs	Inst	Lb	Lg	UF	.096	250.0	.62	4.04	---	4.66	6.46
	Inst	Lb	Sm	UF	.120	200.0	.68	5.05	---	5.73	7.86

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Flexible, coated fabric on spring steel, aluminum, or corrosion-resistant metal

Non-insulated

3" diameter	Inst	LF	Lg	UD	.058	275.0	.88	2.32	---	3.20	4.30
	Inst	LF	Sm	UD	.073	220.0	.97	2.91	---	3.88	5.11
4" diameter	Inst	LF	Lg	UD	.071	225.0	1.32	2.83	---	4.15	5.54
	Inst	LF	Sm	UD	.089	180.0	1.46	3.55	---	5.01	6.51
6" diameter	Inst	LF	Lg	UD	.080	200.0	1.81	3.19	---	5.00	6.62
	Inst	LF	Sm	UD	.100	160.0	2.00	3.99	---	5.99	7.67
7" diameter	Inst	LF	Lg	UD	.091	175.0	1.90	3.63	---	5.53	7.34
	Inst	LF	Sm	UD	.114	140.0	2.10	4.55	---	6.65	8.56
8" diameter	Inst	LF	Lg	UD	.107	150.0	2.00	4.27	---	6.27	8.37
	Inst	LF	Sm	UD	.133	120.0	2.20	5.31	---	7.51	9.74
10" diameter	Inst	LF	Lg	UD	.128	125.0	2.10	5.11	---	7.21	9.67
	Inst	LF	Sm	UD	.160	100.0	2.31	6.39	---	8.70	11.40
12" diameter	Inst	LF	Lg	UD	.160	100.0	2.21	6.39	---	8.60	11.60
	Inst	LF	Sm	UD	.200	80.0	2.43	7.98	---	10.41	13.80

Insulated

3" diameter	Inst	LF	Lg	UD	.064	250.0	3.12	2.55	---	5.67	7.22
	Inst	LF	Sm	UD	.080	200.0	3.43	3.19	---	6.62	7.97
4" diameter	Inst	LF	Lg	UD	.071	225.0	3.28	2.83	---	6.11	7.80
	Inst	LF	Sm	UD	.089	180.0	3.62	3.55	---	7.17	8.67
5" diameter	Inst	LF	Lg	UD	.080	200.0	3.45	3.19	---	6.64	8.50
	Inst	LF	Sm	UD	.100	160.0	3.80	3.99	---	7.79	9.47
6" diameter	Inst	LF	Lg	UD	.091	175.0	3.68	3.63	---	7.31	9.39
	Inst	LF	Sm	UD	.114	140.0	4.05	4.55	---	8.60	10.50
7" diameter	Inst	LF	Lg	UD	.107	150.0	3.98	4.27	---	8.25	10.60
	Inst	LF	Sm	UD	.133	120.0	4.38	5.31	---	9.69	11.90
8" diameter	Inst	LF	Lg	UD	.128	125.0	4.48	5.11	---	9.59	12.40
	Inst	LF	Sm	UD	.160	100.0	4.94	6.39	---	11.33	14.00
10" diameter	Inst	LF	Lg	UD	.160	100.0	6.80	6.39	---	13.19	16.90
	Inst	LF	Sm	UD	.200	80.00	7.50	7.98	---	15.48	18.80
12" diameter	Inst	LF	Lg	UD	.213	75.00	7.47	8.50	---	15.97	20.70
	Inst	LF	Sm	UD	.267	60.00	8.23	10.70	---	18.93	23.40
14" diameter	Inst	LF	Lg	UD	.320	50.00	7.84	12.80	---	20.64	27.20
	Inst	LF	Sm	UD	.400	40.00	8.64	16.00	---	24.64	31.30

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Fans and Ventilators

Roof-type ventilators

Aluminum, dome

6" diameter, 300 CFM	Inst	Ea	Lg	EA	.667	12.00	144.00	29.90	---	173.90	209.00
	Inst	Ea	Sm	EA	.833	9.60	159.00	37.40	---	196.40	213.00
7" diameter, 450 CFM	Inst	Ea	Lg	EA	.727	11.00	151.00	32.60	---	183.60	222.00
	Inst	Ea	Sm	EA	.909	8.80	167.00	40.80	---	207.80	226.00
9" diameter, 900 CFM	Inst	Ea	Lg	EA	.800	10.00	159.00	35.90	---	194.90	235.00
	Inst	Ea	Sm	EA	1.00	8.00	176.00	44.90	---	220.90	241.00
12" diameter, 1,000 CFM	Inst	Ea	Lg	EA	1.00	8.00	168.00	44.90	---	212.90	258.00
	Inst	Ea	Sm	EA	1.25	6.40	185.00	56.10	---	241.10	266.00
16" diameter, 1,500 CFM	Inst	Ea	Lg	EA	1.14	7.00	222.00	51.20	---	273.20	329.00
	Inst	Ea	Sm	EA	1.43	5.60	244.00	64.20	---	308.20	337.00
20" diameter, 2,500 CFM	Inst	Ea	Lg	EA	1.33	6.00	266.00	59.70	---	325.70	393.00
	Inst	Ea	Sm	EA	1.67	4.80	293.00	75.00	---	368.00	402.00
26" diameter, 4,000 CFM	Inst	Ea	Lg	EA	1.60	5.00	319.00	71.80	---	390.80	471.00
	Inst	Ea	Sm	EA	2.00	4.00	352.00	89.80	---	441.80	482.00
32" diameter, 6,500 CFM	Inst	Ea	Lg	EA	2.00	4.00	383.00	89.80	---	472.80	571.00
	Inst	Ea	Sm	EA	2.50	3.20	422.00	112.00	---	534.00	585.00
38" diameter, 8,000 CFM	Inst	Ea	Lg	EA	2.67	3.00	460.00	120.00	---	580.00	703.00
	Inst	Ea	Sm	EA	3.33	2.40	507.00	149.00	---	656.00	723.00
50" diameter, 13,000 CFM	Inst	Ea	Lg	EA	4.00	2.00	552.00	180.00	---	732.00	895.00
	Inst	Ea	Sm	EA	5.00	1.60	608.00	224.00	---	832.00	933.00

Plastic ABS dome

900 CFM	Inst	Ea	Lg	EA	.667	12.00	112.00	29.90	---	141.90	172.00
	Inst	Ea	Sm	EA	.833	9.60	123.00	37.40	---	160.40	177.00
1,600 CFM	Inst	Ea	Lg	EA	.800	10.00	155.00	35.90	---	190.90	231.00
	Inst	Ea	Sm	EA	1.00	8.00	171.00	44.90	---	215.90	236.00

Wall-type ventilators, one speed, with shutter

12" diameter, 1,000 CFM	Inst	Ea	Lg	EA	.667	12.00	168.00	29.90	---	197.90	236.00
	Inst	Ea	Sm	EA	.833	9.60	185.00	37.40	---	222.40	239.00
14" diameter, 1,500 CFM	Inst	Ea	Lg	EA	.800	10.00	222.00	35.90	---	257.90	307.00
	Inst	Ea	Sm	EA	1.00	8.00	244.00	44.90	---	288.90	309.00
16" diameter, 2,000 CFM	Inst	Ea	Lg	EA	1.00	8.00	266.00	44.90	---	310.90	371.00
	Inst	Ea	Sm	EA	1.25	6.40	293.00	56.10	---	349.10	375.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Entire structure, exhaust, wall-type, one speed, with shutter

30" diameter, 10,00 CFM	Inst	Ea	Lg	EA	1.60	5.00	734.00	71.80	---	805.80	948.00
	Inst	Ea	Sm	EA	2.00	4.00	809.00	89.80	---	898.80	939.00
36" diameter, 12,100 CFM	Inst	Ea	Lg	EA	2.00	4.00	773.00	89.80	---	862.80	1020.00
	Inst	Ea	Sm	EA	2.50	3.20	851.00	112.00	---	963.00	1010.00
42" diameter, 15,900 CFM	Inst	Ea	Lg	EA	2.67	3.00	795.00	120.00	---	915.00	1090.00
	Inst	Ea	Sm	EA	3.33	2.40	876.00	149.00	---	1025.00	1090.00
48" diameter, 21,100 CFM	Inst	Ea	Lg	EA	4.00	2.00	1290.00	180.00	---	1470.00	1740.00
	Inst	Ea	Sm	EA	5.00	1.60	1420.00	224.00	---	1644.00	1740.00
Two speeds, ADD	Inst	Ea	Lg	---	---	---	49.00	---	---	49.00	56.40
	Inst	Ea	Sm	---	---	---	54.00	---	---	54.00	62.10
12-hour timer, ADD	Inst	Ea	Lg	EA	.500	16.00	24.50	22.40	---	46.90	60.70
	Inst	Ea	Sm	EA	.625	12.80	27.00	28.10	---	55.10	67.70

Entire structure, lay-down type, one speed, with shutter

30" diameter, 5,100 CFM	Inst	Ea	Lg	EA	1.33	6.00	370.00	59.70	---	429.70	512.00
	Inst	Ea	Sm	EA	1.67	4.80	408.00	75.00	---	483.00	517.00
36" diameter, 6,500 CFM	Inst	Ea	Lg	EA	1.60	5.00	715.00	71.80	---	786.80	926.00
	Inst	Ea	Sm	EA	2.00	4.00	788.00	89.80	---	877.80	918.00
42" diameter, 9,000 CFM	Inst	Ea	Lg	EA	2.00	4.00	736.00	89.80	---	825.80	977.00
	Inst	Ea	Sm	EA	2.50	3.20	812.00	112.00	---	924.00	974.00
48" diameter, 12,000 CFM	Inst	Ea	Lg	EA	2.67	3.00	758.00	120.00	---	878.00	1050.00
	Inst	Ea	Sm	EA	3.33	2.40	835.00	149.00	---	984.00	1050.00
Two speeds, ADD	Inst	Ea	Lg	---	---	---	49.00	---	---	49.00	56.40
	Inst	Ea	Sm	---	---	---	54.00	---	---	54.00	62.10
12-hour timer, ADD	Inst	Ea	Lg	EA	.500	16.00	24.50	22.40	---	46.90	60.70
	Inst	Ea	Sm	EA	.625	12.80	27.00	28.10	---	55.10	67.70

Minimum Job Charge

	Inst	Job	Lg	EA	2.29	3.50	---	103.00	---	103.00	149.00
	Inst	Job	Sm	EA	2.86	2.80	---	128.00	---	128.00	186.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

System units complete**Fan coil air conditioning***Residential / Light Commercial*

0.5 ton cooling	Inst	Ea	Lg	SB	4.00	4.00	1600.00	163.00	---	1763.00	2070.00
	Inst	Ea	Sm	SB	5.00	3.20	1760.00	203.00	---	1963.00	2050.00
1 ton cooling	Inst	Ea	Lg	SB	5.33	3.00	1770.00	217.00	---	1987.00	2350.00
	Inst	Ea	Sm	SB	6.67	2.40	1950.00	271.00	---	2221.00	2350.00
2.5 ton cooling	Inst	Ea	Lg	SB	8.00	2.00	1970.00	325.00	---	2295.00	2740.00
	Inst	Ea	Sm	SB	10.0	1.60	2170.00	407.00	---	2577.00	2760.00
3 ton cooling	Inst	Ea	Lg	SB	16.0	1.00	2370.00	651.00	---	3021.00	3660.00
	Inst	Ea	Sm	SB	20.0	0.80	2610.00	813.00	---	3423.00	3790.00
4 ton cooling	Inst	Ea	Lg	SF	12.0	2.00	2640.00	517.00	---	3157.00	3780.00
	Inst	Ea	Sm	SF	15.0	1.60	2910.00	647.00	---	3557.00	3850.00
5 ton cooling	Inst	Ea	Lg	SF	16.0	1.50	3240.00	690.00	---	3930.00	4730.00
	Inst	Ea	Sm	SF	20.0	1.20	3570.00	862.00	---	4432.00	4820.00

Commercial

2 ton cooling	Inst	Ea	Lg	SB	12.80	1.25	2180.00	520.00	---	2700.00	3270.00
	Inst	Ea	Sm	SB	16.00	1.00	2410.00	651.00	---	3061.00	3350.00
5 ton cooling	Inst	Ea	Lg	SB	16.00	1.00	4160.00	651.00	---	4811.00	5730.00
	Inst	Ea	Sm	SB	20.00	0.80	4590.00	813.00	---	5403.00	5770.00
8 ton cooling	Inst	Ea	Lg	SB	21.33	0.75	4970.00	867.00	---	5837.00	6980.00
	Inst	Ea	Sm	SB	26.7	0.60	5480.00	1090.00	---	6570.00	7060.00
10 ton cooling	Inst	Ea	Lg	SB	32.0	0.50	5220.00	1300.00	---	6520.00	7890.00
	Inst	Ea	Sm	SB	40.0	0.40	5760.00	1630.00	---	7390.00	8110.00
15 ton cooling	Inst	Ea	Lg	SF	72.7	0.33	10900.00	3130.00	---	14030.00	17000.00
	Inst	Ea	Sm	SF	92.3	0.26	12000.00	3980.00	---	15980.00	17700.00

Minimum Job Charge

	Inst	Job	Lg	SB	5.33	3.00	---	217.00	---	217.00	314.00
	Inst	Job	Sm	SB	6.67	2.40	---	271.00	---	271.00	393.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Heat Pump

Exterior coil unit, not including curbs or pads

2 ton cool	Inst	Ea	Lg	SB	16.0	1.00	1510.00	651.00	---	2161.00	2670.00
	Inst	Ea	Sm	SB	20.0	0.80	1660.00	813.00	---	2473.00	2840.00
3 ton cool	Inst	Ea	Lg	SB	32.0	0.50	1660.00	1300.00	---	2960.00	3800.00
	Inst	Ea	Sm	SB	40.0	0.40	1830.00	1630.00	---	3460.00	4190.00
4 ton cool	Inst	Ea	Lg	SB	48.5	0.33	2090.00	1970.00	---	4060.00	5260.00
	Inst	Ea	Sm	SB	61.5	0.26	2300.00	2500.00	---	4800.00	5930.00
5 ton cool	Inst	Ea	Lg	SB	64.0	0.25	2130.00	2600.00	---	4730.00	6230.00
	Inst	Ea	Sm	SB	80.0	0.20	2350.00	3250.00	---	5600.00	7070.00

Roof mounted, coil unit, not including curbs or pads or crane

8 ton cool	Inst	Ea	Lg	SB	32.0	0.50	6780.00	1300.00	---	8080.00	9690.00
	Inst	Ea	Sm	SB	40.0	0.40	7470.00	1630.00	---	9100.00	9830.00
10 ton cool	Inst	Ea	Lg	SB	48.5	0.33	8590.00	1970.00	---	10560.00	12700.00
	Inst	Ea	Sm	SB	61.5	0.26	9470.00	2500.00	---	11970.00	13100.00
15 ton cool	Inst	Ea	Lg	SB	64.0	0.25	12300.00	2600.00	---	14900.00	18000.00
	Inst	Ea	Sm	SB	80.0	0.20	13600.00	3250.00	---	16850.00	18300.00
20 ton cool	Inst	Ea	Lg	SB	80.0	0.20	16300.00	3250.00	---	19550.00	23400.00
	Inst	Ea	Sm	SB	100.0	0.16	17900.00	4070.00	---	21970.00	23800.00

Minimum Job Charge

	Inst	Job	Lg	SB	8.00	2.00	---	325.00	---	325.00	472.00
	Inst	Job	Sm	SB	10.0	1.60	---	407.00	---	407.00	590.00

PTAC Wall / Window unit air conditioners.

Semi-permanent installation, 3-speed fan, 125-volt GFI receptacle, energy-efficient models

6,000 BTUH (0.5 ton cool)	Inst	Ea	Lg	EB	4.00	4.00	509.00	180.00	---	689.00	846.00
	Inst	Ea	Sm	EB	5.00	3.20	561.00	224.00	---	785.00	886.00
9,000 BTUH (0.75 ton cool)	Inst	Ea	Lg	EB	4.00	4.00	641.00	180.00	---	821.00	997.00
	Inst	Ea	Sm	EB	5.00	3.20	706.00	224.00	---	930.00	1030.00
12,000 BTUH (1.0 ton cool)	Inst	Ea	Lg	EB	4.00	4.00	733.00	180.00	---	913.00	1100.00
	Inst	Ea	Sm	EB	5.00	3.20	808.00	224.00	---	1032.00	1130.00
18,000 BTUH (1.5 ton cool)	Inst	Ea	Lg	EB	5.33	3.00	875.00	239.00	---	1114.00	1350.00
	Inst	Ea	Sm	EB	6.67	2.40	964.00	299.00	---	1263.00	1400.00
24,000 BTUH (2.0 ton cool)	Inst	Ea	Lg	EB	5.33	3.00	1180.00	239.00	---	1419.00	1700.00
	Inst	Ea	Sm	EB	6.67	2.40	1300.00	299.00	---	1599.00	1730.00
36,000 BTUH (3.0 ton cool)	Inst	Ea	Lg	EB	5.33	3.00	1370.00	239.00	---	1609.00	1920.00
	Inst	Ea	Sm	EB	6.67	2.40	1510.00	299.00	---	1809.00	1950.00

Minimum Job Charge

	Inst	Job	Lg	EA	2.67	3.00	---	120.00	---	120.00	174.00
	Inst	Job	Sm	EA	3.33	2.40	---	149.00	---	149.00	217.00

Awnings. See Canopies, page 67**Backfill. See Excavation, page 155**

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Bath accessories

Individual components. See page 41 for Medicine Cabinets and Mirrors.

Cup holder, surface mounted

Chrome	Inst	Ea	Lg	MR	.333	24.00	6.15	13.00	---	19.15	25.50
	Inst	Ea	Sm	MR	.444	18.00	6.78	17.30	---	24.08	32.30

Cup and toothbrush holder

Brass	Inst	Ea	Lg	MR	.333	24.00	8.56	13.00	---	21.56	28.30
	Inst	Ea	Sm	MR	.444	18.00	9.43	17.30	---	26.73	35.40
Chrome	Inst	Ea	Lg	MR	.333	24.00	6.84	13.00	---	19.84	26.30
	Inst	Ea	Sm	MR	.444	18.00	7.54	17.30	---	24.84	33.20

Cup, toothbrush and soapholder, recessed

Chrome	Inst	Ea	Lg	MR	.500	16.00	13.70	19.50	---	33.20	43.40
	Inst	Ea	Sm	MR	.667	12.00	15.10	26.00	---	41.10	54.20

Diaper change station

Plastic	Inst	Ea	Lg	MR	4.000	2.00	260.00	156.00	---	416.00	520.00
	Inst	Ea	Sm	MR	5.333	1.50	286.00	208.00	---	494.00	624.00

Feminine napkin dispenser

Stainless steel	Inst	Ea	Lg	MR	2.667	3.00	201.00	104.00	---	305.00	378.00
	Inst	Ea	Sm	MR	3.556	2.25	221.00	138.00	---	359.00	451.00

Feminine napkin disposal

Stainless steel	Inst	Ea	Lg	MR	1.000	8.00	34.60	38.90	---	73.50	95.10
	Inst	Ea	Sm	MR	1.333	6.00	38.10	51.90	---	90.00	118.00

Glass or mirror shelf, chrome

18" long	Inst	Ea	Lg	MR	.400	20.00	42.30	15.60	---	57.90	70.80
	Inst	Ea	Sm	MR	.533	15.00	46.60	20.70	---	67.30	83.10
24" long	Inst	Ea	Lg	MR	.400	20.00	44.50	15.60	---	60.10	73.30
	Inst	Ea	Sm	MR	.533	15.00	49.10	20.70	---	69.80	85.90

Grab bars, concealed mounting, stainless steel

Straight, 1-1/2"

12" long	Inst	Ea	Lg	MR	.400	20.00	33.00	15.60	---	48.60	60.10
	Inst	Ea	Sm	MR	.533	15.00	36.40	20.70	---	57.10	71.30
18" long	Inst	Ea	Lg	MR	.400	20.00	34.90	15.60	---	50.50	62.20
	Inst	Ea	Sm	MR	.533	15.00	38.40	20.70	---	59.10	73.70
24" long	Inst	Ea	Lg	MR	.400	20.00	36.70	15.60	---	52.30	64.30
	Inst	Ea	Sm	MR	.533	15.00	40.50	20.70	---	61.20	76.00
30" long	Inst	Ea	Lg	MR	.400	20.00	47.90	15.60	---	63.50	77.20
	Inst	Ea	Sm	MR	.533	15.00	52.80	20.70	---	73.50	90.20
36" long	Inst	Ea	Lg	MR	.400	20.00	51.50	15.60	---	67.10	81.30
	Inst	Ea	Sm	MR	.533	15.00	56.70	20.70	---	77.40	94.70
42" long	Inst	Ea	Lg	MR	.400	20.00	57.10	15.60	---	72.70	87.80
	Inst	Ea	Sm	MR	.533	15.00	62.90	20.70	---	83.60	102.00
48" long	Inst	Ea	Lg	MR	.400	20.00	62.70	15.60	---	78.30	94.20
	Inst	Ea	Sm	MR	.533	15.00	69.10	20.70	---	89.80	109.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Angle bar, 16" L x 32" H	Inst	Ea	Lg	MR	.400	20.00	125.00	15.60	---	140.60	166.00
	Inst	Ea	Sm	MR	.533	15.00	138.00	20.70	---	158.70	188.00
Tub-shower bar, 36" L x 54" H	Inst	Ea	Lg	MR	.400	20.00	188.00	15.60	---	203.60	238.00
	Inst	Ea	Sm	MR	.533	15.00	207.00	20.70	---	227.70	268.00
Wall-to-floor angle bar with flange, bolt, washer and screws											
	Inst	Ea	Lg	MR	1.333	6.00	220.00	51.90	---	271.90	326.00
	Inst	Ea	Sm	MR	1.778	4.50	242.00	69.20	---	311.20	376.00
Hot air hand dryer											
Average	Inst	Ea	Lg	MR	6.015	1.33	271.00	234.00	---	505.00	644.00
	Inst	Ea	Sm	MR	8.000	1.00	298.00	311.00	---	609.00	785.00
Good	Inst	Ea	Lg	MR	6.015	1.33	441.00	234.00	---	675.00	840.00
	Inst	Ea	Sm	MR	8.000	1.00	486.00	311.00	---	797.00	1000.00
Paper towel dispenser	Inst	Ea	Lg	MR	.667	12.00	47.00	26.00	---	73.00	90.90
	Inst	Ea	Sm	MR	.889	9.00	51.80	34.60	---	86.40	109.00
Paper towel dispenser w/ waste											
	Inst	Ea	Lg	MR	1.000	8.00	47.00	38.90	---	85.90	109.00
	Inst	Ea	Sm	MR	1.333	6.00	51.80	51.90	---	103.70	133.00
Robe hooks, single or double	Inst	Ea	Lg	MR	.250	32.00	7.13	9.73	---	16.86	22.00
	Inst	Ea	Sm	MR	.333	24.00	7.86	13.00	---	20.86	27.40
Shower curtain rod, 1" dia x 5' 5" L with adjacent rod holder											
	Inst	Ea	Lg	MR	.250	32.00	16.10	9.73	---	25.83	32.30
	Inst	Ea	Sm	MR	.333	24.00	17.70	13.00	---	30.70	38.80
Soap dish / holder, chrome											
Surface	Inst	Ea	Lg	MR	.250	32.00	10.20	9.73	---	19.93	25.60
	Inst	Ea	Sm	MR	.333	24.00	11.30	13.00	---	24.30	31.30
Recessed	Inst	Ea	Lg	MR	.250	32.00	15.00	9.73	---	24.73	31.10
	Inst	Ea	Sm	MR	.333	24.00	16.60	13.00	---	29.60	37.50
Soap dish / holder with bar											
Surface	Inst	Ea	Lg	MR	.250	32.00	11.70	9.73	---	21.43	27.30
	Inst	Ea	Sm	MR	.333	24.00	12.90	13.00	---	25.90	33.30
Recessed	Inst	Ea	Lg	MR	.250	32.00	21.10	9.73	---	30.83	38.00
	Inst	Ea	Sm	MR	.333	24.00	23.20	13.00	---	36.20	45.10
Soap / Hand sanitizer dispenser, wall mounted											
Standard	Inst	Ea	Lg	MR	.500	16.00	19.60	19.50	---	39.10	50.20
	Inst	Ea	Sm	MR	.667	12.00	21.60	26.00	---	47.60	61.70
Average	Inst	Ea	Lg	MR	.500	16.00	39.10	19.50	---	58.60	72.60
	Inst	Ea	Sm	MR	.667	12.00	43.10	26.00	---	69.10	86.40
Good	Inst	Ea	Lg	MR	.500	16.00	76.40	19.50	---	95.90	116.00
	Inst	Ea	Sm	MR	.667	12.00	84.20	26.00	---	110.20	134.00

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					Crew per Unit	per Day	Mat'l Unit	Labor Unit	Equip Unit	Total Unit	Price Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
Toilet partition, standard size											
Plastic Laminate / Enamel Steel	Inst	Ea	Lg	MR	8.000	1.00	370.00	311.00	---	681.00	868.00
	Inst	Ea	Sm	MR	10.667	0.75	408.00	415.00	---	823.00	1060.00
Solid Plastic / Resin	Inst	Ea	Lg	MR	8.000	1.00	735.00	311.00	---	1046.00	1290.00
	Inst	Ea	Sm	MR	10.667	0.75	810.00	415.00	---	1225.00	1520.00
Cultured marble or stone	Inst	Ea	Lg	MR	8.000	1.00	1270.00	311.00	---	1581.00	1910.00
	Inst	Ea	Sm	MR	10.667	0.75	1400.00	415.00	---	1815.00	2200.00
Stainless Steel	Inst	Ea	Lg	MR	8.000	1.00	892.00	311.00	---	1203.00	1470.00
	Inst	Ea	Sm	MR	10.667	0.75	983.00	415.00	---	1398.00	1720.00
Toilet partition, oversized / ADA											
Plastic Laminate / Enamel Steel	Inst	Ea	Lg	MR	9.412	0.85	466.00	366.00	---	832.00	1060.00
	Inst	Ea	Sm	MR	12.500	0.64	513.00	487.00	---	1000.00	1280.00
Solid Plastic / Resin	Inst	Ea	Lg	MR	9.412	0.85	882.00	366.00	---	1248.00	1530.00
	Inst	Ea	Sm	MR	12.500	0.64	972.00	487.00	---	1459.00	1810.00
Cultured marble or stone	Inst	Ea	Lg	MR	9.412	0.85	1520.00	366.00	---	1886.00	2270.00
	Inst	Ea	Sm	MR	12.500	0.64	1670.00	487.00	---	2157.00	2620.00
Stainless Steel	Inst	Ea	Lg	MR	9.412	0.85	1130.00	366.00	---	1496.00	1820.00
	Inst	Ea	Sm	MR	12.500	0.64	1240.00	487.00	---	1727.00	2120.00
Toilet roll holder, commercial, single roll											
Standard	Inst	Ea	Lg	MR	.889	9.00	10.40	34.60	---	45.00	61.00
	Inst	Ea	Sm	MR	1.185	6.75	11.40	46.10	---	57.50	78.60
Average	Inst	Ea	Lg	MR	.889	9.00	23.70	34.60	---	58.30	76.40
	Inst	Ea	Sm	MR	1.185	6.75	26.10	46.10	---	72.20	95.60
Good	Inst	Ea	Lg	MR	.889	9.00	43.80	34.60	---	78.40	99.50
	Inst	Ea	Sm	MR	1.185	6.75	48.30	46.10	---	94.40	121.00
Toilet roll holder, commercial, double roll											
Standard	Inst	Ea	Lg	MR	1.000	8.00	18.60	38.90	---	57.50	76.60
	Inst	Ea	Sm	MR	1.333	6.00	20.50	51.90	---	72.40	97.20
Average	Inst	Ea	Lg	MR	1.000	8.00	33.50	38.90	---	72.40	93.80
	Inst	Ea	Sm	MR	1.333	6.00	36.90	51.90	---	88.80	116.00
Good	Inst	Ea	Lg	MR	1.000	8.00	73.50	38.90	---	112.40	140.00
	Inst	Ea	Sm	MR	1.333	6.00	81.00	51.90	---	132.90	167.00
Toilet roll holder, residential											
Surface	Inst	Ea	Lg	MR	.250	32.00	12.10	9.73	---	21.83	27.80
	Inst	Ea	Sm	MR	.333	24.00	13.40	13.00	---	26.40	33.80
Recessed	Inst	Ea	Lg	MR	.250	32.00	17.00	9.73	---	26.73	33.30
	Inst	Ea	Sm	MR	.333	24.00	18.70	13.00	---	31.70	39.90
Toilet roll holder, residential, with hood, recessed											
Surface	Inst	Ea	Lg	MR	.333	24.00	30.70	13.00	---	43.70	53.70
	Inst	Ea	Sm	MR	.444	18.00	33.80	17.30	---	51.10	63.40
Recessed	Inst	Ea	Lg	MR	.333	24.00	43.00	13.00	---	56.00	67.80
	Inst	Ea	Sm	MR	.444	18.00	47.40	17.30	---	64.70	79.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Towel bars, square or round											
Chrome, 18" to 36" long											
Standard	Inst	Ea	Lg	MR	.250	32.00	6.44	9.73	---	16.17	21.20
	Inst	Ea	Sm	MR	.333	24.00	7.10	13.00	---	20.10	26.60
Average	Inst	Ea	Lg	MR	.250	32.00	14.80	9.73	---	24.53	30.80
	Inst	Ea	Sm	MR	.333	24.00	16.30	13.00	---	29.30	37.20
Good	Inst	Ea	Lg	MR	.250	32.00	22.10	9.73	---	31.83	39.20
	Inst	Ea	Sm	MR	.333	24.00	24.30	13.00	---	37.30	46.40
Premium	Inst	Ea	Lg	MR	.250	32.00	43.50	9.73	---	53.23	63.90
	Inst	Ea	Sm	MR	.333	24.00	48.00	13.00	---	61.00	73.60
Towel bar with extra towel shelf											
Average	Inst	Ea	Lg	MR	1.000	8.00	74.00	38.90	---	112.90	140.00
	Inst	Ea	Sm	MR	1.333	6.00	81.50	51.90	---	133.40	167.00
Good	Inst	Ea	Lg	MR	1.000	8.00	132.00	38.90	---	170.90	208.00
	Inst	Ea	Sm	MR	1.333	6.00	146.00	51.90	---	197.90	241.00
Towel ring											
Standard	Inst	Ea	Lg	MR	.222	36.00	7.72	8.64	---	16.36	21.20
	Inst	Ea	Sm	MR	.296	27.00	8.51	11.50	---	20.01	26.20
Average	Inst	Ea	Lg	MR	.222	36.00	14.80	8.64	---	23.44	29.30
	Inst	Ea	Sm	MR	.296	27.00	16.40	11.50	---	27.90	35.20
Good	Inst	Ea	Lg	MR	.222	36.00	20.00	8.64	---	28.64	35.20
	Inst	Ea	Sm	MR	.296	27.00	22.00	11.50	---	33.50	41.70
Premium	Inst	Ea	Lg	MR	.222	36.00	31.50	8.64	---	40.14	48.50
	Inst	Ea	Sm	MR	.296	27.00	34.80	11.50	---	46.30	56.30
Towel ladder, warmer, electric, 4 rungs											
Free Standing portable	Inst	Ea	Lg	MR	1.000	8.00	814.00	38.90	---	852.90	991.00
	Inst	Ea	Sm	MR	1.333	6.00	897.00	51.90	---	948.90	1110.00
Floor / Wall mounted	Inst	Ea	Lg	MR	2.000	4.00	1640.00	77.80	---	1717.80	1990.00
	Inst	Ea	Sm	MR	2.667	3.00	1810.00	104.00	---	1914.00	2220.00
Urinal partition											
Plastic Laminate / Enamel Ste	Inst	Ea	Lg	MR	2.667	3.00	111.00	104.00	---	215.00	275.00
	Inst	Ea	Sm	MR	3.556	2.25	122.00	138.00	---	260.00	337.00
Solid Plastic / Resin	Inst	Ea	Lg	MR	2.667	3.00	247.00	104.00	---	351.00	431.00
	Inst	Ea	Sm	MR	3.556	2.25	272.00	138.00	---	410.00	509.00
Stainless Steel	Inst	Ea	Lg	MR	2.667	3.00	306.00	104.00	---	410.00	499.00
	Inst	Ea	Sm	MR	3.556	2.25	337.00	138.00	---	475.00	584.00
Waste receptacle, recessed	Inst	Ea	Lg	MR	1.143	7.00	245.00	44.50	---	289.50	345.00
	Inst	Ea	Sm	MR	1.524	5.25	270.00	59.30	---	329.30	395.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Medicine cabinets

No electrical work included; for wall outlet cost, see Electrical, page 148

Surface mounting, no wall opening

Swing door cabinets with reversible mirror door

16" x 22"	Inst	Ea	Lg	MR	.800	10.00	60.40	31.10	---	91.50	114.00
	Inst	Ea	Sm	MR	1.07	7.50	66.50	41.60	---	108.10	136.00
16" x 26"	Inst	Ea	Lg	MR	.800	10.00	75.50	31.10	---	106.60	131.00
	Inst	Ea	Sm	MR	1.07	7.50	83.20	41.60	---	124.80	155.00

Swing door, corner cabinets with reversible mirror door

16" x 36"	Inst	Ea	Lg	MR	.800	10.00	106.00	31.10	---	137.10	166.00
	Inst	Ea	Sm	MR	1.07	7.50	116.00	41.60	---	157.60	193.00

Sliding door cabinets, bypassing mirror doors

Toplighted, stainless steel

20" x 20"	Inst	Ea	Lg	MR	.800	10.00	125.00	31.10	---	156.10	188.00
	Inst	Ea	Sm	MR	1.07	7.50	137.00	41.60	---	178.60	217.00
24" x 20"	Inst	Ea	Lg	MR	.800	10.00	156.00	31.10	---	187.10	223.00
	Inst	Ea	Sm	MR	1.07	7.50	172.00	41.60	---	213.60	257.00
28" x 20"	Inst	Ea	Lg	MR	.800	10.00	171.00	31.10	---	202.10	241.00
	Inst	Ea	Sm	MR	1.07	7.50	189.00	41.60	---	230.60	276.00

Cosmetic box with framed mirror stainless steel, Builders series

18" x 26"	Inst	Ea	Lg	MR	.800	10.00	79.20	31.10	---	110.30	135.00
	Inst	Ea	Sm	MR	1.07	7.50	87.30	41.60	---	128.90	160.00
24" x 32"	Inst	Ea	Lg	MR	.800	10.00	86.80	31.10	---	117.90	144.00
	Inst	Ea	Sm	MR	1.07	7.50	95.60	41.60	---	137.20	169.00
30" x 32"	Inst	Ea	Lg	MR	.800	10.00	94.30	31.10	---	125.40	153.00
	Inst	Ea	Sm	MR	1.07	7.50	104.00	41.60	---	145.60	179.00
36" x 32"	Inst	Ea	Lg	MR	.800	10.00	102.00	31.10	---	133.10	161.00
	Inst	Ea	Sm	MR	1.07	7.50	112.00	41.60	---	153.60	188.00
48" x 32"	Inst	Ea	Lg	MR	.800	10.00	109.00	31.10	---	140.10	170.00
	Inst	Ea	Sm	MR	1.07	7.50	121.00	41.60	---	162.60	198.00

3-way mirror, tri-view

30" x 30"

Frameless, beveled mirror	Inst	Ea	Lg	MR	.889	9.00	357.00	34.60	---	391.60	460.00
	Inst	Ea	Sm	MR	1.19	6.75	394.00	46.30	---	440.30	518.00
Natural oak	Inst	Ea	Lg	MR	.889	9.00	417.00	34.60	---	451.60	528.00
	Inst	Ea	Sm	MR	1.19	6.75	459.00	46.30	---	505.30	594.00
White finish	Inst	Ea	Lg	MR	.889	9.00	377.00	34.60	---	411.60	483.00
	Inst	Ea	Sm	MR	1.19	6.75	416.00	46.30	---	462.30	544.00

36" x 30"

Frameless, beveled mirror	Inst	Ea	Lg	MR	.889	9.00	397.00	34.60	---	431.60	506.00
	Inst	Ea	Sm	MR	1.19	6.75	437.00	46.30	---	483.30	569.00
Natural oak	Inst	Ea	Lg	MR	.889	9.00	456.00	34.60	---	490.60	574.00
	Inst	Ea	Sm	MR	1.19	6.75	503.00	46.30	---	549.30	644.00
White finish	Inst	Ea	Lg	MR	.889	9.00	437.00	34.60	---	471.60	551.00
	Inst	Ea	Sm	MR	1.19	6.75	481.00	46.30	---	527.30	619.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					

48" x 30"

Frameless, beveled mirror	Inst	Ea	Lg	MR	1.00	8.00	516.00	38.90	---	554.90	649.00
	Inst	Ea	Sm	MR	1.33	6.00	569.00	51.80	---	620.80	727.00
Natural oak	Inst	Ea	Lg	MR	1.00	8.00	556.00	38.90	---	594.90	694.00
	Inst	Ea	Sm	MR	1.33	6.00	612.00	51.80	---	663.80	778.00
White finish	Inst	Ea	Lg	MR	1.00	8.00	536.00	38.90	---	574.90	671.00
	Inst	Ea	Sm	MR	1.33	6.00	590.00	51.80	---	641.80	753.00

With matching light fixture

with 2 lights	Inst	Ea	Lg	EA	2.00	4.00	23.40	89.80	---	113.20	157.00
	Inst	Ea	Sm	EA	2.67	3.00	25.80	120.00	---	145.80	203.00
with 3 lights	Inst	Ea	Lg	EA	2.00	4.00	26.20	89.80	---	116.00	160.00
	Inst	Ea	Sm	EA	2.67	3.00	28.90	120.00	---	148.90	207.00
with 4 lights	Inst	Ea	Lg	EA	2.00	4.00	36.80	89.80	---	126.60	172.00
	Inst	Ea	Sm	EA	2.67	3.00	40.50	120.00	---	160.50	220.00
with 6 lights	Inst	Ea	Lg	EA	2.00	4.00	49.80	89.80	---	139.60	187.00
	Inst	Ea	Sm	EA	2.67	3.00	54.90	120.00	---	174.90	237.00

With matching light fixture for beveled mirror cabinets only

with 2 lights	Inst	Ea	Lg	EA	2.00	4.00	32.80	89.80	---	122.60	168.00
	Inst	Ea	Sm	EA	2.67	3.00	36.10	120.00	---	156.10	215.00
with 3 lights	Inst	Ea	Lg	EA	2.00	4.00	36.70	89.80	---	126.50	172.00
	Inst	Ea	Sm	EA	2.67	3.00	40.50	120.00	---	160.50	220.00
with 4 lights	Inst	Ea	Lg	EA	2.00	4.00	51.50	89.80	---	141.30	189.00
	Inst	Ea	Sm	EA	2.67	3.00	56.70	120.00	---	176.70	239.00
with 6 lights	Inst	Ea	Lg	EA	2.00	4.00	69.70	89.80	---	159.50	210.00
	Inst	Ea	Sm	EA	2.67	3.00	76.80	120.00	---	196.80	262.00

Recessed mounting, overall sizes

Swing door with mirror

Builders series

14" x 18"

Polished brass strip	Inst	Ea	Lg	MR	1.00	8.00	64.10	38.90	---	103.00	129.00
	Inst	Ea	Sm	MR	1.33	6.00	70.70	51.80	---	122.50	155.00
Polished edge strip	Inst	Ea	Lg	MR	1.00	8.00	86.80	38.90	---	125.70	155.00
	Inst	Ea	Sm	MR	1.33	6.00	95.60	51.80	---	147.40	183.00
Stainless steel strip	Inst	Ea	Lg	MR	1.00	8.00	71.70	38.90	---	110.60	138.00
	Inst	Ea	Sm	MR	1.33	6.00	79.00	51.80	---	130.80	164.00

14" x 24"

Polished brass strip	Inst	Ea	Lg	MR	1.00	8.00	67.90	38.90	---	106.80	133.00
	Inst	Ea	Sm	MR	1.33	6.00	74.80	51.80	---	126.60	160.00
Polished edge strip	Inst	Ea	Lg	MR	1.00	8.00	90.60	38.90	---	129.50	159.00
	Inst	Ea	Sm	MR	1.33	6.00	99.80	51.80	---	151.60	188.00
Stainless steel strip	Inst	Ea	Lg	MR	1.00	8.00	79.20	38.90	---	118.10	146.00
	Inst	Ea	Sm	MR	1.33	6.00	87.30	51.80	---	139.10	174.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Decorator series

14" x 18"

Frameless bevel mirror	Inst	Ea	Lg	MR	1.00	8.00	101.00	38.90	---	139.90	172.00
	Inst	Ea	Sm	MR	1.33	6.00	112.00	51.80	---	163.80	202.00
Natural oak	Inst	Ea	Lg	MR	1.00	8.00	117.00	38.90	---	155.90	190.00
	Inst	Ea	Sm	MR	1.33	6.00	129.00	51.80	---	180.80	222.00
White birch	Inst	Ea	Lg	MR	1.00	8.00	132.00	38.90	---	170.90	208.00
	Inst	Ea	Sm	MR	1.33	6.00	146.00	51.80	---	197.80	241.00
White finish	Inst	Ea	Lg	MR	1.00	8.00	164.00	38.90	---	202.90	243.00
	Inst	Ea	Sm	MR	1.33	6.00	180.00	51.80	---	231.80	281.00

14" x 24"

Frameless bevel mirror	Inst	Ea	Lg	MR	1.00	8.00	109.00	38.90	---	147.90	181.00
	Inst	Ea	Sm	MR	1.33	6.00	120.00	51.80	---	171.80	212.00
Natural oak	Inst	Ea	Lg	MR	1.00	8.00	125.00	38.90	---	163.90	199.00
	Inst	Ea	Sm	MR	1.33	6.00	137.00	51.80	---	188.80	232.00
White birch	Inst	Ea	Lg	MR	1.00	8.00	140.00	38.90	---	178.90	217.00
	Inst	Ea	Sm	MR	1.33	6.00	155.00	51.80	---	206.80	251.00
White finish	Inst	Ea	Lg	MR	1.00	8.00	171.00	38.90	---	209.90	252.00
	Inst	Ea	Sm	MR	1.33	6.00	189.00	51.80	---	240.80	291.00

Oak framed cabinet with oval mirror

20" x 36"

	Inst	Ea	Lg	MR	1.00	8.00	218.00	38.90	---	256.90	306.00
	Inst	Ea	Sm	MR	1.33	6.00	240.00	51.80	---	291.80	350.00

Mirrors

1/4" plate glass

Clear, no frame	Inst	SF	Lg	MR	.222	36.00	13.80	8.64	---	22.44	28.10
	Inst	SF	Sm	MR	.296	27.00	15.20	11.50	---	26.70	33.80
Veined or Smoked, no frame	Inst	SF	Lg	MR	.222	36.00	30.60	8.64	---	39.24	47.50
	Inst	SF	Sm	MR	.296	27.00	33.80	11.50	---	45.30	55.20
Clear, framed	Inst	SF	Lg	MR	.222	36.00	23.60	8.64	---	32.24	39.40
	Inst	SF	Sm	MR	.296	27.00	26.00	11.50	---	37.50	46.30
Veined or Smoked, framed	Inst	SF	Lg	MR	.222	36.00	49.10	8.64	---	57.74	68.70
	Inst	SF	Sm	MR	.296	27.00	54.10	11.50	---	65.60	78.60

Shower equipment. See Shower stalls, page 356

Vanity cabinets. See Cabinets, page 64

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Bathtubs (includes Jetted Tubs / Whirlpools)

Plumbing fixtures with faucets, supply, fittings included in material cost.

Labor cost for installation only of fixture, faucets, supply, fittings.

For Rough-In see Adjustments in this Bathroom Section.

Frequently encountered applications

Detach & reset operations

Alcove / Recessed / Apron	Reset	Ea	Lg	SB	4.00	4.00	118.00	163	---	281.00	371.00
	Reset	Ea	Sm	SB	5.33	3.00	130.00	217	---	347.00	463.00
Drop-In / Built-In / Sunken	Reset	Ea	Lg	SB	5.33	3.00	118.00	217	---	335.00	449.00
	Reset	Ea	Sm	SB	7.11	2.25	130.00	289	---	419.00	568.00
Free-Standing tub	Reset	Ea	Lg	SB	3.20	5.00	118.00	130	---	248.00	324.00
	Reset	Ea	Sm	SB	4.27	3.75	130.00	174	---	304.00	401.00

Remove operations

Alcove / Recessed / Apron	Demo	Ea	Lg	SB	2.00	8.00	49.00	81.30	---	130.30	174.00
	Demo	Ea	Sm	SB	2.67	6.00	54.00	109	---	163.00	220.00
Drop-In / Built-In / Sunken	Demo	Ea	Lg	SB	2.67	6.00	73.50	109	---	182.50	242.00
	Demo	Ea	Sm	SB	3.56	4.50	81.00	145	---	226.00	303.00
Free-Standing tub	Demo	Ea	Lg	SB	1.33	12.00	24.50	54.10	---	78.60	107.00
	Demo	Ea	Sm	SB	1.78	9.00	27.00	72.40	---	99.40	136.00

Replace operations

Alcove / Recessed / Integral Apron

Acrylic

66" L x 32" W x 19" H

Bathtub only, no Whirlpool	Inst	Ea	Lg	SB	6.67	2.40	879.00	271	---	1150.00	1400.00
	Inst	Ea	Sm	SB	8.89	1.80	968.00	361	---	1329.00	1640.00

Bathtub with Jetted Whirlpool

Plumbing installation	Inst	Ea	Lg	SB	13.3	1.20	1960.00	541	---	2501.00	3030.00
	Inst	Ea	Sm	SB	17.8	0.90	2180.00	724	---	2904.00	3560.00
Electrical installation	Inst	Ea	Lg	EA	6.15	1.30	245.00	276	---	521.00	682.00
	Inst	Ea	Sm	EA	8.16	0.98	270.00	366	---	636.00	842.00

Enameled Cast Iron

60" L x 32" W x 17" H

Bathtub only, no Whirlpool	Inst	Ea	Lg	SB	6.67	2.40	891.00	271	---	1162.00	1420.00
	Inst	Ea	Sm	SB	8.89	1.80	982.00	361	---	1343.00	1650.00

72" L x 32" W x 20" H

Bathtub only, no Whirlpool	Inst	Ea	Lg	SB	6.67	2.40	1530.00	271	---	1801.00	2150.00
	Inst	Ea	Sm	SB	8.89	1.80	1680.00	361	---	2041.00	2460.00

Enameled Steel

60" L x 30" W x 17" H

Bathtub only, no Whirlpool	Inst	Ea	Lg	SB	6.67	2.40	614.00	271	---	885.00	1100.00
	Inst	Ea	Sm	SB	8.89	1.80	677.00	361	---	1038.00	1300.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P
Drop-In / Built-In / Sunken, not including full frame support and sidewall finish											
<i>Acrylic</i>											
<i>60" L x 32" W x 20" H</i>											
<i>Bathtub only, no Whirlpool</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>6.67</i>	<i>2.40</i>	<i>774.00</i>	<i>271</i>	<i>---</i>	<i>1045.00</i>	<i>1280.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>8.89</i>	<i>1.80</i>	<i>853.00</i>	<i>361</i>	<i>---</i>	<i>1214.00</i>	<i>1500.00</i>
<i>Bathtub with Jetted Whirlpool</i>											
<i>Plumbing installation</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>13.3</i>	<i>1.20</i>	<i>1750.00</i>	<i>541</i>	<i>---</i>	<i>2291.00</i>	<i>2790.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>17.8</i>	<i>0.90</i>	<i>1930.00</i>	<i>724</i>	<i>---</i>	<i>2654.00</i>	<i>3270.00</i>
<i>Electrical installation</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>EA</i>	<i>6.15</i>	<i>1.30</i>	<i>245.00</i>	<i>276</i>	<i>---</i>	<i>521.00</i>	<i>682.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>EA</i>	<i>8.16</i>	<i>0.98</i>	<i>270.00</i>	<i>366</i>	<i>---</i>	<i>636.00</i>	<i>842.00</i>
<i>72" L x 36" W x 20" H</i>											
<i>Bathtub only, no Whirlpool</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>6.67</i>	<i>2.40</i>	<i>844.00</i>	<i>271</i>	<i>---</i>	<i>1115.00</i>	<i>1360.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>8.89</i>	<i>1.80</i>	<i>930.00</i>	<i>361</i>	<i>---</i>	<i>1291.00</i>	<i>1590.00</i>
<i>Bathtub with Jetted Whirlpool</i>											
<i>Plumbing installation</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>13.3</i>	<i>1.20</i>	<i>1900.00</i>	<i>541</i>	<i>---</i>	<i>2441.00</i>	<i>2970.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>17.8</i>	<i>0.90</i>	<i>2100.00</i>	<i>724</i>	<i>---</i>	<i>2824.00</i>	<i>3460.00</i>
<i>Electrical installation</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>EA</i>	<i>6.15</i>	<i>1.30</i>	<i>245.00</i>	<i>276</i>	<i>---</i>	<i>521.00</i>	<i>682.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>EA</i>	<i>8.16</i>	<i>0.98</i>	<i>270.00</i>	<i>366</i>	<i>---</i>	<i>636.00</i>	<i>842.00</i>
<i>60" L x 60" W x 20" H, corner unit</i>											
<i>Bathtub only, no Whirlpool</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>6.67</i>	<i>2.40</i>	<i>1270.00</i>	<i>271</i>	<i>---</i>	<i>1541.00</i>	<i>1850.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>8.89</i>	<i>1.80</i>	<i>1400.00</i>	<i>361</i>	<i>---</i>	<i>1761.00</i>	<i>2130.00</i>
<i>Bathtub with Jetted Whirlpool</i>											
<i>Plumbing installation</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>13.3</i>	<i>1.20</i>	<i>2850.00</i>	<i>541</i>	<i>---</i>	<i>3391.00</i>	<i>4060.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>17.8</i>	<i>0.90</i>	<i>3140.00</i>	<i>724</i>	<i>---</i>	<i>3864.00</i>	<i>4660.00</i>
<i>Electrical installation</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>EA</i>	<i>6.15</i>	<i>1.30</i>	<i>245.00</i>	<i>276</i>	<i>---</i>	<i>521.00</i>	<i>682.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>EA</i>	<i>8.16</i>	<i>0.98</i>	<i>270.00</i>	<i>366</i>	<i>---</i>	<i>636.00</i>	<i>842.00</i>
<i>Enameled Cast Iron</i>											
<i>60" L x 32" W x 20" H</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>6.67</i>	<i>2.40</i>	<i>638.00</i>	<i>271</i>	<i>---</i>	<i>909.00</i>	<i>1130.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>8.89</i>	<i>1.80</i>	<i>703.00</i>	<i>361</i>	<i>---</i>	<i>1064.00</i>	<i>1330.00</i>
<i>Enameled Steel</i>											
<i>60" L x 32" W x 20" H</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>6.67</i>	<i>2.40</i>	<i>877.00</i>	<i>271</i>	<i>---</i>	<i>1148.00</i>	<i>1400.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>8.89</i>	<i>1.80</i>	<i>1340.00</i>	<i>361</i>	<i>---</i>	<i>1701.00</i>	<i>2060.00</i>
Adjustments											
Install rough-In											
<i>Bathtub</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SB</i>	<i>10.0</i>	<i>1.60</i>	<i>343.00</i>	<i>407</i>	<i>---</i>	<i>750.00</i>	<i>984.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SB</i>	<i>13.3</i>	<i>1.20</i>	<i>378.00</i>	<i>541</i>	<i>---</i>	<i>919.00</i>	<i>1220.00</i>
Install shower head with mixer valve over tub											
<i>Open wall, ADD</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SA</i>	<i>2.00</i>	<i>4.00</i>	<i>221.00</i>	<i>96.00</i>	<i>---</i>	<i>317.00</i>	<i>394.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SA</i>	<i>2.67</i>	<i>3.00</i>	<i>201.00</i>	<i>128</i>	<i>---</i>	<i>329.00</i>	<i>417.00</i>
<i>Closed wall, ADD</i>	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SA</i>	<i>4.00</i>	<i>2.00</i>	<i>248.00</i>	<i>192</i>	<i>---</i>	<i>440.00</i>	<i>564.00</i>
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SA</i>	<i>5.33</i>	<i>1.50</i>	<i>225.00</i>	<i>256</i>	<i>---</i>	<i>481.00</i>	<i>630.00</i>

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Individual Bathtubs and Components

Alcove / Recessed / Integral Apron Bathtubs

Acrylic

60" L x 32" W x 19" H

Bathtub only, no Whirlpool

Standard	Inst	Ea	Lg	SB	6.67	2.40	535.00	271.00	---	806.00	1010.00
	Inst	Ea	Sm	SB	8.89	1.80	590.00	361.00	---	951.00	1200.00
Average	Inst	Ea	Lg	SB	6.67	2.40	879.00	271.00	---	1150.00	1400.00
	Inst	Ea	Sm	SB	8.89	1.80	968.00	361.00	---	1329.00	1640.00
Good	Inst	Ea	Lg	SB	6.67	2.40	1520.00	271.00	---	1791.00	2140.00
	Inst	Ea	Sm	SB	8.89	1.80	1680.00	361.00	---	2041.00	2450.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	1740.00	271.00	---	2011.00	2390.00
	Inst	Ea	Sm	SB	8.89	1.80	1920.00	361.00	---	2281.00	2730.00

Bathtub with Jetted Whirlpool

Plumbing installation

Standard	Inst	Ea	Lg	SB	13.3	1.20	1220.00	541.00	---	1761.00	2190.00
	Inst	Ea	Sm	SB	17.8	0.90	1340.00	724.00	---	2064.00	2590.00
Average	Inst	Ea	Lg	SB	13.3	1.20	1980.00	541.00	---	2521.00	3060.00
	Inst	Ea	Sm	SB	17.8	0.90	2180.00	724.00	---	2904.00	3560.00
Good	Inst	Ea	Lg	SB	13.3	1.20	3060.00	541.00	---	3601.00	4310.00
	Inst	Ea	Sm	SB	17.8	0.90	3380.00	724.00	---	4104.00	4930.00
Premium	Inst	Ea	Lg	SB	13.3	1.20	3780.00	541.00	---	4321.00	5130.00
	Inst	Ea	Sm	SB	17.8	0.90	4160.00	724.00	---	4884.00	5830.00
Electrical installation, ADD	Inst	Ea	Lg	EA	6.15	1.30	245.00	276.00	---	521.00	682.00
	Inst	Ea	Sm	EA	8.16	0.98	270.00	366.00	---	636.00	842.00

66" L x 32" W x 19" H

Bathtub only, no Whirlpool

Standard	Inst	Ea	Lg	SB	6.67	2.40	625.00	271.00	---	896.00	1110.00
	Inst	Ea	Sm	SB	8.89	1.80	688.00	361.00	---	1049.00	1320.00
Average	Inst	Ea	Lg	SB	6.67	2.40	879.00	271.00	---	1150.00	1400.00
	Inst	Ea	Sm	SB	8.89	1.80	968.00	361.00	---	1329.00	1640.00
Good	Inst	Ea	Lg	SB	6.67	2.40	1420.00	271.00	---	1691.00	2030.00
	Inst	Ea	Sm	SB	8.89	1.80	1560.00	361.00	---	1921.00	2320.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	2110.00	271.00	---	2381.00	2820.00
	Inst	Ea	Sm	SB	8.89	1.80	2320.00	361.00	---	2681.00	3200.00

Bathtubs, recessed

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Bathtub with Jetted Whirlpool

Plumbing installation

Standard	Inst	Ea	Lg	SB	13.3	1.20	1420.00	541.00	---	1961.00	2410.00
	Inst	Ea	Sm	SB	17.8	0.90	1560.00	724.00	---	2284.00	2850.00
Average	Inst	Ea	Lg	SB	13.3	1.20	1980.00	541.00	---	2521.00	3060.00
	Inst	Ea	Sm	SB	17.8	0.90	2180.00	724.00	---	2904.00	3560.00
Good	Inst	Ea	Lg	SB	13.3	1.20	3060.00	541.00	---	3601.00	4310.00
	Inst	Ea	Sm	SB	17.8	0.90	3380.00	724.00	---	4104.00	4930.00
Premium	Inst	Ea	Lg	SB	13.3	1.20	4600.00	541.00	---	5141.00	6070.00
	Inst	Ea	Sm	SB	17.8	0.90	5070.00	724.00	---	5794.00	6880.00
Electrical installation, ADD											
	Inst	Ea	Lg	EA	6.15	1.30	245.00	276.00	---	521.00	682.00
	Inst	Ea	Sm	EA	8.16	0.98	270.00	366.00	---	636.00	842.00

Enameled Cast Iron

60" L x 32" W x 17" H

Standard	Inst	Ea	Lg	SB	6.67	2.40	655.00	271.00	---	926.00	1150.00
	Inst	Ea	Sm	SB	8.89	1.80	722.00	361.00	---	1083.00	1350.00
Average	Inst	Ea	Lg	SB	6.67	2.40	719.00	271.00	---	990.00	1220.00
	Inst	Ea	Sm	SB	8.89	1.80	792.00	361.00	---	1153.00	1430.00
Good	Inst	Ea	Lg	SB	6.67	2.40	891.00	271.00	---	1162.00	1420.00
	Inst	Ea	Sm	SB	8.89	1.80	982.00	361.00	---	1343.00	1650.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	1530.00	271.00	---	1801.00	2150.00
	Inst	Ea	Sm	SB	8.89	1.80	1680.00	361.00	---	2041.00	2460.00

Enameled Steel

60" L x 30" W x 17" H

Standard	Inst	Ea	Lg	SB	6.67	2.40	495.00	271.00	---	766.00	963.00
	Inst	Ea	Sm	SB	8.89	1.80	546.00	361.00	---	907.00	1150.00
Average	Inst	Ea	Lg	SB	6.67	2.40	614.00	271.00	---	885.00	1100.00
	Inst	Ea	Sm	SB	8.89	1.80	677.00	361.00	---	1038.00	1300.00
Good	Inst	Ea	Lg	SB	6.67	2.40	778.00	271.00	---	1049.00	1290.00
	Inst	Ea	Sm	SB	8.89	1.80	858.00	361.00	---	1219.00	1510.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	865.00	271.00	---	1136.00	1390.00
	Inst	Ea	Sm	SB	8.89	1.80	954.00	361.00	---	1315.00	1620.00

Drop-In / Built-In / Sunken Bathtubs

(not including full frame support and sidewall finish)

Acrylic

60" L x 32" W x 20" H

Bathtub only, no Whirlpool

Standard	Inst	Ea	Lg	SB	6.67	2.40	482.00	271.00	---	753.00	948.00
	Inst	Ea	Sm	SB	8.89	1.80	531.00	361.00	---	892.00	1130.00
Average	Inst	Ea	Lg	SB	6.67	2.40	774.00	271.00	---	1045.00	1280.00
	Inst	Ea	Sm	SB	8.89	1.80	853.00	361.00	---	1214.00	1500.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P
Good	Inst	Ea	Lg	SB	6.67	2.40	1350.00	271.00	---	1621.00	1940.00
	Inst	Ea	Sm	SB	8.89	1.80	1480.00	361.00	---	1841.00	2230.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	1520.00	271.00	---	1791.00	2140.00
	Inst	Ea	Sm	SB	8.89	1.80	1670.00	361.00	---	2031.00	2450.00
Bathtub with Jetted Whirlpool											
Plumbing installation											
Standard	Inst	Ea	Lg	SB	13.3	1.20	1100.00	541.00	---	1641.00	2050.00
	Inst	Ea	Sm	SB	17.8	0.90	1210.00	724.00	---	1934.00	2440.00
Average	Inst	Ea	Lg	SB	13.3	1.20	1750.00	541.00	---	2291.00	2790.00
	Inst	Ea	Sm	SB	17.8	0.90	1930.00	724.00	---	2654.00	3270.00
Good	Inst	Ea	Lg	SB	13.3	1.20	2680.00	541.00	---	3221.00	3860.00
	Inst	Ea	Sm	SB	17.8	0.90	2950.00	724.00	---	3674.00	4440.00
Premium	Inst	Ea	Lg	SB	13.3	1.20	3280.00	541.00	---	3821.00	4560.00
	Inst	Ea	Sm	SB	17.8	0.90	3620.00	724.00	---	4344.00	5210.00
Electrical installation, ADD											
	Inst	Ea	Lg	EA	6.15	1.30	245.00	276.00	---	521.00	682.00
	Inst	Ea	Sm	EA	8.16	0.98	270.00	366.00	---	636.00	842.00
72" L x 36" W x 20" H											
Bathtub only, no Whirlpool											
Standard	Inst	Ea	Lg	SB	6.67	2.40	602.00	271.00	---	873.00	1090.00
	Inst	Ea	Sm	SB	8.89	1.80	664.00	361.00	---	1025.00	1290.00
Average	Inst	Ea	Lg	SB	6.67	2.40	844.00	271.00	---	1115.00	1360.00
	Inst	Ea	Sm	SB	8.89	1.80	930.00	361.00	---	1291.00	1590.00
Good	Inst	Ea	Lg	SB	6.67	2.40	1360.00	271.00	---	1631.00	1960.00
	Inst	Ea	Sm	SB	8.89	1.80	1500.00	361.00	---	1861.00	2250.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	2020.00	271.00	---	2291.00	2710.00
	Inst	Ea	Sm	SB	8.89	1.80	2220.00	361.00	---	2581.00	3080.00
Bathtub with Jetted Whirlpool											
Plumbing installation											
Standard	Inst	Ea	Lg	SB	13.3	1.20	1370.00	541.00	---	1911.00	2360.00
	Inst	Ea	Sm	SB	17.8	0.90	1510.00	724.00	---	2234.00	2780.00
Average	Inst	Ea	Lg	SB	13.3	1.20	1900.00	541.00	---	2441.00	2970.00
	Inst	Ea	Sm	SB	17.8	0.90	2100.00	724.00	---	2824.00	3460.00
Good	Inst	Ea	Lg	SB	13.3	1.20	2940.00	541.00	---	3481.00	4160.00
	Inst	Ea	Sm	SB	17.8	0.90	3230.00	724.00	---	3954.00	4770.00
Premium	Inst	Ea	Lg	SB	13.3	1.20	4390.00	541.00	---	4931.00	5840.00
	Inst	Ea	Sm	SB	17.8	0.90	4840.00	724.00	---	5564.00	6620.00
Electrical installation, ADD											
	Inst	Ea	Lg	EA	6.15	1.30	245.00	276.00	---	521.00	682.00
	Inst	Ea	Sm	EA	8.16	0.98	270.00	366.00	---	636.00	842.00

Bathtubs, sunken/built-in

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

60" L x 60" W x 20" H, corner unit

Bathtub only, no Whirlpool

Standard	Inst	Ea	Lg	SB	6.67	2.40	809.00	271.00	---	1080.00	1320.00
	Inst	Ea	Sm	SB	8.89	1.80	891.00	361.00	---	1252.00	1550.00
Average	Inst	Ea	Lg	SB	6.67	2.40	1270.00	271.00	---	1541.00	1850.00
	Inst	Ea	Sm	SB	8.89	1.80	1400.00	361.00	---	1761.00	2130.00
Good	Inst	Ea	Lg	SB	6.67	2.40	1750.00	271.00	---	2021.00	2410.00
	Inst	Ea	Sm	SB	8.89	1.80	1930.00	361.00	---	2291.00	2750.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	2270.00	271.00	---	2541.00	3010.00
	Inst	Ea	Sm	SB	8.89	1.80	2510.00	361.00	---	2871.00	3410.00

Bathtub with Jetted Whirlpool

Plumbing installation

Standard	Inst	Ea	Lg	SB	13.3	1.20	1830.00	541.00	---	2371.00	2880.00
	Inst	Ea	Sm	SB	17.8	0.90	2010.00	724.00	---	2734.00	3360.00
Average	Inst	Ea	Lg	SB	13.3	1.20	2850.00	541.00	---	3391.00	4060.00
	Inst	Ea	Sm	SB	17.8	0.90	3140.00	724.00	---	3864.00	4660.00
Good	Inst	Ea	Lg	SB	13.3	1.20	3810.00	541.00	---	4351.00	5160.00
	Inst	Ea	Sm	SB	17.8	0.90	4190.00	724.00	---	4914.00	5870.00
Premium	Inst	Ea	Lg	SB	13.3	1.20	4970.00	541.00	---	5511.00	6490.00
	Inst	Ea	Sm	SB	17.8	0.90	5470.00	724.00	---	6194.00	7340.00

Electrical installation, ADD

	Inst	Ea	Lg	EA	6.15	1.30	245.00	276.00	---	521.00	682.00
	Inst	Ea	Sm	EA	8.16	0.98	270.00	366.00	---	636.00	842.00

Cast Iron

60" L x 32" W x 20" H

Standard	Inst	Ea	Lg	SB	6.67	2.40	584.00	271.00	---	855.00	1060.00
	Inst	Ea	Sm	SB	8.89	1.80	643.00	361.00	---	1004.00	1260.00
Average	Inst	Ea	Lg	SB	6.67	2.40	638.00	271.00	---	909.00	1130.00
	Inst	Ea	Sm	SB	8.89	1.80	703.00	361.00	---	1064.00	1330.00
Good	Inst	Ea	Lg	SB	6.67	2.40	796.00	271.00	---	1067.00	1310.00
	Inst	Ea	Sm	SB	8.89	1.80	877.00	361.00	---	1238.00	1530.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	1340.00	271.00	---	1611.00	1930.00
	Inst	Ea	Sm	SB	8.89	1.80	1470.00	361.00	---	1831.00	2220.00

Enameled Steel

60" L x 32" W x 20" H

Standard	Inst	Ea	Lg	SB	6.67	2.40	448.00	271.00	---	719.00	908.00
	Inst	Ea	Sm	SB	8.89	1.80	494.00	361.00	---	855.00	1090.00
Average	Inst	Ea	Lg	SB	6.67	2.40	549.00	271.00	---	820.00	1020.00
	Inst	Ea	Sm	SB	8.89	1.80	605.00	361.00	---	966.00	1220.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Good	Inst	Ea	Lg	SB	6.67	2.40	700.00	271.00	---	971.00	1200.00
	Inst	Ea	Sm	SB	8.89	1.80	772.00	361.00	---	1133.00	1410.00
Premium	Inst	Ea	Lg	SB	6.67	2.40	774.00	271.00	---	1045.00	1280.00
	Inst	Ea	Sm	SB	8.89	1.80	853.00	361.00	---	1214.00	1500.00

Free-Standing Bathtubs

72" L x 37-1/2" W x 21-1/2" H

Standard	Inst	Ea	Lg	SB	8.00	2.00	1440.00	325.00	---	1765.00	2130.00
	Inst	Ea	Sm	SB	10.7	1.50	1590.00	435.00	---	2025.00	2460.00
Average	Inst	Ea	Lg	SB	8.00	2.00	2210.00	325.00	---	2535.00	3010.00
	Inst	Ea	Sm	SB	10.7	1.50	2430.00	435.00	---	2865.00	3430.00
High	Inst	Ea	Lg	SB	8.00	2.00	3670.00	325.00	---	3995.00	4690.00
	Inst	Ea	Sm	SB	10.7	1.50	4040.00	435.00	---	4475.00	5280.00

Accessories

Tub Faucet with Shower

Standard	Inst	Ea	Lg	SB	5.33	3.00	390.00	217.00	---	607.00	763.00
	Inst	Ea	Sm	SB	7.1	2.25	430.00	289.00	---	719.00	913.00
Average	Inst	Ea	Lg	SB	5.33	3.00	583.00	217.00	---	800.00	985.00
	Inst	Ea	Sm	SB	7.1	2.25	643.00	289.00	---	932.00	1160.00
High	Inst	Ea	Lg	SB	5.33	3.00	911.00	217.00	---	1128.00	1360.00
	Inst	Ea	Sm	SB	7.1	2.25	1000.00	289.00	---	1289.00	1570.00

Tub Faucet with Hand-Held Shower

Standard	Inst	Ea	Lg	SB	4.00	4.00	292.00	163.00	---	455.00	572.00
	Inst	Ea	Sm	SB	5.3	3.00	322.00	216.00	---	538.00	683.00
Average	Inst	Ea	Lg	SB	4.00	4.00	458.00	163.00	---	621.00	762.00
	Inst	Ea	Sm	SB	5.3	3.00	504.00	216.00	---	720.00	892.00
High	Inst	Ea	Lg	SB	4.00	4.00	750.00	163.00	---	913.00	1100.00
	Inst	Ea	Sm	SB	5.3	3.00	826.00	216.00	---	1042.00	1260.00

Shower Curtain, full surround

Standard	Inst	Ea	Lg	SB	3.20	5.00	102.00	130.00	---	232.00	306.00
	Inst	Ea	Sm	SB	4.3	3.75	112.00	175.00	---	287.00	383.00
Average	Inst	Ea	Lg	SB	3.20	5.00	170.00	130.00	---	300.00	385.00
	Inst	Ea	Sm	SB	4.3	3.75	188.00	175.00	---	363.00	470.00
High	Inst	Ea	Lg	SB	3.20	5.00	245.00	130.00	---	375.00	471.00
	Inst	Ea	Sm	SB	4.3	3.75	270.00	175.00	---	445.00	564.00

[illegible]

Adjustments

Detach & Reset Bathub

Alcove / Recessed / Apron	Reset	Ea	Lg	SB	4.00	4.00	118.00	163.00	---	281.00	371.00
	Reset	Ea	Sm	SB	5.33	3.00	130.00	217.00	---	347.00	463.00
Drop-In / Built-In / Sunken	Reset	Ea	Lg	SB	5.33	3.00	118.00	217.00	---	335.00	449.00
	Reset	Ea	Sm	SB	7.11	2.25	130.00	289.00	---	419.00	568.00
Free-standing tub	Reset	Ea	Lg	SB	3.20	5.00	118.00	130.00	---	248.00	324.00
	Reset	Ea	Sm	SB	4.27	3.75	130.00	174.00	---	304.00	401.00

Remove Bathtub

Alcove / Recessed / Apron	Demo	Ea	Lg	SB	2.00	8.00	49.00	81.30	---	130.30	174.00
	Demo	Ea	Sm	SB	2.67	6.00	54.00	109.00	---	163.00	220.00
Drop-In / Built-In / Sunken	Demo	Ea	Lg	SB	2.67	6.00	73.50	109.00	---	182.50	242.00
	Demo	Ea	Sm	SB	3.56	4.50	81.00	145.00	---	226.00	303.00
Free-standing tub	Demo	Ea	Lg	SB	1.33	12.00	24.50	54.10	---	78.60	107.00
	Demo	Ea	Sm	SB	1.78	9.00	27.00	72.40	---	99.40	136.00

Install Rough-In

Bathtub	Inst	Ea	Lg	SB	10.0	1.60	343.00	407.00	---	750.00	984.00
	Inst	Ea	Sm	SB	13.3	1.20	378.00	541.00	---	919.00	1220.00

Install shower head w/mixer valve over tub, ADD

Open wall construction

Standard	Inst	Ea	Lg	SA	2.00	4.00	157.00	96.00	---	253.00	320.00
	Inst	Ea	Sm	SA	2.67	3.00	173.00	128.00	---	301.00	385.00
Average	Inst	Ea	Lg	SA	2.00	4.00	201.00	96.00	---	297.00	370.00
	Inst	Ea	Sm	SA	2.67	3.00	221.00	128.00	---	349.00	440.00
High	Inst	Ea	Lg	SA	2.00	4.00	284.00	96.00	---	380.00	466.00
	Inst	Ea	Sm	SA	2.67	3.00	313.00	128.00	---	441.00	546.00
Premium	Inst	Ea	Lg	SA	2.00	4.00	382.00	96.00	---	478.00	579.00
	Inst	Ea	Sm	SA	2.67	3.00	421.00	128.00	---	549.00	670.00

Closed wall construction

Standard	Inst	Ea	Lg	SA	4.00	2.00	181.00	192.00	---	373.00	487.00
	Inst	Ea	Sm	SA	5.33	1.50	200.00	256.00	---	456.00	601.00
Average	Inst	Ea	Lg	SA	4.00	2.00	225.00	192.00	---	417.00	538.00
	Inst	Ea	Sm	SA	5.33	1.50	248.00	256.00	---	504.00	657.00
High	Inst	Ea	Lg	SA	4.00	2.00	309.00	192.00	---	501.00	633.00
	Inst	Ea	Sm	SA	5.33	1.50	340.00	256.00	---	596.00	762.00
Premium	Inst	Ea	Lg	SA	4.00	2.00	407.00	192.00	---	599.00	746.00
	Inst	Ea	Sm	SA	5.33	1.50	448.00	256.00	---	704.00	886.00

Block, concrete. See Masonry, page 279

Brick. See Masonry, page 273

Cabinets

Top quality cabinets are built with the structural stability of fine furniture. Framing stock is kiln dried and a full 1" thick. Cabinets have backs, usually 5-ply $\frac{3}{16}$ "-thick plywood, with all backs and interiors finished. Frames should be constructed of hardwood with mortise and tenon joints; corner blocks should be used on all four corners of all base cabinets. Doors are usually of select $\frac{7}{16}$ " thick solid core construction using semi-concealed hinges. End panels are $\frac{1}{2}$ " thick and attached to frames with mortise and tenon joints, glued and pinned under pressure. Panels should also be dadoed to receive the tops and bottoms of wall cabinets. Shelves are adjustable with veneer faces and front edges. The hardware includes magnetic catches, heavy duty die cast pulls and hinges, and ball-bearing suspension system. The finish is scratch and stain resistant, including a first coat of hand-wiped stain, a sealer coat, and a synthetic varnish with plastic laminate characteristics.

Average quality cabinets feature hardwood frame construction with plywood backs and veneered plywood end panels. Joints are glued mortise and tenon. Doors are solid core attached with exposed self-closing hinges. Shelves are adjustable, and drawers ride on a ball-bearing side suspension glide system. The finish is usually three coats including stain, sealer, and a mar-resistant top coat for easy cleaning.

Economy quality cabinets feature pine construction with joints glued under pressure. Doors, drawer fronts, and side or end panels are constructed of either $\frac{1}{2}$ "-thick wood composition board or $\frac{1}{2}$ "-thick veneered pine. Face frames are $\frac{3}{4}$ "-thick wood composition board or $\frac{3}{4}$ "-thick pine. Features include adjustable shelves, hinge straps, and a three-point suspension system on drawers (using nylon rollers). The finish consists of a filler coat, base coat, and final polyester top coat.

Kitchen Cabinet Installation Procedure

To develop a layout plan, measure and write down the following:

1. Floor space.
2. Height and width of all walls.
3. Location of electrical outlets.
4. Size and position of doors, windows, and vents.
5. Location of any posts or pillars. Walls must be prepared if chair rails or baseboards are located where cabinets will be installed.
6. Common height and depth of base cabinets (including 1" for countertops) and wall cabinets.

When you plan the cabinet placement, consider this Rule of Thumb:

Allow between 4 $\frac{1}{2}$ ' and 5 $\frac{1}{2}$ ' of counter surface between the refrigerator and sink. Allow between 3' and 4' between the sink and range.

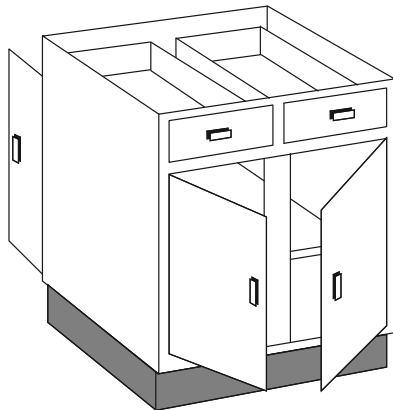
1. What do you have to fit into the available space?
2. Is there enough counter space on both sides of all appliances and sinks? The kitchen has three work centers, each with a major appliance as its hub, and each needing adequate counter space. They are:
 - a. Fresh and frozen food center — Refrigerator-freezer
 - b. Clean-up center — Sink with disposal-dishwasher
 - c. Cooking center — Range-oven
3. Will the sink workspace fit neatly in front of a window?
4. The kitchen triangle is the most efficient kitchen design; it means placing each major center at approximately equidistant triangle points. The ideal triangle is 22 feet total. It should never be less than 13 feet or more than 25 feet.
5. Where are the centers located? A logical working and walking pattern is from refrigerator to sink to range. The refrigerator should be at a triangle point near a door, to minimize the distance to bring in groceries and reduce traffic that could interfere with food preparation. The range should be at a triangle point near the serving and dining area. The sink is located between the two. The refrigerator should be located far enough from the range so that the heat will not affect the refrigerator's cooling efficiency.
6. Does the plan allow for lighting the range and sink work centers and for ventilating the range center?
7. Make sure that open doors (such as cabinet doors or entrance/exit doors) won't interfere with access to an appliance. To clear appliances and cabinets, a door opening should not be less than 30" from the corner, since such equipment is 24" to 28" in depth. A clearance of 48" is necessary when a range is next to a door.
8. Next locate the wall studs with a stud finder or hammer, since all cabinets attach to walls with screws, never nails. Also remove chair rails or baseboards where they conflict with cabinets.

Wall Cabinets: From the highest point on the floor, measure up approximately 84" to determine the top of wall cabinets. Using two #10 x 2 $\frac{1}{2}$ " wood

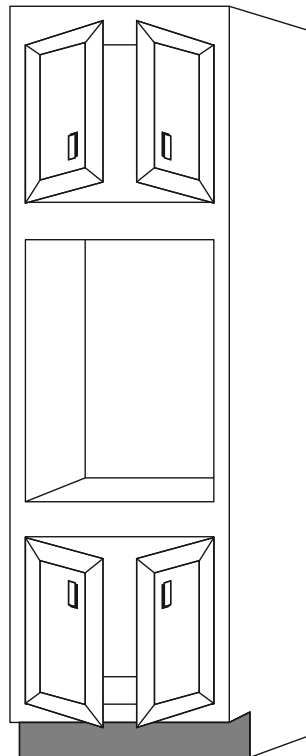
screws, drill through hanging strips built into the cabinet backs at top and bottom. Use a level to assure that cabinets and doors are aligned, then tighten the screws.

Base Cabinets: Start with a corner unit and a base unit on each side of the corner unit. Place this combination in the corner and work out from both

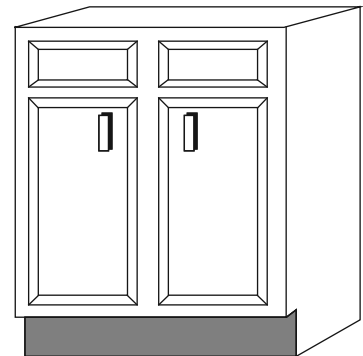
sides. Use “C” clamps when connecting cabinets to draw adjoining units into alignment. With the front face plumb and the unit level from front to back and across the front edge, attach the unit to wall studs by screwing through the hanging strips. To attach adjoining cabinets, drill two holes in the vertical side of one cabinet, inside the door (near top and bottom), and just into the stile of the adjoining cabinet.



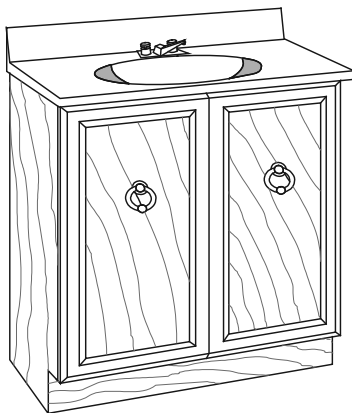
Island



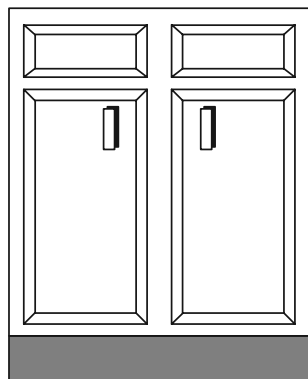
Oven cabinet



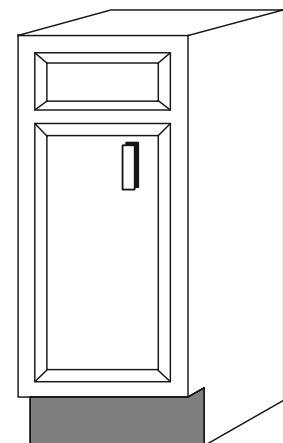
Base



Vanity



Sink front



Base

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Cabinets

Labor costs include hanging and fitting of cabinets

Kitchen

Demolish per cabinet; installed at base, wall, or peninsula

Demo	Ea	Lg	LB	.640	25.00	---	21.30	---	21.30	29.80
Demo	Ea	Sm	LB	1.07	15.00	---	35.60	---	35.60	49.90

Kitchen; all hardware included

Base cabinets, 35" H, 24" D; no tops

12" W, 1 door, 1 drawer

High quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	190.00	36.10	---	226.10	279.00
	Inst	Ea	Sm	MB	1.67	9.60	210.00	60.30	---	270.30	337.00
Good quality workmanship	Inst	Ea	Lg	MB	.667	24.00	146.00	24.10	---	170.10	210.00
	Inst	Ea	Sm	MB	1.11	14.40	161.00	40.10	---	201.10	250.00
Average quality workmanship	Inst	Ea	Lg	MB	.667	24.00	110.00	24.10	---	134.10	166.00
	Inst	Ea	Sm	MB	1.11	14.40	121.00	40.10	---	161.10	202.00

15" W, 1 door, 1 drawer

High quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	203.00	36.10	---	239.10	295.00
	Inst	Ea	Sm	MB	1.67	9.60	224.00	60.30	---	284.30	354.00
Good quality workmanship	Inst	Ea	Lg	MB	.667	24.00	156.00	24.10	---	180.10	221.00
	Inst	Ea	Sm	MB	1.11	14.40	172.00	40.10	---	212.10	263.00
Average quality workmanship	Inst	Ea	Lg	MB	.667	24.00	117.00	24.10	---	141.10	175.00
	Inst	Ea	Sm	MB	1.11	14.40	129.00	40.10	---	169.10	212.00

18" W, 1 door, 1 drawer

High quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	208.00	36.10	---	244.10	301.00
	Inst	Ea	Sm	MB	1.67	9.60	229.00	60.30	---	289.30	361.00
Good quality workmanship	Inst	Ea	Lg	MB	.667	24.00	160.00	24.10	---	184.10	226.00
	Inst	Ea	Sm	MB	1.11	14.40	176.00	40.10	---	216.10	268.00
Average quality workmanship	Inst	Ea	Lg	MB	.667	24.00	120.00	24.10	---	144.10	178.00
	Inst	Ea	Sm	MB	1.11	14.40	132.00	40.10	---	172.10	216.00

21" W, 1 door, 1 drawer

High quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	233.00	41.90	---	274.90	339.00
	Inst	Ea	Sm	MB	1.93	8.28	257.00	69.70	---	326.70	407.00
Good quality workmanship	Inst	Ea	Lg	MB	.741	21.60	179.00	26.80	---	205.80	253.00
	Inst	Ea	Sm	MB	1.23	12.96	198.00	44.40	---	242.40	300.00
Average quality workmanship	Inst	Ea	Lg	MB	.741	21.60	135.00	26.80	---	161.80	199.00
	Inst	Ea	Sm	MB	1.23	12.96	148.00	44.40	---	192.40	241.00

					Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
24" W, 1 door, 1 drawer											
High quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	330.00	41.90	---	371.90	455.00
	Inst	Ea	Sm	MB	1.93	8.28	363.00	69.70	---	432.70	535.00
Good quality workmanship	Inst	Ea	Lg	MB	.741	21.60	195.00	26.80	---	221.80	272.00
	Inst	Ea	Sm	MB	1.23	12.96	215.00	44.40	---	259.40	321.00
Average quality workmanship	Inst	Ea	Lg	MB	.741	21.60	123.00	26.80	---	149.80	186.00
	Inst	Ea	Sm	MB	1.23	12.96	136.00	44.40	---	180.40	226.00
30" W, 2 doors, 2 drawers											
High quality workmanship	Inst	Ea	Lg	MB	1.54	10.40	571.00	55.60	---	626.60	764.00
	Inst	Ea	Sm	MB	2.56	6.24	629.00	92.50	---	721.50	886.00
Good quality workmanship	Inst	Ea	Lg	MB	1.04	15.40	439.00	37.60	---	476.60	580.00
	Inst	Ea	Sm	MB	1.73	9.24	484.00	62.50	---	546.50	669.00
Average quality workmanship	Inst	Ea	Lg	MB	1.04	15.40	329.00	37.60	---	366.60	448.00
	Inst	Ea	Sm	MB	1.73	9.24	363.00	62.50	---	425.50	524.00
36" W, 2 doors, 2 drawers											
High quality workmanship	Inst	Ea	Lg	MB	1.54	10.40	603.00	55.60	---	658.60	803.00
	Inst	Ea	Sm	MB	2.56	6.24	665.00	92.50	---	757.50	929.00
Good quality workmanship	Inst	Ea	Lg	MB	1.04	15.40	477.00	37.60	---	514.60	626.00
	Inst	Ea	Sm	MB	1.73	9.24	526.00	62.50	---	588.50	720.00
Average quality workmanship	Inst	Ea	Lg	MB	1.04	15.40	358.00	37.60	---	395.60	483.00
	Inst	Ea	Sm	MB	1.73	9.24	394.00	62.50	---	456.50	562.00
42" W, 2 doors, 2 drawers											
High quality workmanship	Inst	Ea	Lg	MB	2.00	8.00	713.00	72.20	---	785.20	959.00
	Inst	Ea	Sm	MB	3.33	4.80	786.00	120.00	---	906.00	1110.00
Good quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	549.00	48.00	---	597.00	727.00
	Inst	Ea	Sm	MB	2.22	7.20	605.00	80.20	---	685.20	840.00
Average quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	412.00	48.00	---	460.00	562.00
	Inst	Ea	Sm	MB	2.22	7.20	454.00	80.20	---	534.20	658.00
48" W, 4 doors, 2 drawers											
High quality workmanship	Inst	Ea	Lg	MB	2.00	8.00	775.00	72.20	---	847.20	1030.00
	Inst	Ea	Sm	MB	3.33	4.80	855.00	120.00	---	975.00	1200.00
Good quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	597.00	48.00	---	645.00	784.00
	Inst	Ea	Sm	MB	2.22	7.20	657.00	80.20	---	737.20	903.00
Average quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	447.00	48.00	---	495.00	605.00
	Inst	Ea	Sm	MB	2.22	7.20	493.00	80.20	---	573.20	705.00

Base corner cabinet, blind, 35" H, 24" D, no tops**36" W, 1 door, 1 drawer**

High quality workmanship	Inst	Ea	Lg	MB	1.43	11.20	274.00	51.70	---	325.70	402.00
	Inst	Ea	Sm	MB	2.38	6.72	302.00	86.00	---	388.00	484.00
Good quality workmanship	Inst	Ea	Lg	MB	.988	16.20	211.00	35.70	---	246.70	303.00
	Inst	Ea	Sm	MB	1.65	9.72	232.00	59.60	---	291.60	363.00
Average quality workmanship	Inst	Ea	Lg	MB	.988	16.20	158.00	35.70	---	193.70	240.00
	Inst	Ea	Sm	MB	1.65	9.72	174.00	59.60	---	233.60	293.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

42" W, 1 door, 1 drawer

High quality workmanship	Inst	Ea	Lg	MB	1.82	8.80	455.00	65.70	---	520.70	639.00
	Inst	Ea	Sm	MB	3.03	5.28	501.00	109.00	---	610.00	757.00
Good quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	350.00	41.90	---	391.90	479.00
	Inst	Ea	Sm	MB	1.93	8.28	386.00	69.70	---	455.70	562.00
Average quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	262.00	41.90	---	303.90	374.00
	Inst	Ea	Sm	MB	1.93	8.28	289.00	69.70	---	358.70	446.00

36" x 36" (Lazy Susan)

High quality workmanship	Inst	Ea	Lg	MB	1.43	11.20	328.00	51.70	---	379.70	467.00
	Inst	Ea	Sm	MB	2.38	6.72	362.00	86.00	---	448.00	556.00
Good quality workmanship	Inst	Ea	Lg	MB	.988	16.20	253.00	35.70	---	288.70	354.00
	Inst	Ea	Sm	MB	1.65	9.72	278.00	59.60	---	337.60	419.00
Average quality workmanship	Inst	Ea	Lg	MB	.988	16.20	190.00	35.70	---	225.70	278.00
	Inst	Ea	Sm	MB	1.65	9.72	209.00	59.60	---	268.60	335.00

Base drawer cabinets, 35" H, 24" D

4 drawers, no tops

18" W

High quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	249.00	36.10	---	285.10	351.00
	Inst	Ea	Sm	MB	1.67	9.60	275.00	60.30	---	335.30	416.00
Good quality workmanship	Inst	Ea	Lg	MB	.667	24.00	192.00	24.10	---	216.10	264.00
	Inst	Ea	Sm	MB	1.11	14.40	211.00	40.10	---	251.10	311.00
Average quality workmanship	Inst	Ea	Lg	MB	.667	24.00	144.00	24.10	---	168.10	207.00
	Inst	Ea	Sm	MB	1.11	14.40	159.00	40.10	---	199.10	247.00

24" W

High quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	304.00	41.90	---	345.90	425.00
	Inst	Ea	Sm	MB	1.93	8.28	335.00	69.70	---	404.70	501.00
Good quality workmanship	Inst	Ea	Lg	MB	.741	21.60	234.00	26.80	---	260.80	319.00
	Inst	Ea	Sm	MB	1.23	12.96	258.00	44.40	---	302.40	373.00
Average quality workmanship	Inst	Ea	Lg	MB	.741	21.60	176.00	26.80	---	202.80	249.00
	Inst	Ea	Sm	MB	1.23	12.96	193.00	44.40	---	237.40	295.00

Utility closets, 81" to 85" H, 24" W, 24" D

High quality workmanship	Inst	Ea	Lg	MB	2.00	8.00	437.00	72.20	---	509.20	627.00
	Inst	Ea	Sm	MB	3.33	4.80	482.00	120.00	---	602.00	749.00
Good quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	338.00	48.00	---	386.00	474.00
	Inst	Ea	Sm	MB	2.22	7.20	373.00	80.20	---	453.20	561.00
Average quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	290.00	48.00	---	338.00	416.00
	Inst	Ea	Sm	MB	2.22	7.20	319.00	80.20	---	399.20	497.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Island cabinets

Island base cabinets, 35" H, 24" D

24" W, 1 door both sides

High quality workmanship	Inst	Ea	Lg	MB	1.23	13.00	682.00	44.40	---	726.40	882.00
	Inst	Ea	Sm	MB	2.05	7.80	752.00	74.10	---	826.10	1010.00
Good quality workmanship	Inst	Ea	Lg	MB	.821	19.50	525.00	29.70	---	554.70	672.00
	Inst	Ea	Sm	MB	1.37	11.70	578.00	49.50	---	627.50	764.00
Average quality workmanship	Inst	Ea	Lg	MB	.821	19.50	394.00	29.70	---	423.70	515.00
	Inst	Ea	Sm	MB	1.37	11.70	434.00	49.50	---	483.50	591.00

30" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.60	10.00	713.00	57.80	---	770.80	938.00
	Inst	Ea	Sm	MB	2.67	6.00	786.00	96.40	---	882.40	1080.00
Good quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	549.00	38.70	---	587.70	713.00
	Inst	Ea	Sm	MB	1.78	9.00	605.00	64.30	---	669.30	817.00
Average quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	412.00	38.70	---	450.70	549.00
	Inst	Ea	Sm	MB	1.78	9.00	454.00	64.30	---	518.30	636.00

36" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.60	10.00	744.00	57.80	---	801.80	975.00
	Inst	Ea	Sm	MB	2.67	6.00	820.00	96.40	---	916.40	1120.00
Good quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	573.00	38.70	---	611.70	742.00
	Inst	Ea	Sm	MB	1.78	9.00	631.00	64.30	---	695.30	849.00
Average quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	429.00	38.70	---	467.70	570.00
	Inst	Ea	Sm	MB	1.78	9.00	473.00	64.30	---	537.30	659.00

48" W, 4 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	2.13	7.50	775.00	76.90	---	851.90	1040.00
	Inst	Ea	Sm	MB	3.56	4.50	855.00	129.00	---	984.00	1210.00
Good quality workmanship	Inst	Ea	Lg	MB	1.39	11.50	597.00	50.20	---	647.20	787.00
	Inst	Ea	Sm	MB	2.32	6.90	657.00	83.80	---	740.80	908.00
Average quality workmanship	Inst	Ea	Lg	MB	1.39	11.50	447.00	50.20	---	497.20	608.00
	Inst	Ea	Sm	MB	2.32	6.90	493.00	83.80	---	576.80	711.00

Corner island base cabinets, 35" H, 24" D

42" W, 4 doors, 2 drawers

High quality workmanship	Inst	Ea	Lg	MB	2.13	7.50	837.00	76.90	---	913.90	1110.00
	Inst	Ea	Sm	MB	3.56	4.50	923.00	129.00	---	1052.00	1290.00
Good quality workmanship	Inst	Ea	Lg	MB	1.39	11.50	644.00	50.20	---	694.20	844.00
	Inst	Ea	Sm	MB	2.32	6.90	710.00	83.80	---	793.80	971.00
Average quality workmanship	Inst	Ea	Lg	MB	1.39	11.50	483.00	50.20	---	533.20	651.00
	Inst	Ea	Sm	MB	2.32	6.90	532.00	83.80	---	615.80	758.00

48" W, 6 doors, 2 drawers

High quality workmanship	Inst	Ea	Lg	MB	2.67	6.00	931.00	96.40	---	1027.40	1250.00
	Inst	Ea	Sm	MB	4.44	3.60	1030.00	160.00	---	1190.00	1460.00
Good quality workmanship	Inst	Ea	Lg	MB	1.78	9.00	716.00	64.30	---	780.30	950.00
	Inst	Ea	Sm	MB	2.96	5.40	789.00	107.00	---	896.00	1100.00
Average quality workmanship	Inst	Ea	Lg	MB	1.78	9.00	537.00	64.30	---	601.30	736.00
	Inst	Ea	Sm	MB	2.96	5.40	592.00	107.00	---	699.00	862.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Hanging corner island wall cabinets, 18" H, 24" D

18" W, 3 doors

High quality workmanship	Inst	Ea	Lg	MB	1.45	11.00	345.00	52.40	---	397.40	488.00
	Inst	Ea	Sm	MB	2.42	6.60	380.00	87.40	---	467.40	580.00
Good quality workmanship	Inst	Ea	Lg	MB	.970	16.50	265.00	35.00	---	300.00	368.00
	Inst	Ea	Sm	MB	1.62	9.90	292.00	58.50	---	350.50	434.00
Average quality workmanship	Inst	Ea	Lg	MB	.970	16.50	186.00	35.00	---	221.00	273.00
	Inst	Ea	Sm	MB	1.62	9.90	205.00	58.50	---	263.50	329.00

24" W, 3 doors

High quality workmanship	Inst	Ea	Lg	MB	1.45	11.00	358.00	52.40	---	410.40	504.00
	Inst	Ea	Sm	MB	2.42	6.60	395.00	87.40	---	482.40	598.00
Good quality workmanship	Inst	Ea	Lg	MB	.970	16.50	275.00	35.00	---	310.00	380.00
	Inst	Ea	Sm	MB	1.62	9.90	304.00	58.50	---	362.50	447.00
Average quality workmanship	Inst	Ea	Lg	MB	.970	16.50	193.00	35.00	---	228.00	281.00
	Inst	Ea	Sm	MB	1.62	9.90	213.00	58.50	---	271.50	338.00

30" W, 3 doors

High quality workmanship	Inst	Ea	Lg	MB	1.88	8.50	371.00	67.90	---	438.90	542.00
	Inst	Ea	Sm	MB	3.14	5.10	409.00	113.00	---	522.00	652.00
Good quality workmanship	Inst	Ea	Lg	MB	1.26	12.70	286.00	45.50	---	331.50	407.00
	Inst	Ea	Sm	MB	2.10	7.62	315.00	75.90	---	390.90	486.00
Average quality workmanship	Inst	Ea	Lg	MB	1.26	12.70	200.00	45.50	---	245.50	305.00
	Inst	Ea	Sm	MB	2.10	7.62	220.00	75.90	---	295.90	372.00

Hanging island cabinets, 18" H, 12" D

30" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.70	9.40	332.00	61.40	---	393.40	485.00
	Inst	Ea	Sm	MB	2.84	5.64	365.00	103.00	---	468.00	584.00
Good quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	255.00	41.20	---	296.20	365.00
	Inst	Ea	Sm	MB	1.90	8.40	281.00	68.60	---	349.60	435.00
Average quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	179.00	41.20	---	220.20	273.00
	Inst	Ea	Sm	MB	1.90	8.40	197.00	68.60	---	265.60	334.00

36" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.70	9.40	345.00	61.40	---	406.40	501.00
	Inst	Ea	Sm	MB	2.84	5.64	380.00	103.00	---	483.00	602.00
Good quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	265.00	41.20	---	306.20	377.00
	Inst	Ea	Sm	MB	1.90	8.40	292.00	68.60	---	360.60	448.00
Average quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	186.00	41.20	---	227.20	281.00
	Inst	Ea	Sm	MB	1.90	8.40	205.00	68.60	---	273.60	343.00

Hanging island cabinets, 24" H, 12" D

24" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.45	11.00	345.00	52.40	---	397.40	488.00
	Inst	Ea	Sm	MB	2.42	6.60	380.00	87.40	---	467.40	580.00
Good quality workmanship	Inst	Ea	Lg	MB	.970	16.50	265.00	35.00	---	300.00	368.00
	Inst	Ea	Sm	MB	1.62	9.90	292.00	58.50	---	350.50	434.00
Average quality workmanship	Inst	Ea	Lg	MB	.970	16.50	186.00	35.00	---	221.00	273.00
	Inst	Ea	Sm	MB	1.62	9.90	205.00	58.50	---	263.50	329.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

30" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.88	8.50	358.00	67.90	---	425.90	526.00
	Inst	Ea	Sm	MB	3.14	5.10	395.00	113.00	---	508.00	635.00
Good quality workmanship	Inst	Ea	Lg	MB	1.26	12.70	275.00	45.50	---	320.50	395.00
	Inst	Ea	Sm	MB	2.10	7.62	304.00	75.90	---	379.90	472.00
Average quality workmanship	Inst	Ea	Lg	MB	1.26	12.70	193.00	45.50	---	238.50	296.00
	Inst	Ea	Sm	MB	2.10	7.62	213.00	75.90	---	288.90	363.00

36" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	1.88	8.50	371.00	67.90	---	438.90	542.00
	Inst	Ea	Sm	MB	3.14	5.10	409.00	113.00	---	522.00	652.00
Good quality workmanship	Inst	Ea	Lg	MB	1.26	12.70	286.00	45.50	---	331.50	407.00
	Inst	Ea	Sm	MB	2.10	7.62	315.00	75.90	---	390.90	486.00
Average quality workmanship	Inst	Ea	Lg	MB	1.26	12.70	200.00	45.50	---	245.50	305.00
	Inst	Ea	Sm	MB	2.10	7.62	220.00	75.90	---	295.90	372.00

42" W, 2 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	2.46	6.50	451.00	88.90	---	539.90	667.00
	Inst	Ea	Sm	MB	4.10	3.90	497.00	148.00	---	645.00	807.00
Good quality workmanship	Inst	Ea	Lg	MB	1.63	9.80	347.00	58.90	---	405.90	500.00
	Inst	Ea	Sm	MB	2.72	5.88	382.00	98.30	---	480.30	598.00
Average quality workmanship	Inst	Ea	Lg	MB	1.63	9.80	243.00	58.90	---	301.90	375.00
	Inst	Ea	Sm	MB	2.72	5.88	268.00	98.30	---	366.30	461.00

48" W, 4 doors both sides

High quality workmanship	Inst	Ea	Lg	MB	2.46	6.50	531.00	88.90	---	619.90	763.00
	Inst	Ea	Sm	MB	4.10	3.90	585.00	148.00	---	733.00	912.00
Good quality workmanship	Inst	Ea	Lg	MB	1.63	9.80	408.00	58.90	---	466.90	573.00
	Inst	Ea	Sm	MB	2.72	5.88	450.00	98.30	---	548.30	679.00
Average quality workmanship	Inst	Ea	Lg	MB	1.63	9.80	286.00	58.90	---	344.90	426.00
	Inst	Ea	Sm	MB	2.72	5.88	315.00	98.30	---	413.30	517.00

Oven cabinets**81" to 85" H, 24" D, 27" W**

High quality workmanship	Inst	Ea	Lg	MB	2.00	8.00	788.00	72.20	---	860.20	1050.00
	Inst	Ea	Sm	MB	3.33	4.80	868.00	120.00	---	988.00	1210.00
Good quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	514.00	48.00	---	562.00	685.00
	Inst	Ea	Sm	MB	2.22	7.20	567.00	80.20	---	647.20	794.00
Average quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	318.00	48.00	---	366.00	449.00
	Inst	Ea	Sm	MB	2.22	7.20	350.00	80.20	---	430.20	534.00

Sink/range**Base cabinets, 35" H, 24" D, 2 doors, no tops included****30" W**

High quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	527.00	48.00	---	575.00	701.00
	Inst	Ea	Sm	MB	2.22	7.20	581.00	80.20	---	661.20	811.00
Good quality workmanship	Inst	Ea	Lg	MB	.889	18.00	406.00	32.10	---	438.10	532.00
	Inst	Ea	Sm	MB	1.48	10.80	447.00	53.50	---	500.50	612.00
Average quality workmanship	Inst	Ea	Lg	MB	.889	18.00	304.00	32.10	---	336.10	411.00
	Inst	Ea	Sm	MB	1.48	10.80	335.00	53.50	---	388.50	478.00

National Repair & Remodeling Estimator

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Unit	Day	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
36" W											
High quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	558.00	48.00	---	606.00	738.00
	Inst	Ea	Sm	MB	2.22	7.20	615.00	80.20	---	695.20	852.00
Good quality workmanship	Inst	Ea	Lg	MB	.889	18.00	429.00	32.10	---	461.10	561.00
	Inst	Ea	Sm	MB	1.48	10.80	473.00	53.50	---	526.50	644.00
Average quality workmanship	Inst	Ea	Lg	MB	.889	18.00	322.00	32.10	---	354.10	432.00
	Inst	Ea	Sm	MB	1.48	10.80	355.00	53.50	---	408.50	502.00
42" W											
High quality workmanship	Inst	Ea	Lg	MB	1.74	9.20	620.00	62.90	---	682.90	834.00
	Inst	Ea	Sm	MB	2.90	5.52	684.00	105.00	---	789.00	969.00
Good quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	477.00	41.90	---	518.90	632.00
	Inst	Ea	Sm	MB	1.93	8.28	526.00	69.70	---	595.70	730.00
Average quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	358.00	41.90	---	399.90	489.00
	Inst	Ea	Sm	MB	1.93	8.28	394.00	69.70	---	463.70	572.00
48" W											
High quality workmanship	Inst	Ea	Lg	MB	1.74	9.20	682.00	62.90	---	744.90	908.00
	Inst	Ea	Sm	MB	2.90	5.52	752.00	105.00	---	857.00	1050.00
Good quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	525.00	41.90	---	566.90	689.00
	Inst	Ea	Sm	MB	1.93	8.28	578.00	69.70	---	647.70	793.00
Average quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	394.00	41.90	---	435.90	532.00
	Inst	Ea	Sm	MB	1.93	8.28	434.00	69.70	---	503.70	620.00
Sink/range front cabinets, 35" H, 2 doors											
30" W											
High quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	372.00	41.90	---	413.90	506.00
	Inst	Ea	Sm	MB	1.93	8.28	410.00	69.70	---	479.70	591.00
Good quality workmanship	Inst	Ea	Lg	MB	.800	20.00	286.00	28.90	---	314.90	385.00
	Inst	Ea	Sm	MB	1.33	12.00	316.00	48.00	---	364.00	447.00
Average quality workmanship	Inst	Ea	Lg	MB	.800	20.00	215.00	28.90	---	243.90	299.00
	Inst	Ea	Sm	MB	1.33	12.00	237.00	48.00	---	285.00	352.00
36" W											
High quality workmanship	Inst	Ea	Lg	MB	1.16	13.80	403.00	41.90	---	444.90	543.00
	Inst	Ea	Sm	MB	1.93	8.28	444.00	69.70	---	513.70	632.00
Good quality workmanship	Inst	Ea	Lg	MB	.800	20.00	310.00	28.90	---	338.90	413.00
	Inst	Ea	Sm	MB	1.33	12.00	342.00	48.00	---	390.00	478.00
Average quality workmanship	Inst	Ea	Lg	MB	.800	20.00	233.00	28.90	---	261.90	320.00
	Inst	Ea	Sm	MB	1.33	12.00	256.00	48.00	---	304.00	376.00
42" W											
High quality workmanship	Inst	Ea	Lg	MB	1.51	10.60	434.00	54.50	---	488.50	599.00
	Inst	Ea	Sm	MB	2.52	6.36	479.00	91.00	---	570.00	704.00
Good quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	334.00	36.10	---	370.10	452.00
	Inst	Ea	Sm	MB	1.67	9.60	368.00	60.30	---	428.30	527.00
Average quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	251.00	36.10	---	287.10	352.00
	Inst	Ea	Sm	MB	1.67	9.60	276.00	60.30	---	336.30	417.00
48" W											
High quality workmanship	Inst	Ea	Lg	MB	1.51	10.60	465.00	54.50	---	519.50	636.00
	Inst	Ea	Sm	MB	2.52	6.36	513.00	91.00	---	604.00	745.00
Good quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	358.00	36.10	---	394.10	481.00
	Inst	Ea	Sm	MB	1.67	9.60	394.00	60.30	---	454.30	559.00
Average quality workmanship	Inst	Ea	Lg	MB	1.00	16.00	268.00	36.10	---	304.10	373.00
	Inst	Ea	Sm	MB	1.67	9.60	296.00	60.30	---	356.30	441.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Wall cabinets

15" H, 12" D, 2 doors, "over refrigerator" cabinets

30" W

High quality workmanship	Inst	Ea	Lg	MB	1.54	10.40	172.00	55.60	---	227.60	286.00
	Inst	Ea	Sm	MB	2.56	6.24	190.00	92.50	---	282.50	359.00
Good quality workmanship	Inst	Ea	Lg	MB	1.03	15.60	133.00	37.20	---	170.20	212.00
	Inst	Ea	Sm	MB	1.71	9.36	146.00	61.80	---	207.80	263.00
Average quality workmanship	Inst	Ea	Lg	MB	1.03	15.60	92.90	37.20	---	130.10	164.00
	Inst	Ea	Sm	MB	1.71	9.36	102.00	61.80	---	163.80	210.00

33" W

High quality workmanship	Inst	Ea	Lg	MB	1.54	10.40	186.00	55.60	---	241.60	302.00
	Inst	Ea	Sm	MB	2.56	6.24	205.00	92.50	---	297.50	377.00
Good quality workmanship	Inst	Ea	Lg	MB	1.03	15.60	143.00	37.20	---	180.20	224.00
	Inst	Ea	Sm	MB	1.71	9.36	157.00	61.80	---	218.80	277.00
Average quality workmanship	Inst	Ea	Lg	MB	1.03	15.60	100.00	37.20	---	137.20	173.00
	Inst	Ea	Sm	MB	1.71	9.36	110.00	61.80	---	171.80	220.00

36" W

High quality workmanship	Inst	Ea	Lg	MB	1.54	10.40	199.00	55.60	---	254.60	318.00
	Inst	Ea	Sm	MB	2.56	6.24	219.00	92.50	---	311.50	394.00
Good quality workmanship	Inst	Ea	Lg	MB	1.03	15.60	153.00	37.20	---	190.20	236.00
	Inst	Ea	Sm	MB	1.71	9.36	169.00	61.80	---	230.80	290.00
Average quality workmanship	Inst	Ea	Lg	MB	1.03	15.60	107.00	37.20	---	144.20	181.00
	Inst	Ea	Sm	MB	1.71	9.36	118.00	61.80	---	179.80	229.00

21" H, 12" D, "over range" cabinets

24" W, 1 door

High quality workmanship	Inst	Ea	Lg	MB	1.51	10.60	226.00	54.50	---	280.50	348.00
	Inst	Ea	Sm	MB	2.52	6.36	249.00	91.00	---	340.00	427.00
Good quality workmanship	Inst	Ea	Lg	MB	1.01	15.80	173.00	36.50	---	209.50	260.00
	Inst	Ea	Sm	MB	1.69	9.48	191.00	61.00	---	252.00	316.00
Average quality workmanship	Inst	Ea	Lg	MB	1.01	15.80	121.00	36.50	---	157.50	198.00
	Inst	Ea	Sm	MB	1.69	9.48	134.00	61.00	---	195.00	247.00

30" W, 2 doors

High quality workmanship	Inst	Ea	Lg	MB	1.51	10.60	239.00	54.50	---	293.50	364.00
	Inst	Ea	Sm	MB	2.52	6.36	263.00	91.00	---	354.00	445.00
Good quality workmanship	Inst	Ea	Lg	MB	1.01	15.80	184.00	36.50	---	220.50	272.00
	Inst	Ea	Sm	MB	1.69	9.48	202.00	61.00	---	263.00	330.00
Average quality workmanship	Inst	Ea	Lg	MB	1.01	15.80	129.00	36.50	---	165.50	206.00
	Inst	Ea	Sm	MB	1.69	9.48	142.00	61.00	---	203.00	257.00

33" W, 2 doors

High quality workmanship	Inst	Ea	Lg	MB	1.60	10.00	252.00	57.80	---	309.80	384.00
	Inst	Ea	Sm	MB	2.67	6.00	278.00	96.40	---	374.40	470.00
Good quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	194.00	38.70	---	232.70	288.00
	Inst	Ea	Sm	MB	1.78	9.00	214.00	64.30	---	278.30	348.00
Average quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	136.00	38.70	---	174.70	218.00
	Inst	Ea	Sm	MB	1.78	9.00	150.00	64.30	---	214.30	271.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
36" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	1.60	10.00	297.00	57.80	---	354.80	439.00
	Inst	Ea	Sm	MB	2.67	6.00	328.00	96.40	---	424.40	530.00
Good quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	204.00	38.70	---	242.70	300.00
	Inst	Ea	Sm	MB	1.78	9.00	225.00	64.30	---	289.30	361.00
Average quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	127.00	38.70	---	165.70	207.00
	Inst	Ea	Sm	MB	1.78	9.00	140.00	64.30	---	204.30	259.00
42" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	1.60	10.00	279.00	57.80	---	336.80	416.00
	Inst	Ea	Sm	MB	2.67	6.00	307.00	96.40	---	403.40	505.00
Good quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	214.00	38.70	---	252.70	312.00
	Inst	Ea	Sm	MB	1.78	9.00	236.00	64.30	---	300.30	375.00
Average quality workmanship	Inst	Ea	Lg	MB	1.07	15.00	150.00	38.70	---	188.70	235.00
	Inst	Ea	Sm	MB	1.78	9.00	165.00	64.30	---	229.30	290.00
48" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	2.00	8.00	292.00	72.20	---	364.20	453.00
	Inst	Ea	Sm	MB	3.33	4.80	322.00	120.00	---	442.00	557.00
Good quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	224.00	48.00	---	272.00	338.00
	Inst	Ea	Sm	MB	2.22	7.20	247.00	80.20	---	327.20	411.00
Average quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	157.00	48.00	---	205.00	257.00
	Inst	Ea	Sm	MB	2.22	7.20	173.00	80.20	---	253.20	322.00
30" H, 12" D, "standard wall" cabinets											
12" W, 1 door											
High quality workmanship	Inst	Ea	Lg	MB	1.18	13.60	172.00	42.60	---	214.60	267.00
	Inst	Ea	Sm	MB	1.96	8.16	190.00	70.80	---	260.80	328.00
Good quality workmanship	Inst	Ea	Lg	MB	.780	20.50	132.00	28.20	---	160.20	199.00
	Inst	Ea	Sm	MB	1.30	12.30	146.00	47.00	---	193.00	242.00
Average quality workmanship	Inst	Ea	Lg	MB	.780	20.50	92.60	28.20	---	120.80	151.00
	Inst	Ea	Sm	MB	1.30	12.30	102.00	47.00	---	149.00	189.00
15" W, 1 door											
High quality workmanship	Inst	Ea	Lg	MB	1.18	13.60	186.00	42.60	---	228.60	284.00
	Inst	Ea	Sm	MB	1.96	8.16	205.00	70.80	---	275.80	347.00
Good quality workmanship	Inst	Ea	Lg	MB	.780	20.50	143.00	28.20	---	171.20	212.00
	Inst	Ea	Sm	MB	1.30	12.30	158.00	47.00	---	205.00	256.00
Average quality workmanship	Inst	Ea	Lg	MB	.780	20.50	100.00	28.20	---	128.20	160.00
	Inst	Ea	Sm	MB	1.30	12.30	111.00	47.00	---	158.00	199.00
18" W, 1 door											
High quality workmanship	Inst	Ea	Lg	MB	1.18	13.60	201.00	42.60	---	243.60	301.00
	Inst	Ea	Sm	MB	1.96	8.16	221.00	70.80	---	291.80	366.00
Good quality workmanship	Inst	Ea	Lg	MB	.780	20.50	154.00	28.20	---	182.20	225.00
	Inst	Ea	Sm	MB	1.30	12.30	170.00	47.00	---	217.00	271.00
Average quality workmanship	Inst	Ea	Lg	MB	.780	20.50	108.00	28.20	---	136.20	170.00
	Inst	Ea	Sm	MB	1.30	12.30	119.00	47.00	---	166.00	210.00

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew Size	per	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
21" W, 1 door											
High quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	215.00	48.00	---	263.00	326.00
	Inst	Ea	Sm	MB	2.22	7.20	237.00	80.20	---	317.20	398.00
Good quality workmanship	Inst	Ea	Lg	MB	.889	18.00	165.00	32.10	---	197.10	244.00
	Inst	Ea	Sm	MB	1.48	10.80	182.00	53.50	---	235.50	295.00
Average quality workmanship	Inst	Ea	Lg	MB	.889	18.00	116.00	32.10	---	148.10	185.00
	Inst	Ea	Sm	MB	1.48	10.80	128.00	53.50	---	181.50	229.00
24" W, 1 door											
High quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	229.00	48.00	---	277.00	343.00
	Inst	Ea	Sm	MB	2.22	7.20	253.00	80.20	---	333.20	417.00
Good quality workmanship	Inst	Ea	Lg	MB	.889	18.00	176.00	32.10	---	208.10	257.00
	Inst	Ea	Sm	MB	1.48	10.80	194.00	53.50	---	247.50	309.00
Average quality workmanship	Inst	Ea	Lg	MB	.889	18.00	124.00	32.10	---	156.10	194.00
	Inst	Ea	Sm	MB	1.48	10.80	136.00	53.50	---	189.50	239.00
27" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	1.33	12.00	244.00	48.00	---	292.00	361.00
	Inst	Ea	Sm	MB	2.22	7.20	269.00	80.20	---	349.20	436.00
Good quality workmanship	Inst	Ea	Lg	MB	.889	18.00	187.00	32.10	---	219.10	271.00
	Inst	Ea	Sm	MB	1.48	10.80	207.00	53.50	---	260.50	324.00
Average quality workmanship	Inst	Ea	Lg	MB	.889	18.00	131.00	32.10	---	163.10	203.00
	Inst	Ea	Sm	MB	1.48	10.80	145.00	53.50	---	198.50	249.00
30" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	1.78	9.00	258.00	64.30	---	322.30	401.00
	Inst	Ea	Sm	MB	2.96	5.40	284.00	107.00	---	391.00	493.00
Good quality workmanship	Inst	Ea	Lg	MB	1.19	13.50	199.00	43.00	---	242.00	299.00
	Inst	Ea	Sm	MB	1.98	8.10	219.00	71.50	---	290.50	364.00
Average quality workmanship	Inst	Ea	Lg	MB	1.19	13.50	139.00	43.00	---	182.00	228.00
	Inst	Ea	Sm	MB	1.98	8.10	153.00	71.50	---	224.50	285.00
33" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	1.78	9.00	272.00	64.30	---	336.30	418.00
	Inst	Ea	Sm	MB	2.96	5.40	300.00	107.00	---	407.00	512.00
Good quality workmanship	Inst	Ea	Lg	MB	1.19	13.50	210.00	43.00	---	253.00	312.00
	Inst	Ea	Sm	MB	1.98	8.10	231.00	71.50	---	302.50	379.00
Average quality workmanship	Inst	Ea	Lg	MB	1.19	13.50	147.00	43.00	---	190.00	237.00
	Inst	Ea	Sm	MB	1.98	8.10	162.00	71.50	---	233.50	295.00
36" W, 2 doors											
High quality workmanship	Inst	Ea	Lg	MB	1.78	9.00	370.00	64.30	---	434.30	535.00
	Inst	Ea	Sm	MB	2.96	5.40	408.00	107.00	---	515.00	641.00
Good quality workmanship	Inst	Ea	Lg	MB	1.19	13.50	221.00	43.00	---	264.00	326.00
	Inst	Ea	Sm	MB	1.98	8.10	243.00	71.50	---	314.50	393.00
Average quality workmanship	Inst	Ea	Lg	MB	1.19	13.50	134.00	43.00	---	177.00	222.00
	Inst	Ea	Sm	MB	1.98	8.10	148.00	71.50	---	219.50	279.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
-------------	------	------	-----	-----------	--------------------	---------------------	---------------------	---------------------	---------------------	---------------------	--------------------

42" W, 2 doors

High quality workmanship	Inst	Ea	Lg	MB	2.29	7.00	344.00	82.70	---	426.70	530.00
	Inst	Ea	Sm	MB	3.81	4.20	379.00	138.00	---	517.00	650.00
Good quality workmanship	Inst	Ea	Lg	MB	1.52	10.50	265.00	54.90	---	319.90	396.00
	Inst	Ea	Sm	MB	2.54	6.30	292.00	91.70	---	383.70	480.00
Average quality workmanship	Inst	Ea	Lg	MB	1.52	10.50	185.00	54.90	---	239.90	300.00
	Inst	Ea	Sm	MB	2.54	6.30	204.00	91.70	---	295.70	375.00

48" W, 2 doors

High quality workmanship	Inst	Ea	Lg	MB	2.29	7.00	373.00	82.70	---	455.70	565.00
	Inst	Ea	Sm	MB	3.81	4.20	411.00	138.00	---	549.00	688.00
Good quality workmanship	Inst	Ea	Lg	MB	1.52	10.50	287.00	54.90	---	341.90	422.00
	Inst	Ea	Sm	MB	2.54	6.30	316.00	91.70	---	407.70	509.00
Average quality workmanship	Inst	Ea	Lg	MB	1.52	10.50	201.00	54.90	---	255.90	319.00
	Inst	Ea	Sm	MB	2.54	6.30	221.00	91.70	---	312.70	396.00

24" W, blind corner unit, 1 door

High quality workmanship	Inst	Ea	Lg	MB	1.68	9.50	264.00	60.70	---	324.70	403.00
	Inst	Ea	Sm	MB	2.81	5.70	291.00	102.00	---	393.00	493.00
Good quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	203.00	41.20	---	244.20	302.00
	Inst	Ea	Sm	MB	1.90	8.40	224.00	68.60	---	292.60	366.00
Average quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	142.00	41.20	---	183.20	229.00
	Inst	Ea	Sm	MB	1.90	8.40	157.00	68.60	---	225.60	285.00

24" x 24" angle corner unit, stationary

High quality workmanship	Inst	Ea	Lg	MB	1.68	9.50	287.00	60.70	---	347.70	430.00
	Inst	Ea	Sm	MB	2.81	5.70	316.00	102.00	---	418.00	523.00
Good quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	221.00	41.20	---	262.20	323.00
	Inst	Ea	Sm	MB	1.90	8.40	243.00	68.60	---	311.60	389.00
Average quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	154.00	41.20	---	195.20	244.00
	Inst	Ea	Sm	MB	1.90	8.40	170.00	68.60	---	238.60	302.00

24" x 24" angle corner unit, Lazy Susan

High quality workmanship	Inst	Ea	Lg	MB	1.68	9.50	321.00	60.70	---	381.70	472.00
	Inst	Ea	Sm	MB	2.81	5.70	354.00	102.00	---	456.00	569.00
Good quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	247.00	41.20	---	288.20	355.00
	Inst	Ea	Sm	MB	1.90	8.40	272.00	68.60	---	340.60	424.00
Average quality workmanship	Inst	Ea	Lg	MB	1.14	14.00	173.00	41.20	---	214.20	266.00
	Inst	Ea	Sm	MB	1.90	8.40	191.00	68.60	---	259.60	326.00

Vanity cabinets and sink top

Disconnect plumbing and remove to dumpster

Demo	Ea	Lg	LB	1.00	16.00	---	33.30	---	33.30	46.60
Demo	Ea	Sm	LB	1.67	9.60	---	55.60	---	55.60	77.90

Remove old unit, replace with new unit, reconnect plumbing

Reset	Ea	Lg	SB	2.29	7.00	---	93.10	---	93.10	135.00
Reset	Ea	Sm	SB	3.81	4.20	---	155.00	---	155.00	225.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Vanity units, with marble tops, good quality fittings and faucets; hardware, deluxe, finished models

Stained ash and birch primed composition construction Labor costs include fitting and hanging only of vanity units For rough-in costs, see Adjustments in this cabinets section, page 66

2-door units

20" x 16"

Ash	Inst	Ea	Lg	SB	5.00	3.20	319.00	203.00	---	522.00	677.00
	Inst	Ea	Sm	SB	8.33	1.92	351.00	339.00	---	690.00	912.00
Birch	Inst	Ea	Lg	SB	5.00	3.20	245.00	203.00	---	448.00	589.00
	Inst	Ea	Sm	SB	8.33	1.92	270.00	339.00	---	609.00	815.00
Composition construction	Inst	Ea	Lg	SB	5.00	3.20	172.00	203.00	---	375.00	501.00
	Inst	Ea	Sm	SB	8.33	1.92	189.00	339.00	---	528.00	718.00

25" x 19"

Ash	Inst	Ea	Lg	SB	5.00	3.20	336.00	203.00	---	539.00	698.00
	Inst	Ea	Sm	SB	8.33	1.92	371.00	339.00	---	710.00	936.00
Birch	Inst	Ea	Lg	SB	5.00	3.20	259.00	203.00	---	462.00	605.00
	Inst	Ea	Sm	SB	8.33	1.92	285.00	339.00	---	624.00	833.00
Composition construction	Inst	Ea	Lg	SB	5.00	3.20	181.00	203.00	---	384.00	512.00
	Inst	Ea	Sm	SB	8.33	1.92	200.00	339.00	---	539.00	731.00

31" x 19"

Ash	Inst	Ea	Lg	SB	5.00	3.20	417.00	203.00	---	620.00	795.00
	Inst	Ea	Sm	SB	8.33	1.92	459.00	339.00	---	798.00	1040.00
Birch	Inst	Ea	Lg	SB	5.00	3.20	272.00	203.00	---	475.00	622.00
	Inst	Ea	Sm	SB	8.33	1.92	300.00	339.00	---	639.00	851.00
Composition construction	Inst	Ea	Lg	SB	5.00	3.20	188.00	203.00	---	391.00	520.00
	Inst	Ea	Sm	SB	8.33	1.92	207.00	339.00	---	546.00	740.00

35" x 19"

Ash	Inst	Ea	Lg	SB	5.33	3.00	425.00	217.00	---	642.00	824.00
	Inst	Ea	Sm	SB	8.89	1.80	468.00	361.00	---	829.00	1090.00
Birch	Inst	Ea	Lg	SB	5.33	3.00	327.00	217.00	---	544.00	706.00
	Inst	Ea	Sm	SB	8.89	1.80	360.00	361.00	---	721.00	956.00
Composition construction	Inst	Ea	Lg	SB	5.33	3.00	229.00	217.00	---	446.00	589.00
	Inst	Ea	Sm	SB	8.89	1.80	252.00	361.00	---	613.00	827.00

For drawers in any above unit, ADD per drawer

	Inst	Ea	Lg	SB	---	---	49.00	---	---	49.00	58.80
	Inst	Ea	Sm	SB	---	---	54.00	---	---	54.00	64.80

2-door cutback units with 3 drawers

36" x 19"

Ash	Inst	Ea	Lg	SB	5.33	3.00	382.00	217.00	---	599.00	773.00
	Inst	Ea	Sm	SB	8.89	1.80	421.00	361.00	---	782.00	1030.00
Birch	Inst	Ea	Lg	SB	5.33	3.00	294.00	217.00	---	511.00	667.00
	Inst	Ea	Sm	SB	8.89	1.80	324.00	361.00	---	685.00	913.00
Composition construction	Inst	Ea	Lg	SB	5.33	3.00	206.00	217.00	---	423.00	561.00
	Inst	Ea	Sm	SB	8.89	1.80	227.00	361.00	---	588.00	796.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

49" x 19

Ash	Inst	Ea	Lg	SB	5.33	3.00	538.00	217.00	---	755.00	960.00
	Inst	Ea	Sm	SB	8.89	1.80	593.00	361.00	---	954.00	1240.00
Birch	Inst	Ea	Lg	SB	5.33	3.00	309.00	217.00	---	526.00	686.00
	Inst	Ea	Sm	SB	8.89	1.80	341.00	361.00	---	702.00	933.00
Composition construction	Inst	Ea	Lg	SB	5.33	3.00	185.00	217.00	---	402.00	536.00
	Inst	Ea	Sm	SB	8.89	1.80	203.00	361.00	---	564.00	768.00

60" x 19"

Ash	Inst	Ea	Lg	SB	6.67	2.40	483.00	271.00	---	754.00	972.00
	Inst	Ea	Sm	SB	11.1	1.44	532.00	451.00	---	983.00	1290.00
Birch	Inst	Ea	Lg	SB	6.67	2.40	371.00	271.00	---	642.00	839.00
	Inst	Ea	Sm	SB	11.1	1.44	409.00	451.00	---	860.00	1150.00
Composition construction	Inst	Ea	Lg	SB	6.67	2.40	260.00	271.00	---	531.00	705.00
	Inst	Ea	Sm	SB	11.1	1.44	286.00	451.00	---	737.00	998.00

Corner unit, 1 door

22" x 22"

Ash	Inst	Ea	Lg	SB	5.00	3.20	336.00	203.00	---	539.00	698.00
	Inst	Ea	Sm	SB	8.33	1.92	371.00	339.00	---	710.00	936.00
Birch	Inst	Ea	Lg	SB	5.00	3.20	259.00	203.00	---	462.00	605.00
	Inst	Ea	Sm	SB	8.33	1.92	285.00	339.00	---	624.00	833.00
Composition construction	Inst	Ea	Lg	SB	5.00	3.20	181.00	203.00	---	384.00	512.00
	Inst	Ea	Sm	SB	8.33	1.92	200.00	339.00	---	539.00	731.00

Adjustments

To remove and reset

Vanity units with tops	Reset	Ea	Lg	SA	3.33	2.40	---	160.00	---	160.00	232.00
	Reset	Ea	Sm	SA	5.56	1.44	---	267.00	---	267.00	387.00
Top only	Reset	Ea	Lg	SA	2.00	4.00	---	96.00	---	96.00	139.00
	Reset	Ea	Sm	SA	3.33	2.40	---	160.00	---	160.00	232.00

To install rough-in

	Inst	Ea	Lg	SB	4.00	4.00	---	163.00	---	163.00	236.00
	Inst	Ea	Sm	SB	6.67	2.40	---	271.00	---	271.00	393.00

Carports, Patio Covers, Window / Door Awnings, Sunroom / Garden Room
Costs per Unit includes hardware

Aluminum, prefabricated kit

Standard	Inst	SF	Lg	UB	0.08	200.00	2.55	3.72	---	6.27	8.22
	Inst	SF	Sm	UB	0.11	150.00	2.81	5.12	---	7.93	10.50
Good	Inst	SF	Lg	UB	0.08	200.00	4.25	3.72	---	7.97	10.20
	Inst	SF	Sm	UB	0.11	150.00	4.69	5.12	---	9.81	12.70

Standard	Inst	SF	Lg	UB	0.08	200.00	2.84	3.72	---	6.56	8.55
	Inst	SF	Sm	UB	0.11	150.00	3.13	5.12	---	8.25	10.90
Good	Inst	SF	Lg	UB	0.08	200.00	4.90	3.72	---	8.62	10.90
	Inst	SF	Sm	UB	0.11	150.00	5.40	5.12	---	10.52	13.50

Standard	Inst	SF	Lg	UB	0.08	200.00	3.33	3.72	---	7.05	9.12
	Inst	SF	Sm	UB	0.11	150.00	3.67	5.12	---	8.79	11.50
Good	Inst	SF	Lg	UB	0.08	200.00	5.62	3.72	---	9.34	11.80
	Inst	SF	Sm	UB	0.11	150.00	6.19	5.12	---	11.31	14.40

Light load, 20 psf	Inst	SF	Lg	UB	0.32	50.00	5.53	14.90	---	20.43	27.50
	Inst	SF	Sm	UB	0.43	37.50	6.09	20.00	---	26.09	35.40
Moderate load, 40 psf	Inst	SF	Lg	UB	0.32	50.00	7.29	14.90	---	22.19	29.50
	Inst	SF	Sm	UB	0.43	37.50	8.04	20.00	---	28.04	37.70
Heavy load, 60 psf	Inst	SF	Lg	UB	0.32	50.00	9.68	14.90	---	24.58	32.30
	Inst	SF	Sm	UB	0.43	37.50	10.70	20.00	---	30.70	40.70

Aluminum, prefabricated kit

No load (snow)	Inst	SF	Lg	UB	0.25	65.00	8.34	11.60	---	19.94	26.10
	Inst	SF	Sm	UB	0.33	48.75	9.19	15.40	---	24.59	32.40
Light load, 20 psf	Inst	SF	Lg	UB	0.25	65.00	9.08	11.60	---	20.68	27.00
	Inst	SF	Sm	UB	0.33	48.75	10.00	15.40	---	25.40	33.30
Moderate load, 30 psf	Inst	SF	Lg	UB	0.25	65.00	13.40	11.60	---	25.00	31.90
	Inst	SF	Sm	UB	0.33	48.75	14.80	15.40	---	30.20	38.80
Heavy load, 40 psf	Inst	SF	Lg	UB	0.25	65.00	16.10	11.60	---	27.70	35.00
	Inst	SF	Sm	UB	0.33	48.75	17.70	15.40	---	33.10	42.20

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Canvas with Aluminum framework, prefabricated kit

Fixed, attached, lean-to style, wall attachment and frame

Average	Inst	SF	Lg	UB	0.12	130.00	12.30	5.58	---	17.88	22.00
	Inst	SF	Sm	UB	0.16	97.50	13.50	7.44	---	20.94	26.10
High	Inst	SF	Lg	UB	0.12	130.00	16.70	5.58	---	22.28	27.20
	Inst	SF	Sm	UB	0.16	97.50	18.50	7.44	---	25.94	31.80

Retractable, attached, lean-to style, wall attachment and frame, no electric motor

Average	Inst	SF	Lg	UB	0.09	180.00	10.60	4.19	---	14.79	18.20
	Inst	SF	Sm	UB	0.12	135.00	11.70	5.58	---	17.28	21.40
High	Inst	SF	Lg	UB	0.09	180.00	14.50	4.19	---	18.69	22.60
	Inst	SF	Sm	UB	0.12	135.00	16.00	5.58	---	21.58	26.30
For electric motor, ADD	Inst	Ea	Lg	UE	5.00	4.00	535.00	205.00	---	740.00	906.00
	Inst	Ea	Sm	UE	6.67	3.00	590.00	273.00	---	863.00	1070.00

Fabric replacement

Average	Inst	SF	Lg	UD	0.10	160.00	4.20	3.99	---	8.19	10.50
	Inst	SF	Sm	UD	0.13	120.00	4.63	5.19	---	9.82	12.70
High	Inst	SF	Lg	UD	0.10	160.00	4.96	3.99	---	8.95	11.40
	Inst	SF	Sm	UD	0.13	120.00	5.46	5.19	---	10.65	13.70

Window / Door Awning**Metal, aluminum / steel, prefabricated**

Typical, up to 7' long with 2' projection

Average	Inst	LF	Lg	UB	1.33	12.00	49.30	61.90	---	111.20	145.00
	Inst	LF	Sm	UB	1.78	9.00	54.30	82.80	---	137.10	180.00
High	Inst	LF	Lg	UB	1.33	12.00	69.50	61.90	---	131.40	168.00
	Inst	LF	Sm	UB	1.78	9.00	76.60	82.80	---	159.40	206.00
Detach & Reset	Reset	LF	Lg	UB	2.00	8.00	---	93.10	---	93.10	132.00
	Reset	LF	Sm	UB	2.67	6.00	---	124.00	---	124.00	176.00

Oversize, greater than 7' long or 2' projection

Average	Inst	LF	Lg	UB	1.60	10.00	72.10	74.50	---	146.60	189.00
	Inst	LF	Sm	UB	2.13	7.50	79.50	99.10	---	178.60	232.00
High	Inst	LF	Lg	UB	1.60	10.00	118.00	74.50	---	192.50	241.00
	Inst	LF	Sm	UB	2.13	7.50	130.00	99.10	---	229.10	290.00
Detach & Reset	Reset	LF	Lg	UB	2.29	7.00	---	107.00	---	107.00	151.00
	Reset	LF	Sm	UB	3.05	5.25	---	142.00	---	142.00	202.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Canvas with Aluminum framework, prefabricated

Fixed, attached, lean-to style, wall attachment and frame

Average	Inst	LF	Lg	UB	4.00	4.00	107.00	186.00	---	293.00	387.00
	Inst	LF	Sm	UB	5.33	3.00	118.00	248.00	---	366.00	488.00

Retractable, attached, lean-to style, wall attachment and frame, no electric motor

Average	Inst	LF	Lg	UB	5.33	3.00	142.00	248.00	---	390.00	516.00
	Inst	LF	Sm	UB	7.11	2.25	157.00	331.00	---	488.00	650.00
For electric motor, ADD	Inst	Ea	Lg	UE	5.00	4.00	535.00	205.00	---	740.00	906.00
	Inst	Ea	Sm	UE	6.67	3.00	590.00	273.00	---	863.00	1070.00

Fabric replacement

Average	Inst	SF	Lg	UD	0.10	160.00	4.20	3.99	---	8.19	10.50
	Inst	SF	Sm	UD	0.13	120.00	4.63	5.19	---	9.82	12.70
High	Inst	SF	Lg	UD	0.10	160.00	4.96	3.99	---	8.95	11.40
	Inst	SF	Sm	UD	0.13	120.00	5.46	5.19	---	10.65	13.70

Sunroom / Garden Room, pre-fabricated kit

Prefabricated Kits

Up to 180 SF	Inst	SF	Lg	UB	0.53	30.00	107.00	24.70	---	131.70	158.00
	Inst	SF	Sm	UB	0.71	22.50	118.00	33.00	---	151.00	182.00
Greater than 180 SF	Inst	SF	Lg	UB	0.53	30.00	92.10	24.70	---	116.80	141.00
	Inst	SF	Sm	UB	0.71	22.50	102.00	33.00	---	135.00	164.00

Minimum Job Charge

	Inst	Ea	Lg	UB	10.67	1.50	---	496.00	---	496.00	705.00
	Inst	Ea	Sm	UB	14.16	1.13	---	659.00	---	659.00	936.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Carpet

Detach & reset operations

Detach and re-lay

Existing carpet only	Reset	SY	Lg	FA	.095	84.00	---	3.60	.30	3.90	5.34
	Reset	SY	Sm	FA	.159	50.40	---	6.03	.50	6.53	8.94
Existing carpet w/ new pad	Reset	SY	Lg	FA	.111	72.00	4.59	4.21	---	8.80	11.20
	Reset	SY	Sm	FA	.185	43.20	5.05	7.01	---	12.06	15.60

Remove operations

Carpet only, tacked	Demo	SY	Lg	FA	.035	228.0	---	1.33	---	1.33	1.86
	Demo	SY	Sm	FA	.058	136.8	---	2.20	---	2.20	3.08
Pad, minimal glue	Demo	SY	Lg	FA	.018	456.0	---	.68	---	.68	.96
	Demo	SY	Sm	FA	.029	273.6	---	1.10	---	1.10	1.54
Scrape up backing residue	Demo	SY	Lg	FA	.083	96.00	---	3.15	---	3.15	4.40
	Demo	SY	Sm	FA	.139	57.60	---	5.27	---	5.27	7.38

Replace operations

Price includes consultation, measurement, pad separate, carpet separate, installation using tack strips and hot melt tape on seams

Standard quality

Poly, thin pile density	Inst	SY	Lg	FA	.083	96.00	18.90	3.15	.26	22.31	26.40
	Inst	SY	Sm	FA	.139	57.60	20.80	5.27	.44	26.51	31.70
Loop pile, 20 oz.	Inst	SY	Lg	FA	.083	96.00	11.20	3.15	.26	14.61	17.50
	Inst	SY	Sm	FA	.139	57.60	12.30	5.27	.44	18.01	22.00
Cut pile, 24 oz.	Inst	SY	Lg	FA	.083	96.00	14.50	3.15	.26	17.91	21.30
	Inst	SY	Sm	FA	.139	57.60	15.90	5.27	.44	21.61	26.20
Pad	Inst	SY	Lg	FA	.018	456.0	3.09	.68	---	3.77	4.51
	Inst	SY	Sm	FA	.029	273.6	3.40	1.10	---	4.50	5.45

Average quality

Poly, medium pile density	Inst	SY	Lg	FA	.083	96.00	25.70	3.15	.26	29.11	34.20
	Inst	SY	Sm	FA	.139	57.60	28.30	5.27	.44	34.01	40.40
Loop pile, 26 oz.	Inst	SY	Lg	FA	.083	96.00	15.00	3.15	.26	18.41	21.90
	Inst	SY	Sm	FA	.139	57.60	16.50	5.27	.44	22.21	26.80
Cut pile, 36 oz.	Inst	SY	Lg	FA	.083	96.00	22.10	3.15	.26	25.51	30.10
	Inst	SY	Sm	FA	.139	57.60	24.40	5.27	.44	30.11	35.90
Wool	Inst	SY	Lg	FA	.083	96.00	28.10	3.15	.26	31.51	36.90
	Inst	SY	Sm	FA	.139	57.60	30.90	5.27	.44	36.61	43.40
Pad	Inst	SY	Lg	FA	.018	456.0	4.59	.68	---	5.27	6.23
	Inst	SY	Sm	FA	.029	273.6	5.05	1.10	---	6.15	7.35

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew Size	per Unit	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
High quality											
Nylon, medium pile density	Inst	SY	Lg	FA	.083	96.00	43.80	3.15	.26	47.21	55.10
	Inst	SY	Sm	FA	.139	57.60	48.30	5.27	.44	54.01	63.40
Loop pile, 36 oz.	Inst	SY	Lg	FA	.083	96.00	25.00	3.15	.26	28.41	33.40
	Inst	SY	Sm	FA	.139	57.60	27.50	5.27	.44	33.21	39.50
Cut pile, 46 oz.	Inst	SY	Lg	FA	.083	96.00	34.10	3.15	.26	37.51	43.80
	Inst	SY	Sm	FA	.139	57.60	37.50	5.27	.44	43.21	51.00
Wool	Inst	SY	Lg	FA	.083	96.00	56.50	3.15	.26	59.91	69.60
	Inst	SY	Sm	FA	.139	57.60	62.20	5.27	.44	67.91	79.40
Pad	Inst	SY	Lg	FA	.018	456.0	6.26	.68	---	6.94	8.15
	Inst	SY	Sm	FA	.029	273.6	6.90	1.10	---	8.00	9.47
Premium quality											
Nylon, thick pile density	Inst	SY	Lg	FA	.083	96.00	57.50	3.15	.26	60.91	70.80
	Inst	SY	Sm	FA	.139	57.60	63.40	5.27	.44	69.11	80.70
Cut pile, 54 oz.	Inst	SY	Lg	FA	.083	96.00	46.60	3.15	.26	50.01	58.20
	Inst	SY	Sm	FA	.139	57.60	51.30	5.27	.44	57.01	66.80
Wool	Inst	SY	Lg	FA	.083	96.00	107.00	3.15	.26	110.41	128.00
	Inst	SY	Sm	FA	.139	57.60	118.00	5.27	.44	123.71	143.00
Decorator, floral or design	Inst	SY	Lg	FA	.160	50.00	139.00	6.06	.50	145.56	169.00
	Inst	SY	Sm	FA	.267	30.00	153.00	10.10	.84	163.94	191.00
Pad	Inst	SY	Lg	FA	.018	456.0	10.10	.68	---	10.78	12.60
	Inst	SY	Sm	FA	.029	273.6	11.20	1.10	---	12.30	14.40
Steps											
Waterfall (wrap over nose)	Inst	Ea	Lg	FA	.100	80.00	11.60	3.79	---	15.39	18.60
	Inst	Ea	Sm	FA	.167	48.00	12.80	6.33	---	19.13	23.50
Tucked (under tread nose)	Inst	Ea	Lg	FA	.160	50.00	16.70	6.06	---	22.76	27.70
	Inst	Ea	Sm	FA	.267	30.00	18.40	10.10	---	28.50	35.30
Open Riser	Inst	Ea	Lg	FA	.267	30.00	29.10	10.10	---	39.20	47.70
	Inst	Ea	Sm	FA	.444	18.00	32.10	16.80	---	48.90	60.50
Cove or wall wrap											
4" high	Inst	LF	Lg	FA	.062	130.0	3.15	2.35	---	5.50	6.91
	Inst	LF	Sm	FA	.103	78.00	3.47	3.90	---	7.37	9.46
6" high	Inst	LF	Lg	FA	.067	120.0	3.99	2.54	---	6.53	8.14
	Inst	LF	Sm	FA	.111	72.00	4.40	4.21	---	8.61	11.00
8" high	Inst	LF	Lg	FA	.073	110.0	4.82	2.77	---	7.59	9.42
	Inst	LF	Sm	FA	.121	66.00	5.31	4.59	---	9.90	12.50

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Caulking

Material costs are typical costs for the listed bead diameters. Figures in parentheses, following bead diameter, indicate approximate coverage including 5% waste. Labor costs are per LF of bead length and assume good quality application on smooth to slightly irregular surfaces.

See also Adhesives, page 24

Multi-purpose caulk, good quality

1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.02	.74	---	.76	1.06
	Inst	LF	Sm	CA	.024	333.8	.02	.99	---	1.01	1.40
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.09	1.03	---	1.12	1.54
	Inst	LF	Sm	CA	.033	240.0	.10	1.35	---	1.45	2.01
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.19	1.23	---	1.42	1.94
	Inst	LF	Sm	CA	.040	198.8	.21	1.64	---	1.85	2.54
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	.33	1.35	---	1.68	2.28
	Inst	LF	Sm	CA	.044	180.0	.37	1.81	---	2.18	2.95

Butyl flex caulk, premium quality

1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.07	.74	---	.81	1.12
	Inst	LF	Sm	CA	.024	333.8	.08	.99	---	1.07	1.47
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.26	1.03	---	1.29	1.74
	Inst	LF	Sm	CA	.033	240.0	.29	1.35	---	1.64	2.23
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.59	1.23	---	1.82	2.40
	Inst	LF	Sm	CA	.040	198.8	.65	1.64	---	2.29	3.05
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.05	1.35	---	2.40	3.10
	Inst	LF	Sm	CA	.044	180.0	1.16	1.81	---	2.97	3.86

Latex, premium quality

1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.05	.74	---	.79	1.09
	Inst	LF	Sm	CA	.024	333.8	.05	.99	---	1.04	1.44
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.20	1.03	---	1.23	1.67
	Inst	LF	Sm	CA	.033	240.0	.22	1.35	---	1.57	2.15
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.43	1.23	---	1.66	2.22
	Inst	LF	Sm	CA	.040	198.8	.48	1.64	---	2.12	2.85
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	.76	1.35	---	2.11	2.77
	Inst	LF	Sm	CA	.044	180.0	.84	1.81	---	2.65	3.50

Latex caulk, good quality

1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.04	.74	---	.78	1.08
	Inst	LF	Sm	CA	.024	333.8	.04	.99	---	1.03	1.43
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.14	1.03	---	1.17	1.60
	Inst	LF	Sm	CA	.033	240.0	.15	1.35	---	1.50	2.07
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.32	1.23	---	1.55	2.09
	Inst	LF	Sm	CA	.040	198.8	.36	1.64	---	2.00	2.71
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	.57	1.35	---	1.92	2.55
	Inst	LF	Sm	CA	.044	180.0	.63	1.81	---	2.44	3.25

Caulking

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					
Oil base caulk, good quality											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.10	.74	---	.84	1.15
	Inst	LF	Sm	CA	.024	333.8	.11	.99	---	1.10	1.51
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.37	1.03	---	1.40	1.86
	Inst	LF	Sm	CA	.033	240.0	.41	1.35	---	1.76	2.37
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.84	1.23	---	2.07	2.69
	Inst	LF	Sm	CA	.040	198.8	.93	1.64	---	2.57	3.37
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.49	1.35	---	2.84	3.61
	Inst	LF	Sm	CA	.044	180.0	1.64	1.81	---	3.45	4.42
Oil base caulk, economy quality											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.07	.74	---	.81	1.12
	Inst	LF	Sm	CA	.024	333.8	.08	.99	---	1.07	1.47
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.26	1.03	---	1.29	1.74
	Inst	LF	Sm	CA	.033	240.0	.29	1.35	---	1.64	2.23
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.60	1.23	---	1.83	2.41
	Inst	LF	Sm	CA	.040	198.8	.66	1.64	---	2.30	3.06
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.06	1.35	---	2.41	3.12
	Inst	LF	Sm	CA	.044	180.0	1.17	1.81	---	2.98	3.87
Silicone caulk, good quality											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.04	.74	---	.78	1.08
	Inst	LF	Sm	CA	.024	333.8	.04	.99	---	1.03	1.43
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.14	1.03	---	1.17	1.60
	Inst	LF	Sm	CA	.033	240.0	.15	1.35	---	1.50	2.07
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.32	1.23	---	1.55	2.09
	Inst	LF	Sm	CA	.040	198.8	.36	1.64	---	2.00	2.71
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	.57	1.35	---	1.92	2.55
	Inst	LF	Sm	CA	.044	180.0	.63	1.81	---	2.44	3.25
Silicone caulk, premium quality											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.12	.74	---	.86	1.17
	Inst	LF	Sm	CA	.024	333.8	.13	.99	---	1.12	1.53
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.46	1.03	---	1.49	1.97
	Inst	LF	Sm	CA	.033	240.0	.51	1.35	---	1.86	2.48
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	1.05	1.23	---	2.28	2.93
	Inst	LF	Sm	CA	.040	198.8	1.16	1.64	---	2.80	3.63
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.85	1.35	---	3.20	4.02
	Inst	LF	Sm	CA	.044	180.0	2.04	1.81	---	3.85	4.88
Wet Area (Kitchen & Bath) caulk, white, siliconized											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.07	.74	---	.81	1.12
	Inst	LF	Sm	CA	.024	333.8	.08	.99	---	1.07	1.47
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.26	1.03	---	1.29	1.74
	Inst	LF	Sm	CA	.033	240.0	.29	1.35	---	1.64	2.23
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.60	1.23	---	1.83	2.41
	Inst	LF	Sm	CA	.040	198.8	.66	1.64	---	2.30	3.06
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.06	1.35	---	2.41	3.12
	Inst	LF	Sm	CA	.044	180.0	1.17	1.81	---	2.98	3.87

National Repair & Remodeling Estimator

				Man-	Crew	Avg	Avg	Avg	Avg	Avg	
				hours	Output	Mat'l	Labor	Equip	Total	Price	
				Crew	per	per	Unit	Unit	Unit	Unit	
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
Wet Area (Kitchen & Bath) anti-algae and mildew-resistant caulk, white or clear, siliconized											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.08	.74	---	.82	1.13
	Inst	LF	Sm	CA	.024	333.8	.09	.99	---	1.08	1.48
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.29	1.03	---	1.32	1.77
	Inst	LF	Sm	CA	.033	240.0	.32	1.35	---	1.67	2.26
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.66	1.23	---	1.89	2.48
	Inst	LF	Sm	CA	.040	198.8	.72	1.64	---	2.36	3.13
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.17	1.35	---	2.52	3.24
	Inst	LF	Sm	CA	.044	180.0	1.29	1.81	---	3.10	4.01
Elastomeric caulk, premium quality											
1/8" (11.6 LF/fluid oz.)	Inst	LF	Lg	CA	.018	445.0	.07	.74	---	.81	1.12
	Inst	LF	Sm	CA	.024	333.8	.08	.99	---	1.07	1.47
1/4" (2.91 LF/fluid oz.)	Inst	LF	Lg	CA	.025	320.0	.28	1.03	---	1.31	1.76
	Inst	LF	Sm	CA	.033	240.0	.31	1.35	---	1.66	2.25
3/8" (1.29 LF/fluid oz.)	Inst	LF	Lg	CA	.030	265.0	.64	1.23	---	1.87	2.46
	Inst	LF	Sm	CA	.040	198.8	.70	1.64	---	2.34	3.10
1/2" (.729 LF/fluid oz.)	Inst	LF	Lg	CA	.033	240.0	1.13	1.35	---	2.48	3.20
	Inst	LF	Sm	CA	.044	180.0	1.24	1.81	---	3.05	3.96
Add for irregular surfaces such as vertical masonry or lap siding											
	Inst		Lg	CA	---	---	5.0	---	---	5.0	---
	Inst		Sm	CA	---	---	5.0	---	---	5.0	---
Caulking gun, contractor grade, heavy duty, battery operated											
	Inst	Ea	Lg	CA	---	---	77.40	---	---	77.40	89.00
	Inst	Ea	Sm	CA	---	---	85.30	---	---	85.30	98.10
Caulking gun, heavy duty											
	Inst	Ea	Lg	CA	---	---	17.60	---	---	17.60	20.30
	Inst	Ea	Sm	CA	---	---	19.40	---	---	19.40	22.30
Caulking gun, ratchet, good											
	Inst	Ea	Lg	CA	---	---	10.80	---	---	10.80	12.40
	Inst	Ea	Sm	CA	---	---	11.90	---	---	11.90	13.60

Ceramic tile

1. **Dimensions.** There are many sizes of ceramic tile. Only $4\frac{1}{4}" \times 4\frac{1}{4}"$ and $1" \times 1"$ will be discussed here.

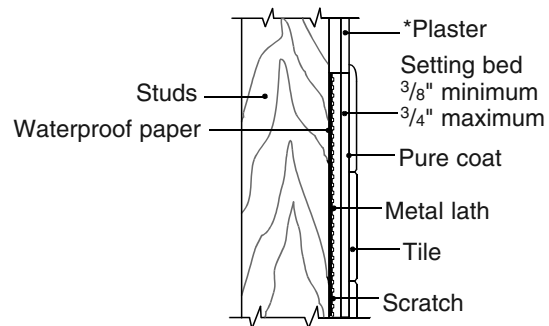
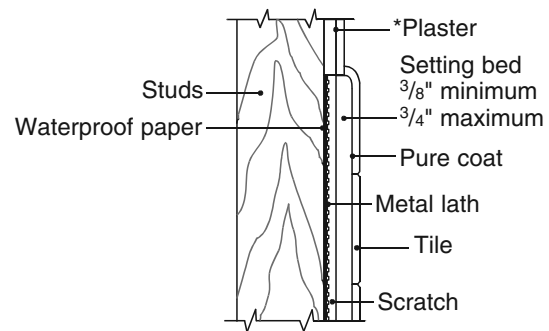
- a. $4\frac{1}{4}" \times 4\frac{1}{4}"$ tile is furnished both unmounted and back-mounted. Back-mounted tile are usually furnished in sheets of 12 tile.
- b. $1" \times 1"$ mosaic tile is furnished face-mounted and back-mounted in sheets; normally, $2'-0" \times 1'-0"$.

2. **Installation.** There are three methods:

- a. Conventional, which uses portland cement, sand and wet tile grout.
- b. Dry-set, which uses dry-set mix and dry tile grout mix.
- c. Organic adhesive, which uses adhesive and dry tile grout mix.

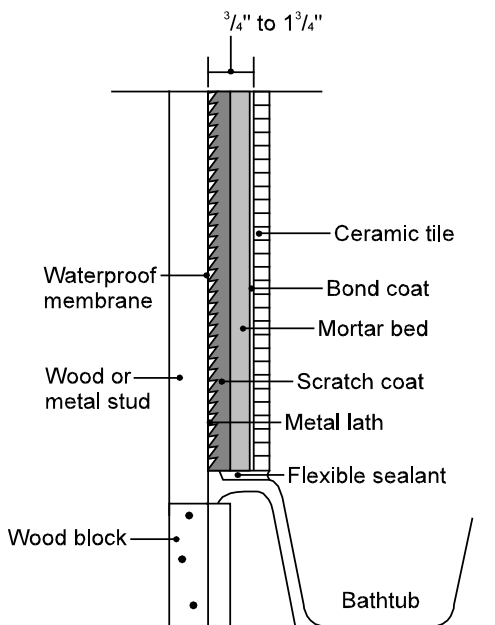
The conventional method is the most expensive and is used less frequently than the other methods.

3. **Estimating Technique.** For tile, determine the area and add 5% to 10% for waste. For cove, base or trim, determine the length in linear feet and add 5% to 10% for waste.



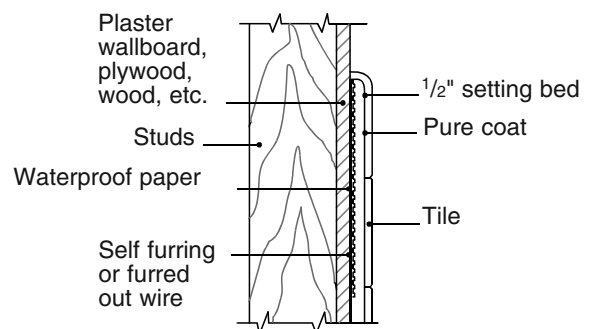
*This installation would be similar if wall finish above tile wainscot were of other material such as wallboard, plywood, etc.

Courtesy: Ceramic Tile Institute of America
700 N. Virgil Ave., Ste 300, Los Angeles, CA 90029



Cross section of bathtub wall using cement mortar

Wood or steel construction with plaster above tile wainscot



Wood or steel construction with solid covered backing

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Ceramic tile

Countertop / Backsplash

Adhesive / Mastic

1" x 1" or similar	Inst	SF	Lg	TB	.229	70.00	8.73	7.94	---	16.67	21.30
	Inst	SF	Sm	TB	.381	42.00	9.62	13.20	---	22.82	29.80
4-1/4" x 4-1/4" or similar	Inst	SF	Lg	TB	.200	80.00	7.30	6.94	---	14.24	18.20
	Inst	SF	Sm	TB	.333	48.00	8.05	11.60	---	19.65	25.70

Cove/base

Adhesive / Mastic

4-1/4" x 4-1/4" or similar	Inst	LF	Lg	TB	.200	80.00	6.99	6.94	---	13.93	17.90
	Inst	LF	Sm	TB	.333	48.00	7.70	11.60	---	19.30	25.30
6" x 4-1/4" or similar	Inst	LF	Lg	TB	.168	95.00	7.73	5.83	---	13.56	17.20
	Inst	LF	Sm	TB	.281	57.00	8.52	9.75	---	18.27	23.60

Conventional mortar

4-1/4" x 4-1/4" or similar	Inst	LF	Lg	TB	.356	45.00	6.94	12.40	---	19.34	25.50
	Inst	LF	Sm	TB	.593	27.00	7.65	20.60	---	28.25	38.00
6" x 4-1/4" or similar	Inst	LF	Lg	TB	.320	50.00	7.67	11.10	---	18.77	24.60
	Inst	LF	Sm	TB	.533	30.00	8.46	18.50	---	26.96	36.00

Thinset / Dry-set

4-1/4" x 4-1/4" or similar	Inst	LF	Lg	TB	.246	65.00	6.87	8.53	---	15.40	20.00
	Inst	LF	Sm	TB	.410	39.00	7.57	14.20	---	21.77	28.90
6" x 4-1/4" or similar	Inst	LF	Lg	TB	.213	75.00	7.58	7.39	---	14.97	19.20
	Inst	LF	Sm	TB	.356	45.00	8.35	12.40	---	20.75	27.10

Floors

1-1/2" x 1-1/2"

Adhesive or Thinset / Dry-set	Demo	SF	Lg	LB	.029	550.0	---	.97	---	.97	1.35
	Demo	SF	Sm	LB	.048	330.0	---	1.60	---	1.60	2.24
Conventional mortar	Demo	SF	Lg	LB	.034	475.0	---	1.13	---	1.13	1.59
	Demo	SF	Sm	LB	.056	285.0	---	1.87	---	1.87	2.61

Adhesive / Mastic

1-1/2" x 1-1/2" or similar	Inst	SF	Lg	TB	.133	120.0	8.73	4.61	---	13.34	16.60
	Inst	SF	Sm	TB	.222	72.00	9.62	7.70	---	17.32	22.00
4-1/4" x 4-1/4" or similar	Inst	SF	Lg	TB	.123	130.0	7.30	4.27	---	11.57	14.50
	Inst	SF	Sm	TB	.205	78.00	8.05	7.11	---	15.16	19.40

Conventional mortar

1-1/2" x 1-1/2" or similar	Inst	SF	Lg	TB	.267	60.00	8.59	9.26	---	17.85	23.00
	Inst	SF	Sm	TB	.444	36.00	9.47	15.40	---	24.87	32.80
4-1/4" x 4-1/4" or similar	Inst	SF	Lg	TB	.229	70.00	7.17	7.94	---	15.11	19.50
	Inst	SF	Sm	TB	.381	42.00	7.91	13.20	---	21.11	27.90

Thinset / Dry-set

1-1/2" x 1-1/2" or similar	Inst	SF	Lg	TB	.168	95.00	8.42	5.83	---	14.25	18.00
	Inst	SF	Sm	TB	.281	57.00	9.28	9.75	---	19.03	24.50
4-1/4" x 4-1/4" or similar	Inst	SF	Lg	TB	.152	105.0	6.99	5.27	---	12.26	15.50
	Inst	SF	Sm	TB	.254	63.00	7.70	8.81	---	16.51	21.40

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Wainscot cap

Adhesive / Mastic

2" x 6" or similar	Inst	LF	Lg	TB	.133	120.0	9.82	4.61	---	14.43	17.80
	Inst	LF	Sm	TB	.222	72.00	10.80	7.70	---	18.50	23.40

Conventional mortar

2" x 6" or similar	Inst	LF	Lg	TB	.213	75.00	9.79	7.39	---	17.18	21.80
	Inst	LF	Sm	TB	.356	45.00	10.80	12.40	---	23.20	29.90

Thinset / Dry-set

2" x 6" or similar	Inst	LF	Lg	TB	.160	100.0	9.76	5.55	---	15.31	19.10
	Inst	LF	Sm	TB	.267	60.00	10.80	9.26	---	20.06	25.50

Walls, 1-1/2" x 1-1/2" or 4-1/4" x 4-1/4"

Adhesive or Thinset / Dry-set

	Demo	SF	Lg	LB	.033	480.0	---	1.10	---	1.10	1.54
	Demo	SF	Sm	LB	.056	288.0	---	1.87	---	1.87	2.61

Conventional mortar

	Demo	SF	Lg	LB	.040	400.0	---	1.33	---	1.33	1.87
	Demo	SF	Sm	LB	.067	240.0	---	2.23	---	2.23	3.12

Adhesive / Mastic

1-1/2" x 1-1/2"	Inst	SF	Lg	TB	.160	100.0	8.73	5.55	---	14.28	17.90
	Inst	SF	Sm	TB	.267	60.00	9.62	9.26	---	18.88	24.20
4-1/4" x 4-1/4"	Inst	SF	Lg	TB	.145	110.0	7.30	5.03	---	12.33	15.50
	Inst	SF	Sm	TB	.242	66.00	8.05	8.39	---	16.44	21.20

Conventional mortar

1-1/2" x 1-1/2"	Inst	SF	Lg	TB	.320	50.00	8.59	11.10	---	19.69	25.60
	Inst	SF	Sm	TB	.533	30.00	9.47	18.50	---	27.97	37.10
4-1/4" x 4-1/4"	Inst	SF	Lg	TB	.267	60.00	7.17	9.26	---	16.43	21.40
	Inst	SF	Sm	TB	.444	36.00	7.91	15.40	---	23.31	31.00

Thinset / Dry-set

1-1/2" x 1-1/2"	Inst	SF	Lg	TB	.200	80.00	8.42	6.94	---	15.36	19.50
	Inst	SF	Sm	TB	.333	48.00	9.28	11.60	---	20.88	27.10
4-1/4" x 4-1/4"	Inst	SF	Lg	TB	.178	90.00	6.99	6.17	---	13.16	16.80
	Inst	SF	Sm	TB	.296	54.00	7.70	10.30	---	18.00	23.40

Related Materials

Cement backer board

1/4" thick	Inst	SF	Lg	TB	.017	960.0	.77	.59	---	1.36	1.72
	Inst	SF	Sm	TB	.028	576.0	.96	.97	---	1.93	2.48
1/2" thick	Inst	SF	Lg	TB	.019	864.0	.83	.66	---	1.49	1.89
	Inst	SF	Sm	TB	.031	518.4	1.05	1.08	---	2.13	2.73

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Closet door systems

Labor costs include hanging and fitting of doors and hardware

Bi-folding units

Includes hardware and pine fascia trim

Unfinished

Birch, flush face, 1-3/8" T, hollow core

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	128.00	65.70	---	193.70	239.00
	Inst	Set	Sm	2C	2.46	6.50	141.00	101.00	---	242.00	303.00
2'-6" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	142.00	65.70	---	207.70	255.00
	Inst	Set	Sm	2C	2.46	6.50	156.00	101.00	---	257.00	321.00
3'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	167.00	65.70	---	232.70	284.00
	Inst	Set	Sm	2C	2.46	6.50	184.00	101.00	---	285.00	353.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	255.00	82.10	---	337.10	408.00
	Inst	Set	Sm	2C	3.08	5.20	281.00	126.00	---	407.00	500.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	283.00	82.10	---	365.10	441.00
	Inst	Set	Sm	2C	3.08	5.20	312.00	126.00	---	438.00	536.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	334.00	82.10	---	416.10	500.00
	Inst	Set	Sm	2C	3.08	5.20	369.00	126.00	---	495.00	601.00
4'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	306.00	82.10	---	388.10	467.00
	Inst	Set	Sm	2C	3.08	5.20	337.00	126.00	---	463.00	565.00
6'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	340.00	82.10	---	422.10	506.00
	Inst	Set	Sm	2C	3.08	5.20	375.00	126.00	---	501.00	608.00
8'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	401.00	82.10	---	483.10	576.00
	Inst	Set	Sm	2C	3.08	5.20	442.00	126.00	---	568.00	686.00

Lauan, flush face, 1-3/8" T, hollow core

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	76.20	65.70	---	141.90	180.00
	Inst	Set	Sm	2C	2.46	6.50	84.00	101.00	---	185.00	238.00
2'-6" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	84.70	65.70	---	150.40	189.00
	Inst	Set	Sm	2C	2.46	6.50	93.30	101.00	---	194.30	249.00
3'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	100.00	65.70	---	165.70	207.00
	Inst	Set	Sm	2C	2.46	6.50	110.00	101.00	---	211.00	268.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	152.00	82.10	---	234.10	290.00
	Inst	Set	Sm	2C	3.08	5.20	168.00	126.00	---	294.00	370.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	169.00	82.10	---	251.10	310.00
	Inst	Set	Sm	2C	3.08	5.20	187.00	126.00	---	313.00	392.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	200.00	82.10	---	282.10	345.00
	Inst	Set	Sm	2C	3.08	5.20	220.00	126.00	---	346.00	430.00
4'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	183.00	82.10	---	265.10	325.00
	Inst	Set	Sm	2C	3.08	5.20	202.00	126.00	---	328.00	409.00
6'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	203.00	82.10	---	285.10	349.00
	Inst	Set	Sm	2C	3.08	5.20	224.00	126.00	---	350.00	435.00
8'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	240.00	82.10	---	322.10	391.00
	Inst	Set	Sm	2C	3.08	5.20	264.00	126.00	---	390.00	481.00

Closet door systems, bi-folding units

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P
Ponderosa pine, half louver raised panel, 1-3/8" T, solid core											
2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	209.00	65.70	---	274.70	332.00
	Inst	Set	Sm	2C	2.46	6.50	230.00	101.00	---	331.00	406.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	418.00	82.10	---	500.10	596.00
	Inst	Set	Sm	2C	3.08	5.20	461.00	126.00	---	587.00	707.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	493.00	82.10	---	575.10	682.00
	Inst	Set	Sm	2C	3.08	5.20	543.00	126.00	---	669.00	802.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	582.00	82.10	---	664.10	784.00
	Inst	Set	Sm	2C	3.08	5.20	641.00	126.00	---	767.00	914.00
Ponderosa pine, full louver, 1-3/8" T, solid core											
2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	174.00	65.70	---	239.70	292.00
	Inst	Set	Sm	2C	2.46	6.50	192.00	101.00	---	293.00	362.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	349.00	82.10	---	431.10	516.00
	Inst	Set	Sm	2C	3.08	5.20	384.00	126.00	---	510.00	619.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	412.00	82.10	---	494.10	588.00
	Inst	Set	Sm	2C	3.08	5.20	454.00	126.00	---	580.00	699.00
Colonist style, raised panel, 1-3/8" T, hollow core											
2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	99.70	65.70	---	165.40	207.00
	Inst	Set	Sm	2C	2.46	6.50	110.00	101.00	---	211.00	268.00
2'-6" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	111.00	65.70	---	176.70	219.00
	Inst	Set	Sm	2C	2.46	6.50	122.00	101.00	---	223.00	282.00
3'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	131.00	65.70	---	196.70	242.00
	Inst	Set	Sm	2C	2.46	6.50	144.00	101.00	---	245.00	307.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	199.00	82.10	---	281.10	344.00
	Inst	Set	Sm	2C	3.08	5.20	220.00	126.00	---	346.00	430.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	222.00	82.10	---	304.10	370.00
	Inst	Set	Sm	2C	3.08	5.20	244.00	126.00	---	370.00	458.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	262.00	82.10	---	344.10	416.00
	Inst	Set	Sm	2C	3.08	5.20	288.00	126.00	---	414.00	509.00
4'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	239.00	82.10	---	321.10	390.00
	Inst	Set	Sm	2C	3.08	5.20	264.00	126.00	---	390.00	480.00
6'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	266.00	82.10	---	348.10	421.00
	Inst	Set	Sm	2C	3.08	5.20	293.00	126.00	---	419.00	514.00
8'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	314.00	82.10	---	396.10	476.00
	Inst	Set	Sm	2C	3.08	5.20	346.00	126.00	---	472.00	575.00
Ash, flush face, 1-3/8" T, hollow core											
2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	254.00	65.70	---	319.70	384.00
	Inst	Set	Sm	2C	2.46	6.50	280.00	101.00	---	381.00	463.00
2'-6" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	282.00	65.70	---	347.70	417.00
	Inst	Set	Sm	2C	2.46	6.50	311.00	101.00	---	412.00	499.00
3'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	333.00	65.70	---	398.70	475.00
	Inst	Set	Sm	2C	2.46	6.50	367.00	101.00	---	468.00	564.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	508.00	82.10	---	590.10	699.00
	Inst	Set	Sm	2C	3.08	5.20	560.00	126.00	---	686.00	821.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	565.00	82.10	---	647.10	764.00
	Inst	Set	Sm	2C	3.08	5.20	622.00	126.00	---	748.00	893.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	666.00	82.10	---	748.10	881.00
	Inst	Set	Sm	2C	3.08	5.20	734.00	126.00	---	860.00	1020.00
4'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	610.00	82.10	---	692.10	816.00
	Inst	Set	Sm	2C	3.08	5.20	672.00	126.00	---	798.00	950.00
6'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	678.00	82.10	---	760.10	894.00
	Inst	Set	Sm	2C	3.08	5.20	747.00	126.00	---	873.00	1040.00
8'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	800.00	82.10	---	882.10	1030.00
	Inst	Set	Sm	2C	3.08	5.20	881.00	126.00	---	1007.00	1190.00

Mirrored

Standard quality

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	211.00	65.70	---	276.70	334.00
	Inst	Set	Sm	2C	2.46	6.50	232.00	101.00	---	333.00	409.00
2'-6" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	234.00	65.70	---	299.70	361.00
	Inst	Set	Sm	2C	2.46	6.50	258.00	101.00	---	359.00	438.00
3'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	276.00	65.70	---	341.70	410.00
	Inst	Set	Sm	2C	2.46	6.50	305.00	101.00	---	406.00	492.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	422.00	82.10	---	504.10	600.00
	Inst	Set	Sm	2C	3.08	5.20	465.00	126.00	---	591.00	712.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	469.00	82.10	---	551.10	654.00
	Inst	Set	Sm	2C	3.08	5.20	516.00	126.00	---	642.00	771.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	553.00	82.10	---	635.10	751.00
	Inst	Set	Sm	2C	3.08	5.20	609.00	126.00	---	735.00	878.00
4'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	506.00	82.10	---	588.10	697.00
	Inst	Set	Sm	2C	3.08	5.20	558.00	126.00	---	684.00	818.00
6'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	562.00	82.10	---	644.10	762.00
	Inst	Set	Sm	2C	3.08	5.20	620.00	126.00	---	746.00	890.00
8'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	664.00	82.10	---	746.10	878.00
	Inst	Set	Sm	2C	3.08	5.20	731.00	126.00	---	857.00	1020.00

Premium quality

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	358.00	65.70	---	423.70	503.00
	Inst	Set	Sm	2C	2.46	6.50	394.00	101.00	---	495.00	595.00
2'-6" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	397.00	65.70	---	462.70	549.00
	Inst	Set	Sm	2C	2.46	6.50	438.00	101.00	---	539.00	645.00
3'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	469.00	65.70	---	534.70	631.00
	Inst	Set	Sm	2C	2.46	6.50	517.00	101.00	---	618.00	736.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	715.00	82.10	---	797.10	938.00
	Inst	Set	Sm	2C	3.08	5.20	788.00	126.00	---	914.00	1080.00

Closet door systems, bi-folding units

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	795.00	82.10	---	877.10	1030.00
	Inst	Set	Sm	2C	3.08	5.20	876.00	126.00	---	1002.00	1180.00
8'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	938.00	82.10	---	1020.10	1190.00
	Inst	Set	Sm	2C	3.08	5.20	1030.00	126.00	---	1156.00	1370.00
4'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	858.00	82.10	---	940.10	1100.00
	Inst	Set	Sm	2C	3.08	5.20	946.00	126.00	---	1072.00	1260.00
6'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	954.00	82.10	---	1036.10	1210.00
	Inst	Set	Sm	2C	3.08	5.20	1050.00	126.00	---	1176.00	1390.00
8'-0" x 8'-0", 4 doors	Inst	Set	Lg	2C	2.00	8.00	1130.00	82.10	---	1212.10	1410.00
	Inst	Set	Sm	2C	3.08	5.20	1240.00	126.00	---	1366.00	1600.00

Prefinished

Walnut tone, mar-resistant finish

Embossed (distressed wood appearance) lauan, flush face, 1-3/8" T, hollow core

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	140.00	65.70	---	205.70	253.00
	Inst	Set	Sm	2C	2.46	6.50	154.00	101.00	---	255.00	318.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	279.00	82.10	---	361.10	436.00
	Inst	Set	Sm	2C	3.08	5.20	308.00	126.00	---	434.00	531.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	310.00	82.10	---	392.10	472.00
	Inst	Set	Sm	2C	3.08	5.20	342.00	126.00	---	468.00	570.00

Lauan, flush face, 1-3/8" T, hollow core

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	114.00	65.70	---	179.70	223.00
	Inst	Set	Sm	2C	2.46	6.50	126.00	101.00	---	227.00	286.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	229.00	82.10	---	311.10	378.00
	Inst	Set	Sm	2C	3.08	5.20	252.00	126.00	---	378.00	467.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	254.00	82.10	---	336.10	407.00
	Inst	Set	Sm	2C	3.08	5.20	280.00	126.00	---	406.00	499.00

Ponderosa pine, full louver, 1-3/8" T, hollow core

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	262.00	65.70	---	327.70	393.00
	Inst	Set	Sm	2C	2.46	6.50	288.00	101.00	---	389.00	473.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	523.00	82.10	---	605.10	717.00
	Inst	Set	Sm	2C	3.08	5.20	576.00	126.00	---	702.00	840.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	617.00	82.10	---	699.10	825.00
	Inst	Set	Sm	2C	3.08	5.20	680.00	126.00	---	806.00	959.00

Ponderosa pine, raised louver, 1-3/8" T, hollow core

2'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	1.60	10.00	313.00	65.70	---	378.70	452.00
	Inst	Set	Sm	2C	2.46	6.50	345.00	101.00	---	446.00	539.00
4'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	627.00	82.10	---	709.10	836.00
	Inst	Set	Sm	2C	3.08	5.20	691.00	126.00	---	817.00	971.00
6'-0" x 6'-8", 4 doors	Inst	Set	Lg	2C	2.00	8.00	740.00	82.10	---	822.10	966.00
	Inst	Set	Sm	2C	3.08	5.20	815.00	126.00	---	941.00	1110.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Sliding or bypassing units

Includes hardware, 4-5/8" jambs, header, and fascia

Wood inserts, 1-3/8" T, hollow core

Unfinished birch

4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	271.00	94.00	---	365.00	443.00
	Inst	Set	Sm	2C	3.52	4.55	298.00	145.00	---	443.00	545.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	301.00	94.00	---	395.00	478.00
	Inst	Set	Sm	2C	3.52	4.55	331.00	145.00	---	476.00	584.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	355.00	94.00	---	449.00	540.00
	Inst	Set	Sm	2C	3.52	4.55	391.00	145.00	---	536.00	652.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	325.00	94.00	---	419.00	505.00
	Inst	Set	Sm	2C	3.52	4.55	358.00	145.00	---	503.00	614.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	361.00	94.00	---	455.00	547.00
	Inst	Set	Sm	2C	3.52	4.55	398.00	145.00	---	543.00	660.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	426.00	94.00	---	520.00	621.00
	Inst	Set	Sm	2C	3.52	4.55	469.00	145.00	---	614.00	742.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	541.00	131.00	---	672.00	807.00
	Inst	Set	Sm	2C	4.92	3.25	597.00	202.00	---	799.00	969.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	602.00	131.00	---	733.00	876.00
	Inst	Set	Sm	2C	4.92	3.25	663.00	202.00	---	865.00	1050.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	626.00	131.00	---	757.00	903.00
	Inst	Set	Sm	2C	4.92	3.25	689.00	202.00	---	891.00	1080.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	650.00	131.00	---	781.00	931.00
	Inst	Set	Sm	2C	4.92	3.25	716.00	202.00	---	918.00	1110.00

Unfinished hardboard

4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	194.00	94.00	---	288.00	355.00
	Inst	Set	Sm	2C	3.52	4.55	214.00	145.00	---	359.00	448.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	216.00	94.00	---	310.00	380.00
	Inst	Set	Sm	2C	3.52	4.55	238.00	145.00	---	383.00	476.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	254.00	94.00	---	348.00	424.00
	Inst	Set	Sm	2C	3.52	4.55	280.00	145.00	---	425.00	525.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	233.00	94.00	---	327.00	399.00
	Inst	Set	Sm	2C	3.52	4.55	257.00	145.00	---	402.00	498.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	259.00	94.00	---	353.00	429.00
	Inst	Set	Sm	2C	3.52	4.55	285.00	145.00	---	430.00	530.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	305.00	94.00	---	399.00	483.00
	Inst	Set	Sm	2C	3.52	4.55	337.00	145.00	---	482.00	589.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	388.00	131.00	---	519.00	630.00
	Inst	Set	Sm	2C	4.92	3.25	428.00	202.00	---	630.00	775.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	431.00	131.00	---	562.00	680.00
	Inst	Set	Sm	2C	4.92	3.25	475.00	202.00	---	677.00	829.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	449.00	131.00	---	580.00	700.00
	Inst	Set	Sm	2C	4.92	3.25	494.00	202.00	---	696.00	851.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	466.00	131.00	---	597.00	720.00
	Inst	Set	Sm	2C	4.92	3.25	513.00	202.00	---	715.00	873.00

Closet door systems, sliding or bypass units

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Unfinished lauan											
4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	170.00	94.00	---	264.00	328.00
	Inst	Set	Sm	2C	3.52	4.55	188.00	145.00	---	333.00	418.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	189.00	94.00	---	283.00	349.00
	Inst	Set	Sm	2C	3.52	4.55	209.00	145.00	---	354.00	442.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	223.00	94.00	---	317.00	388.00
	Inst	Set	Sm	2C	3.52	4.55	246.00	145.00	---	391.00	485.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	204.00	94.00	---	298.00	367.00
	Inst	Set	Sm	2C	3.52	4.55	225.00	145.00	---	370.00	461.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	227.00	94.00	---	321.00	393.00
	Inst	Set	Sm	2C	3.52	4.55	250.00	145.00	---	395.00	490.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	268.00	94.00	---	362.00	440.00
	Inst	Set	Sm	2C	3.52	4.55	295.00	145.00	---	440.00	542.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	341.00	131.00	---	472.00	576.00
	Inst	Set	Sm	2C	4.92	3.25	375.00	202.00	---	577.00	715.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	379.00	131.00	---	510.00	619.00
	Inst	Set	Sm	2C	4.92	3.25	417.00	202.00	---	619.00	762.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	394.00	131.00	---	525.00	637.00
	Inst	Set	Sm	2C	4.92	3.25	434.00	202.00	---	636.00	782.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	409.00	131.00	---	540.00	654.00
	Inst	Set	Sm	2C	4.92	3.25	450.00	202.00	---	652.00	801.00
Unfinished red oak											
4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	392.00	94.00	---	486.00	583.00
	Inst	Set	Sm	2C	3.52	4.55	433.00	145.00	---	578.00	700.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	436.00	94.00	---	530.00	633.00
	Inst	Set	Sm	2C	3.52	4.55	481.00	145.00	---	626.00	755.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.29	7.00	515.00	94.00	---	609.00	723.00
	Inst	Set	Sm	2C	3.52	4.55	567.00	145.00	---	712.00	854.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	471.00	94.00	---	565.00	673.00
	Inst	Set	Sm	2C	3.52	4.55	519.00	145.00	---	664.00	799.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	523.00	94.00	---	617.00	733.00
	Inst	Set	Sm	2C	3.52	4.55	577.00	145.00	---	722.00	866.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.29	7.00	617.00	94.00	---	711.00	842.00
	Inst	Set	Sm	2C	3.52	4.55	680.00	145.00	---	825.00	985.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	785.00	131.00	---	916.00	1090.00
	Inst	Set	Sm	2C	4.92	3.25	865.00	202.00	---	1067.00	1280.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	872.00	131.00	---	1003.00	1190.00
	Inst	Set	Sm	2C	4.92	3.25	961.00	202.00	---	1163.00	1390.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	907.00	131.00	---	1038.00	1230.00
	Inst	Set	Sm	2C	4.92	3.25	1000.00	202.00	---	1202.00	1430.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	942.00	131.00	---	1073.00	1270.00
	Inst	Set	Sm	2C	4.92	3.25	1040.00	202.00	---	1242.00	1480.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P

Mirror bypass units

Frameless unit with 1/2" beveled mirror edges

4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	208.00	110.00	---	318.00	392.00
	Inst	Set	Sm	2C	4.10	3.90	229.00	168.00	---	397.00	499.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	268.00	110.00	---	378.00	461.00
	Inst	Set	Sm	2C	4.10	3.90	295.00	168.00	---	463.00	575.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	371.00	110.00	---	481.00	581.00
	Inst	Set	Sm	2C	4.10	3.90	409.00	168.00	---	577.00	706.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	254.00	110.00	---	364.00	445.00
	Inst	Set	Sm	2C	4.10	3.90	280.00	168.00	---	448.00	557.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	301.00	110.00	---	411.00	499.00
	Inst	Set	Sm	2C	4.10	3.90	332.00	168.00	---	500.00	617.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	394.00	110.00	---	504.00	607.00
	Inst	Set	Sm	2C	4.10	3.90	434.00	168.00	---	602.00	735.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	500.00	131.00	---	631.00	759.00
	Inst	Set	Sm	2C	4.92	3.25	551.00	202.00	---	753.00	916.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	541.00	131.00	---	672.00	806.00
	Inst	Set	Sm	2C	4.92	3.25	596.00	202.00	---	798.00	968.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	570.00	131.00	---	701.00	840.00
	Inst	Set	Sm	2C	4.92	3.25	629.00	202.00	---	831.00	1010.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	624.00	131.00	---	755.00	902.00
	Inst	Set	Sm	2C	4.92	3.25	688.00	202.00	---	890.00	1070.00

Aluminum frame unit

4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	198.00	110.00	---	308.00	381.00
	Inst	Set	Sm	2C	4.10	3.90	218.00	168.00	---	386.00	486.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	233.00	110.00	---	343.00	421.00
	Inst	Set	Sm	2C	4.10	3.90	256.00	168.00	---	424.00	530.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	333.00	110.00	---	443.00	537.00
	Inst	Set	Sm	2C	4.10	3.90	367.00	168.00	---	535.00	658.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	237.00	110.00	---	347.00	426.00
	Inst	Set	Sm	2C	4.10	3.90	261.00	168.00	---	429.00	536.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	279.00	110.00	---	389.00	474.00
	Inst	Set	Sm	2C	4.10	3.90	308.00	168.00	---	476.00	589.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	400.00	110.00	---	510.00	613.00
	Inst	Set	Sm	2C	4.10	3.90	441.00	168.00	---	609.00	742.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	475.00	131.00	---	606.00	730.00
	Inst	Set	Sm	2C	4.92	3.25	523.00	202.00	---	725.00	884.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	558.00	131.00	---	689.00	826.00
	Inst	Set	Sm	2C	4.92	3.25	615.00	202.00	---	817.00	990.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	569.00	131.00	---	700.00	839.00
	Inst	Set	Sm	2C	4.92	3.25	628.00	202.00	---	830.00	1000.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	670.00	131.00	---	801.00	954.00
	Inst	Set	Sm	2C	4.92	3.25	738.00	202.00	---	940.00	1130.00

Closet door systems, mirror bypass units

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Golden oak frame unit											
4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	297.00	110.00	---	407.00	495.00
	Inst	Set	Sm	2C	4.10	3.90	327.00	168.00	---	495.00	612.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	349.00	110.00	---	459.00	555.00
	Inst	Set	Sm	2C	4.10	3.90	384.00	168.00	---	552.00	678.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	500.00	110.00	---	610.00	728.00
	Inst	Set	Sm	2C	4.10	3.90	551.00	168.00	---	719.00	869.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	356.00	110.00	---	466.00	563.00
	Inst	Set	Sm	2C	4.10	3.90	392.00	168.00	---	560.00	687.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	419.00	110.00	---	529.00	635.00
	Inst	Set	Sm	2C	4.10	3.90	461.00	168.00	---	629.00	766.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	600.00	110.00	---	710.00	843.00
	Inst	Set	Sm	2C	4.10	3.90	661.00	168.00	---	829.00	996.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	712.00	131.00	---	843.00	1000.00
	Inst	Set	Sm	2C	4.92	3.25	784.00	202.00	---	986.00	1180.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	837.00	131.00	---	968.00	1150.00
	Inst	Set	Sm	2C	4.92	3.25	923.00	202.00	---	1125.00	1340.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	854.00	131.00	---	985.00	1170.00
	Inst	Set	Sm	2C	4.92	3.25	941.00	202.00	---	1143.00	1370.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	1000.00	131.00	---	1131.00	1340.00
	Inst	Set	Sm	2C	4.92	3.25	1110.00	202.00	---	1312.00	1560.00
Steel frame unit											
4'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	158.00	110.00	---	268.00	335.00
	Inst	Set	Sm	2C	4.10	3.90	174.00	168.00	---	342.00	436.00
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	186.00	110.00	---	296.00	367.00
	Inst	Set	Sm	2C	4.10	3.90	205.00	168.00	---	373.00	471.00
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	2C	2.67	6.00	267.00	110.00	---	377.00	460.00
	Inst	Set	Sm	2C	4.10	3.90	294.00	168.00	---	462.00	573.00
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	190.00	110.00	---	300.00	372.00
	Inst	Set	Sm	2C	4.10	3.90	209.00	168.00	---	377.00	476.00
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	223.00	110.00	---	333.00	410.00
	Inst	Set	Sm	2C	4.10	3.90	246.00	168.00	---	414.00	519.00
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	2C	2.67	6.00	320.00	110.00	---	430.00	521.00
	Inst	Set	Sm	2C	4.10	3.90	353.00	168.00	---	521.00	641.00
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	380.00	131.00	---	511.00	620.00
	Inst	Set	Sm	2C	4.92	3.25	418.00	202.00	---	620.00	764.00
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	2C	3.20	5.00	447.00	131.00	---	578.00	698.00
	Inst	Set	Sm	2C	4.92	3.25	492.00	202.00	---	694.00	849.00
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	456.00	131.00	---	587.00	708.00
	Inst	Set	Sm	2C	4.92	3.25	502.00	202.00	---	704.00	860.00
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	2C	3.20	5.00	536.00	131.00	---	667.00	800.00
	Inst	Set	Sm	2C	4.92	3.25	591.00	202.00	---	793.00	962.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Accordion doors

Custom prefinished woodgrain print

2'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	318.00	65.70	---	383.70	457.00
	Inst	Set	Sm	2C	2.46	6.50	350.00	101.00	---	451.00	544.00
3'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	370.00	65.70	---	435.70	518.00
	Inst	Set	Sm	2C	2.46	6.50	408.00	101.00	---	509.00	611.00
4'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	494.00	65.70	---	559.70	660.00
	Inst	Set	Sm	2C	2.46	6.50	544.00	101.00	---	645.00	767.00
5'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	617.00	65.70	---	682.70	802.00
	Inst	Set	Sm	2C	2.46	6.50	680.00	101.00	---	781.00	924.00
6'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	741.00	65.70	---	806.70	944.00
	Inst	Set	Sm	2C	2.46	6.50	816.00	101.00	---	917.00	1080.00
7'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	864.00	82.10	---	946.10	1110.00
	Inst	Set	Sm	2C	3.08	5.20	953.00	126.00	---	1079.00	1270.00
8'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	988.00	82.10	---	1070.10	1250.00
	Inst	Set	Sm	2C	3.08	5.20	1090.00	126.00	---	1216.00	1430.00
9'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	1110.00	82.10	---	1192.10	1390.00
	Inst	Set	Sm	2C	3.08	5.20	1220.00	126.00	---	1346.00	1590.00
10'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	1230.00	82.10	---	1312.10	1530.00
	Inst	Set	Sm	2C	3.08	5.20	1360.00	126.00	---	1486.00	1740.00
For 8'-0"H, ADD	Inst		Lg	2C	---	---	12.0	---	---	12.0	---
	Inst		Sm	2C	---	---	12.0	---	---	12.0	---

Heritage prefinished real wood veneer

2'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	476.00	65.70	---	541.70	640.00
	Inst	Set	Sm	2C	2.46	6.50	525.00	101.00	---	626.00	745.00
3'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	556.00	65.70	---	621.70	731.00
	Inst	Set	Sm	2C	2.46	6.50	612.00	101.00	---	713.00	846.00
4'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	741.00	65.70	---	806.70	944.00
	Inst	Set	Sm	2C	2.46	6.50	816.00	101.00	---	917.00	1080.00
5'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	926.00	65.70	---	991.70	1160.00
	Inst	Set	Sm	2C	2.46	6.50	1020.00	101.00	---	1121.00	1320.00
6'-0" x 6'-8"	Inst	Set	Lg	2C	1.60	10.00	1110.00	65.70	---	1175.70	1370.00
	Inst	Set	Sm	2C	2.46	6.50	1220.00	101.00	---	1321.00	1550.00
7'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	1300.00	82.10	---	1382.10	1610.00
	Inst	Set	Sm	2C	3.08	5.20	1430.00	126.00	---	1556.00	1820.00
8'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	1480.00	82.10	---	1562.10	1820.00
	Inst	Set	Sm	2C	3.08	5.20	1630.00	126.00	---	1756.00	2050.00
9'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	1670.00	82.10	---	1752.10	2030.00
	Inst	Set	Sm	2C	3.08	5.20	1840.00	126.00	---	1966.00	2290.00
10'-0" x 6'-8"	Inst	Set	Lg	2C	2.00	8.00	1850.00	82.10	---	1932.10	2240.00
	Inst	Set	Sm	2C	3.08	5.20	2040.00	126.00	---	2166.00	2520.00
For 8'-0"H, ADD	Inst		Lg	2C	---	---	20.0	---	---	20.0	---
	Inst		Sm	2C	---	---	20.0	---	---	20.0	---

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Track and hardware only

4'-0" x 6'-8", 2 doors	Inst	Set	Lg	---	---	---	27.40	---	---	27.40	31.50
	Inst	Set	Sm	---	---	---	30.20	---	---	30.20	34.70
6'-0" x 6'-8", 2 doors	Inst	Set	Lg	---	---	---	34.20	---	---	34.20	39.40
	Inst	Set	Sm	---	---	---	37.70	---	---	37.70	43.40
8'-0" x 6'-8", 2 doors	Inst	Set	Lg	---	---	---	42.80	---	---	42.80	49.20
	Inst	Set	Sm	---	---	---	47.20	---	---	47.20	54.30
4'-0" x 8'-0", 2 doors	Inst	Set	Lg	---	---	---	32.90	---	---	32.90	37.80
	Inst	Set	Sm	---	---	---	36.20	---	---	36.20	41.70
6'-0" x 8'-0", 2 doors	Inst	Set	Lg	---	---	---	41.10	---	---	41.10	47.30
	Inst	Set	Sm	---	---	---	45.30	---	---	45.30	52.10
8'-0" x 8'-0", 2 doors	Inst	Set	Lg	---	---	---	51.40	---	---	51.40	59.10
	Inst	Set	Sm	---	---	---	56.60	---	---	56.60	65.10
10'-0" x 6'-8", 3 doors	Inst	Set	Lg	---	---	---	51.40	---	---	51.40	59.10
	Inst	Set	Sm	---	---	---	56.60	---	---	56.60	65.10
12'-0" x 6'-8", 3 doors	Inst	Set	Lg	---	---	---	64.20	---	---	64.20	73.80
	Inst	Set	Sm	---	---	---	70.80	---	---	70.80	81.40
10'-0" x 8'-0", 3 doors	Inst	Set	Lg	---	---	---	58.20	---	---	58.20	66.90
	Inst	Set	Sm	---	---	---	64.20	---	---	64.20	73.80
12'-0" x 8'-0", 3 doors	Inst	Set	Lg	---	---	---	72.80	---	---	72.80	83.70
	Inst	Set	Sm	---	---	---	80.20	---	---	80.20	92.20

Columns

See also Framing, page 176

Aluminum, extruded; self supporting

Designed as decorative, loadbearing elements for porches, entrances, colonnades, etc.; primed, knocked-down, and carton packed complete with cap and base

Column with standard cap and base

8" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.00	6.00	394.00	154.00	98.70	646.70	786.00
	Inst	Ea	Sm	CS	6.15	3.90	434.00	237.00	152.00	823.00	1000.00
10" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.00	6.00	431.00	154.00	98.70	683.70	831.00
	Inst	Ea	Sm	CS	6.15	3.90	475.00	237.00	152.00	864.00	1050.00
10" dia. x 16' to 20' H	Inst	Ea	Lg	CS	5.33	4.50	655.00	205.00	132.00	992.00	1200.00
	Inst	Ea	Sm	CS	8.19	2.93	722.00	315.00	202.00	1239.00	1510.00
12" dia. x 9' to 12' H	Inst	Ea	Lg	CS	4.00	6.00	468.00	154.00	98.70	720.70	876.00
	Inst	Ea	Sm	CS	6.15	3.90	516.00	237.00	152.00	905.00	1100.00
12" dia. x 16' to 24' H	Inst	Ea	Lg	CS	5.33	4.50	841.00	205.00	132.00	1178.00	1430.00
	Inst	Ea	Sm	CS	8.19	2.93	927.00	315.00	202.00	1444.00	1760.00

Column with Corinthian cap and decorative base

8" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.00	6.00	423.00	154.00	98.70	675.70	822.00
	Inst	Ea	Sm	CS	6.15	3.90	467.00	237.00	152.00	856.00	1040.00
10" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.00	6.00	465.00	154.00	98.70	717.70	872.00
	Inst	Ea	Sm	CS	6.15	3.90	512.00	237.00	152.00	901.00	1100.00
10" dia. x 16' to 20' H	Inst	Ea	Lg	CS	5.33	4.50	711.00	205.00	132.00	1048.00	1270.00
	Inst	Ea	Sm	CS	8.19	2.93	783.00	315.00	202.00	1300.00	1580.00
12" dia. x 9' to 12' H	Inst	Ea	Lg	CS	4.00	6.00	506.00	154.00	98.70	758.70	921.00
	Inst	Ea	Sm	CS	6.15	3.90	557.00	237.00	152.00	946.00	1150.00
12" dia. x 16' to 24' H	Inst	Ea	Lg	CS	5.33	4.50	916.00	205.00	132.00	1253.00	1520.00
	Inst	Ea	Sm	CS	8.19	2.93	1010.00	315.00	202.00	1527.00	1850.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Brick columns. See Masonry, page 274

Wood, treated, No. 1 common and better white pine, T&G construction

Designed as decorative, loadbearing elements for porches, entrances, colonnades, etc.; primed, knocked-down, and carton packed complete with cap and base

Plain column with standard cap and base

8" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.80	5.00	468.00	185.00	118.00	771.00	939.00
	Inst	Ea	Sm	CS	7.38	3.25	516.00	284.00	182.00	982.00	1200.00
10" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.80	5.00	515.00	185.00	118.00	818.00	995.00
	Inst	Ea	Sm	CS	7.38	3.25	567.00	284.00	182.00	1033.00	1260.00
12" dia. x 8' to 12' H	Inst	Ea	Lg	CS	5.33	4.50	561.00	205.00	132.00	898.00	1090.00
	Inst	Ea	Sm	CS	8.19	2.93	619.00	315.00	202.00	1136.00	1390.00
14" dia. x 12' to 16' H	Inst	Ea	Lg	CS	6.86	3.50	841.00	264.00	169.00	1274.00	1550.00
	Inst	Ea	Sm	CS	10.5	2.28	927.00	404.00	260.00	1591.00	1940.00
16" dia. x 18' to 20' H	Inst	Ea	Lg	CS	7.50	3.20	1210.00	289.00	185.00	1684.00	2050.00
	Inst	Ea	Sm	CS	11.5	2.08	1340.00	443.00	285.00	2068.00	2510.00

Plain column with Corinthian cap and decorative base

8" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.80	5.00	506.00	185.00	118.00	809.00	984.00
	Inst	Ea	Sm	CS	7.38	3.25	557.00	284.00	182.00	1023.00	1250.00
10" dia. x 8' to 12' H	Inst	Ea	Lg	CS	4.80	5.00	557.00	185.00	118.00	860.00	1050.00
	Inst	Ea	Sm	CS	7.38	3.25	614.00	284.00	182.00	1080.00	1320.00
12" dia. x 8' to 12' H	Inst	Ea	Lg	CS	5.33	4.50	608.00	205.00	132.00	945.00	1150.00
	Inst	Ea	Sm	CS	8.19	2.93	670.00	315.00	202.00	1187.00	1450.00
14" dia. x 12' to 16' H	Inst	Ea	Lg	CS	6.86	3.50	916.00	264.00	169.00	1349.00	1640.00
	Inst	Ea	Sm	CS	10.5	2.28	1010.00	404.00	260.00	1674.00	2040.00
16" dia. x 18' to 20' H	Inst	Ea	Lg	CS	7.50	3.20	1330.00	289.00	185.00	1804.00	2180.00
	Inst	Ea	Sm	CS	11.5	2.08	1460.00	443.00	285.00	2188.00	2660.00

Concrete

Concrete Footings

1. **Dimensions.** 6" T, 8" T, 12" T x 12" W, 16" W, 20" W; 12" T x 24" W.
2. **Installation**
 - a. Forms. 2" side forms equal in height to the thickness of the footing. 2" x 4" stakes 4'-0" oc, no less than the thickness of the footing. 2" x 4" bracing for stakes 8'-0" oc for 6" and 8" thick footings and 4'-0" oc for 12" thick footings. 1" x 2" or 1" x 3" spreaders 4'-0" oc
 - b. Concrete. 1-2-4 mix is used in this section.
 - c. Reinforcing steel. Various sizes, but usually only #3, #4, or #5 straight rods with end ties are used.
3. **Notes on Labor**
 - a. Forming. Output based on a crew of two carpenters and one laborer.
 - b. Grading, finish. Output based on what one laborer can do in one day.
 - c. Reinforcing steel. Output based on what one laborer or one ironworker can do in one day.
 - d. Concrete. Output based on a crew of two laborers and one carpenter.
 - e. Forms, wrecking and cleaning. Output based on what one laborer can do in one day.
4. **Estimating Technique.** Determine the linear feet of footing.

Concrete Foundations

1. **Dimensions.** 8" T, 12" T x 4' H, 8' H, or 12' H.
2. **Installation**
 - a. Forms. 4' x 8' panels made of $\frac{3}{4}$ " form grade plywood backed with 2" x 4" studs and sills (studs approximately 16" oc), three sets and six sets of 2" x 4" wales for 4', 8' and 12' high walls. 2" x 4" wales for 4', 8' and 12' high walls. 2" x 4" diagonal braces (with stakes) 12'-0" oc one side. Snap ties spaced 22" oc, 20" oc and 17" oc along each wale for 4', 8' and 12' high walls. Paraffin oil coating for forms. Twelve uses are estimated for panels; twenty uses for wales and braces; snap ties are used only once.
 - b. Concrete. 1-2-4 mix.
 - c. Reinforcing steel. Sizes #3 to #7. Bars are straight except dowels which may on occasion be bent rods.
3. **Notes on Labor**
 - a. Concrete, placing. Output based on a crew of one carpenter and five laborers.

- b. Forming. Output based on a crew of four carpenters and one laborer.
- c. Reinforcing steel rods. Output based on what two laborers or ironworkers can do in one day.
- d. Wrecking and cleaning forms. Output based on what two laborers can do in one day.

4. Estimating Technique

- a. Determine linear feet of wall if wall is 8" or 12" x 4', 8' or 12', or determine square feet of wall. Then calculate and add the linear feet of rods.

Concrete Interior Floor Finishes

1. **Dimensions.** 3½", 4", 5", 6" thick x various areas.
2. **Installation**
 - a. Forms. A wood form may or may not be required. A foundation wall may serve as a form for both basement and first floor slabs. In this section, only 2" x 4" and 2" x 6" side forms with stakes 4'-0" oc are considered.
 - b. Finish grading. Dirt or gravel.
 - c. Screeds (wood strips placed in area where concrete is to be placed). The concrete will be finished even with top of the screeds. Screeds must be pulled before concrete sets up and the voids filled with concrete. 2" x 2" and 2" x 4" screeds with 2" x 2" stakes 6'-0" oc will be covered in this section.
 - d. Steel reinforcing. Items to be covered are: #3, #4, #5 rods; 6 x 6/10-10 and 6 x 6/6-6 welded wire mesh.
 - e. Concrete. 1-2-4 mix.
3. **Notes on Labor**
 - a. Forms and screeds. Output based on a crew of two masons and one laborer.
 - b. Finish grading. Output based on what one laborer can do in one day.
 - c. Reinforcing. Output based on what two laborers or two ironworkers can do in one day.
 - d. Concrete, place and finish. Output based on a three-cement mason, five-laborer crew.
 - e. Wrecking and cleaning forms. Output based on what one laborer can do in one day.
4. **Estimating Technique**
 - a. Finish grading, mesh, and concrete. Determine the area and add waste.
 - b. Forms, screeds and rods. Determine linear feet.

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Concrete, cast-in-place

Footings

Demo with air tools, reinforced

8" T x 12" W	Demo	LF	Lg	AD	.171	140.0	---	7.44	2.24	9.68	12.70
	Demo	LF	Sm	AD	.214	112.0	---	9.31	2.80	12.11	15.80
8" T x 16" W	Demo	LF	Lg	AD	.182	132.0	---	7.92	2.38	10.30	13.50
	Demo	LF	Sm	AD	.214	112.0	---	9.31	2.80	12.11	15.80
8" T x 20" W	Demo	LF	Lg	AD	.194	124.0	---	8.44	2.53	10.97	14.40
	Demo	LF	Sm	AD	.229	105.0	---	9.97	2.99	12.96	16.90
12" T x 12" W	Demo	LF	Lg	AD	.190	126.0	---	8.27	2.49	10.76	14.10
	Demo	LF	Sm	AD	.224	107.0	---	9.75	2.93	12.68	16.60
12" T x 16" W	Demo	LF	Lg	AD	.200	120.0	---	8.70	2.61	11.31	14.80
	Demo	LF	Sm	AD	.235	102.0	---	10.20	3.08	13.28	17.40
12" T x 20" W	Demo	LF	Lg	AD	.211	114.0	---	9.18	2.75	11.93	15.60
	Demo	LF	Sm	AD	.247	97.00	---	10.80	3.23	14.03	18.30
12" T x 24" W	Demo	LF	Lg	AD	.222	108.0	---	9.66	2.90	12.56	16.40
	Demo	LF	Sm	AD	.261	92.00	---	11.40	3.41	14.81	19.30

Place per LF poured footing

Forming, 4 uses

2" x 6"	Inst	LF	Lg	CS	.107	225.0	.75	4.12	---	4.87	6.51
	Inst	LF	Sm	CS	.116	207.0	.82	4.46	---	5.28	7.07
2" x 8"	Inst	LF	Lg	CS	.120	200.0	.90	4.62	---	5.52	7.36
	Inst	LF	Sm	CS	.130	184.0	.98	5.00	---	5.98	7.98
2" x 12"	Inst	LF	Lg	CS	.133	180.0	1.36	5.12	---	6.48	8.52
	Inst	LF	Sm	CS	.145	166.0	1.47	5.58	---	7.05	9.28

Grading, labor to finish by hand

6", 8", 12" T x 12" W	Inst	LF	Lg	1L	.023	345.0	---	.77	---	.77	1.07
	Inst	LF	Sm	1L	.026	311.0	---	.87	---	.87	1.21
6", 8", 12" T x 16" W	Inst	LF	Lg	1L	.027	295.0	---	.90	---	.90	1.26
	Inst	LF	Sm	1L	.030	266.0	---	1.00	---	1.00	1.40
6", 8", 12" T x 20" W	Inst	LF	Lg	1L	.031	260.0	---	1.03	---	1.03	1.45
	Inst	LF	Sm	1L	.034	234.0	---	1.13	---	1.13	1.59
12" T x 24" W	Inst	LF	Lg	1L	.035	230.0	---	1.17	---	1.17	1.63
	Inst	LF	Sm	1L	.039	207.0	---	1.30	---	1.30	1.82

Concrete, cast-in-place

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Reinforcing steel in place, material costs include lap, waste, and tie wire

Two (No. 3) 3/8" rods	Inst	LF	Lg	1L	.014	590.0	1.02	.47	---	1.49	1.67
	Inst	LF	Sm	1L	.015	531.0	1.12	.50	---	1.62	1.82
Two (No. 4) 1/2" rods	Inst	LF	Lg	1L	.014	560.0	1.71	.47	---	2.18	2.36
	Inst	LF	Sm	1L	.016	504.0	1.87	.53	---	2.40	2.62
Two (No. 5) 5/8" rods	Inst	LF	Lg	1L	.015	540.0	2.08	.50	---	2.58	2.78
	Inst	LF	Sm	1L	.016	486.0	2.29	.53	---	2.82	3.04
Three (No. 3) 3/8" rods	Inst	LF	Lg	1L	.017	460.0	1.53	.57	---	2.10	2.32
	Inst	LF	Sm	1L	.019	414.0	1.68	.63	---	2.31	2.57
Three (No. 4) 1/2" rods	Inst	LF	Lg	1L	.018	440.0	2.56	.60	---	3.16	3.40
	Inst	LF	Sm	1L	.020	396.0	2.81	.67	---	3.48	3.74
Three (No. 5) 5/8" rods	Inst	LF	Lg	1L	.019	420.0	3.12	.63	---	3.75	4.01
	Inst	LF	Sm	1L	.021	378.0	3.43	.70	---	4.13	4.41

Concrete, pour from truck into forms, material cost includes 5% waste and assumes use of 3,000 PSI, 1-1/2" aggregate, 5.7 sack mix

6" T x 12" W (54.0 LF/CY)	Inst	LF	Lg	LC	.039	615.0	4.20	1.40	---	5.60	6.16
	Inst	LF	Sm	LC	.043	554.0	4.63	1.54	---	6.17	6.79
6" T x 16" W (40.5 LF/CY)	Inst	LF	Lg	LC	.043	560.0	5.60	1.54	---	7.14	7.76
	Inst	LF	Sm	LC	.048	504.0	6.18	1.72	---	7.90	8.59
6" T x 20" W (32.3 LF/CY)	Inst	LF	Lg	LC	.044	545.0	7.03	1.58	---	8.61	9.24
	Inst	LF	Sm	LC	.049	491.0	7.75	1.76	---	9.51	10.20
8" T x 12" W (40.5 LF/CY)	Inst	LF	Lg	LC	.043	560.0	5.60	1.54	---	7.14	7.76
	Inst	LF	Sm	LC	.048	504.0	6.18	1.72	---	7.90	8.59
8" T x 16" W (30.4 LF/CY)	Inst	LF	Lg	LC	.047	510.0	7.46	1.69	---	9.15	9.82
	Inst	LF	Sm	LC	.052	459.0	8.23	1.87	---	10.10	10.80
8" T x 20" W (24.3 LF/CY)	Inst	LF	Lg	LC	.049	485.0	9.35	1.76	---	11.11	11.80
	Inst	LF	Sm	LC	.055	437.0	10.30	1.97	---	12.27	13.10
12" T x 12" W (27.0 LF/CY)	Inst	LF	Lg	LC	.045	535.0	8.40	1.62	---	10.02	10.70
	Inst	LF	Sm	LC	.050	482.0	9.25	1.79	---	11.04	11.80
12" T x 16" W (20.3 LF/CY)	Inst	LF	Lg	LC	.052	460.0	11.20	1.87	---	13.07	13.80
	Inst	LF	Sm	LC	.058	414.0	12.30	2.08	---	14.38	15.20
12" T x 20" W (16.2 LF/CY)	Inst	LF	Lg	LC	.057	420.0	14.00	2.05	---	16.05	16.90
	Inst	LF	Sm	LC	.063	378.0	15.40	2.26	---	17.66	18.60
12" T x 24" W (13.5 LF/CY)	Inst	LF	Lg	LC	.049	485.0	16.80	1.76	---	18.56	19.30
	Inst	LF	Sm	LC	.055	437.0	18.50	1.97	---	20.47	21.30

Forms, wreck, remove and clean

2" x 6"	Inst	LF	Lg	1L	.046	175.0	---	1.53	---	1.53	2.14
	Inst	LF	Sm	1L	.051	158.0	---	1.70	---	1.70	2.38
2" x 8"	Inst	LF	Lg	1L	.050	160.0	---	1.67	---	1.67	2.33
	Inst	LF	Sm	1L	.056	144.0	---	1.87	---	1.87	2.61
2" x 12"	Inst	LF	Lg	1L	.055	145.0	---	1.83	---	1.83	2.56
	Inst	LF	Sm	1L	.061	131.0	---	2.03	---	2.03	2.84

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Foundations and retaining walls, demo with air tools, per LF wall

Demo with air tools

With reinforcing

4'-0" H

8" T	Demo	LF	Lg	AD	.300	80.00	---	13.10	3.92	17.02	22.20
	Demo	LF	Sm	AD	.353	68.00	---	15.40	4.61	20.01	26.10
12" T	Demo	LF	Lg	AD	.414	58.00	---	18.00	5.41	23.41	30.60
	Demo	LF	Sm	AD	.490	49.00	---	21.30	6.40	27.70	36.30

8'-0" H

8" T	Demo	LF	Lg	AD	.324	74.00	---	14.10	4.24	18.34	24.00
	Demo	LF	Sm	AD	.381	63.00	---	16.60	4.98	21.58	28.20
12" T	Demo	LF	Lg	AD	.462	52.00	---	20.10	6.03	26.13	34.20
	Demo	LF	Sm	AD	.545	44.00	---	23.70	7.13	30.83	40.30

12'-0" H

8" T	Demo	LF	Lg	AD	.353	68.00	---	15.40	4.61	20.01	26.10
	Demo	LF	Sm	AD	.414	58.00	---	18.00	5.41	23.41	30.60
12" T	Demo	LF	Lg	AD	.545	44.00	---	23.70	7.13	30.83	40.30
	Demo	LF	Sm	AD	.649	37.00	---	28.20	8.48	36.68	48.00

Without reinforcing

4'-0" H

8" T	Demo	LF	Lg	AD	.261	92.00	---	11.40	3.41	14.81	19.30
	Demo	LF	Sm	AD	.308	78.00	---	13.40	4.02	17.42	22.80
12" T	Demo	LF	Lg	AD	.353	68.00	---	15.40	4.61	20.01	26.10
	Demo	LF	Sm	AD	.414	58.00	---	18.00	5.41	23.41	30.60

8'-0" H

8" T	Demo	LF	Lg	AD	.286	84.00	---	12.50	3.73	16.23	21.20
	Demo	LF	Sm	AD	.338	71.00	---	14.70	4.42	19.12	25.00
12" T	Demo	LF	Lg	AD	.400	60.00	---	17.40	5.23	22.63	29.60
	Demo	LF	Sm	AD	.471	51.00	---	20.50	6.15	26.65	34.80

12'-0" H

8" T	Demo	LF	Lg	AD	.316	76.00	---	13.80	4.13	17.93	23.40
	Demo	LF	Sm	AD	.369	65.00	---	16.10	4.83	20.93	27.30
12" T	Demo	LF	Lg	AD	.462	52.00	---	20.10	6.03	26.13	34.20
	Demo	LF	Sm	AD	.545	44.00	---	23.70	7.13	30.83	40.30

Place foundations and retaining walls

Forming only. Material price includes panel forms, wales, braces, snap ties, paraffin oil and nails

8" or 12" T x 4'-0" H

Make (@12 uses)	Inst	SF	Lg	CU	.058	685.0	1.05	2.29	---	3.34	4.26
	Inst	SF	Sm	CU	.063	630.0	1.42	2.49	---	3.91	4.90
Erect and coat	Inst	SF	Lg	CU	.098	410.0	.04	3.87	---	3.91	5.46
	Inst	SF	Sm	CU	.106	377.0	.04	4.19	---	4.23	5.90
Wreck and clean	Inst	SF	Lg	LB	.043	370.0	---	1.43	---	1.43	2.01
	Inst	SF	Sm	LB	.048	333.0	---	1.60	---	1.60	2.24

Concrete, foundations and retaining walls

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

8" or 12" T x 8'-0" H

Make (@12 uses)	Inst	SF	Lg	CU	.061	655.0	.97	2.41	---	3.38	4.34
	Inst	SF	Sm	CU	.066	603.0	1.32	2.61	---	3.93	4.97
Erect and coat	Inst	SF	Lg	CU	.118	340.0	.04	4.66	---	4.70	6.57
	Inst	SF	Sm	CU	.128	313.0	.04	5.06	---	5.10	7.12
Wreck and clean	Inst	SF	Lg	LB	.052	305.0	---	1.73	---	1.73	2.42
	Inst	SF	Sm	LB	.058	275.0	---	1.93	---	1.93	2.70

8" or 12" T x 12'-0" H

Make (@12 uses)	Inst	SF	Lg	CU	.060	670.0	1.03	2.37	---	3.40	4.35
	Inst	SF	Sm	CU	.065	616.0	1.37	2.57	---	3.94	4.97
Erect and coat	Inst	SF	Lg	CU	.138	290.0	.04	5.45	---	5.49	7.67
	Inst	SF	Sm	CU	.150	267.0	.04	5.93	---	5.97	8.34
Wreck and clean	Inst	SF	Lg	LB	.062	260.0	---	2.07	---	2.07	2.89
	Inst	SF	Sm	LB	.068	234.0	---	2.27	---	2.27	3.17

Reinforcing steel rods. 5% waste included, pricing based on LF of rod

No. 3 (3/8" rod)	Inst	LF	Lg	LB	.012	1390	.49	.40	---	.89	1.05
	Inst	LF	Sm	LB	.013	1251	.53	.43	---	.96	1.14
No. 4 (1/2" rod)	Inst	LF	Lg	LB	.012	1330	.82	.40	---	1.22	1.38
	Inst	LF	Sm	LB	.013	1197	.89	.43	---	1.32	1.50
No. 5 (5/8" rod)	Inst	LF	Lg	LB	.013	1260	.99	.43	---	1.42	1.60
	Inst	LF	Sm	LB	.014	1134	1.09	.47	---	1.56	1.74
No. 6 (3/4" rod)	Inst	LF	Lg	LB	.014	1130	1.54	.47	---	2.01	2.19
	Inst	LF	Sm	LB	.016	1017	1.70	.53	---	2.23	2.45
No. 7 (7/8" rod)	Inst	LF	Lg	LB	.016	1000	1.88	.53	---	2.41	2.63
	Inst	LF	Sm	LB	.018	900.0	2.08	.60	---	2.68	2.92

Concrete, placed from trucks into forms, material cost includes 5% waste and assumes use of 3,000 PSI, 1-1/2" aggregate, 5.7 sack mix

8" T x 4'-0" H (10.12 LF/CY)	Inst	LF	Lg	LG	.070	690.0	22.40	2.42	---	24.82	25.80
	Inst	LF	Sm	LG	.077	621.0	24.70	2.66	---	27.36	28.40
8" T x 4'-0" H (40.5 SF/CY)	Inst	SF	Lg	LG	.017	2760	5.60	.59	---	6.19	6.42
	Inst	SF	Sm	LG	.019	2484	6.18	.66	---	6.84	7.10
8" T x 8'-0" H (5.06 LF/CY)	Inst	LF	Lg	LG	.139	345.0	44.80	4.81	---	49.61	51.60
	Inst	LF	Sm	LG	.154	311.0	49.40	5.33	---	54.73	56.90
8" T x 8'-0" H (40.5 SF/CY)	Inst	SF	Lg	LG	.017	2760	5.60	.59	---	6.19	6.42
	Inst	SF	Sm	LG	.019	2484	6.18	.66	---	6.84	7.10
8" T x 12'-0" H (3.37 LF/CY)	Inst	LF	Lg	LG	.209	230.0	67.30	7.23	---	74.53	77.40
	Inst	LF	Sm	LG	.232	207.0	74.20	8.03	---	82.23	85.40
8" T x 12'-0" H (40.5 SF/CY)	Inst	SF	Lg	LG	.017	2760	5.60	.59	---	6.19	6.42
	Inst	SF	Sm	LG	.019	2484	6.18	.66	---	6.84	7.10
12' T x 4'-0" H (6.75 LF/CY)	Inst	LF	Lg	LG	.104	463.0	33.60	3.60	---	37.20	38.60
	Inst	LF	Sm	LG	.115	417.0	37.00	3.98	---	40.98	42.60

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
12" T x 4'-0" H (27.0 LF/CY)	Inst	SF	Lg	LG	.026	1850	8.40	.90	---	9.30	9.66
	Inst	SF	Sm	LG	.029	1665	9.25	1.00	---	10.25	10.70
12" T x 8'-0" H (3.38 LF/CY)	Inst	LF	Lg	LG	.208	231.0	67.10	7.20	---	74.30	77.20
	Inst	LF	Sm	LG	.231	208.0	74.00	7.99	---	81.99	85.20
12" T x 8'-0" H (27.0 SF/CY)	Inst	SF	Lg	LG	.026	1850	8.40	.90	---	9.30	9.66
	Inst	SF	Sm	LG	.026	1850	9.25	.90	---	10.15	10.50
12" T x 12'-0" H (2.25 LF/CY)	Inst	LF	Lg	LG	.312	154.0	101.00	10.80	---	111.80	116.00
	Inst	LF	Sm	LG	.312	154.0	111.00	10.80	---	121.80	126.00
12" T x 12'-0" H (27.0 SF/CY)	Inst	SF	Lg	LG	.026	1850	8.40	.90	---	9.30	9.66
	Inst	SF	Sm	LG	.026	1850	9.25	.90	---	10.15	10.50

Slabs, sidewalks and driveways, demo with air tools

Demo with air tools

With reinforcing (6 x 6 / 10 x 10)

4" T	Demo	SF	Lg	AD	.063	380.0	---	2.74	.38	3.12	4.22
	Demo	SF	Sm	AD	.074	323.0	---	3.22	.45	3.67	4.96
5" T	Demo	SF	Lg	AD	.073	330.0	---	3.18	.44	3.62	4.89
	Demo	SF	Sm	AD	.085	281.0	---	3.70	.52	4.22	5.70
6" T	Demo	SF	Lg	AD	.083	290.0	---	3.61	.50	4.11	5.56
	Demo	SF	Sm	AD	.097	247.0	---	4.22	.59	4.81	6.50

Without reinforcing

4" T	Demo	SF	Lg	AD	.044	550.0	---	1.91	.26	2.17	2.94
	Demo	SF	Sm	AD	.051	468.0	---	2.22	.31	2.53	3.42
5" T	Demo	SF	Lg	AD	.051	475.0	---	2.22	.30	2.52	3.41
	Demo	SF	Sm	AD	.059	404.0	---	2.57	.36	2.93	3.95
6" T	Demo	SF	Lg	AD	.057	420.0	---	2.48	.34	2.82	3.81
	Demo	SF	Sm	AD	.067	357.0	---	2.92	.41	3.33	4.49

Place concrete

Forming, 4 uses

2" x 4" (4" T slab)	Inst	LF	Lg	DD	.041	580.0	.05	1.53	---	1.58	2.22
	Inst	LF	Sm	DD	.045	534.0	.32	1.68	---	2.00	2.70
2" x 6" (5" T and 6" T slab)	Inst	LF	Lg	DD	.041	580.0	.05	1.53	---	1.58	2.22
	Inst	LF	Sm	DD	.045	534.0	.36	1.68	---	2.04	2.74

Grading

Dirt, cut and fill, +/- 1/10 ft	Inst	SF	Lg	1L	.010	800.0	---	.33	---	.33	.47
	Inst	SF	Sm	1L	.011	720.0	---	.37	---	.37	.51
Gravel, 3/4" to 1-1/2" stone	Inst	SF	Lg	1L	.011	750.0	1.27	.37	---	1.64	1.78
	Inst	SF	Sm	1L	.012	675.0	1.40	.40	---	1.80	1.96

Screeds, 3 uses

2" x 2"	Inst	LF	Lg	DD	.029	835.0	.03	1.08	---	1.11	1.57
	Inst	LF	Sm	DD	.031	768.0	.13	1.16	---	1.29	1.77
2" x 4"	Inst	LF	Lg	DD	.032	760.0	.03	1.19	---	1.22	1.72
	Inst	LF	Sm	DD	.034	699.0	.23	1.27	---	1.50	2.03

Concrete, slabs, sidewalks and driveways

Description	Oper	Unit	Vol	Size	Man-	Crew	Unit	Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output							
					per Unit	per Day							

Reinforcing steel rods, includes 5% waste, costs are per LF of rod or SF of mesh

No. 3 (3/8" rod)	Inst	LF	Lg	LB	.011	1480	.49	.37	---	.86	1.00
	Inst	LF	Sm	LB	.012	1332	.53	.40	---	.93	1.09
No. 4 (1/2" rod)	Inst	LF	Lg	LB	.011	1410	.82	.37	---	1.19	1.33
	Inst	LF	Sm	LB	.013	1269	.89	.43	---	1.32	1.50
No. 5 (5/8" rod)	Inst	LF	Lg	LB	.012	1340	.99	.40	---	1.39	1.55
	Inst	LF	Sm	LB	.013	1206	1.09	.43	---	1.52	1.70
6 x 6 / 10-10 @ 21 lbs/CSF	Inst	SF	Lg	LB	.003	5250	.14	.10	---	.24	.28
	Inst	SF	Sm	LB	.003	4725	.15	.10	---	.25	.29
6 x 6 / 6-6 @ 42 lbs/CSF	Inst	SF	Lg	LB	.004	4500	.21	.13	---	.34	.40
	Inst	SF	Sm	LB	.004	4050	.23	.13	---	.36	.42

Concrete, pour and finish (steel trowel), material cost includes 5% waste and assumes use of 2500 PSI, 1" aggregate, 5.5 sack mix

3-1/2" T (92.57 SF/CY)	Inst	SF	Lg	DF	.023	2805	2.45	.82	---	3.27	3.61
	Inst	SF	Sm	DF	.025	2581	2.70	.89	---	3.59	3.96
4" T (81.00 SF/CY)	Inst	SF	Lg	DF	.024	2720	2.79	.85	---	3.64	4.00
	Inst	SF	Sm	DF	.026	2502	3.08	.92	---	4.00	4.39
5" T (64.80 SF/CY)	Inst	SF	Lg	DF	.025	2590	3.49	.89	---	4.38	4.75
	Inst	SF	Sm	DF	.027	2383	3.85	.96	---	4.81	5.21
6" T (54.00 SF/CY)	Inst	SF	Lg	DF	.026	2460	4.20	.92	---	5.12	5.51
	Inst	SF	Sm	DF	.028	2263	4.63	1.00	---	5.63	6.04

Forms, wreck and clean

2" x 4"	Inst	LF	Lg	1L	.022	360.0	---	.73	---	.73	1.03
	Inst	LF	Sm	1L	.025	324.0	---	.83	---	.83	1.17
2" x 6"	Inst	LF	Lg	1L	.024	340.0	---	.80	---	.80	1.12
	Inst	LF	Sm	1L	.026	306.0	---	.87	---	.87	1.21

Material information

Ready mix delivered by truck

Material costs only, prices are typical for most cities and assumes delivery up to 20 miles for 10 CY or more, 3" to 4" slump

Footing and foundation, using 1-1/2" aggregate

2000 PSI, 4.8 sack mix	Inst	CY	Lg	---	---	---	201.00	---	---	201.00	201.00
	Inst	CY	Sm	---	---	---	221.00	---	---	221.00	221.00
2500 PSI, 5.2 sack mix	Inst	CY	Lg	---	---	---	207.00	---	---	207.00	207.00
	Inst	CY	Sm	---	---	---	229.00	---	---	229.00	229.00
3000 PSI, 5.7 sack mix	Inst	CY	Lg	---	---	---	216.00	---	---	216.00	216.00
	Inst	CY	Sm	---	---	---	238.00	---	---	238.00	238.00
3500 PSI, 6.3 sack mix	Inst	CY	Lg	---	---	---	220.00	---	---	220.00	220.00
	Inst	CY	Sm	---	---	---	243.00	---	---	243.00	243.00
4000 PSI, 6.9 sack mix	Inst	CY	Lg	---	---	---	236.00	---	---	236.00	236.00
	Inst	CY	Sm	---	---	---	260.00	---	---	260.00	260.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Slab, sidewalk and driveway, using 1" aggregate

2000 PSI, 5.0 sack mix	Inst	CY	Lg	---	---	---	205.00	---	---	205.00	205.00
	Inst	CY	Sm	---	---	---	226.00	---	---	226.00	226.00
2500 PSI, 5.5 sack mix	Inst	CY	Lg	---	---	---	214.00	---	---	214.00	214.00
	Inst	CY	Sm	---	---	---	236.00	---	---	236.00	236.00
3000 PSI, 6.0 sack mix	Inst	CY	Lg	---	---	---	220.00	---	---	220.00	220.00
	Inst	CY	Sm	---	---	---	243.00	---	---	243.00	243.00
3500 PSI, 6.6 sack mix	Inst	CY	Lg	---	---	---	231.00	---	---	231.00	231.00
	Inst	CY	Sm	---	---	---	255.00	---	---	255.00	255.00
4000 PSI, 7.1 sack mix	Inst	CY	Lg	---	---	---	238.00	---	---	238.00	238.00
	Inst	CY	Sm	---	---	---	262.00	---	---	262.00	262.00

Pump & grout mix, using pea gravel, 3/8" aggregate

2000 PSI, 6.0 sack mix	Inst	CY	Lg	---	---	---	220.00	---	---	220.00	220.00
	Inst	CY	Sm	---	---	---	243.00	---	---	243.00	243.00
2500 PSI, 6.5 sack mix	Inst	CY	Lg	---	---	---	229.00	---	---	229.00	229.00
	Inst	CY	Sm	---	---	---	252.00	---	---	252.00	252.00
3000 PSI, 7.2 sack mix	Inst	CY	Lg	---	---	---	240.00	---	---	240.00	240.00
	Inst	CY	Sm	---	---	---	264.00	---	---	264.00	264.00
3500 PSI, 7.9 sack mix	Inst	CY	Lg	---	---	---	251.00	---	---	251.00	251.00
	Inst	CY	Sm	---	---	---	276.00	---	---	276.00	276.00
4000 PSI, 8.5 sack mix	Inst	CY	Lg	---	---	---	266.00	---	---	266.00	266.00
	Inst	CY	Sm	---	---	---	293.00	---	---	293.00	293.00

Adjustments

Extra delivery costs for ready-mix concrete

Delivery over 20 miles, ADD

Inst	Mi	Lg	---	---	---	10.80	---	---	10.80	10.80
Inst	Mi	Sm	---	---	---	11.90	---	---	11.90	11.90

Standby charge in excess of 5 minutes per CY delivered per minute extra time, ADD

Inst	Min	Lg	---	---	---	1.80	---	---	1.80	1.80
Inst	Min	Sm	---	---	---	1.80	---	---	1.80	1.80

Loads 7.25 CY or less, ADD

7.25 CY	Inst	LS	Lg	---	---	---	15.10	---	---	15.10	15.10
	Inst	LS	Sm	---	---	---	16.70	---	---	16.70	16.70
6.0 CY	Inst	LS	Lg	---	---	---	54.00	---	---	54.00	54.00
	Inst	LS	Sm	---	---	---	59.50	---	---	59.50	59.50
5.0 CY	Inst	LS	Lg	---	---	---	86.40	---	---	86.40	86.40
	Inst	LS	Sm	---	---	---	95.30	---	---	95.30	95.30
4.0 CY	Inst	LS	Lg	---	---	---	119.00	---	---	119.00	119.00
	Inst	LS	Sm	---	---	---	131.00	---	---	131.00	131.00
3.0 CY	Inst	LS	Lg	---	---	---	151.00	---	---	151.00	151.00
	Inst	LS	Sm	---	---	---	167.00	---	---	167.00	167.00
2.0 CY	Inst	LS	Lg	---	---	---	184.00	---	---	184.00	184.00
	Inst	LS	Sm	---	---	---	202.00	---	---	202.00	202.00
1.0 CY	Inst	LS	Lg	---	---	---	216.00	---	---	216.00	216.00
	Inst	LS	Sm	---	---	---	238.00	---	---	238.00	238.00

Concrete, adjustments

[illegible]

Extra costs for non-standard mix additives

High early strength

5.0 sack mix	Inst	CY	Lg	---	---	---	15.00	---	---	15.00	15.00
	Inst	CY	Sm	---	---	---	15.00	---	---	15.00	15.00
6.0 sack mix	Inst	CY	Lg	---	---	---	19.80	---	---	19.80	19.80
	Inst	CY	Sm	---	---	---	19.80	---	---	19.80	19.80

White cement (architectural)

	Inst	CY	Lg	---	---	---	68.40	---	---	68.40	68.40
	Inst	CY	Sm	---	---	---	68.40	---	---	68.40	68.40
For 1% calcium chloride	Inst	CY	Lg	---	---	---	1.92	---	---	1.92	1.92
	Inst	CY	Sm	---	---	---	1.92	---	---	1.92	1.92
For 2% calcium chloride	Inst	CY	Lg	---	---	---	3.00	---	---	3.00	3.00
	Inst	CY	Sm	---	---	---	3.00	---	---	3.00	3.00

Chemical compensated shrinkage (WRDA Admix)

Inst	CY	Lg	---	---	---	25.20	---	---	25.20	25.20
Inst	CY	Sm	---	---	---	25.20	---	---	25.20	25.20

Super plasticized mix, with 7"-8" slump

Inst	Lg	---	---	---	8.0	---	---	8.0	8.0
Inst	Sm	---	---	---	8.0	---	---	8.0	8.0

Coloring of concrete, ADD

Light or sand colors	Inst	CY	Lg	---	---	---	21.60	---	---	21.60	21.60
	Inst	CY	Sm	---	---	---	21.60	---	---	21.60	21.60
Medium or buff colors	Inst	CY	Lg	---	---	---	28.80	---	---	28.80	28.80
	Inst	CY	Sm	---	---	---	28.80	---	---	28.80	28.80
Dark colors	Inst	CY	Lg	---	---	---	43.20	---	---	43.20	43.20
	Inst	CY	Sm	---	---	---	43.20	---	---	43.20	43.20
Green	Inst	CY	Lg	---	---	---	48.00	---	---	48.00	48.00
	Inst	CY	Sm	---	---	---	48.00	---	---	48.00	48.00

Extra costs for non-standard aggregates

Lightweight aggregate, ADD

Mix from truck to forms	Inst	CY	Lg	---	---	---	54.00	---	---	54.00	54.00
	Inst	CY	Sm	---	---	---	59.50	---	---	59.50	59.50
Pump mix	Inst	CY	Lg	---	---	---	57.20	---	---	57.20	57.20
	Inst	CY	Sm	---	---	---	63.10	---	---	63.10	63.10

Granite aggregate, ADD

Inst	CY	Lg	---	---	---	15.70	---	---	15.70	15.70
Inst	CY	Sm	---	---	---	17.30	---	---	17.30	17.30

Concrete block. See Masonry, page 279

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Countertops

Ceramic tile counter and backsplash

Adhesive / Mastic

1" x 1" or similar	Inst	SF	Lg	TB	.229	70.00	8.73	7.94	---	16.67	21.30
	Inst	SF	Sm	TB	.381	42.00	9.62	13.20	---	22.82	29.80
4-1/4" x 4-1/4" or similar	Inst	SF	Lg	TB	.200	80.00	7.30	6.94	---	14.24	18.20
	Inst	SF	Sm	TB	.333	48.00	8.05	11.60	---	19.65	25.70

Concrete

One-piece tops; straight, "L", or "U" shapes; minimal sanding, grinding, or polishing; cemented to particleboard base

25" W, 1-1/2" H front edge, with integral coved 4" H backsplash

Standard grade, solid color											
	Inst	SF	Lg	2C	.107	150.00	53.00	4.39	---	57.39	67.10
	Inst	SF	Sm	2C	.152	105.00	58.40	6.24	---	64.64	75.90
Average grade, solid and mixed color											
	Inst	SF	Lg	2C	.107	150.00	70.60	4.39	---	74.99	87.40
	Inst	SF	Sm	2C	.152	105.00	77.90	6.24	---	84.14	98.30
High grade, specialty mixed colors or finish patterns											
	Inst	SF	Lg	2C	.107	150.00	86.20	4.39	---	90.59	105.00
	Inst	SF	Sm	2C	.152	105.00	95.00	6.24	---	101.24	118.00

Adjustments, ADD

For edge treatment, ADD

Average	Inst	LF	Lg	2C	.213	75.00	28.10	8.75	---	36.85	44.60
	Inst	LF	Sm	2C	.305	52.50	31.00	12.50	---	43.50	53.20
High	Inst	LF	Lg	2C	.291	55.00	48.20	12.00	---	60.20	72.20
	Inst	LF	Sm	2C	.416	38.50	53.10	17.10	---	70.20	85.00

For buff and polish, ADD

Any grade	Inst	SF	Lg	2C	.114	140.00	.45	4.68	---	5.13	7.07
	Inst	SF	Sm	2C	.163	98.00	.50	6.69	---	7.19	9.94

Formica

One-piece tops; straight, "L", or "U" shapes; surfaced with laminated plastic cemented to particleboard base

Post formed countertop with raised front drip edge

25" W, 1-1/2" H front edge, with integral coved 4" H backsplash

Standard grade, solid pattern											
	Inst	LF	Lg	2C	.080	200.00	23.80	3.28	---	27.08	32.00
	Inst	LF	Sm	2C	.114	140.00	26.20	4.68	---	30.88	36.70
Average grade, simple patterns											
	Inst	LF	Lg	2C	.080	200.00	35.70	3.28	---	38.98	45.60
	Inst	LF	Sm	2C	.114	140.00	39.30	4.68	---	43.98	51.80

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

High grade, specialty finish patterns

Inst	LF	Lg	2C	.080	200.00	52.80	3.28	---	56.08	65.30
Inst	LF	Sm	2C	.114	140.00	58.20	4.68	---	62.88	73.40

Premium grade, stone and wood tone patterns

Inst	LF	Lg	2C	.080	200.00	63.10	3.28	---	66.38	77.20
Inst	LF	Sm	2C	.114	140.00	69.50	4.68	---	74.18	86.50

Double roll top, 1-1/2" H front and back edges, no backsplash

25" W

Standard grade, solid pattern

Inst	LF	Lg	2C	.071	225.00	19.30	2.92	---	22.22	26.30
Inst	LF	Sm	2C	.102	157.50	21.30	4.19	---	25.49	30.30

Average grade, simple patterns

Inst	LF	Lg	2C	.071	225.00	32.00	2.92	---	34.92	40.90
Inst	LF	Sm	2C	.102	157.50	35.20	4.19	---	39.39	46.40

High grade, specialty finish patterns

Inst	LF	Lg	2C	.071	225.00	43.20	2.92	---	46.12	53.80
Inst	LF	Sm	2C	.102	157.50	47.60	4.19	---	51.79	60.60

Premium grade, stone and wood tone patterns

Inst	LF	Lg	2C	.071	225.00	60.60	2.92	---	63.52	73.80
Inst	LF	Sm	2C	.102	157.50	66.80	4.19	---	70.99	82.70

36" W

Standard grade, solid pattern

Inst	LF	Lg	2C	.058	275.00	23.90	2.38	---	26.28	30.90
Inst	LF	Sm	2C	.083	192.50	26.40	3.41	---	29.81	35.10

Average grade, simple patterns

Inst	LF	Lg	2C	.058	275.00	39.70	2.38	---	42.08	48.90
Inst	LF	Sm	2C	.083	192.50	43.70	3.41	---	47.11	55.00

High grade, specialty finish patterns

Inst	LF	Lg	2C	.058	275.00	53.60	2.38	---	55.98	64.90
Inst	LF	Sm	2C	.083	192.50	59.00	3.41	---	62.41	72.60

Premium grade, stone and wood tone patterns

Inst	LF	Lg	2C	.058	275.00	75.20	2.38	---	77.58	89.80
Inst	LF	Sm	2C	.083	192.50	82.90	3.41	---	86.31	100.00

Post formed countertop with square edge veneer front

25" W, 1-1/2" H front edge, 4" H coved backsplash

Standard grade, solid pattern

Inst	LF	Lg	2C	.080	200.00	22.80	3.28	---	26.08	30.80
Inst	LF	Sm	2C	.114	140.00	25.10	4.68	---	29.78	35.40

Average grade, simple patterns

Inst	LF	Lg	2C	.080	200.00	37.70	3.28	---	40.98	48.00
Inst	LF	Sm	2C	.114	140.00	41.60	4.68	---	46.28	54.40

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					

High grade, specialty finish patterns

Inst	LF	Lg	2C	.080	200.00	51.00	3.28	---	54.28	63.20
Inst	LF	Sm	2C	.114	140.00	56.20	4.68	---	60.88	71.10

Premium grade, stone and wood tone patterns

Inst	LF	Lg	2C	.080	200.00	71.50	3.28	---	74.78	86.90
Inst	LF	Sm	2C	.114	140.00	78.80	4.68	---	83.48	97.20

Self-edge countertop with square edge veneer front

25" W, 1-1/2" H front edge, 4" H coved backsplash (@ 90-degree angle to deck)

Standard grade, solid pattern

Inst	LF	Lg	2C	.080	200.00	25.10	3.28	---	28.38	33.50
Inst	LF	Sm	2C	.114	140.00	27.70	4.68	---	32.38	38.40

Average grade, simple patterns

Inst	LF	Lg	2C	.080	200.00	41.60	3.28	---	44.88	52.40
Inst	LF	Sm	2C	.114	140.00	45.80	4.68	---	50.48	59.20

High grade, specialty finish patterns

Inst	LF	Lg	2C	.080	200.00	56.10	3.28	---	59.38	69.20
Inst	LF	Sm	2C	.114	140.00	61.90	4.68	---	66.58	77.70

Premium grade, stone and wood tone patterns

Inst	LF	Lg	2C	.080	200.00	78.80	3.28	---	82.08	95.20
Inst	LF	Sm	2C	.114	140.00	86.90	4.68	---	91.58	106.00

Adjustments, ADD

Countertop edge treatment

Plastic laminate	Inst	LF	Lg	2C	.040	400.00	.71	1.64	---	2.35	3.12
	Inst	LF	Sm	2C	.057	280.00	.78	2.34	---	3.12	4.17
Wood	Inst	LF	Lg	2C	.064	250.00	2.35	2.63	---	4.98	6.38
	Inst	LF	Sm	2C	.091	175.00	2.59	3.74	---	6.33	8.21

Diagonal corner cut

Standard	Inst	Ea	Lg	---	---	---	17.60	---	---	17.60	17.60
	Inst	Ea	Sm	---	---	---	19.40	---	---	19.40	19.40
With plateau shelf	Inst	Ea	Lg	---	---	---	83.30	---	---	83.30	83.30
	Inst	Ea	Sm	---	---	---	91.80	---	---	91.80	91.80

Radius corner cut

3" or 6"	Inst	Ea	Lg	---	---	---	11.80	---	---	11.80	11.80
	Inst	Ea	Sm	---	---	---	13.00	---	---	13.00	13.00
12"	Inst	Ea	Lg	---	---	---	11.80	---	---	11.80	11.80
	Inst	Ea	Sm	---	---	---	13.00	---	---	13.00	13.00
Quarter radius end	Inst	Ea	Lg	---	---	---	11.80	---	---	11.80	11.80
	Inst	Ea	Sm	---	---	---	13.00	---	---	13.00	13.00
Half radius end	Inst	Ea	Lg	---	---	---	21.60	---	---	21.60	21.60
	Inst	Ea	Sm	---	---	---	23.80	---	---	23.80	23.80

Countertops, Granite or Marble

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Miter corner, shop assembled											
	Inst	Ea	Lg	---	---	---	125.00	---	---	125.00	125.00
	Inst	Ea	Sm	---	---	---	138.00	---	---	138.00	138.00
Splicing any top or leg 12' or longer, shop assembled											
	Inst	Ea	Lg	---	---	---	20.60	---	---	20.60	20.60
	Inst	Ea	Sm	---	---	---	22.70	---	---	22.70	22.70
Endsplash with finished sides and edges											
	Inst	Ea	Lg	---	---	---	15.70	---	---	15.70	15.70
	Inst	Ea	Sm	---	---	---	17.30	---	---	17.30	17.30
Sink or range cutout											
	Inst	Ea	Lg	---	---	---	6.86	---	---	6.86	6.86
	Inst	Ea	Sm	---	---	---	7.56	---	---	7.56	7.56

Granite or Marble

One-piece tops; straight, "L", or "U" shapes; cemented to particleboard base

25" W, 1-1/2" H front edge, additional for 4" H backsplash

Standard grade, light to neutral colors, small stone patterns											
	Inst	SF	Lg	2C	.229	70.00	14.70	9.40	---	24.10	30.00
	Inst	SF	Sm	2C	.327	49.00	16.20	13.40	---	29.60	37.40
Average grade, dark colors, small to medium stone patterns											
	Inst	SF	Lg	2C	.229	70.00	27.10	9.40	---	36.50	44.30
	Inst	SF	Sm	2C	.327	49.00	29.90	13.40	---	43.30	53.20
High grade, specialty colors											
	Inst	SF	Lg	2C	.229	70.00	41.70	9.40	---	51.10	61.10
	Inst	SF	Sm	2C	.327	49.00	45.90	13.40	---	59.30	71.60
Premium grade, intense primary colors, intricate or matched patterns											
	Inst	SF	Lg	2C	.229	70.00	72.80	9.40	---	82.20	96.90
	Inst	SF	Sm	2C	.327	49.00	80.20	13.40	---	93.60	111.00

Adjustments, ADD

For undermount sink cutout and polish, ADD

Single sink	Inst	Ea	Lg	2C	1.067	15.00	224.00	43.80	---	267.80	319.00
	Inst	Ea	Sm	2C	1.524	10.50	247.00	62.60	---	309.60	372.00
Double sink	Inst	Ea	Lg	2C	2.133	7.50	337.00	87.60	---	424.60	510.00
	Inst	Ea	Sm	2C	3.048	5.25	372.00	125.00	---	497.00	603.00

For edge treatment, ADD

Standard grade	Inst	LF	Lg	2C	.178	90.00	21.10	7.31	---	28.41	34.50
	Inst	LF	Sm	2C	.254	63.00	23.20	10.40	---	33.60	41.30
Average grade	Inst	LF	Lg	2C	.320	50.00	28.10	13.10	---	41.20	50.70
	Inst	LF	Sm	2C	.457	35.00	31.00	18.80	---	49.80	61.90
High grade	Inst	LF	Lg	2C	.457	35.00	48.20	18.80	---	67.00	81.70
	Inst	LF	Sm	2C	.653	24.50	53.10	26.80	---	79.90	98.60
Premium grade	Inst	LF	Lg	2C	.800	20.00	72.30	32.90	---	105.20	129.00
	Inst	LF	Sm	2C	1.143	14.00	79.70	46.90	---	126.60	157.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

For backsplash, ADD

Coved, seamless, permanently joined

Inst	LF	Lg	2C	.400	40.00	15.60	16.40	---	32.00	40.90
Inst	LF	Sm	2C	.571	28.00	17.20	23.50	---	40.70	52.60

Unattached, then butt joint @ 90 degree angle

Inst	LF	Lg	2C	.027	600.00	10.40	1.11	---	11.51	13.60
Inst	LF	Sm	2C	.038	420.00	11.50	1.56	---	13.06	15.40

For buff and polish, ADD

Any grade

Inst	SF	Lg	2C	.114	140.00	.45	4.68	---	5.13	7.07
Inst	SF	Sm	2C	.163	98.00	.50	6.69	---	7.19	9.94

Quartz

One-piece tops; straight, "L", or "U" shapes; cemented to particleboard base

25" W, 1-1/2" H front edge, additional for 4" H backsplash

High grade, specialty colors	Inst	SF	Lg	2C	.229	70.00	58.80	9.40	---	68.20	80.70
	Inst	SF	Sm	2C	.327	49.00	64.80	13.40	---	78.20	93.30

Premium grade, intense primary colors, intricate or matched patterns

Inst	SF	Lg	2C	.229	70.00	71.30	9.40	---	80.70	95.10
Inst	SF	Sm	2C	.327	49.00	78.50	13.40	---	91.90	109.00

Adjustments, ADD

For undermount sink cutout and polish, ADD

Single sink	Inst	Ea	Lg	2C	1.067	15.00	224.00	43.80	---	267.80	319.00
	Inst	Ea	Sm	2C	1.524	10.50	247.00	62.60	---	309.60	372.00
Double sink	Inst	Ea	Lg	2C	2.133	7.50	337.00	87.60	---	424.60	510.00
	Inst	Ea	Sm	2C	3.048	5.25	372.00	125.00	---	497.00	603.00

For edge treatment, ADD

High grade	Inst	LF	Lg	2C	.457	35.00	28.10	18.80	---	46.90	58.60
	Inst	LF	Sm	2C	.653	24.50	31.00	26.80	---	57.80	73.20
Premium grade	Inst	LF	Lg	2C	.800	20.00	48.20	32.90	---	81.10	101.00
	Inst	LF	Sm	2C	1.143	14.00	53.10	46.90	---	100.00	127.00

For backsplash, ADD

Coved, seamless, permanently joined

Inst	LF	Lg	2C	.400	40.00	15.60	16.40	---	32.00	40.90
Inst	LF	Sm	2C	.571	28.00	17.20	23.50	---	40.70	52.60

Unattached, then butt joint @ 90 degree angle

Inst	LF	Lg	2C	.027	600.00	10.40	1.11	---	11.51	13.60
Inst	LF	Sm	2C	.038	420.00	11.50	1.56	---	13.06	15.40

For buff and polish, ADD

Any grade	Inst	SF	Lg	2C	.114	140.00	.45	4.68	---	5.13	7.07
	Inst	SF	Sm	2C	.163	98.00	.50	6.69	---	7.19	9.94

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	Price
											Incl
											O&P

Engineered Stone (e.g., imitation granite / marble / Silestone)

One-piece tops; straight, "L", or "U" shapes; cemented to particleboard base, matte finish

25" W, 1-1/2" H front edge, additional for 4" H backsplash

Standard grade, light to neutral colors, small stone patterns											
	Inst	SF	Lg	2C	.091	175.00	35.20	3.74	---	38.94	45.70
	Inst	SF	Sm	2C	.131	122.50	38.80	5.38	---	44.18	52.10
Average grade, dark colors, small to medium stone patterns											
	Inst	SF	Lg	2C	.091	175.00	43.80	3.74	---	47.54	55.60
	Inst	SF	Sm	2C	.131	122.50	48.30	5.38	---	53.68	63.10
High grade, specialty colors											
	Inst	SF	Lg	2C	.091	175.00	58.80	3.74	---	62.54	72.80
	Inst	SF	Sm	2C	.131	122.50	64.80	5.38	---	70.18	82.00
Premium grade, intense primary colors, intricate or matched patterns											
	Inst	SF	Lg	2C	.091	175.00	71.30	3.74	---	75.04	87.20
	Inst	SF	Sm	2C	.131	122.50	78.50	5.38	---	83.88	97.90

Adjustments, ADD

For undermount sink cutout and polish, includes material for a solid surface sink with seaming kit, and installation labor, ADD

Bar sink	Inst	Ea	Lg	2C	.444	36.00	360.00	18.20	---	378.20	440.00
	Inst	Ea	Sm	2C	.635	25.20	397.00	26.10	---	423.10	493.00
Single sink	Inst	Ea	Lg	2C	.667	24.00	527.00	27.40	---	554.40	644.00
	Inst	Ea	Sm	2C	.952	16.80	580.00	39.10	---	619.10	722.00
Double sink	Inst	Ea	Lg	2C	.889	18.00	575.00	36.50	---	611.50	713.00
	Inst	Ea	Sm	2C	1.270	12.60	634.00	52.20	---	686.20	802.00

For edge treatment, ADD

Standard grade	Inst	LF	Lg	2C	.178	90.00	21.10	7.31	---	28.41	34.50
	Inst	LF	Sm	2C	.254	63.00	23.20	10.40	---	33.60	41.30
Average grade	Inst	LF	Lg	2C	.320	50.00	28.10	13.10	---	41.20	50.70
	Inst	LF	Sm	2C	.457	35.00	31.00	18.80	---	49.80	61.90
High grade	Inst	LF	Lg	2C	.457	35.00	48.20	18.80	---	67.00	81.70
	Inst	LF	Sm	2C	.653	24.50	53.10	26.80	---	79.90	98.60
Premium grade	Inst	LF	Lg	2C	.800	20.00	72.30	32.90	---	105.20	129.00
	Inst	LF	Sm	2C	1.143	14.00	79.70	46.90	---	126.60	157.00

For backsplash, ADD

Coved, seamless, permanently joined											
	Inst	LF	Lg	2C	.400	40.00	15.60	16.40	---	32.00	40.90
	Inst	LF	Sm	2C	.571	28.00	17.20	23.50	---	40.70	52.60
Unattached, then butt joint @ 90 degree angle											
	Inst	LF	Lg	2C	.027	600.00	10.40	1.11	---	11.51	13.60
	Inst	LF	Sm	2C	.038	420.00	11.50	1.56	---	13.06	15.40

For inlays, ADD

Any grade	Inst	LF	Lg	2C	.200	80.00	3.19	8.21	---	11.40	15.20
	Inst	LF	Sm	2C	.286	56.00	3.52	11.70	---	15.22	20.50

For gloss finish, ADD

Any grade	Inst	SF	Lg	2C	.178	90.00	27.60	7.31	---	34.91	42.00
	Inst	SF	Sm	2C	.254	63.00	30.50	10.40	---	40.90	49.60

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Stainless Steel

One-piece tops; straight, "L", or "U" shapes; cemented to particleboard base

25" W, 1-1/2" H front edge, with integral coved 4" H backsplash

Square edges eased	Inst	LF	Lg	2C	.457	35.00	173.00	18.80	---	191.80	225.00
	Inst	LF	Sm	2C	.653	24.50	190.00	26.80	---	216.80	256.00

Terrazzo

One-piece tops; straight, "L", or "U" shapes; material and labor to form, pour, and polish highly

25" W, 1-1/2" H front edge, no backsplash

Square edges eased	Inst	SF	Lg	2C	.800	20.00	6.31	32.90	---	39.21	53.20
	Inst	SF	Sm	2C	1.143	14.00	6.96	46.90	---	53.86	73.70

Wood

Butcher block construction (hard rock maple) throughout top; custom, straight, "L", or "U" shapes

Self-edge top; 26" W, with 4" H backsplash, 1-1/2" H front and back edges

	Inst	LF	Lg	2C	.267	60.00	28.70	11.00	---	39.70	48.30
	Inst	LF	Sm	2C	.381	42.00	31.60	15.60	---	47.20	58.20

Adjustments, ADD

Miter corner	Inst	Ea	Lg	---	---	---	125.00	---	---	125.00	125.00
	Inst	Ea	Sm	---	---	---	138.00	---	---	138.00	138.00
Sink or surface saver cutout	Inst	Ea	Lg	---	---	---	29.40	---	---	29.40	29.40
	Inst	Ea	Sm	---	---	---	32.40	---	---	32.40	32.40
45-degree plateau corner	Inst	Ea	Lg	---	---	---	147.00	---	---	147.00	147.00
	Inst	Ea	Sm	---	---	---	162.00	---	---	162.00	162.00
4" backsplash	Inst	LF	Lg	2C	.267	60.00	3.93	11.00	---	14.93	19.90
	Inst	LF	Sm	2C	.381	42.00	4.33	15.60	---	19.93	26.90
6" backsplash	Inst	LF	Lg	2C	.267	60.00	5.26	11.00	---	16.26	21.40
	Inst	LF	Sm	2C	.381	42.00	5.80	15.60	---	21.40	28.60

Cupolas

Wood, cedar / redwood or comparable, natural finish.

24" x 24" x 32" H	Inst	Ea	Lg	CA	1.33	6.00	451.00	54.60	---	505.60	640.00
	Inst	Ea	Sm	CA	1.78	4.50	497.00	73.10	---	570.10	723.00
30" x 30" x 40" H	Inst	Ea	Lg	CA	1.60	5.00	975.00	65.70	---	1040.70	1310.00
	Inst	Ea	Sm	CA	2.13	3.75	1070.00	87.50	---	1157.50	1470.00
36" x 36" x 48" H	Inst	Ea	Lg	CA	2.00	4.00	1660.00	82.10	---	1742.10	2190.00
	Inst	Ea	Sm	CA	2.67	3.00	1830.00	110.00	---	1940.00	2440.00

Vinyl, pre-finished.

24" x 24" x 32" H	Inst	Ea	Lg	CA	1.33	6.00	585.00	54.60	---	639.60	808.00
	Inst	Ea	Sm	CA	1.78	4.50	645.00	73.10	---	718.10	908.00
30" x 30" x 40" H	Inst	Ea	Lg	CA	1.60	5.00	1130.00	65.70	---	1195.70	1500.00
	Inst	Ea	Sm	CA	2.13	3.75	1240.00	87.50	---	1327.50	1670.00
36" x 36" x 48" H	Inst	Ea	Lg	CA	2.00	4.00	1840.00	82.10	---	1922.10	2410.00
	Inst	Ea	Sm	CA	2.67	3.00	2020.00	110.00	---	2130.00	2680.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Copper

24" x 24" x 32" H	Inst	Ea	Lg	CA	1.60	5.00	2600.00	65.70	---	2665.70	3340.00
	Inst	Ea	Sm	CA	2.13	3.75	2860.00	87.50	---	2947.50	3700.00
30" x 30" x 40" H	Inst	Ea	Lg	CA	2.00	4.00	3580.00	82.10	---	3662.10	4590.00
	Inst	Ea	Sm	CA	2.67	3.00	3940.00	110.00	---	4050.00	5080.00
36" x 36" x 48" H	Inst	Ea	Lg	CA	2.67	3.00	7350.00	110.00	---	7460.00	9340.00
	Inst	Ea	Sm	CA	3.56	2.25	8100.00	146.00	---	8246.00	10300.00

Weather vanes for above, aluminum

18" H, black finish	Inst	Ea	Lg	---	---	---	170.00	---	---	170.00	170.00
	Inst	Ea	Sm	---	---	---	187.00	---	---	187.00	187.00
24" H, black finish	Inst	Ea	Lg	---	---	---	212.00	---	---	212.00	212.00
	Inst	Ea	Sm	---	---	---	234.00	---	---	234.00	234.00
36" H, black and gold finish	Inst	Ea	Lg	---	---	---	255.00	---	---	255.00	255.00
	Inst	Ea	Sm	---	---	---	281.00	---	---	281.00	281.00
24" H, copper	Inst	Ea	Lg	---	---	---	283.00	---	---	283.00	283.00
	Inst	Ea	Sm	---	---	---	312.00	---	---	312.00	312.00
36" H, copper	Inst	Ea	Lg	---	---	---	498.00	---	---	498.00	498.00
	Inst	Ea	Sm	---	---	---	548.00	---	---	548.00	548.00

Demolition

Wreck and remove to dumpster

Dumpsters

Delivery, rental, transport of dumpsite, includes fees

12 CY, 1 - 3 tons	Demo	Ea	Lg	--	--	--	---	---	416.00	416.00	479.00
	Demo	Ea	Sm	--	--	--	---	---	459.00	459.00	527.00
20 CY, 4 tons	Demo	Ea	Lg	--	--	--	---	---	520.00	520.00	598.00
	Demo	Ea	Sm	--	--	--	---	---	573.00	573.00	659.00
30 CY, 5 - 7 tons	Demo	Ea	Lg	--	--	--	---	---	622.00	622.00	715.00
	Demo	Ea	Sm	--	--	--	---	---	686.00	686.00	788.00
40 CY, 7 - 8 tons	Demo	Ea	Lg	--	--	--	---	---	739.00	739.00	850.00
	Demo	Ea	Sm	--	--	--	---	---	815.00	815.00	937.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Concrete

Footings, with air tools; reinforced

8" T x 12" W (.67 CF/LF)	Demo	LF	Lg	AB	.133	120.0	---	5.45	2.61	8.06	10.20
	Demo	LF	Sm	AB	.205	78.00	---	8.40	4.02	12.42	15.80
8" T x 16" W (.89 CF/LF)	Demo	LF	Lg	AB	.160	100.0	---	6.56	3.14	9.70	12.30
	Demo	LF	Sm	AB	.246	65.00	---	10.10	4.83	14.93	18.90
8" T x 20" W (1.11 CF/LF)	Demo	LF	Lg	AB	.178	90.00	---	7.29	3.49	10.78	13.70
	Demo	LF	Sm	AB	.274	58.50	---	11.20	5.36	16.56	21.10
12" T x 12" W (1.00 CF/LF)	Demo	LF	Lg	AB	.229	70.00	---	9.38	4.48	13.86	17.60
	Demo	LF	Sm	AB	.352	45.50	---	14.40	6.90	21.30	27.10
12" T x 16" W (1.33 CF/LF)	Demo	LF	Lg	AB	.267	60.00	---	10.90	5.23	16.13	20.50
	Demo	LF	Sm	AB	.410	39.00	---	16.80	8.04	24.84	31.60
12" T x 20" W (1.67 CF/LF)	Demo	LF	Lg	AB	.291	55.00	---	11.90	5.70	17.60	22.40
	Demo	LF	Sm	AB	.448	35.75	---	18.40	8.78	27.18	34.50
12" T x 24" W (2.00 CF/LF)	Demo	LF	Lg	AB	.320	50.00	---	13.10	6.27	19.37	24.60
	Demo	LF	Sm	AB	.492	32.50	---	20.20	9.65	29.85	37.90

Foundations and retaining walls, with air tools, per LF wall

With reinforcing

4'-0" H

8" T (2.67 CF/LF)	Demo	SF	Lg	AB	.267	60.00	---	10.90	5.23	16.13	20.50
	Demo	SF	Sm	AB	.410	39.00	---	16.80	8.04	24.84	31.60
12" T (4.00 CF/LF)	Demo	SF	Lg	AB	.356	45.00	---	14.60	6.97	21.57	27.40
	Demo	SF	Sm	AB	.547	29.25	---	22.40	10.70	33.10	42.10

8'-0" H

8" T (5.33 CF/LF)	Demo	SF	Lg	AB	.291	55.00	---	11.90	5.70	17.60	22.40
	Demo	SF	Sm	AB	.448	35.75	---	18.40	8.78	27.18	34.50
12" T (8.00 CF/LF)	Demo	SF	Lg	AB	.400	40.00	---	16.40	7.84	24.24	30.80
	Demo	SF	Sm	AB	.615	26.00	---	25.20	12.10	37.30	47.30

12'-0" H

8" T (8.00 CF/LF)	Demo	SF	Lg	AB	.320	50.00	---	13.10	6.27	19.37	24.60
	Demo	SF	Sm	AB	.492	32.50	---	20.20	9.65	29.85	37.90
12" T (12.00 CF/LF)	Demo	SF	Lg	AB	.457	35.00	---	18.70	8.96	27.66	35.20
	Demo	SF	Sm	AB	.703	22.75	---	28.80	13.80	42.60	54.10

Without reinforcing

4'-0" H

8" T (2.67 CF/LF)	Demo	SF	Lg	AB	.200	80.00	---	8.19	3.92	12.11	15.40
	Demo	SF	Sm	AB	.308	52.00	---	12.60	6.03	18.63	23.70
12" T (4.00 CF/LF)	Demo	SF	Lg	AB	.267	60.00	---	10.90	5.23	16.13	20.50
	Demo	SF	Sm	AB	.410	39.00	---	16.80	8.04	24.84	31.60

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					
8'-0" H											
8" T (5.33 CF/LF)	Demo	SF	Lg	AB	.229	70.00	---	9.38	4.48	13.86	17.60
	Demo	SF	Sm	AB	.352	45.50	---	14.40	6.90	21.30	27.10
12" T (8.00 CF/LF)	Demo	SF	Lg	AB	.320	50.00	---	13.10	6.27	19.37	24.60
	Demo	SF	Sm	AB	.492	32.50	---	20.20	9.65	29.85	37.90
12'-0" H											
8" T (8.00 CF/LF)	Demo	SF	Lg	AB	.267	60.00	---	10.90	5.23	16.13	20.50
	Demo	SF	Sm	AB	.410	39.00	---	16.80	8.04	24.84	31.60
12" T (12.00 CF/LF)	Demo	SF	Lg	AB	.400	40.00	---	16.40	7.84	24.24	30.80
	Demo	SF	Sm	AB	.615	26.00	---	25.20	12.10	37.30	47.30
Slabs with air tools											
With reinforcing											
4" T	Demo	SF	Lg	AB	.038	425.0	---	1.56	.74	2.30	2.92
	Demo	SF	Sm	AB	.058	276.3	---	2.38	1.14	3.52	4.47
5" T	Demo	SF	Lg	AB	.043	370.0	---	1.76	.85	2.61	3.32
	Demo	SF	Sm	AB	.067	240.5	---	2.74	1.30	4.04	5.14
6" T	Demo	SF	Lg	AB	.046	350.0	---	1.88	.90	2.78	3.54
	Demo	SF	Sm	AB	.070	227.5	---	2.87	1.38	4.25	5.39
Without reinforcing											
4" T	Demo	SF	Lg	AB	.032	500.0	---	1.31	.63	1.94	2.47
	Demo	SF	Sm	AB	.049	325.0	---	2.01	.97	2.98	3.78
5" T	Demo	SF	Lg	AB	.038	425.0	---	1.56	.74	2.30	2.92
	Demo	SF	Sm	AB	.058	276.3	---	2.38	1.14	3.52	4.47
6" T	Demo	SF	Lg	AB	.043	370.0	---	1.76	.85	2.61	3.32
	Demo	SF	Sm	AB	.067	240.5	---	2.74	1.30	4.04	5.14
Masonry											
Brick											
Chimneys											
4" T wall	Demo	VLF	Lg	LB	.640	25.00	---	21.30	---	21.30	29.80
	Demo	VLF	Sm	LB	.985	16.25	---	32.80	---	32.80	45.90
8" T wall	Demo	VLF	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	VLF	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00
Columns, 12" x 12" o.d.											
	Demo	VLF	Lg	LB	.320	50.00	---	10.70	---	10.70	14.90
	Demo	VLF	Sm	LB	.492	32.50	---	16.40	---	16.40	22.90
Veneer, 4" T, with air tools	Demo	SF	Lg	AB	.059	270.0	---	2.42	1.16	3.58	4.54
	Demo	SF	Sm	AB	.091	175.5	---	3.73	1.79	5.52	7.01
Walls, with air tools											
8" T wall	Demo	SF	Lg	AB	.119	135.0	---	4.88	2.32	7.20	9.14
	Demo	SF	Sm	AB	.182	87.75	---	7.46	3.58	11.04	14.00
12" T wall	Demo	SF	Lg	AB	.168	95.00	---	6.88	3.30	10.18	12.90
	Demo	SF	Sm	AB	.259	61.75	---	10.60	5.08	15.68	19.90

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Concrete block; lightweight (haydite), standard or heavyweight**Foundations and retaining walls; no excavation included****Without reinforcing or with only lateral reinforcing**

With air tools

8" W x 8" H x 16" L	Demo	SF	Lg	AB	.057	280.0	---	2.34	1.12	3.46	4.39
	Demo	SF	Sm	AB	.088	182.0	---	3.61	1.72	5.33	6.77
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.067	240.0	---	2.74	1.31	4.05	5.15
	Demo	SF	Sm	AB	.103	156.0	---	4.22	2.01	6.23	7.92

Without air tools

8" W x 8" H x 16" L	Demo	SF	Lg	LB	.071	225.0	---	2.37	---	2.37	3.31
	Demo	SF	Sm	LB	.109	146.3	---	3.63	---	3.63	5.08
12" W x 8" H x 16" L	Demo	SF	Lg	LB	.084	190.0	---	2.80	---	2.80	3.92
	Demo	SF	Sm	LB	.130	123.5	---	4.33	---	4.33	6.06

With vertical reinforcing in every other core (2 cores per block) with cores filled

With air tools

8" W x 8" H x 16" L	Demo	SF	Lg	AB	.094	170.0	---	3.85	1.85	5.70	7.24
	Demo	SF	Sm	AB	.145	110.5	---	5.94	2.84	8.78	11.20
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.110	145.0	---	4.51	2.16	6.67	8.47
	Demo	SF	Sm	AB	.170	94.25	---	6.96	3.33	10.29	13.10

Exterior walls (above grade) and partitions, no shoring included**Without reinforcing or with only lateral reinforcing**

With air tools

8" W x 8" H x 16" L	Demo	SF	Lg	AB	.046	350.0	---	1.88	.90	2.78	3.54
	Demo	SF	Sm	AB	.070	227.5	---	2.87	1.38	4.25	5.39
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.053	300.0	---	2.17	1.05	3.22	4.09
	Demo	SF	Sm	AB	.082	195.0	---	3.36	1.61	4.97	6.31

Without air tools

8" W x 8" H x 16" L	Demo	SF	Lg	LB	.057	280.0	---	1.90	---	1.90	2.66
	Demo	SF	Sm	LB	.088	182.0	---	2.93	---	2.93	4.10
12" W x 8" H x 16" L	Demo	SF	Lg	LB	.067	240.0	---	2.23	---	2.23	3.12
	Demo	SF	Sm	LB	.103	156.0	---	3.43	---	3.43	4.80

Fences**Without reinforcing or with only lateral reinforcing**

With air tools

6" W x 4" H x 16" L	Demo	SF	Lg	AB	.041	390.0	---	1.68	.80	2.48	3.15
	Demo	SF	Sm	AB	.063	253.5	---	2.58	1.24	3.82	4.85
6" W x 6" H x 16" L	Demo	SF	Lg	AB	.043	370.0	---	1.76	.85	2.61	3.32
	Demo	SF	Sm	AB	.067	240.5	---	2.74	1.30	4.04	5.14
8" W x 8" H x 16" L	Demo	SF	Lg	AB	.046	350.0	---	1.88	.90	2.78	3.54
	Demo	SF	Sm	AB	.070	227.5	---	2.87	1.38	4.25	5.39
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.053	300.0	---	2.17	1.05	3.22	4.09
	Demo	SF	Sm	AB	.082	195.0	---	3.36	1.61	4.97	6.31

Without air tools

6" W x 4" H x 16" L	Demo	SF	Lg	LB	.052	310.0	---	1.73	---	1.73	2.42
	Demo	SF	Sm	LB	.079	201.5	---	2.63	---	2.63	3.68
6" W x 6" H x 16" L	Demo	SF	Lg	LB	.054	295.0	---	1.80	---	1.80	2.52
	Demo	SF	Sm	LB	.083	191.8	---	2.76	---	2.76	3.87
8" W x 8" H x 16" L	Demo	SF	Lg	LB	.057	280.0	---	1.90	---	1.90	2.66
	Demo	SF	Sm	LB	.088	182.0	---	2.93	---	2.93	4.10
12" W x 8" H x 16" L	Demo	SF	Lg	LB	.067	240.0	---	2.23	---	2.23	3.12
	Demo	SF	Sm	LB	.103	156.0	---	3.43	---	3.43	4.80

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Quarry tile, 6" or 9" squares**Floors**

Conventional mortar set	Demo	SF	Lg	LB	.036	445.0	---	1.20	---	1.20	1.68
	Demo	SF	Sm	LB	.055	289.3	---	1.83	---	1.83	2.56
Dry-set mortar	Demo	SF	Lg	LB	.031	515.0	---	1.03	---	1.03	1.45
	Demo	SF	Sm	LB	.048	334.8	---	1.60	---	1.60	2.24

Rough carpentry (framing)**Dimension lumber****Beams, set on steel columns**

Built-up from 2" lumber

4" T x 10" W - 10' L (2 pcs)	Demo	LF	Lg	LB	.019	855.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.029	555.8	---	.97	---	.97	1.35
4" T x 12" W - 12' L (2 pcs)	Demo	LF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.024	666.3	---	.80	---	.80	1.12
6" T x 10" W - 10' L (3 pcs)	Demo	LF	Lg	LB	.019	855.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.029	555.8	---	.97	---	.97	1.35
6" T x 12" W - 12' L (3 pcs)	Demo	LF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.024	666.3	---	.80	---	.80	1.12

Single member (solid lumber)

3" T x 12" W - 12' L	Demo	LF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.024	666.3	---	.80	---	.80	1.12
4" T x 12" W - 12' L	Demo	LF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.024	666.3	---	.80	---	.80	1.12

Bracing, diagonal, notched-in, studs oc

1" x 6" - 10' L	Demo	LF	Lg	LB	.026	605.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.041	393.3	---	1.37	---	1.37	1.91

Bridging, "X" type, 1" x 3", (8", 10", 12" T)

16" oc	Demo	LF	Lg	LB	.046	350.0	---	1.53	---	1.53	2.14
	Demo	LF	Sm	LB	.070	227.5	---	2.33	---	2.33	3.26

Columns or posts

4" x 4" -8' L	Demo	LF	Lg	LB	.021	770.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.032	500.5	---	1.07	---	1.07	1.49
6" x 6" -8' L	Demo	LF	Lg	LB	.021	770.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.032	500.5	---	1.07	---	1.07	1.49
6" x 8" -8' L	Demo	LF	Lg	LB	.025	650.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.038	422.5	---	1.27	---	1.27	1.77
8" x 8" -8' L	Demo	LF	Lg	LB	.026	615.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.040	399.8	---	1.33	---	1.33	1.87

Fascia

1" x 4" - 12" L	Demo	LF	Lg	LB	.012	1315	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.019	854.8	---	.63	---	.63	.89

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours	Output					Price
					per Unit	per Day					Incl O&P
Firestops or stiffeners											
2" x 4" - 16"	Demo	LF	Lg	LB	.034	475.0	---	1.13	---	1.13	1.59
	Demo	LF	Sm	LB	.052	308.8	---	1.73	---	1.73	2.42
2" x 6" - 16"	Demo	LF	Lg	LB	.034	475.0	---	1.13	---	1.13	1.59
	Demo	LF	Sm	LB	.052	308.8	---	1.73	---	1.73	2.42
Furring strips, 1" x 4" - 8' L											
Walls; strips 12" oc											
Studs 16" oc	Demo	SF	Lg	LB	.013	1215	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.020	789.8	---	.67	---	.67	.93
Studs 24" oc	Demo	SF	Lg	LB	.012	1365	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.018	887.3	---	.60	---	.60	.84
Masonry (concrete blocks)	Demo	SF	Lg	LB	.015	1095	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.022	711.8	---	.73	---	.73	1.03
Concrete	Demo	SF	Lg	LB	.025	645.0	---	.83	---	.83	1.17
	Demo	SF	Sm	LB	.038	419.3	---	1.27	---	1.27	1.77
Ceiling; joists 16" oc											
Strips 12" oc	Demo	SF	Lg	LB	.019	840.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.029	546.0	---	.97	---	.97	1.35
Strips 16" oc	Demo	SF	Lg	LB	.015	1075	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.023	698.8	---	.77	---	.77	1.07
Headers or lintels, over openings											
Built-up or single member											
4" T x 6" W - 4' L	Demo	LF	Lg	LB	.029	560.0	---	.97	---	.97	1.35
	Demo	LF	Sm	LB	.044	364.0	---	1.47	---	1.47	2.05
4" T x 8" W - 8' L	Demo	LF	Lg	LB	.022	720.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.034	468.0	---	1.13	---	1.13	1.59
4" T x 10" W - 10' L	Demo	LF	Lg	LB	.019	855.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.029	555.8	---	.97	---	.97	1.35
4" T x 12" W - 12' L	Demo	LF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.024	666.3	---	.80	---	.80	1.12
4" T x 14" W - 14' L	Demo	LF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.024	666.3	---	.80	---	.80	1.12
Joists											
Ceiling											
2" x 4" - 8' L	Demo	LF	Lg	LB	.013	1230	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.020	799.5	---	.67	---	.67	.93
2" x 4" - 10' L	Demo	LF	Lg	LB	.011	1395	---	.37	---	.37	.51
	Demo	LF	Sm	LB	.018	906.8	---	.60	---	.60	.84
2" x 8" - 12' L	Demo	LF	Lg	LB	.011	1420	---	.37	---	.37	.51
	Demo	LF	Sm	LB	.017	923.0	---	.57	---	.57	.79
2" x 10" - 14' L	Demo	LF	Lg	LB	.010	1535	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.016	997.8	---	.53	---	.53	.75
2" x 12" - 16' L	Demo	LF	Lg	LB	.010	1585	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.016	1030	---	.53	---	.53	.75
Floor; seated on sill plate											
2" x 8" - 12' L	Demo	LF	Lg	LB	.010	1600	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.015	1040	---	.50	---	.50	.70
2" x 10" - 14' L	Demo	LF	Lg	LB	.009	1725	---	.30	---	.30	.42
	Demo	LF	Sm	LB	.014	1121	---	.47	---	.47	.65
2" x 12" - 16' L	Demo	LF	Lg	LB	.009	1755	---	.30	---	.30	.42
	Demo	LF	Sm	LB	.014	1141	---	.47	---	.47	.65

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					per Unit	per Day					

Ledgers

Nailed, 2" x 6" - 12' L	Demo	LF	Lg	LB	.023	710.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.035	461.5	---	1.17	---	1.17	1.63
Bolted, 3" x 8" - 12' L	Demo	LF	Lg	LB	.016	970.0	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.025	630.5	---	.83	---	.83	1.17

Plates; 2" x 4" or 2" x 6"

Double top nailed	Demo	LF	Lg	LB	.020	820.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.030	533.0	---	1.00	---	1.00	1.40
Sill, nailed	Demo	LF	Lg	LB	.012	1360	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.018	884.0	---	.60	---	.60	.84
Sill or bottom, bolted	Demo	LF	Lg	LB	.023	685.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.036	445.3	---	1.20	---	1.20	1.68

Rafters

Common

2" x 4" - 14' L	Demo	LF	Lg	LB	.009	1795	---	.30	---	.30	.42
	Demo	LF	Sm	LB	.014	1167	---	.47	---	.47	.65
2" x 6" - 14' L	Demo	LF	Lg	LB	.010	1660	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.015	1079	---	.50	---	.50	.70
2" x 8" - 14' L	Demo	LF	Lg	LB	.011	1435	---	.37	---	.37	.51
	Demo	LF	Sm	LB	.017	932.8	---	.57	---	.57	.79
2" x 10" - 14' L	Demo	LF	Lg	LB	.013	1195	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.021	776.8	---	.70	---	.70	.98

Hip and/or valley

2" x 4" - 16' L	Demo	LF	Lg	LB	.008	2050	---	.27	---	.27	.37
	Demo	LF	Sm	LB	.012	1333	---	.40	---	.40	.56
2" x 6" - 16' L	Demo	LF	Lg	LB	.008	1895	---	.27	---	.27	.37
	Demo	LF	Sm	LB	.013	1232	---	.43	---	.43	.61
2" x 8" - 16' L	Demo	LF	Lg	LB	.010	1640	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.015	1066	---	.50	---	.50	.70
2" x 10" - 16' L	Demo	LF	Lg	LB	.012	1360	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.018	884.0	---	.60	---	.60	.84

Jack

2" x 4" - 6' L	Demo	LF	Lg	LB	.020	805.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.031	523.3	---	1.03	---	1.03	1.45
2" x 6" - 6' L	Demo	LF	Lg	LB	.022	740.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.033	481.0	---	1.10	---	1.10	1.54
2" x 8" - 6' L	Demo	LF	Lg	LB	.024	655.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.038	425.8	---	1.27	---	1.27	1.77
2" x 10" - 6' L	Demo	LF	Lg	LB	.030	540.0	---	1.00	---	1.00	1.40
	Demo	LF	Sm	LB	.046	351.0	---	1.53	---	1.53	2.14

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Roof decking, solid T&G

2" x 6" - 12' L	Demo	LF	Lg	LB	.025	645.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.038	419.3	---	1.27	---	1.27	1.77
2" x 8" - 12' L	Demo	LF	Lg	LB	.018	900.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.027	585.0	---	.90	---	.90	1.26

Studs

2" x 4" - 8' L	Demo	LF	Lg	LB	.012	1360	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.018	884.0	---	.60	---	.60	.84
2" x 6" - 8' L	Demo	LF	Lg	LB	.012	1360	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.018	884.0	---	.60	---	.60	.84

Stud partitions, studs 16" oc with bottom plate and double top plates and firestops; per LF partition

2" x 4" - 8' L	Demo	LF	Lg	LB	.160	100.0	---	5.33	---	5.33	7.46
	Demo	LF	Sm	LB	.246	65.00	---	8.19	---	8.19	11.50
2" x 6" - 8' L	Demo	LF	Lg	LB	.160	100.0	---	5.33	---	5.33	7.46
	Demo	LF	Sm	LB	.246	65.00	---	8.19	---	8.19	11.50

Boards**Sheathing, regular or diagonal**

1" x 8"

Roof	Demo	SF	Lg	LB	.012	1340	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.018	871.0	---	.60	---	.60	.84
Sidewall	Demo	SF	Lg	LB	.010	1615	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.015	1050	---	.50	---	.50	.70

Subflooring, regular or diagonal

1" x 8" - 16' L	Demo	SF	Lg	LB	.010	1525	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.016	991.3	---	.53	---	.53	.75
1" x 10" - 16' L	Demo	SF	Lg	LB	.008	1930	---	.27	---	.27	.37
	Demo	SF	Sm	LB	.013	1255	---	.43	---	.43	.61

Plywood**Sheathing**

Roof

1/2" T, CDX	Demo	SF	Lg	LB	.008	1970	---	.27	---	.27	.37
	Demo	SF	Sm	LB	.012	1281	---	.40	---	.40	.56
5/8" T, CDX	Demo	SF	Lg	LB	.008	1935	---	.27	---	.27	.37
	Demo	SF	Sm	LB	.013	1258	---	.43	---	.43	.61

Wall

3/8" or 1/2" T, CDX	Demo	SF	Lg	LB	.006	2520	---	.20	---	.20	.28
	Demo	SF	Sm	LB	.010	1638	---	.33	---	.33	.47
5/8" T, CDX	Demo	SF	Lg	LB	.007	2460	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1599	---	.33	---	.33	.47

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					
Subflooring											
5/8", 3/4" T, CDX	Demo	SF	Lg	LB	.007	2305	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.011	1498	---	.37	---	.37	.51
1-1/8" T, 2-4-1, T&G long edges											
	Demo	SF	Lg	LB	.010	1615	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.015	1050	---	.50	---	.50	.70
Trusses, "W" pattern with gin pole, 24' to 30' spans											
3 - in - 12 slope	Demo	Ea	Lg	LB	.615	26.00	---	20.50	---	20.50	28.70
	Demo	Ea	Sm	LB	.947	16.90	---	31.50	---	31.50	44.20
5 - in - 12 slope	Demo	Ea	Lg	LB	.615	26.00	---	20.50	---	20.50	28.70
	Demo	Ea	Sm	LB	.947	16.90	---	31.50	---	31.50	44.20
Finish carpentry											
Bath accessories, screwed											
	Demo	Ea	Lg	LB	.128	125.0	---	4.26	---	4.26	5.97
	Demo	Ea	Sm	LB	.197	81.25	---	6.56	---	6.56	9.19
Cabinets											
Kitchen, to 3' x 4', wood; base, wall, or peninsula											
	Demo	Ea	Lg	LB	.640	25.00	---	21.30	---	21.30	29.80
	Demo	Ea	Sm	LB	.985	16.25	---	32.80	---	32.80	45.90
Medicine, metal											
	Demo	Ea	Lg	LB	.533	30.00	---	17.80	---	17.80	24.90
	Demo	Ea	Sm	LB	.821	19.50	---	27.40	---	27.40	38.30
Vanity, cabinet and sink top											
Disconnect plumbing and remove to dumpster											
	Demo	Ea	Lg	LB	1.00	16.00	---	33.30	---	33.30	46.60
	Demo	Ea	Sm	LB	1.54	10.40	---	51.30	---	51.30	71.80
Remove old unit, replace with new unit, reconnect plumbing											
	Demo	Ea	Lg	SB	2.29	7.00	---	93.10	---	93.10	135.00
	Demo	Ea	Sm	SB	3.52	4.55	---	143.00	---	143.00	208.00
Hardwood flooring (over wood subfloors)											
Block, set in mastic	Demo	SF	Lg	LB	.013	1200	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.021	780.0	---	.70	---	.70	.98
Strip, nailed	Demo	SF	Lg	LB	.018	900.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.027	585.0	---	.90	---	.90	1.26
Marlite panels, 4' x 8',											
adhesive set	Demo	SF	Lg	LB	.019	850.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.029	552.5	---	.97	---	.97	1.35
Molding and trim											
At base (floor)	Demo	LF	Lg	LB	.015	1060	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.023	689.0	---	.77	---	.77	1.07
At ceiling	Demo	LF	Lg	LB	.013	1200	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.021	780.0	---	.70	---	.70	.98
On walls or cabinets	Demo	LF	Lg	LB	.010	1600	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.015	1040	---	.50	---	.50	.70
Paneling											
Plywood, prefinished	Demo	SF	Lg	LB	.009	1850	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.013	1203	---	.43	---	.43	.61
Wood	Demo	SF	Lg	LB	.010	1650	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.015	1073	---	.50	---	.50	.70

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Weather protection**Insulation****Batt/roll, with wall or ceiling finish already removed**

Joists, 16" or 24" oc	Demo	SF	Lg	LB	.005	2935	---	.17	---	.17	.23
	Demo	SF	Sm	LB	.008	1908	---	.27	---	.27	.37
Rafters, 16" or 24" oc	Demo	SF	Lg	LB	.006	2560	---	.20	---	.20	.28
	Demo	SF	Sm	LB	.010	1664	---	.33	---	.33	.47
Studs, 16" or 24" oc	Demo	SF	Lg	LB	.005	3285	---	.17	---	.17	.23
	Demo	SF	Sm	LB	.007	2135	---	.23	---	.23	.33

Loose, with ceiling finish already removed

Joists, 16" or 24" oc

4" T	Demo	SF	Lg	LB	.004	3900	---	.13	---	.13	.19
	Demo	SF	Sm	LB	.006	2535	---	.20	---	.20	.28
6" T	Demo	SF	Lg	LB	.007	2340	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.011	1521	---	.37	---	.37	.51

Rigid

Roofs

1/2" T	Demo	Sq	Lg	LB	.941	17.00	---	31.30	---	31.30	43.90
	Demo	Sq	Sm	LB	1.45	11.05	---	48.30	---	48.30	67.60
1" T	Demo	Sq	Lg	LB	1.07	15.00	---	35.60	---	35.60	49.90
	Demo	Sq	Sm	LB	1.64	9.75	---	54.60	---	54.60	76.50
Walls, 1/2" T	Demo	SF	Lg	LB	.007	2140	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.012	1391	---	.40	---	.40	.56

Sheet metal**Gutter and downspouts**

Aluminum	Demo	LF	Lg	LB	.019	850.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.029	552.5	---	.97	---	.97	1.35
Galvanized	Demo	LF	Lg	LB	.025	640.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.038	416.0	---	1.27	---	1.27	1.77

Roofing and siding**Aluminum****Roofing, nailed to wood**

Corrugated (2-1/2"), 26" W with 3-3/4" side lap and 6" end lap

	Demo	Sq	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	Sq	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00

Siding, nailed to wood

Clapboard (i.e., lap drop)

8" exposure	Demo	SF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.024	666.3	---	.80	---	.80	1.12
10" exposure	Demo	SF	Lg	LB	.013	1280	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.019	832.0	---	.63	---	.63	.89
Corrugated (2-1/2"), 26" W with 2-1/2" side lap and 4" end lap											
	Demo	SF	Lg	LB	.013	1200	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.021	780.0	---	.70	---	.70	.98
Panels, 4' x 8'	Demo	SF	Lg	LB	.007	2400	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1560	---	.33	---	.33	.47
Shingle, 24" L with 12" exposure											
	Demo	SF	Lg	LB	.011	1450	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.017	942.5	---	.57	---	.57	.79

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
-------------	------	------	-----	--------------	------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	-----------------------------

Asphalt shingle roofing

240 lb/sq, strip, 3 tab 5" exposure

Demo	Sq	Lg	LB	1.00	16.00	---	33.30	---	33.30	46.60
Demo	Sq	Sm	LB	1.54	10.40	---	51.30	---	51.30	71.80

Built-up/hot roofing (to wood deck)

3 ply

With gravel	Demo	Sq	Lg	LB	1.45	11.00	---	48.30	---	48.30	67.60
	Demo	Sq	Sm	LB	2.24	7.15	---	74.60	---	74.60	104.00
Without gravel	Demo	Sq	Lg	LB	1.14	14.00	---	38.00	---	38.00	53.20
	Demo	Sq	Sm	LB	1.76	9.10	---	58.60	---	58.60	82.10

5 ply

With gravel	Demo	Sq	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	Sq	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00
Without gravel	Demo	Sq	Lg	LB	1.23	13.00	---	41.00	---	41.00	57.40
	Demo	Sq	Sm	LB	1.89	8.45	---	63.00	---	63.00	88.10

Clay tile roofing

2 piece interlocking	Demo	Sq	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	Sq	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00
1 piece	Demo	Sq	Lg	LB	1.45	11.00	---	48.30	---	48.30	67.60
	Demo	Sq	Sm	LB	2.24	7.15	---	74.60	---	74.60	104.00

Hardboard siding

Lap, 1/2" T x 12" W x 16' L, with 11" exposure

Demo	SF	Lg	LB	.012	1345	---	.40	---	.40	.56
Demo	SF	Sm	LB	.018	874.3	---	.60	---	.60	.84

Panels, 7/16" T x 4' W x 8' H

Demo	SF	Lg	LB	.006	2520	---	.20	---	.20	.28
Demo	SF	Sm	LB	.010	1638	---	.33	---	.33	.47

Mineral surfaced roll roofing

Single coverage 90 lb/sq roll with 6" end lap and 2" headlap

Demo	Sq	Lg	LB	.500	32.00	---	16.70	---	16.70	23.30
Demo	Sq	Sm	LB	.769	20.80	---	25.60	---	25.60	35.90

Double coverage selvage roll, with 6" end lap and 17" exposure

Demo	Sq	Lg	LB	.727	22.00	---	24.20	---	24.20	33.90
Demo	Sq	Sm	LB	1.12	14.30	---	37.30	---	37.30	52.20

Wood**Roofing**

Shakes

24" L with 10" exposure

1/2" to 3/4" T	Demo	Sq	Lg	LB	.640	25.00	---	21.30	---	21.30	29.80
	Demo	Sq	Sm	LB	.985	16.25	---	32.80	---	32.80	45.90
3/4" to 5/4" T	Demo	Sq	Lg	LB	.696	23.00	---	23.20	---	23.20	32.50
	Demo	Sq	Sm	LB	1.07	14.95	---	35.60	---	35.60	49.90

Shingles

16" L with 5" exposure	Demo	Sq	Lg	LB	1.33	12.00	---	44.30	---	44.30	62.00
	Demo	Sq	Sm	LB	2.05	7.80	---	68.30	---	68.30	95.60
18" L with 5-1/2" exposure	Demo	Sq	Lg	LB	1.23	13.00	---	41.00	---	41.00	57.40
	Demo	Sq	Sm	LB	1.89	8.45	---	63.00	---	63.00	88.10
24" L with 7-1/2" exposure	Demo	Sq	Lg	LB	.889	18.00	---	29.60	---	29.60	41.50
	Demo	Sq	Sm	LB	1.37	11.70	---	45.60	---	45.60	63.90

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
Siding											
Bevel											
1/2" x 8" with 6-3/4" exposure	Demo	SF	Lg	LB	.018	910.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.027	591.5	---	.90	---	.90	1.26
5/8" x 10" with 8-3/4" exposure	Demo	SF	Lg	LB	.014	1180	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.021	767.0	---	.70	---	.70	.98
3/4" x 12" with 10-3/4" exposure	Demo	SF	Lg	LB	.011	1450	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.017	942.5	---	.57	---	.57	.79
Drop (horizontal), 1/4" T&G											
1" x 8" with 7" exposure	Demo	SF	Lg	LB	.017	945.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.026	614.3	---	.87	---	.87	1.21
1" x 10" with 9" exposure	Demo	SF	Lg	LB	.013	1215	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.020	789.8	---	.67	---	.67	.93
Board (1" x 12") and batten (1" x 2") @ 12" oc											
Horizontal											
	Demo	SF	Lg	LB	.013	1280	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.019	832.0	---	.63	---	.63	.89
Vertical											
Standard	Demo	SF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.024	666.3	---	.80	---	.80	1.12
Reverse	Demo	SF	Lg	LB	.015	1065	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.023	692.3	---	.77	---	.77	1.07
Board on board (1" x 12" with 1-1/2" overlap), vertical											
	Demo	SF	Lg	LB	.017	950.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.026	617.5	---	.87	---	.87	1.21
Plywood (1/2" T) with battens (1" x 2")											
16" oc battens	Demo	SF	Lg	LB	.007	2255	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.011	1466	---	.37	---	.37	.51
24" oc battens	Demo	SF	Lg	LB	.007	2365	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1537	---	.33	---	.33	.47
Shakes											
24" L with 11-1/2" exposure											
1/2" to 3/4" T	Demo	SF	Lg	LB	.010	1600	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.015	1040	---	.50	---	.50	.70
3/4" to 5/4" T	Demo	SF	Lg	LB	.011	1440	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.017	936.0	---	.57	---	.57	.79
Shingles											
16" L with 7-1/2" exposure	Demo	SF	Lg	LB	.016	1000	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.025	650.0	---	.83	---	.83	1.17
18" L with 8-1/2" exposure	Demo	SF	Lg	LB	.014	1130	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.022	734.5	---	.73	---	.73	1.03
24" L with 11-1/2" exposure	Demo	SF	Lg	LB	.010	1530	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.016	994.5	---	.53	---	.53	.75

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
-------------	------	------	-----	--------------	------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	-----------------------------

Doors, windows and glazing

Doors with related trim and frame

Closet, with track

Folding, 4 doors	Demo	Set	Lg	LB	1.33	12.00	---	44.30	---	44.30	62.00
	Demo	Set	Sm	LB	2.05	7.80	---	68.30	---	68.30	95.60
Sliding, 2 or 3 doors	Demo	Set	Lg	LB	1.33	12.00	---	44.30	---	44.30	62.00
	Demo	Set	Sm	LB	2.05	7.80	---	68.30	---	68.30	95.60

Entry, 3' x 7'

	Demo	Ea	Lg	LB	1.14	14.00	---	38.00	---	38.00	53.20
	Demo	Ea	Sm	LB	1.76	9.10	---	58.60	---	58.60	82.10

Fire, 3' x 7'

	Demo	Ea	Lg	LB	1.14	14.00	---	38.00	---	38.00	53.20
	Demo	Ea	Sm	LB	1.76	9.10	---	58.60	---	58.60	82.10

Garage

Wood, aluminum, or hardboard

Single	Demo	Ea	Lg	LB	2.00	8.00	---	66.60	---	66.60	93.30
	Demo	Ea	Sm	LB	3.08	5.20	---	103.00	---	103.00	144.00
Double	Demo	Ea	Lg	LB	2.67	6.00	---	88.90	---	88.90	125.00
	Demo	Ea	Sm	LB	4.10	3.90	---	137.00	---	137.00	191.00

Steel

Single	Demo	Ea	Lg	LB	2.29	7.00	---	76.30	---	76.30	107.00
	Demo	Ea	Sm	LB	3.52	4.55	---	117.00	---	117.00	164.00
Double	Demo	Ea	Lg	LB	3.20	5.00	---	107.00	---	107.00	149.00
	Demo	Ea	Sm	LB	4.92	3.25	---	164.00	---	164.00	229.00

Glass sliding, with track

2 lites wide	Demo	Set	Lg	LB	2.00	8.00	---	66.60	---	66.60	93.30
	Demo	Set	Sm	LB	3.08	5.20	---	103.00	---	103.00	144.00
3 lites wide	Demo	Set	Lg	LB	2.67	6.00	---	88.90	---	88.90	125.00
	Demo	Set	Sm	LB	4.10	3.90	---	137.00	---	137.00	191.00
4 lites wide	Demo	Set	Lg	LB	4.00	4.00	---	133.00	---	133.00	187.00
	Demo	Set	Sm	LB	6.15	2.60	---	205.00	---	205.00	287.00

Interior, 3' x 7'

	Demo	Ea	Lg	LB	1.00	16.00	---	33.30	---	33.30	46.60
	Demo	Ea	Sm	LB	1.54	10.40	---	51.30	---	51.30	71.80

Screen, 3' x 7'

	Demo	Ea	Lg	LB	.800	20.00	---	26.70	---	26.70	37.30
	Demo	Ea	Sm	LB	1.23	13.00	---	41.00	---	41.00	57.40

Storm combination, 3' x 7'

	Demo	Ea	Lg	LB	.800	20.00	---	26.70	---	26.70	37.30
	Demo	Ea	Sm	LB	1.23	13.00	---	41.00	---	41.00	57.40

Windows, with related trim and frame

To 12 SF

Aluminum	Demo	Ea	Lg	LB	.762	21.00	---	25.40	---	25.40	35.50
	Demo	Ea	Sm	LB	1.17	13.65	---	39.00	---	39.00	54.60
Wood	Demo	Ea	Lg	LB	1.00	16.00	---	33.30	---	33.30	46.60
	Demo	Ea	Sm	LB	1.54	10.40	---	51.30	---	51.30	71.80

13 SF to 50 SF

Aluminum	Demo	Ea	Lg	LB	1.23	13.00	---	41.00	---	41.00	57.40
	Demo	Ea	Sm	LB	1.89	8.45	---	63.00	---	63.00	88.10
Wood	Demo	Ea	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	Ea	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Glazing, clean sash and remove old putty or rubber**3/32" T float, putty or rubber**

8" x 12" (0.667 SF)	Demo	SF	Lg	GA	.320	25.00	---	12.80	---	12.80	18.10
	Demo	SF	Sm	GA	.492	16.25	---	19.60	---	19.60	27.80
12" x 16" (1.333 SF)	Demo	SF	Lg	GA	.178	45.00	---	7.09	---	7.09	10.10
	Demo	SF	Sm	GA	.274	29.25	---	10.90	---	10.90	15.50
14" x 20" (1.944 SF)	Demo	SF	Lg	GA	.145	55.00	---	5.78	---	5.78	8.20
	Demo	SF	Sm	GA	.224	35.75	---	8.92	---	8.92	12.70
16" x 24" (2.667 SF)	Demo	SF	Lg	GA	.114	70.00	---	4.54	---	4.54	6.45
	Demo	SF	Sm	GA	.176	45.50	---	7.01	---	7.01	9.96
24" x 26" (4.333 SF)	Demo	SF	Lg	GA	.084	95.00	---	3.35	---	3.35	4.75
	Demo	SF	Sm	GA	.130	61.75	---	5.18	---	5.18	7.35
36" x 24" (6.000 SF)	Demo	SF	Lg	GA	.064	125.0	---	2.55	---	2.55	3.62
	Demo	SF	Sm	GA	.098	81.25	---	3.90	---	3.90	5.54

1/8" T float, putty, steel sash

12" x 16" (1.333 SF)	Demo	SF	Lg	GA	.178	45.00	---	7.09	---	7.09	10.10
	Demo	SF	Sm	GA	.274	29.25	---	10.90	---	10.90	15.50
16" x 20" (2.222 SF)	Demo	SF	Lg	GA	.123	65.00	---	4.90	---	4.90	6.96
	Demo	SF	Sm	GA	.189	42.25	---	7.53	---	7.53	10.70
16" x 24" (2.667 SF)	Demo	SF	Lg	GA	.114	70.00	---	4.54	---	4.54	6.45
	Demo	SF	Sm	GA	.176	45.50	---	7.01	---	7.01	9.96
24" x 26" (4.333 SF)	Demo	SF	Lg	GA	.084	95.00	---	3.35	---	3.35	4.75
	Demo	SF	Sm	GA	.130	61.75	---	5.18	---	5.18	7.35
28" x 32" (6.222 SF)	Demo	SF	Lg	GA	.062	130.0	---	2.47	---	2.47	3.51
	Demo	SF	Sm	GA	.095	84.50	---	3.78	---	3.78	5.37
36" x 36" (9.000 SF)	Demo	SF	Lg	GA	.050	160.0	---	1.99	---	1.99	2.83
	Demo	SF	Sm	GA	.077	104.0	---	3.07	---	3.07	4.36
36" x 48" (12.000 SF)	Demo	SF	Lg	GA	.042	190.0	---	1.67	---	1.67	2.38
	Demo	SF	Sm	GA	.065	123.5	---	2.59	---	2.59	3.68

1/4" T float**Wood sash with putty**

72" x 48" (24.0 SF)	Demo	SF	Lg	GA	.043	185.0	---	1.71	---	1.71	2.43
	Demo	SF	Sm	GA	.067	120.3	---	2.67	---	2.67	3.79

Aluminum sash with aluminum channel and rigid neoprene rubber

48" x 96" (32.0 SF)	Demo	SF	Lg	GA	.046	175.0	---	1.83	---	1.83	2.60
	Demo	SF	Sm	GA	.070	113.8	---	2.79	---	2.79	3.96
96" x 96" (64.0 SF)	Demo	SF	Lg	GA	.044	180.0	---	1.75	---	1.75	2.49
	Demo	SF	Sm	GA	.068	117.0	---	2.71	---	2.71	3.85

1" T insulating glass; with 2 pieces 1/4" float and 1/2" air space

To 6.0 SF	Demo	SF	Lg	GA	.160	50.00	---	6.37	---	6.37	9.05
	Demo	SF	Sm	GA	.246	32.50	---	9.80	---	9.80	13.90
6.1 to 12.0 SF	Demo	SF	Lg	GA	.073	110.0	---	2.91	---	2.91	4.13
	Demo	SF	Sm	GA	.112	71.50	---	4.46	---	4.46	6.34
12.1 to 18.0 SF	Demo	SF	Lg	GA	.055	145.0	---	2.19	---	2.19	3.11
	Demo	SF	Sm	GA	.085	94.25	---	3.39	---	3.39	4.81
18.1 to 24.0 SF	Demo	SF	Lg	GA	.053	150.0	---	2.11	---	2.11	3.00
	Demo	SF	Sm	GA	.082	97.50	---	3.27	---	3.27	4.64

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Unit
					Unit	Day	Cost	Cost	Cost	Cost	Cost

Aluminum sliding door glass with aluminum channel and rigid neoprene rubber

34" x 76" (17.944 SF)

5/8" T insulating glass with 2 pieces 5/32" T (tempered with 1-1/4" air space)											
	Demo	SF	Lg	GA	.047	170.0	---	1.87	---	1.87	2.66
	Demo	SF	Sm	GA	.072	110.5	---	2.87	---	2.87	4.07
5/32" T tempered	Demo	SF	Lg	GA	.041	195.0	---	1.63	---	1.63	2.32
	Demo	SF	Sm	GA	.063	126.8	---	2.51	---	2.51	3.56

46" x 76" (24.278 SF)

5/8" T insulating glass with 2 pieces 5/32" T (tempered with 1-1/4" air space)											
	Demo	SF	Lg	GA	.037	215.0	---	1.47	---	1.47	2.09
	Demo	SF	Sm	GA	.057	139.8	---	2.27	---	2.27	3.22
5/32" T tempered	Demo	SF	Lg	GA	.033	245.0	---	1.31	---	1.31	1.87
	Demo	SF	Sm	GA	.050	159.3	---	1.99	---	1.99	2.83

Finishes

Exterior and interior, with hand tools; no insulation removal included

Plaster and stucco; remove to studs or sheathing

Lath (wood or metal) and plaster, walls and ceiling

2 coats	Demo	SY	Lg	LB	.123	130.0	---	4.10	---	4.10	5.74
	Demo	SY	Sm	LB	.189	84.50	---	6.30	---	6.30	8.81
3 coats	Demo	SY	Lg	LB	.133	120.0	---	4.43	---	4.43	6.20
	Demo	SY	Sm	LB	.205	78.00	---	6.83	---	6.83	9.56

Stucco and metal netting

2 coats	Demo	SY	Lg	LB	.168	95.00	---	5.60	---	5.60	7.83
	Demo	SY	Sm	LB	.259	61.75	---	8.63	---	8.63	12.10
3 coats	Demo	SY	Lg	LB	.200	80.00	---	6.66	---	6.66	9.33
	Demo	SY	Sm	LB	.308	52.00	---	10.30	---	10.30	14.40

Wallboard, gypsum (drywall)

Walls and ceilings	Demo	SF	Lg	LB	.010	1540	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.016	1001	---	.53	---	.53	.75

Ceramic, metal, plastic tile

Floors, 1" x 1"

Adhesive or dry-set base	Demo	SF	Lg	LB	.029	550.0	---	.97	---	.97	1.35
	Demo	SF	Sm	LB	.045	357.5	---	1.50	---	1.50	2.10
Conventional mortar base	Demo	SF	Lg	LB	.034	475.0	---	1.13	---	1.13	1.59
	Demo	SF	Sm	LB	.052	308.8	---	1.73	---	1.73	2.42

Walls, 1" x 1" or 4-1/4" x 4-1/4"

Adhesive or dry-set base	Demo	SF	Lg	LB	.033	480.0	---	1.10	---	1.10	1.54
	Demo	SF	Sm	LB	.051	312.0	---	1.70	---	1.70	2.38
Conventional mortar base	Demo	SF	Lg	LB	.040	400.0	---	1.33	---	1.33	1.87
	Demo	SF	Sm	LB	.062	260.0	---	2.07	---	2.07	2.89

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Unit
					Unit	Day	Cost	Cost	Cost	Cost	Cost

Acoustical or insulating ceiling tile

Adhesive set, tile only	Demo	SF	Lg	LB	.012	1300	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.019	845.0	---	.63	---	.63	.89
Stapled, tile only	Demo	SF	Lg	LB	.014	1170	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.021	760.5	---	.70	---	.70	.98
Stapled, tile and furring strips	Demo	SF	Lg	LB	.010	1540	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.016	1001	---	.53	---	.53	.75

Suspended ceiling system

Panels and grid system	Demo	SF	Lg	LB	.009	1780	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.014	1157	---	.47	---	.47	.65

Resilient flooring, adhesive set

Sheet products	Demo	SY	Lg	LB	.100	160.0	---	3.33	---	3.33	4.66
	Demo	SY	Sm	LB	.154	104.0	---	5.13	---	5.13	7.18
Tile products	Demo	SF	Lg	LB	.011	1500	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.016	975.0	---	.53	---	.53	.75

Wallpaper*Average output is expressed in rolls (36.0 SF/single roll)*

Single layer of paper from plaster with steaming equipment											
	Demo	Roll	Lg	1L	.400	20.00	---	13.30	---	13.30	18.70
	Demo	Roll	Sm	1L	.615	13.00	---	20.50	---	20.50	28.70
Several layers of paper from plaster with steaming equipment											
	Demo	Roll	Lg	1L	.667	12.00	---	22.20	---	22.20	31.10
	Demo	Roll	Sm	1L	1.03	7.80	---	34.30	---	34.30	48.00
Vinyls (with non-woven, woven, or synthetic fiber backings) from plaster with steaming equipment											
	Demo	Roll	Lg	1L	.267	30.00	---	8.89	---	8.89	12.50
	Demo	Roll	Sm	1L	.410	19.50	---	13.70	---	13.70	19.10
Single layer of paper from drywall with steaming equipment											
	Demo	Roll	Lg	1L	.400	20.00	---	13.30	---	13.30	18.70
	Demo	Roll	Sm	1L	.615	13.00	---	20.50	---	20.50	28.70
Several layers of paper from drywall with steaming equipment											
	Demo	Roll	Lg	1L	.667	12.00	---	22.20	---	22.20	31.10
	Demo	Roll	Sm	1L	1.03	7.80	---	34.30	---	34.30	48.00
Vinyls (with synthetic fiber backing) from drywall with steaming equipment											
	Demo	Roll	Lg	1L	.267	30.00	---	8.89	---	8.89	12.50
	Demo	Roll	Sm	1L	.410	19.50	---	13.70	---	13.70	19.10
Vinyls (with other backings) from drywall with steaming equipment											
	Demo	Roll	Lg	1L	.400	20.00	---	13.30	---	13.30	18.70
	Demo	Roll	Sm	1L	.615	13.00	---	20.50	---	20.50	28.70

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Dishwashers

High quality units. Labor cost includes rough-in

Frequently encountered applications

Detach & reset unit	<i>Reset</i>	<i>Ea</i>	<i>Lg</i>	<i>SA</i>	1.33	6.00	---	63.80	---	63.80	92.60
	<i>Reset</i>	<i>Ea</i>	<i>Sm</i>	<i>SA</i>	1.78	4.50	---	85.40	---	85.40	124.00
Remove unit	<i>Demo</i>	<i>Ea</i>	<i>Lg</i>	<i>SA</i>	0.80	10.00	---	38.40	---	38.40	55.70
	<i>Demo</i>	<i>Ea</i>	<i>Sm</i>	<i>SA</i>	1.07	7.50	---	51.40	---	51.40	74.50
Install unit											
Standard	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	505.00	310.00	---	815.00	1030.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	556.00	413.00	---	969.00	1240.00
Average	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	832.00	310.00	---	1142.00	1410.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	916.00	413.00	---	1329.00	1650.00
High	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	1080.00	310.00	---	1390.00	1690.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	1190.00	413.00	---	1603.00	1970.00
Premium	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	1670.00	310.00	---	1980.00	2370.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	1840.00	413.00	---	2253.00	2710.00

Built-in front loading

Deluxe grade	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	1670.00	310.00	---	1980.00	2370.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	1840.00	413.00	---	2253.00	2710.00
Premium grade	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	1080.00	310.00	---	1390.00	1690.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	1190.00	413.00	---	1603.00	1970.00
High grade	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	832.00	310.00	---	1142.00	1410.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	916.00	413.00	---	1329.00	1650.00
Average grade	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	505.00	310.00	---	815.00	1030.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	556.00	413.00	---	969.00	1240.00
Standard grade	<i>Inst</i>	<i>Ea</i>	<i>Lg</i>	<i>SC</i>	6.67	2.40	361.00	310.00	---	671.00	864.00
	<i>Inst</i>	<i>Ea</i>	<i>Sm</i>	<i>SC</i>	8.89	1.80	398.00	413.00	---	811.00	1060.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Door frames

Metal

See also Doors, Steel, page 144

Exterior frame, 14 gauge, welded joint construction

Wood frame structures

3'-0" x 7'-0"	Inst	Ea	Lg	2C	2.000	8.0	260.00	82.10	---	342.10	414.00
	Inst	Ea	Sm	2C	3.077	5.2	286.00	126.00	---	412.00	506.00
4'-0" x 7'-0"	Inst	Ea	Lg	2C	2.000	8.0	274.00	82.10	---	356.10	431.00
	Inst	Ea	Sm	2C	3.077	5.2	302.00	126.00	---	428.00	525.00
6'-0" x 7'-0"	Inst	Ea	Lg	2C	2.286	7.0	306.00	93.90	---	399.90	483.00
	Inst	Ea	Sm	2C	3.516	4.6	337.00	144.00	---	481.00	590.00
8'-0" x 7'-0"	Inst	Ea	Lg	2C	2.286	7.0	358.00	93.90	---	451.90	543.00
	Inst	Ea	Sm	2C	3.516	4.6	394.00	144.00	---	538.00	655.00
3'-0" x 9'-0"	Inst	Ea	Lg	2C	2.462	6.5	722.00	101.00	---	823.00	971.00
	Inst	Ea	Sm	2C	3.783	4.2	795.00	155.00	---	950.00	1130.00

Masonry frame structures

Existing masonry, ADD	Inst	Ea	Lg	2C	1.143	14.0	6.86	46.90	---	53.76	73.60
	Inst	Ea	Sm	2C	1.758	9.1	7.56	72.20	---	79.76	110.00
New masonry, ADD	Inst	Ea	Lg	2C	1.000	16.0	6.86	41.10	---	47.96	65.40
	Inst	Ea	Sm	2C	1.538	10.4	7.56	63.20	---	70.76	97.10

Wood

Exterior frame, jamb stock, door stop, casing both sides

5/4 x 4-9/16" deep

Pine	Inst	LF	Lg	2C	.123	130.0	8.45	5.05	---	13.50	16.80
	Inst	LF	Sm	2C	.189	84.5	9.31	7.76	---	17.07	21.60
Oak	Inst	LF	Lg	2C	.133	120.0	14.10	5.46	---	19.56	23.80
	Inst	LF	Sm	2C	.205	78.0	15.50	8.42	---	23.92	29.60
Walnut	Inst	LF	Lg	2C	.160	100.0	21.10	6.57	---	27.67	33.50
	Inst	LF	Sm	2C	.246	65.0	23.30	10.10	---	33.40	40.90

5/4 x 5-3/16" deep

Pine	Inst	LF	Lg	2C	.123	130.0	9.29	5.05	---	14.34	17.80
	Inst	LF	Sm	2C	.189	84.5	10.20	7.76	---	17.96	22.60
Oak	Inst	LF	Lg	2C	.133	120.0	15.50	5.46	---	20.96	25.50
	Inst	LF	Sm	2C	.205	78.0	17.10	8.42	---	25.52	31.40
Walnut	Inst	LF	Lg	2C	.160	100.0	23.30	6.57	---	29.87	35.90
	Inst	LF	Sm	2C	.246	65.0	25.60	10.10	---	35.70	43.60

5/4 x 6-9/16" deep

Pine	Inst	LF	Lg	2C	.123	130.0	10.60	5.05	---	15.65	19.20
	Inst	LF	Sm	2C	.189	84.5	11.60	7.76	---	19.36	24.20
Oak	Inst	LF	Lg	2C	.133	120.0	16.50	5.46	---	21.96	26.60
	Inst	LF	Sm	2C	.205	78.0	18.20	8.42	---	26.62	32.70
Walnut	Inst	LF	Lg	2C	.160	100.0	24.80	6.57	---	31.37	37.70
	Inst	LF	Sm	2C	.246	65.0	27.30	10.10	---	37.40	45.60

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Interior frame

11/16" x 3-5/8" deep

Pine	Inst	LF	Lg	2C	.123	130.0	7.76	5.05	---	12.81	16.00
	Inst	LF	Sm	2C	.189	84.5	8.55	7.76	---	16.31	20.70
Oak	Inst	LF	Lg	2C	.133	120.0	10.50	5.46	---	15.96	19.70
	Inst	LF	Sm	2C	.205	78.0	11.50	8.42	---	19.92	25.00
Walnut	Inst	LF	Lg	2C	.160	100.0	15.70	6.57	---	22.27	27.20
	Inst	LF	Sm	2C	.246	65.0	17.30	10.10	---	27.40	34.00

11/16" x 4-9/16" deep

Pine	Inst	LF	Lg	2C	.123	130.0	8.54	5.05	---	13.59	16.90
	Inst	LF	Sm	2C	.189	84.5	9.41	7.76	---	17.17	21.70
Oak	Inst	LF	Lg	2C	.133	120.0	11.50	5.46	---	16.96	20.90
	Inst	LF	Sm	2C	.205	78.0	12.70	8.42	---	21.12	26.40
Walnut	Inst	LF	Lg	2C	.160	100.0	17.20	6.57	---	23.77	29.00
	Inst	LF	Sm	2C	.246	65.0	19.00	10.10	---	29.10	36.00

11/16" x 5-3/16" deep

Pine	Inst	LF	Lg	2C	.123	130.0	8.63	5.05	---	13.68	17.00
	Inst	LF	Sm	2C	.189	84.5	9.51	7.76	---	17.27	21.80
Oak	Inst	LF	Lg	2C	.133	120.0	13.60	5.46	---	19.06	23.20
	Inst	LF	Sm	2C	.205	78.0	15.00	8.42	---	23.42	29.00
Walnut	Inst	LF	Lg	2C	.160	100.0	20.30	6.57	---	26.87	32.60
	Inst	LF	Sm	2C	.246	65.0	22.40	10.10	---	32.50	39.90

Threshold*See also Door Hardware, page 125*

Wood	Inst	LF	Lg	2C	.267	60.0	5.71	11.00	---	16.71	21.90
	Inst	LF	Sm	2C	.410	39.0	6.30	16.80	---	23.10	30.80
Aluminum	Inst	LF	Lg	2C	.267	60.0	8.83	11.00	---	19.83	25.50
	Inst	LF	Sm	2C	.410	39.00	9.73	16.80	---	26.53	34.80
Rubber	Inst	LF	Lg	2C	.267	60.0	13.10	11.00	---	24.10	30.50
	Inst	LF	Sm	2C	.410	39.00	14.50	16.80	---	31.30	40.20

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Door hardware

Locksets

Exterior

Door Lockset and Deadbolt

Excellent quality	Inst	Ea	Lg	CA	.667	12.00	186.00	27.40	---	213.40	252.00
	Inst	Ea	Sm	CA	1.03	7.80	205.00	42.30	---	247.30	295.00
Good quality	Inst	Ea	Lg	CA	.500	16.00	96.10	20.50	---	116.60	139.00
	Inst	Ea	Sm	CA	.769	10.40	106.00	31.60	---	137.60	166.00
Average quality	Inst	Ea	Lg	CA	.500	16.00	56.40	20.50	---	76.90	93.60
	Inst	Ea	Sm	CA	.769	10.40	62.20	31.60	---	93.80	116.00

Door Lockset Only

Excellent quality	Inst	Ea	Lg	CA	.667	12.00	122.00	27.40	---	149.40	178.00
	Inst	Ea	Sm	CA	1.03	7.80	134.00	42.30	---	176.30	213.00
Good quality	Inst	Ea	Lg	CA	.500	16.00	54.70	20.50	---	75.20	91.60
	Inst	Ea	Sm	CA	.769	10.40	60.30	31.60	---	91.90	114.00
Average quality	Inst	Ea	Lg	CA	.500	16.00	29.90	20.50	---	50.40	63.20
	Inst	Ea	Sm	CA	.769	10.40	33.00	31.60	---	64.60	82.10

Deadbolt Only

Excellent quality	Inst	Ea	Lg	CA	.533	15.00	64.00	21.90	---	85.90	104.00
	Inst	Ea	Sm	CA	.821	9.75	70.50	33.70	---	104.20	128.00
Good quality	Inst	Ea	Lg	CA	.400	20.00	41.40	16.40	---	57.80	70.70
	Inst	Ea	Sm	CA	.615	13.00	45.70	25.30	---	71.00	87.90
Average quality	Inst	Ea	Lg	CA	.400	20.00	26.50	16.40	---	42.90	53.40
	Inst	Ea	Sm	CA	.615	13.00	29.20	25.30	---	54.50	68.90

Bath or bedroom lock

Excellent quality	Inst	Ea	Lg	CA	.533	15.00	62.00	21.90	---	83.90	102.00
	Inst	Ea	Sm	CA	.821	9.75	68.40	33.70	---	102.10	126.00
Good quality	Inst	Ea	Lg	CA	.400	20.00	35.10	16.40	---	51.50	63.40
	Inst	Ea	Sm	CA	.615	13.00	38.70	25.30	---	64.00	79.90
Average quality	Inst	Ea	Lg	CA	.400	20.00	21.00	16.40	---	37.40	47.10
	Inst	Ea	Sm	CA	.615	13.00	23.10	25.30	---	48.40	61.90

Passage latch

Excellent quality	Inst	Ea	Lg	CA	.400	20.00	29.30	16.40	---	45.70	56.60
	Inst	Ea	Sm	CA	.615	13.00	32.30	25.30	---	57.60	72.40
Good quality	Inst	Ea	Lg	CA	.308	26.00	17.70	12.70	---	30.40	38.10
	Inst	Ea	Sm	CA	.473	16.90	19.60	19.40	---	39.00	49.70
Average quality	Inst	Ea	Lg	CA	.308	26.00	12.10	12.70	---	24.80	31.60
	Inst	Ea	Sm	CA	.473	16.90	13.30	19.40	---	32.70	42.50

Kickplates, 8" x 30"

Aluminum	Inst	Ea	Lg	CA	.308	26.00	38.10	12.70	---	50.80	61.60
	Inst	Ea	Sm	CA	.473	16.90	42.00	19.40	---	61.40	75.50
Brass or bronze	Inst	Ea	Lg	CA	.308	26.00	49.60	12.70	---	62.30	74.70
	Inst	Ea	Sm	CA	.473	16.90	54.70	19.40	---	74.10	90.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Thresholds

See also Door Frames, page 123

Aluminum, pre-notched, draft-proof, standard
3/4" high

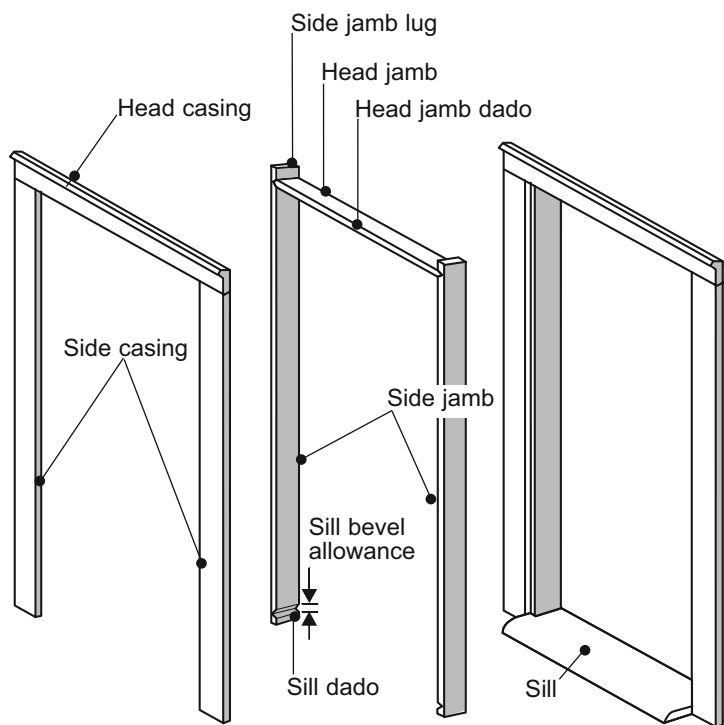
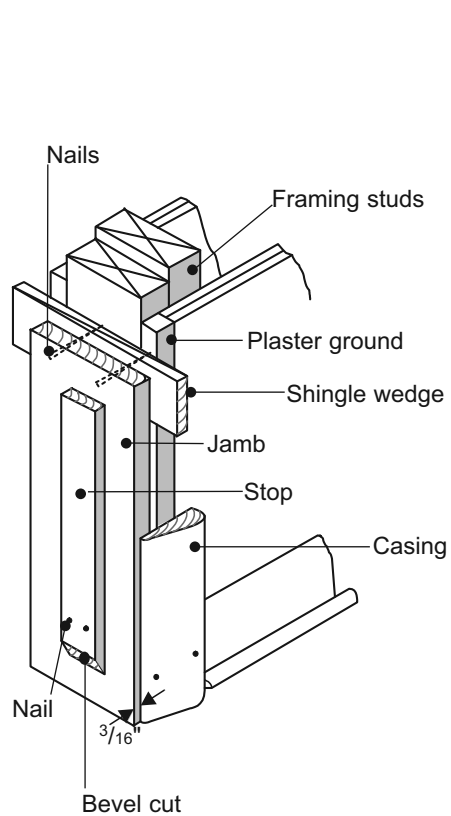
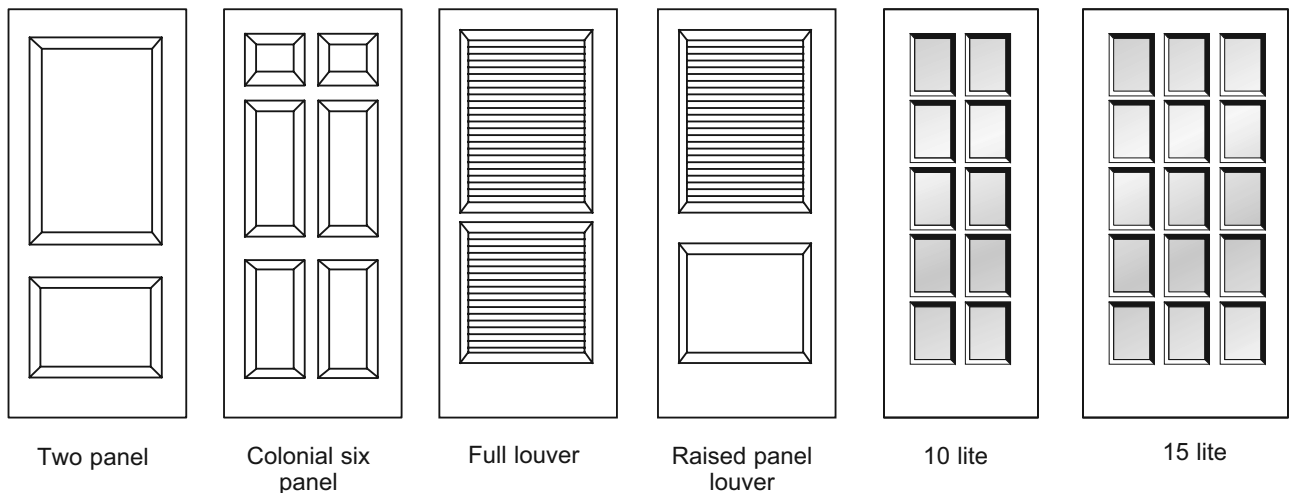
32" long	Inst	Ea	Lg	CA	.250	32.00	23.60	10.30	---	33.90	41.50
	Inst	Ea	Sm	CA	.385	20.80	26.00	15.80	---	41.80	52.00
36" long	Inst	Ea	Lg	CA	.250	32.00	26.50	10.30	---	36.80	44.80
	Inst	Ea	Sm	CA	.385	20.80	29.20	15.80	---	45.00	55.70
42" long	Inst	Ea	Lg	CA	.250	32.00	30.90	10.30	---	41.20	49.90
	Inst	Ea	Sm	CA	.385	20.80	34.10	15.80	---	49.90	61.30
48" long	Inst	Ea	Lg	CA	.250	32.00	35.30	10.30	---	45.60	55.00
	Inst	Ea	Sm	CA	.385	20.80	38.90	15.80	---	54.70	66.90
60" long	Inst	Ea	Lg	CA	.250	32.00	44.20	10.30	---	54.50	65.10
	Inst	Ea	Sm	CA	.385	20.80	48.70	15.80	---	64.50	78.10
72" long	Inst	Ea	Lg	CA	.250	32.00	53.00	10.30	---	63.30	75.30
	Inst	Ea	Sm	CA	.385	20.80	58.40	15.80	---	74.20	89.30
For high rug-type, 1-1/8"											
ADD	Inst		Lg	CA	---	---	25.0	---	---	25.0	---
	Inst		Sm	CA	---	---	25.0	---	---	25.0	---

Wood, oak threshold with vinyl weather seal
5/8" x 3-1/2"

33" long	Inst	Ea	Lg	CA	.250	32.00	15.30	10.30	---	25.60	31.90
	Inst	Ea	Sm	CA	.385	20.80	16.80	15.80	---	32.60	41.50
37" long	Inst	Ea	Lg	CA	.250	32.00	17.10	10.30	---	27.40	34.10
	Inst	Ea	Sm	CA	.385	20.80	18.90	15.80	---	34.70	43.90
43" long	Inst	Ea	Lg	CA	.250	32.00	20.00	10.30	---	30.30	37.40
	Inst	Ea	Sm	CA	.385	20.80	22.00	15.80	---	37.80	47.50
49" long	Inst	Ea	Lg	CA	.250	32.00	22.90	10.30	---	33.20	40.70
	Inst	Ea	Sm	CA	.385	20.80	25.20	15.80	---	41.00	51.10
61" long	Inst	Ea	Lg	CA	.250	32.00	28.60	10.30	---	38.90	47.20
	Inst	Ea	Sm	CA	.385	20.80	31.50	15.80	---	47.30	58.30
73" long	Inst	Ea	Lg	CA	.250	32.00	34.30	10.30	---	44.60	53.80
	Inst	Ea	Sm	CA	.385	20.80	37.80	15.80	---	53.60	65.60
3/4" x 3-1/2"											
33" long	Inst	Ea	Lg	CA	.250	32.00	19.80	10.30	---	30.10	37.20
	Inst	Ea	Sm	CA	.385	20.80	21.90	15.80	---	37.70	47.30
37" long	Inst	Ea	Lg	CA	.250	32.00	22.30	10.30	---	32.60	40.00
	Inst	Ea	Sm	CA	.385	20.80	24.60	15.80	---	40.40	50.40

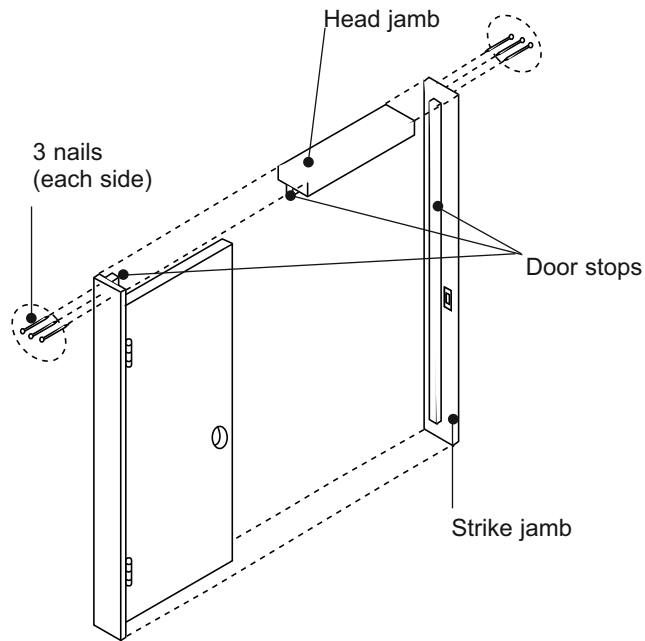
Doors

Interior Door Systems

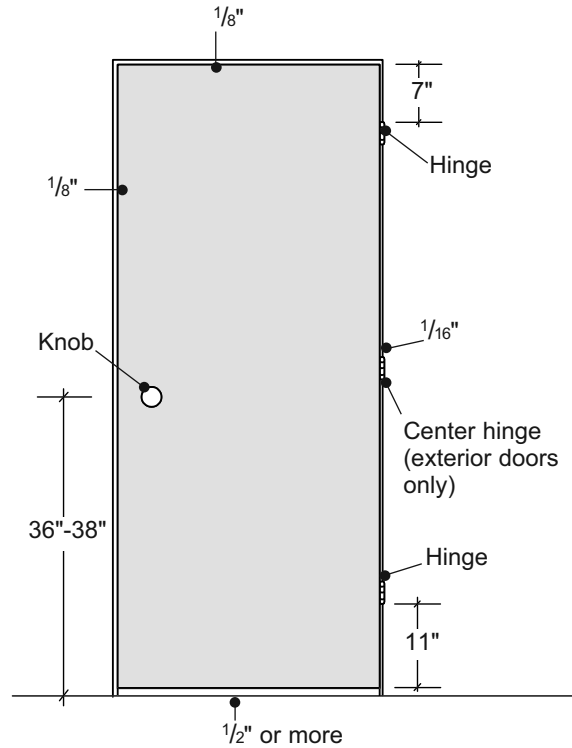


Parts of Exterior Door Frame

Assembled Package Door Units (Interior)



Door Clearances

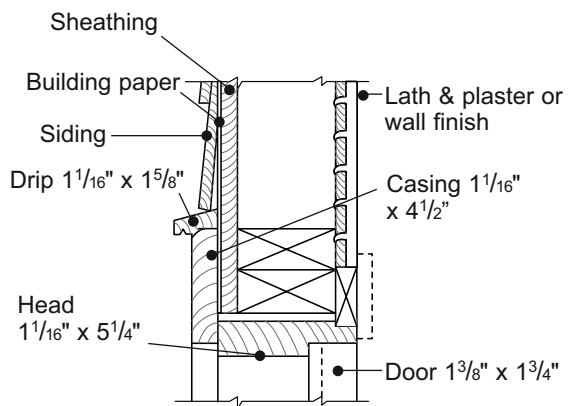


Unit Includes:

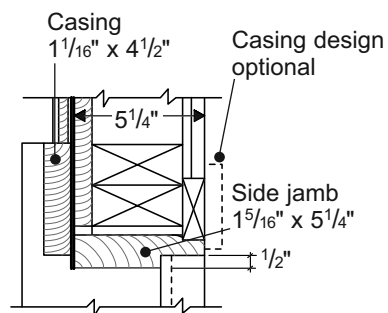
Jamb: $4\frac{9}{16}"$ finger joint pine w/ stops applied.

Butts: 1 pair $3\frac{1}{2}" \times 3\frac{1}{2}"$ applied to door and jamb.

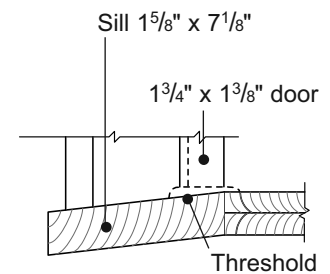
Door: 3 degree bevel one side $\frac{3}{16}"$ under std. width - net 80"
H center bored - $2\frac{1}{8}"$ bore
 $2\frac{3}{8}"$ backset - 1" edge bore



Head jamb



Side jamb



Sill

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Doors

Excludes finish hardware and paint / stain. See also Door Frames, page 122

Exterior / Entry doors, See page 130 for Sidelites.

Alder or similar wood

6'-8" High

Paneled, single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	1220.00	110.00	---	1330.00	1560.00
	Inst	Ea	Sm	2C	4.10	3.90	1350.00	168.00	---	1518.00	1780.00

Slab only

	Inst	Ea	Lg	2C	3.20	5.00	678.00	131.00	---	809.00	963.00
	Inst	Ea	Sm	2C	4.92	3.25	747.00	202.00	---	949.00	1140.00

Paneled, single door, radius top

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	2030.00	110.00	---	2140.00	2480.00
	Inst	Ea	Sm	2C	4.10	3.90	2230.00	168.00	---	2398.00	2800.00

Paneled, double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	1620.00	110.00	---	1730.00	2020.00
	Inst	Ea	Sm	2C	4.10	3.90	1790.00	168.00	---	1958.00	2290.00

8'-0" High

Paneled, single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	1340.00	110.00	---	1450.00	1690.00
	Inst	Ea	Sm	2C	4.10	3.90	1470.00	168.00	---	1638.00	1930.00

Slab only

	Inst	Ea	Lg	2C	3.20	5.00	846.00	131.00	---	977.00	1160.00
	Inst	Ea	Sm	2C	4.92	3.25	933.00	202.00	---	1135.00	1360.00

Paneled, double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	2070.00	110.00	---	2180.00	2530.00
	Inst	Ea	Sm	2C	4.10	3.90	2280.00	168.00	---	2448.00	2860.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Mahogany similar wood**6'-8" High**

Paneled, single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Inst	Ea	Lg	2C	2.67	6.00	1610.00	110.00	---	1720.00	2000.00
Inst	Ea	Sm	2C	4.10	3.90	1770.00	168.00	---	1938.00	2270.00

Slab only

Inst	Ea	Lg	2C	3.20	5.00	989.00	131.00	---	1120.00	1320.00
Inst	Ea	Sm	2C	4.92	3.25	1090.00	202.00	---	1292.00	1540.00

Paneled, double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side

Inst	Ea	Lg	2C	2.67	6.00	2480.00	110.00	---	2590.00	3010.00
Inst	Ea	Sm	2C	4.10	3.90	2730.00	168.00	---	2898.00	3380.00

8'-0" High

Paneled, single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Inst	Ea	Lg	2C	3.20	5.00	1720.00	131.00	---	1851.00	2170.00
Inst	Ea	Sm	2C	4.92	3.25	1900.00	202.00	---	2102.00	2470.00

Slab only

Inst	Ea	Lg	2C	4.00	4.00	1090.00	164.00	---	1254.00	1480.00
Inst	Ea	Sm	2C	6.15	2.60	1200.00	253.00	---	1453.00	1730.00

Paneled, double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side

Inst	Ea	Lg	2C	3.20	5.00	2610.00	131.00	---	2741.00	3190.00
Inst	Ea	Sm	2C	4.92	3.25	2880.00	202.00	---	3082.00	3590.00

Wood or Composite Material, highly detailed**6'-8" High**

Single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

High	Inst	Ea	Lg	2C	3.20	5.00	1430.00	131.00	---	1561.00	1820.00
	Inst	Ea	Sm	2C	4.92	3.25	1570.00	202.00	---	1772.00	2090.00

Slab only

Deluxe / Premium	Inst	Ea	Lg	2C	5.33	3.00	856.00	219.00	---	1075.00	1290.00
	Inst	Ea	Sm	2C	8.21	1.95	944.00	337.00	---	1281.00	1560.00

8'-0" High

Single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Deluxe / Premium	Inst	Ea	Lg	2C	4.00	4.00	1890.00	164.00	---	2054.00	2410.00
	Inst	Ea	Sm	2C	6.15	2.60	2090.00	253.00	---	2343.00	2750.00

Slab only

Deluxe / Premium	Inst	Ea	Lg	2C	8.00	2.00	1100.00	328.00	---	1428.00	1720.00
	Inst	Ea	Sm	2C	12.31	1.30	1210.00	505.00	---	1715.00	2100.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Metal, insulated**6'-8" High**

Single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Standard	Inst	Ea	Lg	2C	2.29	7.00	253.00	94.00	---	347.00	422.00
	Inst	Ea	Sm	2C	3.52	4.55	279.00	145.00	---	424.00	523.00
Average	Inst	Ea	Lg	2C	2.67	6.00	377.00	110.00	---	487.00	587.00
	Inst	Ea	Sm	2C	4.10	3.90	416.00	168.00	---	584.00	714.00
High	Inst	Ea	Lg	2C	3.20	5.00	501.00	131.00	---	632.00	760.00
	Inst	Ea	Sm	2C	4.92	3.25	552.00	202.00	---	754.00	918.00

Slab only

Standard	Inst	Ea	Lg	2C	2.67	6.00	109.00	110.00	---	219.00	279.00
	Inst	Ea	Sm	2C	4.10	3.90	120.00	168.00	---	288.00	374.00
Average	Inst	Ea	Lg	2C	3.20	5.00	175.00	131.00	---	306.00	385.00
	Inst	Ea	Sm	2C	4.92	3.25	192.00	202.00	---	394.00	504.00
High	Inst	Ea	Lg	2C	4.00	4.00	368.00	164.00	---	532.00	654.00
	Inst	Ea	Sm	2C	6.15	2.60	406.00	253.00	---	659.00	820.00

Double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Average	Inst	Ea	Lg	2C	5.33	3.00	470.00	219.00	---	689.00	847.00
	Inst	Ea	Sm	2C	8.21	1.95	518.00	337.00	---	855.00	1070.00

8'-0" High

Single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Average	Inst	Ea	Lg	2C	3.20	5.00	500.00	131.00	---	631.00	759.00
	Inst	Ea	Sm	2C	4.92	3.25	551.00	202.00	---	753.00	917.00
High	Inst	Ea	Lg	2C	4.00	4.00	727.00	164.00	---	891.00	1070.00
	Inst	Ea	Sm	2C	6.15	2.60	801.00	253.00	---	1054.00	1270.00

Slab only

Average	Inst	Ea	Lg	2C	4.00	4.00	304.00	164.00	---	468.00	579.00
	Inst	Ea	Sm	2C	6.15	2.60	335.00	253.00	---	588.00	739.00
High	Inst	Ea	Lg	2C	5.33	3.00	405.00	219.00	---	624.00	772.00
	Inst	Ea	Sm	2C	8.21	1.95	446.00	337.00	---	783.00	985.00

Sidelites**6'-8" High**

Per each, single (add 1) or double (add 2)

To pre-hung unit, ADD

Average	Inst	Ea	Lg	2C	1.00	16.00	167.00	41.10	---	208.10	249.00
	Inst	Ea	Sm	2C	1.54	10.40	184.00	63.20	---	247.20	300.00
High	Inst	Ea	Lg	2C	1.00	16.00	440.00	41.10	---	481.10	563.00
	Inst	Ea	Sm	2C	1.54	10.40	485.00	63.20	---	548.20	646.00
Deluxe / Premium	Inst	Ea	Lg	2C	1.00	16.00	1150.00	41.10	---	1191.10	1380.00
	Inst	Ea	Sm	2C	1.54	10.40	1260.00	63.20	---	1323.20	1540.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Dutch doors, country style, top and bottom sections open separately

Solid core, luan / mahogany or similar wood

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	703.00	110.00	---	813.00	962.00
	Inst	Ea	Sm	2C	4.10	3.90	775.00	168.00	---	943.00	1130.00

Slab only

	Inst	Ea	Lg	2C	3.20	5.00	262.00	131.00	---	393.00	485.00
	Inst	Ea	Sm	2C	4.92	3.25	289.00	202.00	---	491.00	615.00

Fire doors, excludes hinges and hardware, 1.5 hour rating

See also Steel Doors, page 144

Steel

3'-0" x 7'-0"	Inst	Ea	Lg	2C	2.00	8.00	210.00	82.10	---	292.10	356.00
	Inst	Ea	Sm	2C	3.08	5.20	231.00	126.00	---	357.00	443.00
4'-0" x 7'-0"	Inst	Ea	Lg	2C	2.00	8.00	262.00	82.10	---	344.10	416.00
	Inst	Ea	Sm	2C	3.08	5.20	288.00	126.00	---	414.00	509.00
3'-0" x 9'-0"	Inst	Ea	Lg	2C	2.67	6.00	220.00	110.00	---	330.00	406.00
	Inst	Ea	Sm	2C	4.10	3.90	242.00	168.00	---	410.00	514.00

Wood, birch / mahogany / oak face, mineral fiber core

3'-0" x 7'-0"	Inst	Ea	Lg	2C	2.29	7.00	298.00	94.00	---	392.00	474.00
	Inst	Ea	Sm	2C	3.52	4.55	328.00	145.00	---	473.00	580.00
3'-0" x 9'-0"	Inst	Ea	Lg	2C	3.20	5.00	332.00	131.00	---	463.00	566.00
	Inst	Ea	Sm	2C	4.92	3.25	366.00	202.00	---	568.00	704.00

French doors

Solid core, alder or similar wood, 15 lite

Exterior

Single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	2.67	6.00	904.00	110.00	---	1014.00	1190.00
	Inst	Ea	Sm	2C	4.10	3.90	997.00	168.00	---	1165.00	1380.00

Slab only

	Inst	Ea	Lg	2C	3.20	5.00	481.00	131.00	---	612.00	738.00
	Inst	Ea	Sm	2C	4.92	3.25	531.00	202.00	---	733.00	893.00

Double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

	Inst	Ea	Lg	2C	5.33	3.00	1690.00	219.00	---	1909.00	2250.00
	Inst	Ea	Sm	2C	8.21	1.95	1860.00	337.00	---	2197.00	2610.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Interior

6'-8" High

Single door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	2.29	7.00	557.00	94.00	---	651.00	773.00
Inst	Ea	Sm	2C	3.52	4.55	614.00	145.00	---	759.00	909.00

Slab only

Inst	Ea	Lg	2C	2.67	6.00	284.00	110.00	---	394.00	481.00
Inst	Ea	Sm	2C	4.10	3.90	313.00	168.00	---	481.00	596.00

Double door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	4.00	4.00	728.00	164.00	---	892.00	1070.00
Inst	Ea	Sm	2C	6.15	2.60	803.00	253.00	---	1056.00	1280.00

8'-0" High

Single door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	2.46	6.50	910.00	101.00	---	1011.00	1190.00
Inst	Ea	Sm	2C	3.78	4.23	1000.00	155.00	---	1155.00	1370.00

Slab only

Inst	Ea	Lg	2C	2.91	5.50	547.00	119.00	---	666.00	797.00
Inst	Ea	Sm	2C	4.47	3.58	603.00	184.00	---	787.00	951.00

Double door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	4.57	3.50	1900.00	188.00	---	2088.00	2450.00
Inst	Ea	Sm	2C	7.02	2.28	2100.00	288.00	---	2388.00	2810.00

Garden doors, single lite*"X" is a fixed unit and "O" is an opening unit*

1 door, "X" unit

3' x 6'-8"	Inst	LS	Lg	2C	2.67	6.00	1040.00	110.00	---	1150.00	1350.00
	Inst	LS	Sm	2C	4.10	3.90	1150.00	168.00	---	1318.00	1550.00

2 doors, "XO/OX" unit

6' x 6'-8"	Inst	LS	Lg	2C	5.33	3.00	1940.00	219.00	---	2159.00	2540.00
	Inst	LS	Sm	2C	8.21	1.95	2140.00	337.00	---	2477.00	2930.00

3 doors, "XOX" unit

9' x 6'-8"	Inst	LS	Lg	2C	10.67	1.50	2980.00	438.00	---	3418.00	4040.00
	Inst	LS	Sm	2C	16.33	0.98	3290.00	671.00	---	3961.00	4720.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Glass sliding doors

Clear dual pane tempered glass, includes screen, weatherstripping

5'-0" x 6'-8", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	4.00	4.00	529.00	164.00	---	693.00	839.00
	Inst	Set	Sm	2C	6.15	2.60	583.00	253.00	---	836.00	1020.00
High	Inst	Set	Lg	2C	4.00	4.00	761.00	164.00	---	925.00	1100.00
	Inst	Set	Sm	2C	6.15	2.60	839.00	253.00	---	1092.00	1320.00

Fiberglass frame

Average	Inst	Set	Lg	2C	4.00	4.00	1610.00	164.00	---	1774.00	2080.00
	Inst	Set	Sm	2C	6.15	2.60	1780.00	253.00	---	2033.00	2400.00
High	Inst	Set	Lg	2C	4.00	4.00	1870.00	164.00	---	2034.00	2380.00
	Inst	Set	Sm	2C	6.15	2.60	2060.00	253.00	---	2313.00	2720.00

Vinyl frame

Average	Inst	Set	Lg	2C	4.00	4.00	674.00	164.00	---	838.00	1000.00
	Inst	Set	Sm	2C	6.15	2.60	743.00	253.00	---	996.00	1210.00
High	Inst	Set	Lg	2C	4.00	4.00	1030.00	164.00	---	1194.00	1410.00
	Inst	Set	Sm	2C	6.15	2.60	1130.00	253.00	---	1383.00	1660.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	4.00	4.00	1790.00	164.00	---	1954.00	2290.00
	Inst	Set	Sm	2C	6.15	2.60	1970.00	253.00	---	2223.00	2620.00
High	Inst	Set	Lg	2C	4.00	4.00	2190.00	164.00	---	2354.00	2750.00
	Inst	Set	Sm	2C	6.15	2.60	2410.00	253.00	---	2663.00	3130.00

5'-0" x 8'-0", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	4.00	4.00	749.00	164.00	---	913.00	1090.00
	Inst	Set	Sm	2C	6.15	2.60	826.00	253.00	---	1079.00	1300.00
High	Inst	Set	Lg	2C	4.00	4.00	1080.00	164.00	---	1244.00	1470.00
	Inst	Set	Sm	2C	6.15	2.60	1190.00	253.00	---	1443.00	1720.00

Fiberglass frame

Average	Inst	Set	Lg	2C	4.00	4.00	2120.00	164.00	---	2284.00	2660.00
	Inst	Set	Sm	2C	6.15	2.60	2330.00	253.00	---	2583.00	3030.00
High	Inst	Set	Lg	2C	4.00	4.00	2270.00	164.00	---	2434.00	2840.00
	Inst	Set	Sm	2C	6.15	2.60	2510.00	253.00	---	2763.00	3240.00

Vinyl frame

Average	Inst	Set	Lg	2C	4.00	4.00	842.00	164.00	---	1006.00	1200.00
	Inst	Set	Sm	2C	6.15	2.60	928.00	253.00	---	1181.00	1420.00
High	Inst	Set	Lg	2C	4.00	4.00	1250.00	164.00	---	1414.00	1660.00
	Inst	Set	Sm	2C	6.15	2.60	1370.00	253.00	---	1623.00	1930.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	4.00	4.00	2180.00	164.00	---	2344.00	2740.00
	Inst	Set	Sm	2C	6.15	2.60	2400.00	253.00	---	2653.00	3120.00
High	Inst	Set	Lg	2C	4.00	4.00	2560.00	164.00	---	2724.00	3180.00
	Inst	Set	Sm	2C	6.15	2.60	2820.00	253.00	---	3073.00	3600.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

6'-0" x 6'-8", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	4.00	4.00	623.00	164.00	---	787.00	946.00
	Inst	Set	Sm	2C	6.15	2.60	686.00	253.00	---	939.00	1140.00
High	Inst	Set	Lg	2C	4.00	4.00	1050.00	164.00	---	1214.00	1440.00
	Inst	Set	Sm	2C	6.15	2.60	1160.00	253.00	---	1413.00	1680.00

Fiberglass frame

Average	Inst	Set	Lg	2C	4.00	4.00	1750.00	164.00	---	1914.00	2240.00
	Inst	Set	Sm	2C	6.15	2.60	1920.00	253.00	---	2173.00	2570.00
High	Inst	Set	Lg	2C	4.00	4.00	2140.00	164.00	---	2304.00	2690.00
	Inst	Set	Sm	2C	6.15	2.60	2350.00	253.00	---	2603.00	3060.00

Vinyl frame

Average	Inst	Set	Lg	2C	4.00	4.00	755.00	164.00	---	919.00	1100.00
	Inst	Set	Sm	2C	6.15	2.60	832.00	253.00	---	1085.00	1310.00
High	Inst	Set	Lg	2C	4.00	4.00	1200.00	164.00	---	1364.00	1610.00
	Inst	Set	Sm	2C	6.15	2.60	1320.00	253.00	---	1573.00	1870.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	4.00	4.00	2070.00	164.00	---	2234.00	2620.00
	Inst	Set	Sm	2C	6.15	2.60	2290.00	253.00	---	2543.00	2980.00
High	Inst	Set	Lg	2C	4.00	4.00	2490.00	164.00	---	2654.00	3090.00
	Inst	Set	Sm	2C	6.15	2.60	2740.00	253.00	---	2993.00	3500.00

6'-0" x 8'-0", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	4.00	4.00	1110.00	164.00	---	1274.00	1510.00
	Inst	Set	Sm	2C	6.15	2.60	1220.00	253.00	---	1473.00	1760.00
High	Inst	Set	Lg	2C	4.00	4.00	1330.00	164.00	---	1494.00	1760.00
	Inst	Set	Sm	2C	6.15	2.60	1470.00	253.00	---	1723.00	2040.00

Fiberglass frame

Average	Inst	Set	Lg	2C	4.00	4.00	2560.00	164.00	---	2724.00	3170.00
	Inst	Set	Sm	2C	6.15	2.60	2820.00	253.00	---	3073.00	3600.00
High	Inst	Set	Lg	2C	4.00	4.00	2870.00	164.00	---	3034.00	3530.00
	Inst	Set	Sm	2C	6.15	2.60	3160.00	253.00	---	3413.00	3990.00

Vinyl frame

Average	Inst	Set	Lg	2C	4.00	4.00	1220.00	164.00	---	1384.00	1630.00
	Inst	Set	Sm	2C	6.15	2.60	1340.00	253.00	---	1593.00	1900.00
High	Inst	Set	Lg	2C	4.00	4.00	1440.00	164.00	---	1604.00	1890.00
	Inst	Set	Sm	2C	6.15	2.60	1590.00	253.00	---	1843.00	2180.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	4.00	4.00	2640.00	164.00	---	2804.00	3260.00
	Inst	Set	Sm	2C	6.15	2.60	2910.00	253.00	---	3163.00	3700.00
High	Inst	Set	Lg	2C	4.00	4.00	2960.00	164.00	---	3124.00	3630.00
	Inst	Set	Sm	2C	6.15	2.60	3260.00	253.00	---	3513.00	4100.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

8'-0" x 6'-8", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	5.33	3.00	1080.00	219.00	---	1299.00	1550.00
	Inst	Set	Sm	2C	8.21	1.95	1190.00	337.00	---	1527.00	1840.00
High	Inst	Set	Lg	2C	5.33	3.00	1300.00	219.00	---	1519.00	1800.00
	Inst	Set	Sm	2C	8.21	1.95	1430.00	337.00	---	1767.00	2110.00

Fiberglass frame

Average	Inst	Set	Lg	2C	5.33	3.00	2490.00	219.00	---	2709.00	3170.00
	Inst	Set	Sm	2C	8.21	1.95	2740.00	337.00	---	3077.00	3630.00
High	Inst	Set	Lg	2C	5.33	3.00	2790.00	219.00	---	3009.00	3510.00
	Inst	Set	Sm	2C	8.21	1.95	3070.00	337.00	---	3407.00	4010.00

Vinyl frame

Average	Inst	Set	Lg	2C	5.33	3.00	1180.00	219.00	---	1399.00	1660.00
	Inst	Set	Sm	2C	8.21	1.95	1300.00	337.00	---	1637.00	1970.00
High	Inst	Set	Lg	2C	5.33	3.00	1400.00	219.00	---	1619.00	1920.00
	Inst	Set	Sm	2C	8.21	1.95	1540.00	337.00	---	1877.00	2250.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	5.33	3.00	2560.00	219.00	---	2779.00	3250.00
	Inst	Set	Sm	2C	8.21	1.95	2820.00	337.00	---	3157.00	3720.00
High	Inst	Set	Lg	2C	5.33	3.00	2870.00	219.00	---	3089.00	3610.00
	Inst	Set	Sm	2C	8.21	1.95	3170.00	337.00	---	3507.00	4110.00

8'-0" x 8'-0", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	5.33	3.00	1180.00	219.00	---	1399.00	1660.00
	Inst	Set	Sm	2C	8.21	1.95	1300.00	337.00	---	1637.00	1970.00
High	Inst	Set	Lg	2C	5.33	3.00	1470.00	219.00	---	1689.00	2000.00
	Inst	Set	Sm	2C	8.21	1.95	1620.00	337.00	---	1957.00	2340.00

Fiberglass frame

Average	Inst	Set	Lg	2C	5.33	3.00	3000.00	219.00	---	3219.00	3760.00
	Inst	Set	Sm	2C	8.21	1.95	3310.00	337.00	---	3647.00	4280.00
High	Inst	Set	Lg	2C	5.33	3.00	3390.00	219.00	---	3609.00	4200.00
	Inst	Set	Sm	2C	8.21	1.95	3730.00	337.00	---	4067.00	4760.00

Vinyl frame

Average	Inst	Set	Lg	2C	5.33	3.00	1450.00	219.00	---	1669.00	1980.00
	Inst	Set	Sm	2C	8.21	1.95	1600.00	337.00	---	1937.00	2310.00
High	Inst	Set	Lg	2C	5.33	3.00	1760.00	219.00	---	1979.00	2330.00
	Inst	Set	Sm	2C	8.21	1.95	1940.00	337.00	---	2277.00	2710.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	5.33	3.00	3290.00	219.00	---	3509.00	4090.00
	Inst	Set	Sm	2C	8.21	1.95	3620.00	337.00	---	3957.00	4640.00
High	Inst	Set	Lg	2C	5.33	3.00	3930.00	219.00	---	4149.00	4820.00
	Inst	Set	Sm	2C	8.21	1.95	4330.00	337.00	---	4667.00	5450.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

10'-0" x 6'-8", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	5.33	3.00	1150.00	219.00	---	1369.00	1630.00
	Inst	Set	Sm	2C	8.21	1.95	1270.00	337.00	---	1607.00	1930.00
High	Inst	Set	Lg	2C	5.33	3.00	1380.00	219.00	---	1599.00	1890.00
	Inst	Set	Sm	2C	8.21	1.95	1520.00	337.00	---	1857.00	2220.00

Fiberglass frame

Average	Inst	Set	Lg	2C	5.33	3.00	2810.00	219.00	---	3029.00	3540.00
	Inst	Set	Sm	2C	8.21	1.95	3100.00	337.00	---	3437.00	4030.00
High	Inst	Set	Lg	2C	5.33	3.00	3290.00	219.00	---	3509.00	4080.00
	Inst	Set	Sm	2C	8.21	1.95	3620.00	337.00	---	3957.00	4640.00

Vinyl frame

Average	Inst	Set	Lg	2C	5.33	3.00	1350.00	219.00	---	1569.00	1860.00
	Inst	Set	Sm	2C	8.21	1.95	1490.00	337.00	---	1827.00	2180.00
High	Inst	Set	Lg	2C	5.33	3.00	1490.00	219.00	---	1709.00	2020.00
	Inst	Set	Sm	2C	8.21	1.95	1640.00	337.00	---	1977.00	2360.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	5.33	3.00	3190.00	219.00	---	3409.00	3970.00
	Inst	Set	Sm	2C	8.21	1.95	3510.00	337.00	---	3847.00	4510.00
High	Inst	Set	Lg	2C	5.33	3.00	3820.00	219.00	---	4039.00	4690.00
	Inst	Set	Sm	2C	8.21	1.95	4210.00	337.00	---	4547.00	5310.00

10'-0" x 8'-0", 2 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	5.33	3.00	1370.00	219.00	---	1589.00	1880.00
	Inst	Set	Sm	2C	8.21	1.95	1510.00	337.00	---	1847.00	2210.00
High	Inst	Set	Lg	2C	5.33	3.00	2070.00	219.00	---	2289.00	2690.00
	Inst	Set	Sm	2C	8.21	1.95	2280.00	337.00	---	2617.00	3100.00

Fiberglass frame

Average	Inst	Set	Lg	2C	5.33	3.00	3360.00	219.00	---	3579.00	4170.00
	Inst	Set	Sm	2C	8.21	1.95	3700.00	337.00	---	4037.00	4730.00
High	Inst	Set	Lg	2C	5.33	3.00	3990.00	219.00	---	4209.00	4890.00
	Inst	Set	Sm	2C	8.21	1.95	4390.00	337.00	---	4727.00	5530.00

Vinyl frame

Average	Inst	Set	Lg	2C	5.33	3.00	2050.00	219.00	---	2269.00	2670.00
	Inst	Set	Sm	2C	8.21	1.95	2260.00	337.00	---	2597.00	3070.00
High	Inst	Set	Lg	2C	5.33	3.00	2210.00	219.00	---	2429.00	2850.00
	Inst	Set	Sm	2C	8.21	1.95	2440.00	337.00	---	2777.00	3270.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	5.33	3.00	3870.00	219.00	---	4089.00	4760.00
	Inst	Set	Sm	2C	8.21	1.95	4270.00	337.00	---	4607.00	5380.00
High	Inst	Set	Lg	2C	5.33	3.00	4240.00	219.00	---	4459.00	5190.00
	Inst	Set	Sm	2C	8.21	1.95	4680.00	337.00	---	5017.00	5850.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

12'-0" x 6'-8", 3 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	8.00	2.00	1410.00	328.00	---	1738.00	2080.00
	Inst	Set	Sm	2C	12.31	1.30	1560.00	505.00	---	2065.00	2500.00
High	Inst	Set	Lg	2C	8.00	2.00	2130.00	328.00	---	2458.00	2910.00
	Inst	Set	Sm	2C	12.31	1.30	2350.00	505.00	---	2855.00	3410.00

Fiberglass frame

Average	Inst	Set	Lg	2C	8.00	2.00	3970.00	328.00	---	4298.00	5030.00
	Inst	Set	Sm	2C	12.31	1.30	4380.00	505.00	---	4885.00	5740.00
High	Inst	Set	Lg	2C	8.00	2.00	4530.00	328.00	---	4858.00	5670.00
	Inst	Set	Sm	2C	12.31	1.30	4990.00	505.00	---	5495.00	6450.00

Vinyl frame

Average	Inst	Set	Lg	2C	8.00	2.00	2110.00	328.00	---	2438.00	2890.00
	Inst	Set	Sm	2C	12.31	1.30	2330.00	505.00	---	2835.00	3390.00
High	Inst	Set	Lg	2C	8.00	2.00	2280.00	328.00	---	2608.00	3080.00
	Inst	Set	Sm	2C	12.31	1.30	2510.00	505.00	---	3015.00	3590.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	8.00	2.00	4150.00	328.00	---	4478.00	5230.00
	Inst	Set	Sm	2C	12.31	1.30	4570.00	505.00	---	5075.00	5970.00
High	Inst	Set	Lg	2C	8.00	2.00	4660.00	328.00	---	4988.00	5820.00
	Inst	Set	Sm	2C	12.31	1.30	5140.00	505.00	---	5645.00	6620.00

12'-0" x 8'-0", 3 lites, 1 sliding

Aluminum frame, anodized

Average	Inst	Set	Lg	2C	8.00	2.00	2000.00	328.00	---	2328.00	2760.00
	Inst	Set	Sm	2C	12.31	1.30	2210.00	505.00	---	2715.00	3250.00
High	Inst	Set	Lg	2C	8.00	2.00	2440.00	328.00	---	2768.00	3270.00
	Inst	Set	Sm	2C	12.31	1.30	2690.00	505.00	---	3195.00	3810.00

Fiberglass frame

Average	Inst	Set	Lg	2C	8.00	2.00	4560.00	328.00	---	4888.00	5700.00
	Inst	Set	Sm	2C	12.31	1.30	5020.00	505.00	---	5525.00	6480.00
High	Inst	Set	Lg	2C	8.00	2.00	5230.00	328.00	---	5558.00	6470.00
	Inst	Set	Sm	2C	12.31	1.30	5760.00	505.00	---	6265.00	7340.00

Vinyl frame

Average	Inst	Set	Lg	2C	8.00	2.00	2240.00	328.00	---	2568.00	3030.00
	Inst	Set	Sm	2C	12.31	1.30	2460.00	505.00	---	2965.00	3540.00
High	Inst	Set	Lg	2C	8.00	2.00	2510.00	328.00	---	2838.00	3350.00
	Inst	Set	Sm	2C	12.31	1.30	2770.00	505.00	---	3275.00	3890.00

Wood frame with exterior cladding

Average	Inst	Set	Lg	2C	8.00	2.00	4690.00	328.00	---	5018.00	5860.00
	Inst	Set	Sm	2C	12.31	1.30	5170.00	505.00	---	5675.00	6660.00
High	Inst	Set	Lg	2C	8.00	2.00	5390.00	328.00	---	5718.00	6660.00
	Inst	Set	Sm	2C	12.31	1.30	5940.00	505.00	---	6445.00	7540.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					

Adjustments

For impact resistant laminated glass, ADD

Inst	SF	Lg	2C	---	---	9.84	---	---	9.84	11.30
Inst	SF	Sm	2C	---	---	10.80	---	---	10.80	12.50

For one-way reflective glass, ADD

Inst	SF	Lg	2C	---	---	15.70	---	---	15.70	18.00
Inst	SF	Sm	2C	---	---	17.30	---	---	17.30	19.90

For tinted glass, ADD

Inst	SF	Lg	2C	---	---	2.05	---	---	2.05	2.36
Inst	SF	Sm	2C	---	---	2.26	---	---	2.26	2.60

To Detach & Reset the set / unit

5'-0", 6'-0" x 6'8", 8'-0"	Inst	Set	Lg	2C	6.40	2.50	.47	263.00	---	263.47	368.00
	Inst	Set	Sm	2C	9.82	1.63	.52	403.00	---	403.52	565.00
8'-0", 10'-0" x 6'8", 8'-0"	Inst	Set	Lg	2C	8.00	2.00	.67	328.00	---	328.67	461.00
	Inst	Set	Sm	2C	12.31	1.30	.73	505.00	---	505.73	708.00
12'-0" x 6'8", 8'-0"	Inst	Set	Lg	2C	10.67	1.50	.94	438.00	---	438.94	614.00
	Inst	Set	Sm	2C	16.33	0.98	1.04	671.00	---	672.04	940.00

Interior passage doors**Alder or similar wood, solid core****6'-8" High**

Paneled, single door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	2.00	8.00	500.00	82.10	---	582.10	690.00
Inst	Ea	Sm	2C	3.08	5.20	551.00	126.00	---	677.00	811.00

Slab only

Inst	Ea	Lg	2C	2.29	7.00	301.00	94.00	---	395.00	478.00
Inst	Ea	Sm	2C	3.52	4.55	332.00	145.00	---	477.00	584.00

Paneled, single door, radius top

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	4.57	3.50	1560.00	188.00	---	1748.00	2060.00
Inst	Ea	Sm	2C	7.02	2.28	1720.00	288.00	---	2008.00	2380.00

Paneled, double door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	3.20	5.00	849.00	131.00	---	980.00	1160.00
Inst	Ea	Sm	2C	4.92	3.25	936.00	202.00	---	1138.00	1360.00

8'-0" High

Paneled, single door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Inst	Ea	Lg	2C	2.67	6.00	660.00	110.00	---	770.00	913.00
Inst	Ea	Sm	2C	4.10	3.90	728.00	168.00	---	896.00	1070.00

Slab only

Inst	Ea	Lg	2C	3.20	5.00	377.00	131.00	---	508.00	617.00
Inst	Ea	Sm	2C	4.92	3.25	415.00	202.00	---	617.00	760.00

Paneled, double door

Pre-hung with hinges, jamb, stop, brick mold, casing one side, threshold, weatherstrip

Inst	Ea	Lg	2C	4.00	4.00	1110.00	164.00	---	1274.00	1500.00
Inst	Ea	Sm	2C	6.15	2.60	1220.00	253.00	---	1473.00	1760.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Birch or similar wood, hollow core**6'-8" High**

Flush, single door

Pre-hung with hinges, jamb, stop, casing both sides

Paint grade	Inst	Ea	Lg	2C	2.00	8.00	258.00	82.10	---	340.10	412.00
	Inst	Ea	Sm	2C	3.08	5.20	285.00	126.00	---	411.00	504.00
Stain grade	Inst	Ea	Lg	2C	2.00	8.00	300.00	82.10	---	382.10	459.00
	Inst	Ea	Sm	2C	3.08	5.20	330.00	126.00	---	456.00	557.00

Slab only

Inst	Ea	Lg	2C	2.29	7.00	139.00	94.00	---	233.00	291.00
Inst	Ea	Sm	2C	3.52	4.55	153.00	145.00	---	298.00	378.00

Flush, double door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	3.20	5.00	366.00	131.00	---	497.00	605.00
Inst	Ea	Sm	2C	4.92	3.25	403.00	202.00	---	605.00	747.00

Colonist / Raised Panel, molded hardboard**6'-8" High**

Hollow core, paneled, single door

Pre-hung with hinges, jamb, stop, casing both sides

Paint grade	Inst	Ea	Lg	2C	2.00	8.00	242.00	82.10	---	324.10	393.00
	Inst	Ea	Sm	2C	3.08	5.20	266.00	126.00	---	392.00	483.00
Stain grade	Inst	Ea	Lg	2C	2.00	8.00	283.00	82.10	---	365.10	440.00
	Inst	Ea	Sm	2C	3.08	5.20	312.00	126.00	---	438.00	536.00

Slab only

Inst	Ea	Lg	2C	2.29	7.00	96.20	94.00	---	190.20	242.00
Inst	Ea	Sm	2C	3.52	4.55	106.00	145.00	---	251.00	324.00

Hollow core, paneled, double door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	3.20	5.00	446.00	131.00	---	577.00	697.00
Inst	Ea	Sm	2C	4.92	3.25	492.00	202.00	---	694.00	848.00

Solid core, paneled, single door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	2.00	8.00	327.00	82.10	---	409.10	491.00
Inst	Ea	Sm	2C	3.08	5.20	361.00	126.00	---	487.00	592.00

Slab only

Inst	Ea	Lg	2C	2.29	7.00	153.00	94.00	---	247.00	308.00
Inst	Ea	Sm	2C	3.52	4.55	169.00	145.00	---	314.00	397.00

Solid core, paneled, double door

Pre-hung with hinges, jamb, stop, casing both sides

Inst	Ea	Lg	2C	3.20	5.00	646.00	131.00	---	777.00	927.00
Inst	Ea	Sm	2C	4.92	3.25	712.00	202.00	---	914.00	1100.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

8'-0" High

Hollow core, paneled, single door

Pre-hung with hinges, jamb, stop, casing both sides

Paint grade	Inst	Ea	Lg	2C	2.67	6.00	460.00	110.00	---	570.00	682.00
	Inst	Ea	Sm	2C	4.10	3.90	507.00	168.00	---	675.00	818.00
Stain grade	Inst	Ea	Lg	2C	2.67	6.00	506.00	110.00	---	616.00	736.00
	Inst	Ea	Sm	2C	4.10	3.90	558.00	168.00	---	726.00	877.00
Slab only											
	Inst	Ea	Lg	2C	3.20	5.00	169.00	131.00	---	300.00	378.00
	Inst	Ea	Sm	2C	4.92	3.25	186.00	202.00	---	388.00	497.00

Hollow core, paneled, double door

Pre-hung with hinges, jamb, stop, casing both sides

	Inst	Ea	Lg	2C	4.00	4.00	606.00	164.00	---	770.00	927.00
	Inst	Ea	Sm	2C	6.15	2.60	668.00	253.00	---	921.00	1120.00

Solid core, paneled, single door

Pre-hung with hinges, jamb, stop, casing both sides

Paint grade	Inst	Ea	Lg	2C	2.67	6.00	522.00	110.00	---	632.00	754.00
	Inst	Ea	Sm	2C	4.10	3.90	575.00	168.00	---	743.00	897.00
Stain grade	Inst	Ea	Lg	2C	2.67	6.00	569.00	110.00	---	679.00	808.00
	Inst	Ea	Sm	2C	4.10	3.90	627.00	168.00	---	795.00	957.00
Slab only											
	Inst	Ea	Lg	2C	3.20	5.00	302.00	131.00	---	433.00	532.00
	Inst	Ea	Sm	2C	4.92	3.25	333.00	202.00	---	535.00	666.00

Solid core, paneled, double door

Pre-hung with hinges, jamb, stop, casing both sides

	Inst	Ea	Lg	2C	4.00	4.00	708.00	164.00	---	872.00	1040.00
	Inst	Ea	Sm	2C	6.15	2.60	780.00	253.00	---	1033.00	1250.00

Lauan / Mahogany or similar wood**6'-8" High**

Hollow core, flush, single door

Pre-hung with hinges, jamb, stop, casing both sides

Paint grade	Inst	Ea	Lg	2C	2.00	8.00	237.00	82.10	---	319.10	388.00
	Inst	Ea	Sm	2C	3.08	5.20	261.00	126.00	---	387.00	478.00
Stain grade, average	Inst	Ea	Lg	2C	2.00	8.00	278.00	82.10	---	360.10	435.00
	Inst	Ea	Sm	2C	3.08	5.20	307.00	126.00	---	433.00	530.00
Stain grade, premium	Inst	Ea	Lg	2C	2.00	8.00	295.00	82.10	---	377.10	455.00
	Inst	Ea	Sm	2C	3.08	5.20	326.00	126.00	---	452.00	551.00
Slab only											
	Inst	Ea	Lg	2C	2.29	7.00	83.00	94.00	---	177.00	227.00
	Inst	Ea	Sm	2C	3.52	4.55	91.40	145.00	---	236.40	307.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Hollow core, flush, double door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	3.20	5.00	286.00	131.00	---	417.00	513.00
	Inst	Ea	Sm	2C	4.92	3.25	316.00	202.00	---	518.00	646.00
Solid core, paneled, single door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	2.00	8.00	724.00	82.10	---	806.10	948.00
	Inst	Ea	Sm	2C	3.08	5.20	798.00	126.00	---	924.00	1100.00
Slab only											
	Inst	Ea	Lg	2C	2.29	7.00	407.00	94.00	---	501.00	600.00
	Inst	Ea	Sm	2C	3.52	4.55	449.00	145.00	---	594.00	719.00
Solid core, paneled, double door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	3.20	5.00	1080.00	131.00	---	1211.00	1430.00
	Inst	Ea	Sm	2C	4.92	3.25	1190.00	202.00	---	1392.00	1660.00
8'-0" High											
Solid core, paneled, single door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	2.67	6.00	971.00	110.00	---	1081.00	1270.00
	Inst	Ea	Sm	2C	4.10	3.90	1070.00	168.00	---	1238.00	1470.00
Slab only											
	Inst	Ea	Lg	2C	3.20	5.00	729.00	131.00	---	860.00	1020.00
	Inst	Ea	Sm	2C	4.92	3.25	804.00	202.00	---	1006.00	1210.00
Solid core, paneled, double door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	4.00	4.00	1380.00	164.00	---	1544.00	1820.00
	Inst	Ea	Sm	2C	6.15	2.60	1520.00	253.00	---	1773.00	2110.00
Oak or similar wood											
6'-8" High											
Hollow core, flush, single door											
Pre-hung with hinges, jamb, stop, casing both sides											
Paint grade	Inst	Ea	Lg	2C	2.00	8.00	251.00	82.10	---	333.10	403.00
	Inst	Ea	Sm	2C	3.08	5.20	276.00	126.00	---	402.00	495.00
Stain grade, average	Inst	Ea	Lg	2C	2.00	8.00	309.00	82.10	---	391.10	470.00
	Inst	Ea	Sm	2C	3.08	5.20	341.00	126.00	---	467.00	569.00
Stain grade, premium	Inst	Ea	Lg	2C	2.00	8.00	325.00	82.10	---	407.10	488.00
	Inst	Ea	Sm	2C	3.08	5.20	358.00	126.00	---	484.00	589.00
Slab only											
	Inst	Ea	Lg	2C	2.29	7.00	78.00	94.00	---	172.00	221.00
	Inst	Ea	Sm	2C	3.52	4.55	86.00	145.00	---	231.00	301.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Hollow core, flush, double door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	3.20	5.00	339.00	131.00	---	470.00	574.00
	Inst	Ea	Sm	2C	4.92	3.25	374.00	202.00	---	576.00	713.00
Solid core, paneled, single door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	2.00	8.00	444.00	82.10	---	526.10	626.00
	Inst	Ea	Sm	2C	3.08	5.20	489.00	126.00	---	615.00	740.00
Slab only											
	Inst	Ea	Lg	2C	2.29	7.00	251.00	94.00	---	345.00	421.00
	Inst	Ea	Sm	2C	3.52	4.55	277.00	145.00	---	422.00	521.00
Solid core, paneled, double door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	3.20	5.00	723.00	131.00	---	854.00	1010.00
	Inst	Ea	Sm	2C	4.92	3.25	796.00	202.00	---	998.00	1200.00
8'-0" High											
Solid core, paneled, single door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	2.67	6.00	689.00	110.00	---	799.00	946.00
	Inst	Ea	Sm	2C	4.10	3.90	759.00	168.00	---	927.00	1110.00
Slab only											
	Inst	Ea	Lg	2C	3.20	5.00	450.00	131.00	---	581.00	701.00
	Inst	Ea	Sm	2C	4.92	3.25	495.00	202.00	---	697.00	853.00
Solid core, paneled, double door											
Pre-hung with hinges, jamb, stop, casing both sides											
	Inst	Ea	Lg	2C	4.00	4.00	1230.00	164.00	---	1394.00	1650.00
	Inst	Ea	Sm	2C	6.15	2.60	1360.00	253.00	---	1613.00	1920.00
Louver doors											
Pre-hung with hinges, jamb, stop, casing both sides											
Single door											
Full louvered	Inst	Ea	Lg	2C	2.67	6.00	446.00	110.00	---	556.00	666.00
	Inst	Ea	Sm	2C	4.10	3.90	491.00	168.00	---	659.00	800.00
Half louvered	Inst	Ea	Lg	2C	2.67	6.00	457.00	110.00	---	567.00	679.00
	Inst	Ea	Sm	2C	4.10	3.90	504.00	168.00	---	672.00	815.00
Double door											
Full louvered	Inst	Ea	Lg	2C	4.00	4.00	922.00	164.00	---	1086.00	1290.00
	Inst	Ea	Sm	2C	6.15	2.60	1020.00	253.00	---	1273.00	1520.00
Half louvered	Inst	Ea	Lg	2C	4.00	4.00	1090.00	164.00	---	1254.00	1480.00
	Inst	Ea	Sm	2C	6.15	2.60	1200.00	253.00	---	1453.00	1730.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Pocket doors

Pre-hung assembly, rails, brackets, jamb, stop, excludes latch and casing both sides

Lauan / Mahogany, flush, hollow core

	Inst	Ea	Lg	2C	2.67	6.00	164.00	110.00	---	274.00	342.00
	Inst	Ea	Sm	2C	4.10	3.90	181.00	168.00	---	349.00	444.00

Colonist / Raised Panel Hardboard, hollow core

	Inst	Ea	Lg	2C	2.67	6.00	177.00	110.00	---	287.00	357.00
	Inst	Ea	Sm	2C	4.10	3.90	195.00	168.00	---	363.00	460.00

Birch, flush, hollow core

	Inst	Ea	Lg	2C	2.67	6.00	220.00	110.00	---	330.00	406.00
	Inst	Ea	Sm	2C	4.10	3.90	242.00	168.00	---	410.00	514.00

Fir, panel, stain grade, solid core

	Inst	Ea	Lg	2C	2.67	6.00	296.00	110.00	---	406.00	494.00
	Inst	Ea	Sm	2C	4.10	3.90	326.00	168.00	---	494.00	611.00

Screen doors

Metal frame, full fiberglass wire screen, no glass, plain grille, includes hardware, hinges, closer and latch

Standard	Inst	Ea	Lg	2C	1.60	10.00	73.30	65.70	---	139.00	176.00
	Inst	Ea	Sm	2C	2.46	6.50	80.70	101.00	---	181.70	234.00
Average	Inst	Ea	Lg	2C	1.60	10.00	118.00	65.70	---	183.70	227.00
	Inst	Ea	Sm	2C	2.46	6.50	130.00	101.00	---	231.00	290.00

Wood frame, full fiberglass wire screen, no glass, plain grille, includes hardware, hinges, closer and latch

Standard	Inst	Ea	Lg	2C	1.60	10.00	50.80	65.70	---	116.50	150.00
	Inst	Ea	Sm	2C	2.46	6.50	56.00	101.00	---	157.00	206.00
Average	Inst	Ea	Lg	2C	1.60	10.00	107.00	65.70	---	172.70	215.00
	Inst	Ea	Sm	2C	2.46	6.50	118.00	101.00	---	219.00	277.00

Storm doors

Metal frame, with glass and screens, includes hardware, hinges, lockset, threshold, closer

Standard	Inst	Ea	Lg	2C	3.20	5.00	152.00	131.00	---	283.00	359.00
	Inst	Ea	Sm	2C	4.92	3.25	168.00	202.00	---	370.00	475.00
Average	Inst	Ea	Lg	2C	3.20	5.00	200.00	131.00	---	331.00	414.00
	Inst	Ea	Sm	2C	4.92	3.25	220.00	202.00	---	422.00	536.00
High	Inst	Ea	Lg	2C	3.20	5.00	272.00	131.00	---	403.00	497.00
	Inst	Ea	Sm	2C	4.92	3.25	300.00	202.00	---	502.00	628.00
Deluxe / Premium	Inst	Ea	Lg	2C	3.20	5.00	420.00	131.00	---	551.00	667.00
	Inst	Ea	Sm	2C	4.92	3.25	463.00	202.00	---	665.00	815.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Steel doors

See page 131 for Fire Doors. See page 122, Door Frames for steel frames.

Masonry and wood frame structures

Hollow core metal door, primed surfaces, reinforced for hinges, lockset, closer, excludes hinges, lockset, hardware.

3'-0" x 7'-0"

Flush panel	Inst	Ea	Lg	2C	2.00	8.00	397.00	82.10	---	479.10	571.00
	Inst	Ea	Sm	2C	3.08	5.20	437.00	126.00	---	563.00	680.00
Flush panel with glass lite	Inst	Ea	Lg	2C	2.00	8.00	1380.00	82.10	---	1462.10	1700.00
	Inst	Ea	Sm	2C	3.08	5.20	1520.00	126.00	---	1646.00	1930.00
Louvered	Inst	Ea	Lg	2C	2.00	8.00	1660.00	82.10	---	1742.10	2030.00
	Inst	Ea	Sm	2C	3.08	5.20	1830.00	126.00	---	1956.00	2280.00

4'-0" x 7'-0"

Flush panel	Inst	Ea	Lg	2C	2.00	8.00	527.00	82.10	---	609.10	721.00
	Inst	Ea	Sm	2C	3.08	5.20	581.00	126.00	---	707.00	845.00

Metal pole frame structures

Pre-hung hollow core metal door and frame, hinges, primed surfaces, excludes lockset, hardware.

3'-0" x 7'-0"

Flush panel	Inst	Ea	Lg	2C	8.00	2.00	248.00	328.00	---	576.00	744.00
	Inst	Ea	Sm	2C	12.31	1.30	273.00	505.00	---	778.00	1020.00
Flush panel with glass lite	Inst	Ea	Lg	2C	8.00	2.00	297.00	328.00	---	625.00	802.00
	Inst	Ea	Sm	2C	12.31	1.30	328.00	505.00	---	833.00	1080.00

4'-0" x 7'-0"

Flush panel	Inst	Ea	Lg	2C	8.00	2.00	319.00	328.00	---	647.00	826.00
	Inst	Ea	Sm	2C	12.31	1.30	351.00	505.00	---	856.00	1110.00

Drywall (Sheetrock or wallboard)

The types of drywall are Standard, Fire Resistant, Water Resistant, and Fire and Water Resistant.

1. **Dimensions.** $\frac{1}{4}$ " , $\frac{3}{8}$ " x 6' to 12'; $\frac{1}{2}$ " , $\frac{5}{8}$ " x 6' to 14'.

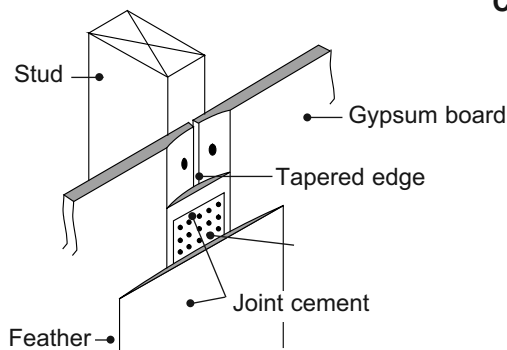
2. Installation

- a. One ply. Sheets are nailed to studs and joists using $1\frac{1}{4}$ " or $1\frac{3}{8}$ " x .101 type 500 nails. Nails are usually spaced 8" oc on walls and 7" oc on ceilings. The joints between sheets are filled, taped and sanded. Tape and compound

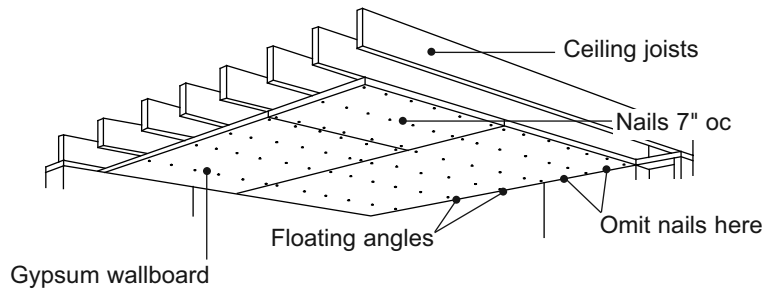
are available in kits containing 250 LF of tape and 18 lbs of compound or 75 LF of tape and 5 lbs of compound.

- b. Two plies. Initial ply is nailed to studs or joists. Second ply is laminated to first with taping compounds as the adhesive. Only the joints in the second ply are filled, taped and finished.

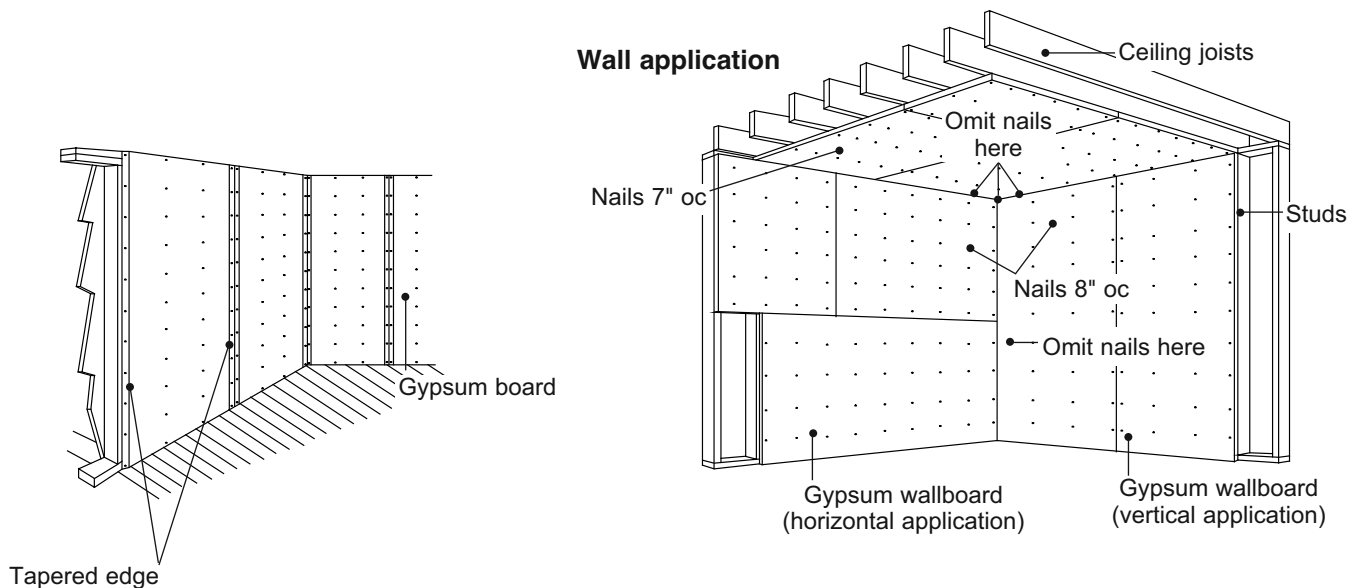
3. **Estimating Technique.** Determine area, deduct openings and add approximately 10% for waste.



Ceiling application



Wall application



Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Drywall

Demo Drywall or Sheetrock, walls and ceilings

Demo	SF	Lg	LH	.007	3680	---	.23	---	.23	.33
Demo	SF	Sm	LB	.009	1766	---	.30	---	.30	.42

Install Drywall or Sheetrock (gypsum plasterboard)

Includes tape, finish, nails or screws, and 5% waste

Applied to wood or metal frame

Walls only, 4' x 8', 10', 12'

3/8" T, standard	Inst	SF	Lg	DL	.015	1600.0	.72	.61	---	1.33	1.68
	Inst	SF	Sm	DK	.021	768.0	.79	.85	---	1.64	2.10
1/2" T, standard	Inst	SF	Lg	DL	.015	1600.0	.66	.61	---	1.27	1.61
	Inst	SF	Sm	DK	.021	768.0	.73	.85	---	1.58	2.03
5/8" T, standard	Inst	SF	Lg	DL	.017	1440.0	.73	.69	---	1.42	1.80
	Inst	SF	Sm	DK	.023	691.2	.80	.93	---	1.73	2.22
Laminated 3/8" T sheets, std.	Inst	SF	Lg	DL	.029	840.0	1.36	1.17	---	2.53	3.21
	Inst	SF	Sm	DK	.040	403.2	1.49	1.62	---	3.11	3.98

Ceilings only, 4' x 8', 10', 12'

3/8" T, standard	Inst	SF	Lg	DL	.019	1280.0	.72	.77	---	1.49	1.90
	Inst	SF	Sm	DK	.026	614.4	.79	1.05	---	1.84	2.38
1/2" T, standard	Inst	SF	Lg	DL	.019	1280.0	.66	.77	---	1.43	1.83
	Inst	SF	Sm	DK	.026	614.4	.73	1.05	---	1.78	2.31
5/8" T, standard	Inst	SF	Lg	DL	.021	1152.0	.73	.85	---	1.58	2.03
	Inst	SF	Sm	DK	.029	553.0	.80	1.17	---	1.97	2.56
Laminated 3/8" T sheets, std.	Inst	SF	Lg	DL	.036	672.0	1.36	1.46	---	2.82	3.60
	Inst	SF	Sm	DK	.050	322.6	1.49	2.03	---	3.52	4.55

Average for ceilings and walls

3/8" T, standard	Inst	SF	Lg	DL	.016	1536.0	.72	.65	---	1.37	1.73
	Inst	SF	Sm	DK	.022	737.3	.79	.89	---	1.68	2.16
1/2" T, standard	Inst	SF	Lg	DL	.016	1536.0	.66	.65	---	1.31	1.66
	Inst	SF	Sm	DK	.022	737.3	.73	.89	---	1.62	2.09
5/8" T, standard	Inst	SF	Lg	DL	.017	1382.4	.73	.69	---	1.42	1.80
	Inst	SF	Sm	DK	.024	663.6	.80	.97	---	1.77	2.28
Laminated 3/8" T sheets, std.	Inst	SF	Lg	DL	.030	806.4	1.36	1.21	---	2.57	3.26
	Inst	SF	Sm	DK	.041	387.1	1.49	1.66	---	3.15	4.04

Tape and bed joints on repaired sheetrock

Walls	Inst	SF	Lg	DU	.022	728.0	.22	.90	---	1.12	1.51
	Inst	SF	Sm	DT	.023	349.4	.24	.94	---	1.18	1.59
Ceilings	Inst	SF	Lg	DU	.025	632.0	.22	1.02	---	1.24	1.68
	Inst	SF	Sm	DT	.026	303.4	.24	1.06	---	1.30	1.76

Thin coat plaster

	Inst	SF	Lg	DU	.014	1125	.16	.57	---	.73	.98
	Inst	SF	Sm	DT	.015	540.0	.17	.61	---	.78	1.05

Material and labor adjustments

No tape and finish, DEDUCT	Inst	SF	Lg	2C	-.017	-1420	-.22	-.69	---	-.91	---
	Inst	SF	Sm	CA	-.023	-681.6	-.24	-.93	---	-1.17	---

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

For ceilings 9' H

Ceiling only, ADD	Inst	SF	Lg	DL	.012	2000	---	.49	---	.49	.68
	Inst	SF	Sm	DK	.017	960	---	.69	---	.69	.96
Walls & ceilings (average), ADD	Inst	SF	Lg	DL	.005	5000	---	.20	---	.20	.28
	Inst	SF	Sm	DK	.007	2400	---	.28	---	.28	.40

Material adjustments

For fire resistant (1/2" and 5/8" T) ADD

	Inst	SF	Lg	DL	---	---	.07	---	---	.07	.08
	Inst	SF	Sm	DK	---	---	.07	---	---	.07	.08

For water resistant (1/2" and 5/8" T) ADD

	Inst	SF	Lg	DL	---	---	.18	---	---	.18	.21
	Inst	SF	Sm	DK	---	---	.18	---	---	.18	.21

For fire and water resistant (5/8" T only) ADD

	Inst	SF	Lg	DL	---	---	.25	---	---	.25	.29
	Inst	SF	Sm	DK	---	---	.25	---	---	.25	.29

Electrical

General work

Residential service, single phase system. Prices given on a cost per each basis for a unit price system which includes a weathercap, service entrance cable, meter socket, entrance disconnect switch, ground rod with clamp, ground cable, EMT, and panelboard

Weathercap

100 AMP service	Inst	Ea	Lg	EA	1.00	8.00	11.30	44.90	---	56.20	78.10
	Inst	Ea	Sm	EA	1.43	5.60	12.50	64.20	---	76.70	107.00
200 AMP service	Inst	Ea	Lg	EA	1.60	5.00	68.70	71.80	---	140.50	183.00
	Inst	Ea	Sm	EA	2.29	3.50	75.70	103.00	---	178.70	236.00

Service entrance cable (typical allowance is 20 LF)

100 AMP service	Inst	LF	Lg	EA	.123	65.00	3.69	5.52	---	9.21	12.30
	Inst	LF	Sm	EA	.176	45.50	4.07	7.90	---	11.97	16.10
200 AMP service	Inst	LF	Lg	EA	.178	45.00	4.38	7.99	---	12.37	16.60
	Inst	LF	Sm	EA	.254	31.50	4.83	11.40	---	16.23	22.10

Meter socket

100 AMP service	Inst	Ea	Lg	EA	4.00	2.00	63.20	180.00	---	243.20	333.00
	Inst	Ea	Sm	EA	5.71	1.40	69.70	256.00	---	325.70	452.00
200 AMP service	Inst	Ea	Lg	EA	6.40	1.25	132.00	287.00	---	419.00	569.00
	Inst	Ea	Sm	EA	9.09	0.88	146.00	408.00	---	554.00	759.00

Entrance disconnect switch

100 AMP service	Inst	Ea	Lg	EA	6.40	1.25	397.00	287.00	---	684.00	873.00
	Inst	Ea	Sm	EA	9.09	0.88	437.00	408.00	---	845.00	1090.00
200 AMP service	Inst	Ea	Lg	EA	9.41	0.85	730.00	422.00	---	1152.00	1450.00
	Inst	Ea	Sm	EA	13.3	0.60	805.00	597.00	---	1402.00	1790.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Ground rod, with clamp

100 AMP service	Inst	Ea	Lg	EA	2.67	3.00	19.70	120.00	---	139.70	196.00
	Inst	Ea	Sm	EA	3.81	2.10	21.70	171.00	---	192.70	273.00
200 AMP service	Inst	Ea	Lg	EA	2.67	3.00	39.40	120.00	---	159.40	219.00
	Inst	Ea	Sm	EA	3.81	2.10	43.40	171.00	---	214.40	298.00

Ground cable (typical allowance is 10 LF)

100 AMP service	Inst	LF	Lg	EA	.080	100.0	.85	3.59	---	4.44	6.18
	Inst	LF	Sm	EA	.114	70.00	.94	5.12	---	6.06	8.50
200 AMP service	Inst	LF	Lg	EA	.100	80.00	1.29	4.49	---	5.78	7.99
	Inst	LF	Sm	EA	.143	56.00	1.43	6.42	---	7.85	11.00

3/4" EMT (typical allowance is 10 LF)

200 AMP service	Inst	LF	Lg	EA	.107	75.00	1.09	4.80	---	5.89	8.22
	Inst	LF	Sm	EA	.152	52.50	1.20	6.82	---	8.02	11.30

Panelboard

100 AMP, 12-circuit	Inst	Ea	Lg	EA	1.60	5.00	168.00	71.80	---	239.80	297.00
	Inst	Ea	Sm	EA	2.29	3.50	185.00	103.00	---	288.00	362.00
200 AMP, 16-circuit	Inst	Ea	Lg	EA	2.29	3.50	407.00	103.00	---	510.00	617.00
	Inst	Ea	Sm	EA	3.27	2.45	449.00	147.00	---	596.00	729.00
400 AMP, 24-circuit	Inst	Ea	Lg	EA	1.60	5.00	741.00	71.80	---	812.80	957.00
	Inst	Ea	Sm	EA	2.29	3.50	817.00	103.00	---	920.00	1090.00

Adjustments for other than normal working situations

Cut and patch, ADD	Inst		Lg	EA	---	---	---	---	---	---	20.0
	Inst		Sm	EA	---	---	---	---	---	---	50.0
Dust protection, ADD	Inst		Lg	EA	---	---	---	---	---	---	10.0
	Inst		Sm	EA	---	---	---	---	---	---	40.0
Protect existing work, ADD	Inst		Lg	EA	---	---	---	---	---	---	20.0
	Inst		Sm	EA	---	---	---	---	---	---	50.0

Wiring per outlet or switch; wall or ceiling

Romex, non-metallic sheathed cable, 600 volt, copper with ground wire

	Inst	Ea	Lg	EA	.500	16.00	20.90	22.40	---	43.30	56.60
	Inst	Ea	Sm	EA	.714	11.20	23.00	32.00	---	55.00	72.90

BX, flexible armored cable, 600 volt, copper

	Inst	Ea	Lg	EA	.667	12.00	30.10	29.90	---	60.00	78.10
	Inst	Ea	Sm	EA	.952	8.40	33.20	42.70	---	75.90	100.00

EMT with wire, electric metallic thinwall, 1/2"

	Inst	Ea	Lg	EA	1.33	6.00	39.40	59.70	---	99.10	132.00
	Inst	Ea	Sm	EA	1.90	4.20	43.40	85.30	---	128.70	174.00

Rigid with wire, 1/2"

	Inst	Ea	Lg	EA	2.00	4.00	54.40	89.80	---	144.20	193.00
	Inst	Ea	Sm	EA	2.86	2.80	59.90	128.00	---	187.90	255.00

Wiring, connection, and installation in closed wall structure, ADD

	Inst	Ea	Lg	EA	1.00	8.00	---	44.90	---	44.90	65.10
	Inst	Ea	Sm	EA	1.43	5.60	---	64.20	---	64.20	93.10

Lighting. See Lighting fixtures, page 268

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Special systems**Carbon monoxide detector**

Standard, battery	Inst	Ea	Lg	EA	.800	10.00	28.40	35.90	---	64.30	84.80
	Inst	Ea	Sm	EA	1.14	7.00	31.30	51.20	---	82.50	110.00
Average, hardwired	Inst	Ea	Lg	EA	1.00	8.00	40.20	44.90	---	85.10	111.00
	Inst	Ea	Sm	EA	1.43	5.60	44.30	64.20	---	108.50	144.00
High, hardwired	Inst	Ea	Lg	EA	1.000	8.00	59.10	44.90	---	104.00	133.00
	Inst	Ea	Sm	EA	1.429	5.60	65.10	64.10	---	129.20	168.00
To only Detach & Reset											
Hardwired	D R	Ea	Lg	EA	1.333	6.00	---	59.80	---	59.80	86.80
	D R	Ea	Sm	EA	1.905	4.20	---	85.50	---	85.50	124.00

Smoke detector

Standard, battery	Inst	Ea	Lg	EA	.800	10.00	16.00	35.90	---	51.90	70.40
	Inst	Ea	Sm	EA	1.14	7.00	17.60	51.20	---	68.80	94.40
Average, hardwired	Inst	Ea	Lg	EA	1.00	8.00	27.50	44.90	---	72.40	96.70
	Inst	Ea	Sm	EA	1.43	5.60	30.30	64.20	---	94.50	128.00
High, hardwired	Inst	Ea	Lg	EA	1.000	8.00	56.10	44.90	---	101.00	130.00
	Inst	Ea	Sm	EA	1.429	5.60	61.80	64.10	---	125.90	164.00
Premium, hardwired	Inst	Ea	Lg	EA	1.00	8.00	141.00	44.90	---	185.90	228.00
	Inst	Ea	Sm	EA	1.43	5.60	156.00	64.20	---	220.20	272.00
To only Detach & Reset											
Hardwired	D R	Ea	Lg	EA	1.333	6.00	---	59.80	---	59.80	86.80
	D R	Ea	Sm	EA	1.905	4.20	---	85.50	---	85.50	124.00

Combo CO / Smoke detector

Standard, hardwired	Inst	Ea	Lg	EA	1.000	8.00	44.20	44.90	---	89.10	116.00
	Inst	Ea	Sm	EA	1.43	5.60	48.70	64.20	---	112.90	149.00
Average, hardwired	Inst	Ea	Lg	EA	1.00	8.00	67.40	44.90	---	112.30	143.00
	Inst	Ea	Sm	EA	1.43	5.60	74.30	64.20	---	138.50	179.00
High, hardwired	Inst	Ea	Lg	EA	1.000	8.00	94.30	44.90	---	139.20	174.00
	Inst	Ea	Sm	EA	1.429	5.60	104.00	64.10	---	168.10	213.00
Premium, hardwired	Inst	Ea	Lg	EA	1.00	8.00	163.00	44.90	---	207.90	253.00
	Inst	Ea	Sm	EA	1.43	5.60	180.00	64.20	---	244.20	300.00
To only Detach & Reset											
Hardwired	D R	Ea	Lg	EA	1.333	6.00	---	59.80	---	59.80	86.80
	D R	Ea	Sm	EA	1.905	4.20	---	85.50	---	85.50	124.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Door bell (chime) systems

Wired, low voltage, to 1-5 buttons, excludes buttons.

Standard	Inst	Ea	Lg	EA	2.667	3.00	19.60	120.00	---	139.60	196.00
	Inst	Ea	Sm	EA	3.81	2.10	21.60	171.00	---	192.60	273.00
Average	Inst	Ea	Lg	EA	2.67	3.00	39.20	120.00	---	159.20	219.00
	Inst	Ea	Sm	EA	3.81	2.10	43.20	171.00	---	214.20	298.00
High	Inst	Ea	Lg	EA	2.667	3.00	58.80	120.00	---	178.80	241.00
	Inst	Ea	Sm	EA	3.810	2.10	64.80	171.00	---	235.80	322.00
Premium	Inst	Ea	Lg	EA	2.67	3.00	110.00	120.00	---	230.00	301.00
	Inst	Ea	Sm	EA	3.81	2.10	122.00	171.00	---	293.00	388.00

Push button only

Standard	Inst	Ea	Lg	EA	.400	20.00	11.80	18.00	---	29.80	39.60
	Inst	Ea	Sm	EA	0.57	14.00	13.00	25.60	---	38.60	52.00
Average	Inst	Ea	Lg	EA	0.40	20.00	21.60	18.00	---	39.60	50.80
	Inst	Ea	Sm	EA	0.57	14.00	23.80	25.60	---	49.40	64.40
High	Inst	Ea	Lg	EA	.400	20.00	44.10	18.00	---	62.10	76.80
	Inst	Ea	Sm	EA	.571	14.00	48.60	25.60	---	74.20	93.10

Wireless, low voltage, includes 1 button

Standard	Inst	Ea	Lg	EA	1.333	6.00	14.70	59.80	---	74.50	104.00
	Inst	Ea	Sm	EA	1.90	4.20	16.20	85.30	---	101.50	142.00
Average	Inst	Ea	Lg	EA	1.33	6.00	33.50	59.70	---	93.20	125.00
	Inst	Ea	Sm	EA	1.90	4.20	36.90	85.30	---	122.20	166.00
High	Inst	Ea	Lg	EA	1.333	6.00	58.80	59.80	---	118.60	154.00
	Inst	Ea	Sm	EA	1.905	4.20	64.80	85.50	---	150.30	198.00
Premium	Inst	Ea	Lg	EA	1.33	6.00	98.00	59.70	---	157.70	199.00
	Inst	Ea	Sm	EA	1.90	4.20	108.00	85.30	---	193.30	248.00

Push button only

Standard	Inst	Ea	Lg	EA	.400	20.00	13.10	18.00	---	31.10	41.10
	Inst	Ea	Sm	EA	0.57	14.00	14.50	25.60	---	40.10	53.70
Average	Inst	Ea	Lg	EA	0.40	20.00	34.30	18.00	---	52.30	65.50
	Inst	Ea	Sm	EA	0.57	14.00	37.80	25.60	---	63.40	80.60
High, Wi-Fi video	Inst	Ea	Lg	EA	.400	20.00	195.00	18.00	---	213.00	250.00
	Inst	Ea	Sm	EA	.571	14.00	215.00	25.60	---	240.60	284.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Fire alarm systems, see page 149 for Smoke Detector.

Fire Alarm System complete

Includes pull stations, alarm horns, smoke and heat detectors, conduit and wire

Priced per Detector	Inst	Ea	Lg	EA	20.00	0.40	67.40	898.00	---	965.40	1380.00
	Inst	Ea	Sm	EA	28.57	0.28	74.30	1280.00	---	1354.30	1940.00
Priced per SF Floor	Inst	SF	Lg	EA	0.03	250.00	.55	1.35	---	1.90	2.58
	Inst	SF	Sm	EA	0.05	175.00	.60	2.24	---	2.84	3.94
Manual pull station	Inst	Ea	Lg	EA	2.67	3.00	99.80	120.00	---	219.80	288.00
	Inst	Ea	Sm	EA	3.81	2.10	110.00	171.00	---	281.00	374.00
Remote LED indicator	Inst	Ea	Lg	EA	4.00	2.00	54.20	180.00	---	234.20	323.00
	Inst	Ea	Sm	EA	5.71	1.40	59.70	256.00	---	315.70	440.00
Signal horn / bell	Inst	Ea	Lg	EA	4.00	2.00	33.00	180.00	---	213.00	298.00
	Inst	Ea	Sm	EA	5.71	1.40	36.40	256.00	---	292.40	413.00

Intercom systems

Master station, low voltage, 100' wire

Standard, basic speaker, up to 8 remote stations

	Inst	Set	Lg	EA	8.00	1.00	163.00	359.00	---	522.00	708.00
	Inst	Set	Sm	EA	11.43	0.70	180.00	513.00	---	693.00	951.00

Average, built-in stereo, up to 8 remote stations

	Inst	Set	Lg	EA	8.00	1.00	361.00	359.00	---	720.00	936.00
	Inst	Set	Sm	EA	11.4	0.70	398.00	512.00	---	910.00	1200.00

High, built-in stereo, up to 12 remote stations

	Inst	Set	Lg	EA	8.00	1.00	626.00	359.00	---	985.00	1240.00
	Inst	Set	Sm	EA	11.43	0.70	690.00	513.00	---	1203.00	1540.00

Premium, digital display, built-in stereo, up to 12 remote stations

	Inst	Set	Lg	EA	8.00	1.00	803.00	359.00	---	1162.00	1440.00
	Inst	Set	Sm	EA	11.4	0.70	885.00	512.00	---	1397.00	1760.00

Remote station, low voltage, 100' wire

Average, communicates only with master station

	Inst	Set	Lg	EA	2.67	3.00	48.30	120.00	---	168.30	229.00
	Inst	Set	Sm	EA	3.81	2.10	53.20	171.00	---	224.20	309.00

High, communicates both with master station and other remote stations

	Inst	LS	Lg	EA	2.67	3.00	78.80	120.00	---	198.80	264.00
	Inst	LS	Sm	EA	3.81	2.10	86.80	171.00	---	257.80	348.00

Security (burglary detection) systems

Control panel, 50' wire

	Inst	Ea	Lg	EA	8.00	1.00	175.00	359.00	---	534.00	722.00
	Inst	Ea	Sm	EA	11.43	0.70	193.00	513.00	---	706.00	965.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Key pad, 50' wire

Average, indicator lights	Inst	Ea	Lg	EA	3.20	2.50	93.10	144.00	---	237.10	315.00
	Inst	Ea	Sm	EA	4.57	1.75	103.00	205.00	---	308.00	415.00
High, digital read-out	Inst	Ea	Lg	EA	3.20	2.50	122.00	144.00	---	266.00	349.00
	Inst	Ea	Sm	EA	4.57	1.75	135.00	205.00	---	340.00	453.00

Contact wire / pad, per opening

Average, wire contact	Inst	Ea	Lg	EA	2.29	3.50	12.20	103.00	---	115.20	163.00
	Inst	Ea	Sm	EA	3.27	2.45	13.50	147.00	---	160.50	228.00
High, magnetic pad	Inst	Ea	Lg	EA	2.29	3.50	14.70	103.00	---	117.70	166.00
	Inst	Ea	Sm	EA	3.27	2.45	16.20	147.00	---	163.20	231.00

Motion detector, 50' wire

	Inst	Ea	Lg	EA	2.67	3.00	92.60	120.00	---	212.60	280.00
	Inst	Ea	Sm	EA	3.81	2.10	102.00	171.00	---	273.00	365.00

Photo-electric beam, 50' wire

	Inst	Ea	Lg	EA	11.43	0.70	128.00	513.00	---	641.00	891.00
	Inst	Ea	Sm	EA	16.33	0.49	141.00	733.00	---	874.00	1220.00

Pressure mat, 50' wire

	Inst	Ea	Lg	EA	0.31	26.00	3.92	13.90	---	17.82	24.70
	Inst	Ea	Sm	EA	0.44	18.20	4.32	19.80	---	24.12	33.60

Telephone, phone-jack wiring

Pre-wiring, per outlet or jack

	Inst	Ea	Lg	EA	.500	16.00	5.23	22.40	---	27.63	38.60
	Inst	Ea	Sm	EA	.714	11.20	5.77	32.00	---	37.77	53.10

Wiring, connection, and installation in closed wall structure, ADD

	Inst	Ea	Lg	EA	0.50	16.00	---	22.40	---	22.40	32.50
	Inst	Ea	Sm	EA	0.71	11.20	---	31.90	---	31.90	46.20

Television antenna

Television / Cable outlet

	Inst	Ea	Lg	EA	1.333	6.00	19.40	59.80	---	79.20	109.00
	Inst	Ea	Sm	EA	1.905	4.20	21.40	85.50	---	106.90	149.00

Wiring, connection, and installation in closed wall structure, ADD

	Inst	Ea	Lg	EA	1.33	6.00	---	59.70	---	59.70	86.60
	Inst	Ea	Sm	EA	1.90	4.20	---	85.30	---	85.30	124.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Thermostat wiring*Heating / Cooling unit is located on the first floor*

Thermostat on first floor

Average	Inst	Ea	Lg	EA	1.33	6.00	21.00	59.70	---	80.70	111.00
	Inst	Ea	Sm	EA	1.90	4.20	23.10	85.30	---	108.40	150.00
High	Inst	Ea	Lg	EA	1.33	6.00	48.40	59.70	---	108.10	142.00
	Inst	Ea	Sm	EA	1.90	4.20	53.30	85.30	---	138.60	185.00
Premium	Inst	Ea	Lg	EA	1.33	6.00	69.70	59.70	---	129.40	167.00
	Inst	Ea	Sm	EA	1.90	4.20	76.80	85.30	---	162.10	212.00
Deluxe	Inst	Ea	Lg	EA	1.33	6.00	126.00	59.70	---	185.70	232.00
	Inst	Ea	Sm	EA	1.90	4.20	139.00	85.30	---	224.30	284.00

Wiring, connection, and installation in closed wall structure, ADD

	Inst	Ea	Lg	EA	1.33	6.00	19.60	59.70	---	79.30	109.00
	Inst	Ea	Sm	EA	1.90	4.20	21.60	85.30	---	106.90	148.00

Thermostat on second floor

Average	Inst	Ea	Lg	EA	2.00	4.00	21.00	89.80	---	110.80	154.00
	Inst	Ea	Sm	EA	2.86	2.80	23.10	128.00	---	151.10	213.00
High	Inst	Ea	Lg	EA	2.00	4.00	48.40	89.80	---	138.20	186.00
	Inst	Ea	Sm	EA	2.86	2.80	53.30	128.00	---	181.30	247.00
Premium	Inst	Ea	Lg	EA	2.00	4.00	69.70	89.80	---	159.50	210.00
	Inst	Ea	Sm	EA	2.86	2.80	76.80	128.00	---	204.80	274.00
Deluxe	Inst	Ea	Lg	EA	2.00	4.00	126.00	89.80	---	215.80	276.00
	Inst	Ea	Sm	EA	2.86	2.80	139.00	128.00	---	267.00	346.00

Wiring, connection, and installation in closed wall structure, ADD

	Inst	Ea	Lg	EA	2.00	4.00	19.60	89.80	---	109.40	153.00
	Inst	Ea	Sm	EA	2.86	2.80	21.60	128.00	---	149.60	211.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Entrances

Single & double door entrances

Demo	Ea	Lg	LB	.640	25.00	---	21.30	---	21.30	29.80
Demo	Ea	Sm	LB	.889	18.00	---	29.60	---	29.60	41.50

Colonial design

White pine includes frames, pediments, and pilasters

Plain carved archway

Single door units

3'-0" W x 6'-8" H	Inst	Ea	Lg	2C	2.00	8.00	359.00	82.10	---	441.10	474.00
	Inst	Ea	Sm	2C	2.67	6.00	396.00	110.00	---	506.00	549.00

Double door units

Two - 2'-6" W x 6'-8" H	Inst	Ea	Lg	2C	2.67	6.00	401.00	110.00	---	511.00	555.00
	Inst	Ea	Sm	2C	3.56	4.50	442.00	146.00	---	588.00	647.00
Two - 2'-8" W x 6'-8" H	Inst	Ea	Lg	2C	2.67	6.00	408.00	110.00	---	518.00	562.00
	Inst	Ea	Sm	2C	3.56	4.50	450.00	146.00	---	596.00	655.00
Two - 3'-0" W x 6'-8" H	Inst	Ea	Lg	2C	2.67	6.00	422.00	110.00	---	532.00	576.00
	Inst	Ea	Sm	2C	3.56	4.50	465.00	146.00	---	611.00	670.00

Decorative carved archway

Single door units

3'-0" W x 6'-8" H	Inst	Ea	Lg	2C	2.00	8.00	431.00	82.10	---	513.10	546.00
	Inst	Ea	Sm	2C	2.67	6.00	475.00	110.00	---	585.00	628.00

Double door units

Two - 2'-6" W x 6'-8" H	Inst	Ea	Lg	2C	2.67	6.00	482.00	110.00	---	592.00	635.00
	Inst	Ea	Sm	2C	3.56	4.50	531.00	146.00	---	677.00	735.00
Two - 2'-8" W x 6'-8" H	Inst	Ea	Lg	2C	2.67	6.00	490.00	110.00	---	600.00	644.00
	Inst	Ea	Sm	2C	3.56	4.50	540.00	146.00	---	686.00	745.00
Two - 3'-0" W x 6'-8" H	Inst	Ea	Lg	2C	2.67	6.00	507.00	110.00	---	617.00	660.00
	Inst	Ea	Sm	2C	3.56	4.50	559.00	146.00	---	705.00	763.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					per Unit	per Day					

Excavation

Digging out or trenching

	Demo	CY	Lg	LB	.034	475.0	---	1.13	---	1.13	1.59
	Demo	CY	Sm	LB	.056	285.0	---	1.87	---	1.87	2.61

Pits, medium earth, piled

With front end loader, track mounted, 1-1/2 CY capacity; 55 CY per hour

	Demo	CY	Lg	VB	.036	440.0	---	1.45	1.26	2.71	3.29
	Demo	CY	Sm	VB	.061	264.0	---	2.45	2.09	4.54	5.52

By hand

To 4'-0" D	Demo	CY	Lg	LB	1.07	15.00	---	35.60	---	35.60	49.90
	Demo	CY	Sm	LB	1.78	9.00	---	59.30	---	59.30	83.00
4'-0" to 6'-0" D	Demo	CY	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	CY	Sm	LB	2.67	6.00	---	88.90	---	88.90	125.00
6'-0" to 8'-0" D	Demo	CY	Lg	LB	2.67	6.00	---	88.90	---	88.90	125.00
	Demo	CY	Sm	LB	4.00	4.00	---	133.00	---	133.00	187.00

Continuous footing or trench, medium earth, piled

With tractor backhoe, 3/8 CY capacity (48 HP); 15 CY per hour

	Demo	CY	Lg	VB	.133	120.0	---	5.35	4.61	9.96	12.10
	Demo	CY	Sm	VB	.222	72.00	---	8.92	7.68	16.60	20.20

By hand, to 4'-0" D

	Demo	CY	Lg	LB	1.07	15.00	---	35.60	---	35.60	49.90
	Demo	CY	Sm	LB	1.78	9.00	---	59.30	---	59.30	83.00

Backfilling, by hand, medium soil

Without compaction

	Demo	CY	Lg	LB	.571	28.00	---	19.00	---	19.00	26.60
	Demo	CY	Sm	LB	.941	17.00	---	31.30	---	31.30	43.90

With hand compaction

6" layers	Demo	CY	Lg	LB	.941	17.00	---	31.30	---	31.30	43.90
	Demo	CY	Sm	LB	1.60	10.00	---	53.30	---	53.30	74.60
12" layers	Demo	CY	Lg	LB	.727	22.00	---	24.20	---	24.20	33.90
	Demo	CY	Sm	LB	1.23	13.00	---	41.00	---	41.00	57.40

With vibrating plate compaction

6" layers	Demo	CY	Lg	AB	.800	20.00	---	32.80	2.95	35.75	48.80
	Demo	CY	Sm	AB	1.33	12.00	---	54.50	4.91	59.41	81.20
12" layers	Demo	CY	Lg	AB	.667	24.00	---	27.30	2.46	29.76	40.70
	Demo	CY	Sm	AB	1.14	14.00	---	46.70	4.21	50.91	69.60

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Fences

Basketweave

Redwood, preassembled, 8' L panels, includes 4" x 4" line posts, horizontal or vertical weave

2' to 4' H	Inst	LF	Lg	CS	.100	240.0	24.30	3.85	---	28.15	33.30
	Inst	LF	Sm	CS	.133	180.0	26.80	5.12	---	31.92	37.90
4' to 6' H	Inst	LF	Lg	CS	.100	240.0	35.70	3.85	---	39.55	46.50
	Inst	LF	Sm	CS	.133	180.0	39.40	5.12	---	44.52	52.50

Adjustments

Corner or end posts, 8' H	Inst	Ea	Lg	CA	.615	13.00	41.60	25.30	---	66.90	83.20
	Inst	Ea	Sm	CA	.821	9.75	45.80	33.70	---	79.50	99.90

Gate with hardware

2' to 4' H	Inst	LF	Lg	CA	.500	16.00	41.40	20.50	---	61.90	76.30
	Inst	LF	Sm	CA	0.67	12.00	45.60	27.50	---	73.10	91.00
4' to 6' H	Inst	LF	Lg	CA	.500	16.00	54.00	20.50	---	74.50	90.80
	Inst	LF	Sm	CA	0.67	12.00	59.50	27.50	---	87.00	107.00

Board, per LF complete fence system

6' H boards nailed to wood frame, on 1 side only; 8' L redwood 4" x 4" (milled) posts, set 2' D in concrete filled holes @ 6' oc; frame members 2" x 4" (milled) as 2 rails between posts per 6' L fence section; costs are per LF of fence

Douglas fir frame members with redwood posts

Milled boards, "dog-eared" one end

Cedar

1" x 6" - 6' H	Inst	LF	Lg	CS	.400	60.00	50.30	15.40	---	65.70	79.40
	Inst	LF	Sm	CS	.533	45.00	55.50	20.50	---	76.00	92.50
1" x 8" - 6' H	Inst	LF	Lg	CS	.343	70.00	41.00	13.20	---	54.20	65.70
	Inst	LF	Sm	CS	.457	52.50	45.20	17.60	---	62.80	76.60
1" x 10" - 6' H	Inst	LF	Lg	CS	.300	80.00	46.20	11.50	---	57.70	69.30
	Inst	LF	Sm	CS	.400	60.00	50.90	15.40	---	66.30	80.10

Douglas fir

1" x 6" - 6' H	Inst	LF	Lg	CS	.400	60.00	46.70	15.40	---	62.10	75.20
	Inst	LF	Sm	CS	.533	45.00	51.50	20.50	---	72.00	87.90
1" x 8" - 6' H	Inst	LF	Lg	CS	.343	70.00	44.60	13.20	---	57.80	69.70
	Inst	LF	Sm	CS	.457	52.50	49.10	17.60	---	66.70	81.10
1" x 10" - 6' H	Inst	LF	Lg	CS	.300	80.00	43.40	11.50	---	54.90	66.00
	Inst	LF	Sm	CS	.400	60.00	47.80	15.40	---	63.20	76.50

Redwood

1" x 6" - 6' H	Inst	LF	Lg	CS	.400	60.00	51.50	15.40	---	66.90	80.80
	Inst	LF	Sm	CS	.533	45.00	56.70	20.50	---	77.20	94.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.343	70.00	48.70	13.20	---	61.90	74.50
	Inst	LF	Sm	CS	.457	52.50	53.70	17.60	---	71.30	86.30
1" x 10" - 6' H	Inst	LF	Lg	CS	.300	80.00	47.10	11.50	---	58.60	70.30
	Inst	LF	Sm	CS	.400	60.00	51.90	15.40	---	67.30	81.20

Rough boards, both ends squared

Cedar

1" x 6" - 6' H	Inst	LF	Lg	CS	.369	65.00	46.70	14.20	---	60.90	73.50
	Inst	LF	Sm	CS	.492	48.75	51.40	18.90	---	70.30	85.60
1" x 8" - 6' H	Inst	LF	Lg	CS	.320	75.00	39.30	12.30	---	51.60	62.40
	Inst	LF	Sm	CS	.427	56.25	43.30	16.40	---	59.70	72.80
1" x 10" - 6' H	Inst	LF	Lg	CS	.282	85.00	43.50	10.90	---	54.40	65.30
	Inst	LF	Sm	CS	.376	63.75	48.00	14.50	---	62.50	75.40

Fences, redwood frame

					Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
Description	Oper	Unit	Vol	Crew Size							
Douglas fir											
1" x 6" - 6' H	Inst	LF	Lg	CS	.369	65.00	43.80	14.20	---	58.00	70.20
	Inst	LF	Sm	CS	.492	48.75	48.20	18.90	---	67.10	82.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.320	75.00	42.20	12.30	---	54.50	65.80
	Inst	LF	Sm	CS	.427	56.25	46.50	16.40	---	62.90	76.50
1" x 10" - 6' H	Inst	LF	Lg	CS	.282	85.00	41.30	10.90	---	52.20	62.70
	Inst	LF	Sm	CS	.376	63.75	45.50	14.50	---	60.00	72.60
Redwood											
1" x 6" - 6' H	Inst	LF	Lg	CS	.369	65.00	47.60	14.20	---	61.80	74.60
	Inst	LF	Sm	CS	.492	48.75	52.40	18.90	---	71.30	86.80
1" x 8" - 6' H	Inst	LF	Lg	CS	.320	75.00	45.50	12.30	---	57.80	69.60
	Inst	LF	Sm	CS	.427	56.25	50.10	16.40	---	66.50	80.70
1" x 10" - 6' H	Inst	LF	Lg	CS	.282	85.00	44.30	10.90	---	55.20	66.10
	Inst	LF	Sm	CS	.376	63.75	48.80	14.50	---	63.30	76.40

Redwood frame members with redwood posts

Milled boards, "dog-eared" one end

Cedar

1" x 6" - 6' H	Inst	LF	Lg	CS	.400	60.00	171.00	15.40	---	186.40	218.00
	Inst	LF	Sm	CS	.533	45.00	189.00	20.50	---	209.50	246.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.343	70.00	162.00	13.20	---	175.20	205.00
	Inst	LF	Sm	CS	.457	52.50	178.00	17.60	---	195.60	230.00
1" x 10" - 6' H	Inst	LF	Lg	CS	.300	80.00	167.00	11.50	---	178.50	208.00
	Inst	LF	Sm	CS	.400	60.00	184.00	15.40	---	199.40	233.00

Douglas fir

1" x 6" - 6' H	Inst	LF	Lg	CS	.400	60.00	167.00	15.40	---	182.40	214.00
	Inst	LF	Sm	CS	.533	45.00	185.00	20.50	---	205.50	241.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.343	70.00	165.00	13.20	---	178.20	209.00
	Inst	LF	Sm	CS	.457	52.50	182.00	17.60	---	199.60	234.00
1" x 10" - 6' H	Inst	LF	Lg	CS	.300	80.00	164.00	11.50	---	175.50	205.00
	Inst	LF	Sm	CS	.400	60.00	181.00	15.40	---	196.40	230.00

Redwood

1" x 6" - 6' H	Inst	LF	Lg	CS	.400	60.00	171.00	15.40	---	186.40	218.00
	Inst	LF	Sm	CS	.533	45.00	189.00	20.50	---	209.50	246.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.343	70.00	162.00	13.20	---	175.20	205.00
	Inst	LF	Sm	CS	.457	52.50	178.00	17.60	---	195.60	230.00
1" x 10" - 6' H	Inst	LF	Lg	CS	.300	80.00	167.00	11.50	---	178.50	208.00
	Inst	LF	Sm	CS	.400	60.00	184.00	15.40	---	199.40	233.00

Rough boards, both ends squared

Cedar

1" x 6" - 6' H	Inst	LF	Lg	CS	.369	65.00	167.00	14.20	---	181.20	212.00
	Inst	LF	Sm	CS	.492	48.75	184.00	18.90	---	202.90	239.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.320	75.00	160.00	12.30	---	172.30	201.00
	Inst	LF	Sm	CS	.427	56.25	176.00	16.40	---	192.40	226.00
1" x 10" - 6' H	Inst	LF	Lg	CS	.282	85.00	164.00	10.90	---	174.90	204.00
	Inst	LF	Sm	CS	.376	63.75	181.00	14.50	---	195.50	228.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Douglas fir											
1" x 6" - 6' H	Inst	LF	Lg	CS	.369	65.00	164.00	14.20	---	178.20	209.00
	Inst	LF	Sm	CS	.492	48.75	181.00	18.90	---	199.90	235.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.320	75.00	163.00	12.30	---	175.30	205.00
	Inst	LF	Sm	CS	.427	56.25	180.00	16.40	---	196.40	230.00
1" x 10" - 6' H	Inst	LF	Lg	CS	.282	85.00	162.00	10.90	---	172.90	202.00
	Inst	LF	Sm	CS	.376	63.75	179.00	14.50	---	193.50	226.00
Redwood											
1" x 6" - 6' H	Inst	LF	Lg	CS	.369	65.00	168.00	14.20	---	182.20	213.00
	Inst	LF	Sm	CS	.492	48.75	185.00	18.90	---	203.90	240.00
1" x 8" - 6' H	Inst	LF	Lg	CS	.320	75.00	166.00	12.30	---	178.30	208.00
	Inst	LF	Sm	CS	.427	56.25	183.00	16.40	---	199.40	234.00
1" x 10" - 6' H	Inst	LF	Lg	CS	.282	85.00	165.00	10.90	---	175.90	205.00
	Inst	LF	Sm	CS	.376	63.75	182.00	14.50	---	196.50	229.00

Chain link

9 gauge galvanized steel, includes top rail (1-5/8" o.d.), line posts (2" o.d.) @ 10' oc and sleeves

36" H (3' H)	Inst	LF	Lg	HB	.073	220.0	11.60	2.78	---	14.38	17.30
	Inst	LF	Sm	HB	.097	165.0	12.80	3.69	---	16.49	20.00
48" H (4' H)	Inst	LF	Lg	HB	.080	200.0	13.00	3.04	---	16.04	19.30
	Inst	LF	Sm	HB	.107	150.0	14.40	4.07	---	18.47	22.30
60" H (5' H)	Inst	LF	Lg	HB	.089	180.0	14.20	3.39	---	17.59	21.10
	Inst	LF	Sm	HB	.119	135.0	15.60	4.53	---	20.13	24.40
72" H (6' H)	Inst	LF	Lg	HB	.100	160.0	16.50	3.81	---	20.31	24.40
	Inst	LF	Sm	HB	.133	120.0	18.20	5.06	---	23.26	28.10
84" H (7' H)	Inst	LF	Lg	HB	.100	160.0	21.20	3.81	---	25.01	29.80
	Inst	LF	Sm	HB	.133	120.0	23.30	5.06	---	28.36	34.00
120" H (10' H)	Inst	LF	Lg	HB	.114	140.0	27.60	4.34	---	31.94	37.90
	Inst	LF	Sm	HB	.152	105.0	30.40	5.79	---	36.19	43.10
144" H (12' H)	Inst	LF	Lg	HB	.114	140.0	31.20	4.34	---	35.54	42.00
	Inst	LF	Sm	HB	.152	105.0	34.40	5.79	---	40.19	47.70
11-1/2 gauge galvanized steel fabric											
DEDUCT	Inst		Lg	---	---		-17.0	---	---	---	---
	Inst		Sm	---	---		-17.0	---	---	---	---

11-1/2 gauge vinyl coat, includes top rail (1-5/8" o.d.), line posts (2" o.d.) @ 10' oc and sleeves

36" H (3' H)	Inst	LF	Lg	HB	.073	220.0	9.94	2.78	---	12.72	15.40
	Inst	LF	Sm	HB	.097	165.0	11.00	3.69	---	14.69	17.80
48" H (4' H)	Inst	LF	Lg	HB	.080	200.0	11.70	3.04	---	14.74	17.70
	Inst	LF	Sm	HB	.107	150.0	12.90	4.07	---	16.97	20.60
60" H (5' H)	Inst	LF	Lg	HB	.089	180.0	13.40	3.39	---	16.79	20.20
	Inst	LF	Sm	HB	.119	135.0	14.70	4.53	---	19.23	23.40
72" H (6' H)	Inst	LF	Lg	HB	.100	160.0	14.80	3.81	---	18.61	22.50
	Inst	LF	Sm	HB	.133	120.0	16.30	5.06	---	21.36	26.00
84" H (7' H)	Inst	LF	Lg	HB	.100	160.0	19.50	3.81	---	23.31	27.80
	Inst	LF	Sm	HB	.133	120.0	21.50	5.06	---	26.56	31.90
120" H (10' H)	Inst	LF	Lg	HB	.114	140.0	28.90	4.34	---	33.24	39.40
	Inst	LF	Sm	HB	.152	105.0	31.80	5.79	---	37.59	44.80
144" H (12' H)	Inst	LF	Lg	HB	.114	140.0	31.70	4.34	---	36.04	42.60
	Inst	LF	Sm	HB	.152	105.0	34.90	5.79	---	40.69	48.40

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

9 gauge galvanized steel, install fabric only

36" H (3' H)	Inst	LF	Lg	HB	.053	300.0	4.88	2.02	---	6.90	8.48
	Inst	LF	Sm	HB	.071	225.0	5.38	2.70	---	8.08	10.00
48" H (4' H)	Inst	LF	Lg	HB	.059	270.0	6.28	2.25	---	8.53	10.40
	Inst	LF	Sm	HB	.079	202.5	6.92	3.01	---	9.93	12.20
60" H (5' H)	Inst	LF	Lg	HB	.065	245.0	7.09	2.47	---	9.56	11.70
	Inst	LF	Sm	HB	.087	183.8	7.81	3.31	---	11.12	13.70
72" H (6' H)	Inst	LF	Lg	HB	.073	220.0	8.53	2.78	---	11.31	13.80
	Inst	LF	Sm	HB	.097	165.0	9.40	3.69	---	13.09	16.10
84" H (7' H)	Inst	LF	Lg	HB	.073	220.0	9.53	2.78	---	12.31	14.90
	Inst	LF	Sm	HB	.097	165.0	10.50	3.69	---	14.19	17.30
120" H (10' H)	Inst	LF	Lg	HB	.084	190.0	13.60	3.20	---	16.80	20.10
	Inst	LF	Sm	HB	.112	142.5	14.90	4.26	---	19.16	23.20
144" H (12' H)	Inst	LF	Lg	HB	.084	190.0	15.80	3.20	---	19.00	22.70
	Inst	LF	Sm	HB	.112	142.5	17.40	4.26	---	21.66	26.10
11-1/2 gauge galvanized steel fabric											
DEDUCT	Inst		Lg	---	---		-58.0	---	---	---	---
	Inst		Sm	---	---		-58.0	---	---	---	---

11-1/2 gauge vinyl coat, install fabric only

36" H (3' H)	Inst	LF	Lg	HB	.053	300.0	3.93	2.02	---	5.95	7.38
	Inst	LF	Sm	HB	.071	225.0	4.33	2.70	---	7.03	8.82
48" H (4' H)	Inst	LF	Lg	HB	.059	270.0	4.78	2.25	---	7.03	8.69
	Inst	LF	Sm	HB	.079	202.5	5.27	3.01	---	8.28	10.30
60" H (5' H)	Inst	LF	Lg	HB	.065	245.0	6.08	2.47	---	8.55	10.50
	Inst	LF	Sm	HB	.087	183.8	6.70	3.31	---	10.01	12.40
72" H (6' H)	Inst	LF	Lg	HB	.073	220.0	6.49	2.78	---	9.27	11.40
	Inst	LF	Sm	HB	.097	165.0	7.15	3.69	---	10.84	13.50
84" H (7' H)	Inst	LF	Lg	HB	.073	220.0	7.50	2.78	---	10.28	12.60
	Inst	LF	Sm	HB	.097	165.0	8.26	3.69	---	11.95	14.70
120" H (10' H)	Inst	LF	Lg	HB	.084	190.0	14.50	3.20	---	17.70	21.20
	Inst	LF	Sm	HB	.112	142.5	16.00	4.26	---	20.26	24.40
144" H (12' H)	Inst	LF	Lg	HB	.084	190.0	15.90	3.20	---	19.10	22.80
	Inst	LF	Sm	HB	.112	142.5	17.50	4.26	---	21.76	26.20

Gates, installed**9 gauge galvanized****Rolling**

36" H (3' H)	Inst	LF	Lg	HB	.640	25.0	90.80	24.40	---	115.20	139.00
	Inst	LF	Sm	HB	.853	18.8	100.00	32.50	---	132.50	161.00
48" H (4' H)	Inst	LF	Lg	HB	.727	22.0	101.00	27.70	---	128.70	156.00
	Inst	LF	Sm	HB	.970	16.5	112.00	36.90	---	148.90	181.00
60" H (5' H)	Inst	LF	Lg	HB	.842	19.0	108.00	32.10	---	140.10	170.00
	Inst	LF	Sm	HB	1.123	14.3	119.00	42.70	---	161.70	198.00
72" H (6' H)	Inst	LF	Lg	HB	1.000	16.0	130.00	38.10	---	168.10	203.00
	Inst	LF	Sm	HB	1.333	12.0	143.00	50.70	---	193.70	237.00

Swinging

36" H (3' H)	Inst	LF	Lg	HB	.533	30.0	41.40	20.30	---	61.70	76.40
	Inst	LF	Sm	HB	.711	22.5	45.60	27.10	---	72.70	90.80
48" H (4' H)	Inst	LF	Lg	HB	.593	27.0	44.30	22.60	---	66.90	83.00
	Inst	LF	Sm	HB	.790	20.3	48.80	30.10	---	78.90	98.80
60" H (5' H)	Inst	LF	Lg	HB	.696	23.0	46.90	26.50	---	73.40	91.60
	Inst	LF	Sm	HB	.928	17.3	51.70	35.30	---	87.00	110.00
72" H (6' H)	Inst	LF	Lg	HB	.800	20.0	50.20	30.50	---	80.70	101.00
	Inst	LF	Sm	HB	1.067	15.0	55.30	40.60	---	95.90	121.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P
Vinyl coat											
Rolling											
36" H (3' H)	Inst	LF	Lg	HB	.640	25.0	106.00	24.40	---	130.40	157.00
	Inst	LF	Sm	HB	.853	18.8	117.00	32.50	---	149.50	181.00
48" H (4' H)	Inst	LF	Lg	HB	.727	22.0	117.00	27.70	---	144.70	173.00
	Inst	LF	Sm	HB	.970	16.5	128.00	36.90	---	164.90	200.00
60" H (5' H)	Inst	LF	Lg	HB	.842	19.0	127.00	32.10	---	159.10	191.00
	Inst	LF	Sm	HB	1.123	14.3	140.00	42.70	---	182.70	221.00
72" H (6' H)	Inst	LF	Lg	HB	1.000	16.0	158.00	38.10	---	196.10	235.00
	Inst	LF	Sm	HB	1.333	12.0	174.00	50.70	---	224.70	272.00
Swinging											
36" H (3' H)	Inst	LF	Lg	HB	.533	30.0	51.20	20.30	---	71.50	87.70
	Inst	LF	Sm	HB	.711	22.5	56.40	27.10	---	83.50	103.00
48" H (4' H)	Inst	LF	Lg	HB	.593	27.0	62.50	22.60	---	85.10	104.00
	Inst	LF	Sm	HB	.790	20.3	68.90	30.10	---	99.00	122.00
60" H (5' H)	Inst	LF	Lg	HB	.696	23.0	69.30	26.50	---	95.80	117.00
	Inst	LF	Sm	HB	.928	17.3	76.40	35.30	---	111.70	138.00
72" H (6' H)	Inst	LF	Lg	HB	.800	20.0	74.10	30.50	---	104.60	128.00
	Inst	LF	Sm	HB	1.067	15.0	81.70	40.60	---	122.30	152.00
Adjustments											
Chain link fence fabric											
Detach & Reset	Inst	LF	Lg	HB	.032	500.0	7.94	1.22	---	9.16	10.90
	Inst	LF	Sm	HB	.043	375.0	8.75	1.64	---	10.39	12.40
Filler strips, ADD											
Aluminum, baked-on enamel finish											
Diagonal, 1-7/8" W											
48" H	Inst	LF	Lg	LB	.160	100.0	5.37	5.33	---	10.70	13.60
	Inst	LF	Sm	LB	.213	75.00	5.92	7.10	---	13.02	16.70
60" H	Inst	LF	Lg	LB	.160	100.0	6.71	5.33	---	12.04	15.20
	Inst	LF	Sm	LB	.213	75.00	7.40	7.10	---	14.50	18.40
72" H	Inst	LF	Lg	LB	.160	100.0	8.06	5.33	---	13.39	16.70
	Inst	LF	Sm	LB	.213	75.00	8.88	7.10	---	15.98	20.10
Vertical, 1-1/4" W											
48" H	Inst	LF	Lg	LB	.160	100.0	5.37	5.33	---	10.70	13.60
	Inst	LF	Sm	LB	.213	75.00	5.92	7.10	---	13.02	16.70
60" H	Inst	LF	Lg	LB	.160	100.0	6.71	5.33	---	12.04	15.20
	Inst	LF	Sm	LB	.213	75.00	7.40	7.10	---	14.50	18.40
72" H	Inst	LF	Lg	LB	.160	100.0	8.06	5.33	---	13.39	16.70
	Inst	LF	Sm	LB	.213	75.00	8.88	7.10	---	15.98	20.10
Wood, redwood stain											
Vertical, 1-1/4" W											
48" H	Inst	LF	Lg	LB	.160	100.0	6.98	5.33	---	12.31	15.50
	Inst	LF	Sm	LB	.213	75.00	7.69	7.10	---	14.79	18.80
60" H	Inst	LF	Lg	LB	.160	100.0	8.72	5.33	---	14.05	17.50
	Inst	LF	Sm	LB	.213	75.00	9.61	7.10	---	16.71	21.00
72" H	Inst	LF	Lg	LB	.160	100.0	10.50	5.33	---	15.83	19.50
	Inst	LF	Sm	LB	.213	75.00	11.50	7.10	---	18.60	23.20
Corner posts (2-1/2" o.d.) with cap for the listed fence height, installed, heavyweight											
36" H	Inst	Ea	Lg	HA	.286	28.00	33.00	12.20	---	45.20	55.30
	Inst	Ea	Sm	HA	.381	21.00	36.30	16.30	---	52.60	64.90
48" H	Inst	Ea	Lg	HA	.320	25.00	36.50	13.70	---	50.20	61.40
	Inst	Ea	Sm	HA	.427	18.75	40.20	18.30	---	58.50	72.20

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours per Unit	Output per Day					
60" H	Inst	Ea	Lg	HA	.364	22.00	42.00	15.60	---	57.60	70.40
	Inst	Ea	Sm	HA	.485	16.50	46.30	20.80	---	67.10	82.70
72" H	Inst	Ea	Lg	HA	.400	20.00	67.70	17.10	---	84.80	102.00
	Inst	Ea	Sm	HA	.533	15.00	74.60	22.80	---	97.40	118.00
84" H	Inst	Ea	Lg	HA	.444	18.00	67.70	19.00	---	86.70	105.00
	Inst	Ea	Sm	HA	.593	13.50	74.60	25.40	---	100.00	122.00
120" H	Inst	Ea	Lg	HA	.500	16.00	79.50	21.40	---	100.90	122.00
	Inst	Ea	Sm	HA	.667	12.00	87.60	28.60	---	116.20	141.00
144" H	Inst	Ea	Lg	HA	.571	14.00	91.10	24.40	---	115.50	140.00
	Inst	Ea	Sm	HA	.762	10.50	100.00	32.60	---	132.60	162.00
End / Gate posts (2-1/2" o.d.) with cap for the listed fence height, installed, heavyweight											
36" H	Inst	Ea	Lg	HA	.286	28.00	21.70	12.20	---	33.90	42.30
	Inst	Ea	Sm	HA	.381	21.00	23.90	16.30	---	40.20	50.60
48" H	Inst	Ea	Lg	HA	.320	25.00	21.70	13.70	---	35.40	44.40
	Inst	Ea	Sm	HA	.427	18.75	23.90	18.30	---	42.20	53.40
60" H	Inst	Ea	Lg	HA	.364	22.00	24.40	15.60	---	40.00	50.20
	Inst	Ea	Sm	HA	.485	16.50	26.90	20.80	---	47.70	60.40
72" H	Inst	Ea	Lg	HA	.400	20.00	33.00	17.10	---	50.10	62.30
	Inst	Ea	Sm	HA	.533	15.00	36.40	22.80	---	59.20	74.30
Split rail											
Red cedar, 10' L sectional spans											
Rails only	Inst	Ea	Lg	---	---	---	20.70	---	---	20.70	20.70
	Inst	Ea	Sm	---	---	---	22.90	---	---	22.90	22.90
Bored 2 rail posts											
5'-6" line or end posts	Inst	Ea	Lg	CA	.615	13.00	26.70	25.30	---	52.00	66.00
	Inst	Ea	Sm	CA	.821	9.75	29.40	33.70	---	63.10	81.00
5'-6" corner posts	Inst	Ea	Lg	CA	.615	13.00	26.70	25.30	---	52.00	66.00
	Inst	Ea	Sm	CA	.821	9.75	29.40	33.70	---	63.10	81.00
Bored 3 rail posts											
6'-6" line or end posts	Inst	Ea	Lg	CA	.615	13.00	29.40	25.30	---	54.70	69.10
	Inst	Ea	Sm	CA	.821	9.75	32.40	33.70	---	66.10	84.40
6'-6" corner posts	Inst	Ea	Lg	CA	.615	13.00	29.40	25.30	---	54.70	69.10
	Inst	Ea	Sm	CA	.821	9.75	32.40	33.70	---	66.10	84.40
Complete fence estimate (does not include gates)											
2 rail											
36" H, 5'-6" post	Inst	LF	Lg	CJ	.042	380.0	7.01	1.56	---	8.57	10.30
	Inst	LF	Sm	CJ	.056	285.0	7.72	2.08	---	9.80	11.80
3 rail											
48" H, 6'-6" post	Inst	LF	Lg	CJ	.048	330.0	9.37	1.79	---	11.16	13.30
	Inst	LF	Sm	CJ	.065	247.5	10.30	2.42	---	12.72	15.30
Gate											
2 rails											
3-1/2' W	Inst	Ea	Lg	CA	.615	13.00	89.60	25.30	---	114.90	138.00
	Inst	Ea	Sm	CA	.821	9.75	98.80	33.70	---	132.50	161.00
5' W	Inst	Ea	Lg	CA	.800	10.00	128.00	32.90	---	160.90	193.00
	Inst	Ea	Sm	CA	1.07	7.50	141.00	43.90	---	184.90	224.00
3 rails											
3-1/2' W	Inst	Ea	Lg	CA	.615	13.00	99.60	25.30	---	124.90	150.00
	Inst	Ea	Sm	CA	.821	9.75	110.00	33.70	---	143.70	173.00
5' W	Inst	Ea	Lg	CA	.800	10.00	142.00	32.90	---	174.90	210.00
	Inst	Ea	Sm	CA	1.07	7.50	157.00	43.90	---	200.90	242.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Fiberglass panels

Corrugated; 8', 10', or 12' L panels; 2-1/2" W x 1/2" D corrugation

Nailed on wood frame

4 oz., 0.03" T, 26" W	Inst	SF	Lg	CA	.040	200.0	1.70	1.64	---	3.34	4.25
	Inst	SF	Sm	CA	.053	150.0	1.83	2.18	---	4.01	5.15
Fire retardant	Inst	SF	Lg	CA	.040	200.0	2.35	1.64	---	3.99	5.00
	Inst	SF	Sm	CA	.053	150.0	2.52	2.18	---	4.70	5.94
5 oz., 0.037" T, 26" W	Inst	SF	Lg	CA	.040	200.0	2.09	1.64	---	3.73	4.70
	Inst	SF	Sm	CA	.053	150.0	2.25	2.18	---	4.43	5.63
Fire retardant	Inst	SF	Lg	CA	.040	200.0	2.89	1.64	---	4.53	5.62
	Inst	SF	Sm	CA	.053	150.0	3.10	2.18	---	5.28	6.61
6 oz., 0.045" T, 26" W	Inst	SF	Lg	CA	.040	200.0	2.48	1.64	---	4.12	5.15
	Inst	SF	Sm	CA	.053	150.0	2.67	2.18	---	4.85	6.12
Fire retardant	Inst	SF	Lg	CA	.040	200.0	3.43	1.64	---	5.07	6.24
	Inst	SF	Sm	CA	.053	150.0	3.68	2.18	---	5.86	7.28
8 oz., 0.06" T, 26" W	Inst	SF	Lg	CA	.040	200.0	2.88	1.64	---	4.52	5.61
	Inst	SF	Sm	CA	.053	150.0	3.09	2.18	---	5.27	6.60
Fire retardant	Inst	SF	Lg	CA	.040	200.0	3.97	1.64	---	5.61	6.86
	Inst	SF	Sm	CA	.053	150.0	4.26	2.18	---	6.44	7.95

Flat panels; 8', 10', or 12' L panels; clear, green, or white

5 oz., 48" W	Inst	SF	Lg	CA	.040	200.0	1.13	1.64	---	2.77	3.60
	Inst	SF	Sm	CA	.053	150.0	1.22	2.18	---	3.40	4.45
Fire retardant	Inst	SF	Lg	CA	.040	200.0	1.13	1.64	---	2.77	3.60
	Inst	SF	Sm	CA	.053	150.0	1.22	2.18	---	3.40	4.45
6 oz., 48" W	Inst	SF	Lg	CA	.040	200.0	2.23	1.64	---	3.87	4.86
	Inst	SF	Sm	CA	.053	150.0	2.39	2.18	---	4.57	5.79
Fire retardant	Inst	SF	Lg	CA	.040	200.0	3.85	1.64	---	5.49	6.73
	Inst	SF	Sm	CA	.053	150.0	4.13	2.18	---	6.31	7.80
8 oz., 48" W	Inst	SF	Lg	CA	.040	200.0	2.88	1.64	---	4.52	5.61
	Inst	SF	Sm	CA	.053	150.0	3.09	2.18	---	5.27	6.60
Fire retardant	Inst	SF	Lg	CA	.040	200.0	4.97	1.64	---	6.61	8.01
	Inst	SF	Sm	CA	.053	150.0	5.34	2.18	---	7.52	9.19

Solar block; 8', 10', 12' L panels; 2-1/2" W x 1/2" D corrugation; nailed on wood frame

5 oz., 26" W	Inst	SF	Lg	CA	.040	200.0	1.28	1.64	---	2.92	3.77
	Inst	SF	Sm	CA	.053	150.0	1.38	2.18	---	3.56	4.63

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					per Unit	per Day					

Accessories

Wood corrugated

2-1/2" W x 1-1/2" D x 6' L	Inst	Ea	Lg	---	---	---	3.38	---	---	3.38	3.89
	Inst	Ea	Sm	---	---	---	3.63	---	---	3.63	4.17
2-1/2" W x 1-1/2" D x 8' L	Inst	Ea	Lg	---	---	---	4.10	---	---	4.10	4.72
	Inst	Ea	Sm	---	---	---	4.41	---	---	4.41	5.07
2-1/2" W x 3/4" D x 6' L	Inst	Ea	Lg	---	---	---	1.55	---	---	1.55	1.78
	Inst	Ea	Sm	---	---	---	1.67	---	---	1.67	1.92
2-1/2" W x 3/4" D x 8' L	Inst	Ea	Lg	---	---	---	2.00	---	---	2.00	2.30
	Inst	Ea	Sm	---	---	---	2.15	---	---	2.15	2.47

Rubber corrugated

1" x 3"	Inst	Ea	Lg	---	---	---	1.55	---	---	1.55	1.78
	Inst	Ea	Sm	---	---	---	1.67	---	---	1.67	1.92

Polyfoam corrugated

1" x 3"	Inst	Ea	Lg	---	---	---	1.09	---	---	1.09	1.25
	Inst	Ea	Sm	---	---	---	1.17	---	---	1.17	1.35

Vertical crown molding

Wood

1-1/2" x 6' L	Inst	Ea	Lg	---	---	---	2.82	---	---	2.82	3.24
	Inst	Ea	Sm	---	---	---	3.03	---	---	3.03	3.48
1-1/2" x 8' L	Inst	Ea	Lg	---	---	---	3.73	---	---	3.73	4.29
	Inst	Ea	Sm	---	---	---	4.00	---	---	4.00	4.60

Polyfoam

1" x 1" x 3' L	Inst	Ea	Lg	---	---	---	1.36	---	---	1.36	1.56
	Inst	Ea	Sm	---	---	---	1.46	---	---	1.46	1.68

Rubber

1" x 1" x 3' L	Inst	Ea	Lg	---	---	---	2.58	---	---	2.58	2.97
	Inst	Ea	Sm	---	---	---	2.77	---	---	2.77	3.19

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Fireplaces

Prefabricated, zero clearance. No masonry support required, installs directly on floor.

Excludes chimney framing, exterior finish, interior finish, hearth, mantel.

Direct vent flue pipe, direct vent fireplace box

Includes termination kit and sealed glass doors

Average	Inst	LS	Lg	CJ	20.0	0.80	2200.00	744.00	---	2944.00	3580.00
	Inst	LS	Sm	CJ	28.6	0.56	2430.00	1060.00	---	3490.00	4280.00
High	Inst	LS	Lg	CJ	20.0	0.80	4150.00	744.00	---	4894.00	5810.00
	Inst	LS	Sm	CJ	28.6	0.56	4570.00	1060.00	---	5630.00	6740.00
For blower, ADD	Inst	LS	Lg	CJ	1.6	10.00	147.00	59.50	---	206.50	253.00
	Inst	LS	Sm	CJ	2.3	7.00	162.00	85.50	---	247.50	306.00

Double wall flue pipe (B-vent), gas burning fireplace box

Includes sealed glass doors, chase cover, roof flashing, collar, firestop, flue cap

Average	Inst	LS	Lg	CJ	32.0	0.50	2510.00	1190.00	---	3700.00	4550.00
	Inst	LS	Sm	CJ	45.7	0.35	2770.00	1700.00	---	4470.00	5560.00
High	Inst	LS	Lg	CJ	32.0	0.50	4640.00	1190.00	---	5830.00	7000.00
	Inst	LS	Sm	CJ	45.7	0.35	5110.00	1700.00	---	6810.00	8260.00

Triple wall flue pipe (B-vent), gas and wood burning fireplace box

Includes sealed glass doors, chase cover, roof flashing, collar, firestop, flue cap

Average	Inst	LS	Lg	CJ	26.7	0.60	3220.00	993.00	---	4213.00	5100.00
	Inst	LS	Sm	CJ	38.1	0.42	3550.00	1420.00	---	4970.00	6070.00
High	Inst	LS	Lg	CJ	24.6	0.65	5890.00	915.00	---	6805.00	8050.00
	Inst	LS	Sm	CJ	34.8	0.46	6490.00	1290.00	---	7780.00	9270.00

Accessories

Chimney framing for zero clearance fireplace

Per Vertical LF	Inst	LF	Lg	CJ	1.3	12.00	24.70	48.40	---	73.10	96.10
	Inst	LF	Sm	CJ	1.9	8.40	27.20	70.70	---	97.90	130.00

Hearth

Brick	Inst	SF	Lg	BK	1.6	10.00	7.68	58.30	---	65.98	91.70
	Inst	SF	Sm	BK	2.3	7.00	8.47	83.80	---	92.27	129.00
Marble / Stone	Inst	SF	Lg	MM	0.6	14.00	40.00	22.10	---	62.10	78.00
	Inst	SF	Sm	MM	0.8	9.80	44.10	29.50	---	73.60	93.40
Tile	Inst	SF	Lg	TA	0.3	32.00	8.70	11.80	---	20.50	26.80
	Inst	SF	Sm	TA	0.4	22.40	9.59	15.80	---	25.39	33.40

Log lighter with gas valve (straight or angle pattern)

	Inst	Ea	Lg	SA	1.33	6.00	49.00	63.80	---	112.80	149.00
	Inst	Ea	Sm	SA	1.90	4.20	54.00	91.20	---	145.20	194.00

Log lighter, less gas valve (straight, angle, tee pattern)

	Inst	Ea	Lg	SA	.667	12.00	24.50	32.00	---	56.50	74.60
	Inst	Ea	Sm	SA	0.95	8.40	27.00	45.60	---	72.60	97.20

Gas valve for log lighter

	Inst	Ea	Lg	SA	.667	12.00	24.50	32.00	---	56.50	74.60
	Inst	Ea	Sm	SA	0.95	8.40	27.00	45.60	---	72.60	97.20

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Trim kit, upgraded, for zero clearance fireplace

Average	Inst	LS	Lg	CJ	1.0	16.00	98.00	37.20	---	135.20	165.00
	Inst	LS	Sm	CJ	1.4	11.20	108.00	52.10	---	160.10	197.00
High	Inst	LS	Lg	CJ	1.0	16.00	144.00	37.20	---	181.20	218.00
	Inst	LS	Sm	CJ	1.4	11.20	159.00	52.10	---	211.10	256.00

Fireplace mantels. See Mantels, fireplace, page 271

Flashing. See Sheet metal, page 345

Floor finishes. See individual items

Floor joists. See Framing, page 178

Food centers

Includes wiring, connection and installation in exposed drainboard only

Built-in models, 4-1/4" x 6-3/4" x 10" rough cut

1,000 watt motor, 110 volts, 5 speed, 8.7 sones quiet

	Inst	Ea	Lg	EA	2.67	3.00	294.00	120.00	---	414.00	512.00
	Inst	Ea	Sm	EA	3.81	2.10	324.00	171.00	---	495.00	621.00

Options

Blender, glass	Inst	Ea	Lg	---	---	---	108.00	---	---	108.00	108.00
	Inst	Ea	Sm	---	---	---	119.00	---	---	119.00	119.00
Blender, stainless steel	Inst	Ea	Lg	---	---	---	123.00	---	---	123.00	123.00
	Inst	Ea	Sm	---	---	---	135.00	---	---	135.00	135.00
Food processor	Inst	Ea	Lg	---	---	---	196.00	---	---	196.00	196.00
	Inst	Ea	Sm	---	---	---	216.00	---	---	216.00	216.00
Grinder	Inst	Ea	Lg	---	---	---	108.00	---	---	108.00	108.00
	Inst	Ea	Sm	---	---	---	119.00	---	---	119.00	119.00
Mini-chopper	Inst	Ea	Lg	---	---	---	88.20	---	---	88.20	88.20
	Inst	Ea	Sm	---	---	---	97.20	---	---	97.20	97.20
Mixer	Inst	Ea	Lg	---	---	---	196.00	---	---	196.00	196.00
	Inst	Ea	Sm	---	---	---	216.00	---	---	216.00	216.00

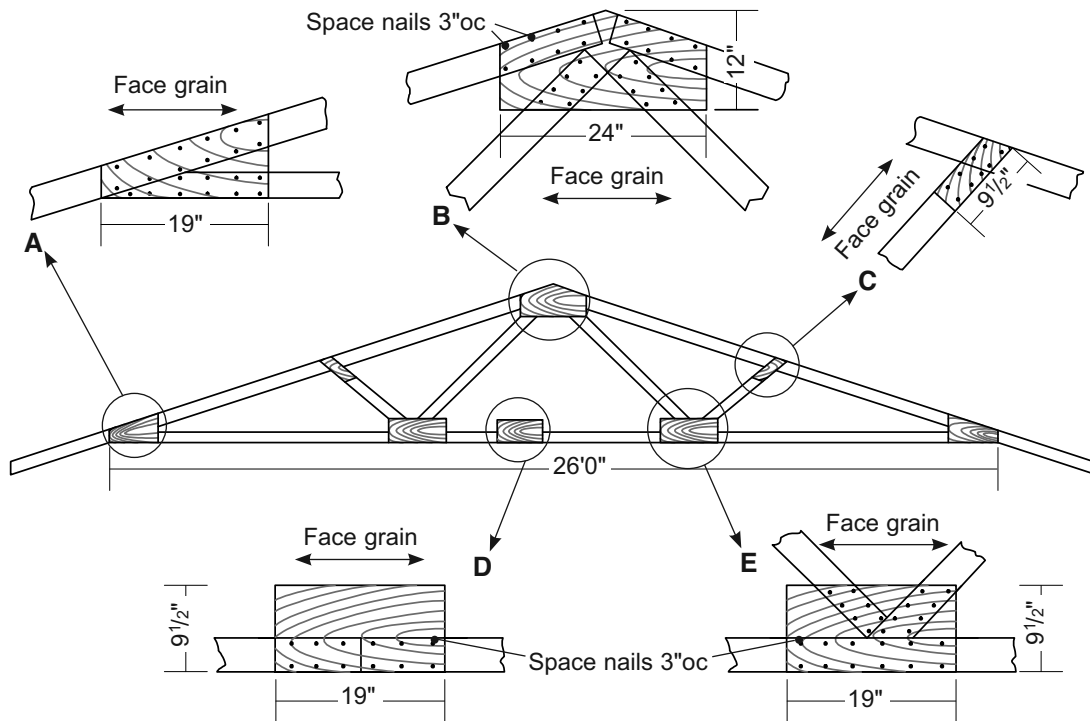
Footings. See Concrete, page 90

Formica. See Countertops, page 98

Forming. See Concrete, page 90

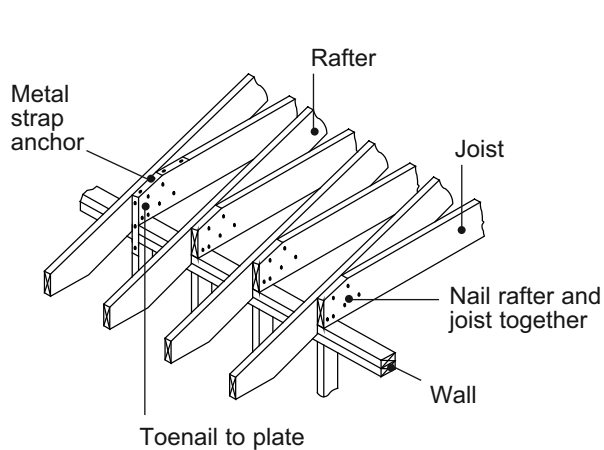
Foundations. See Concrete, page 92

Framing

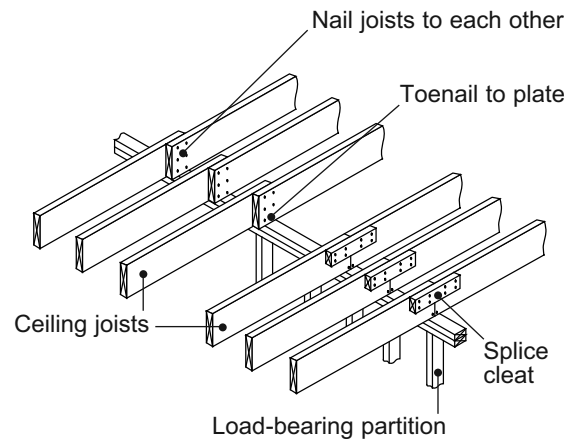


Construction of a 26 foot W truss:

- A Bevel-heel gusset
- B Peak gusset
- C Upper chord intermediate gusset
- D Splice of lower chord
- E Lower chord intermediate gusset



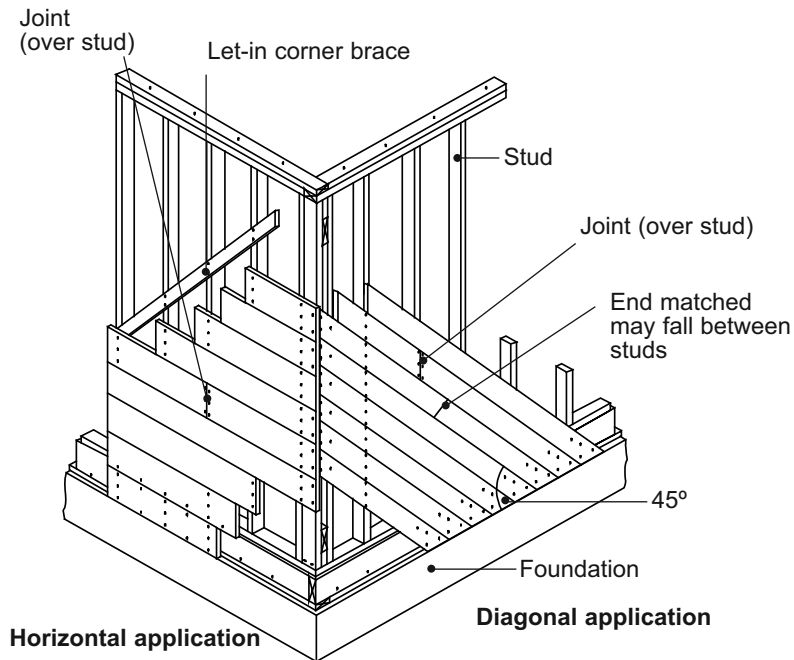
Wood hanger



Metal joist hanger

Flush ceiling framing

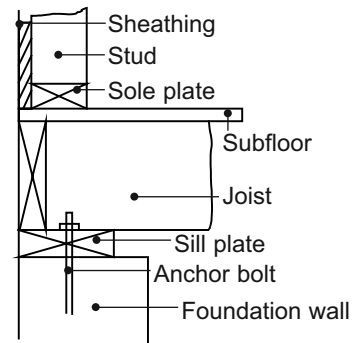
A



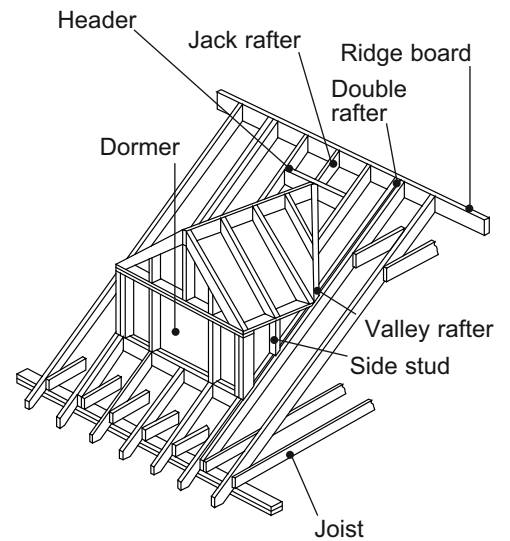
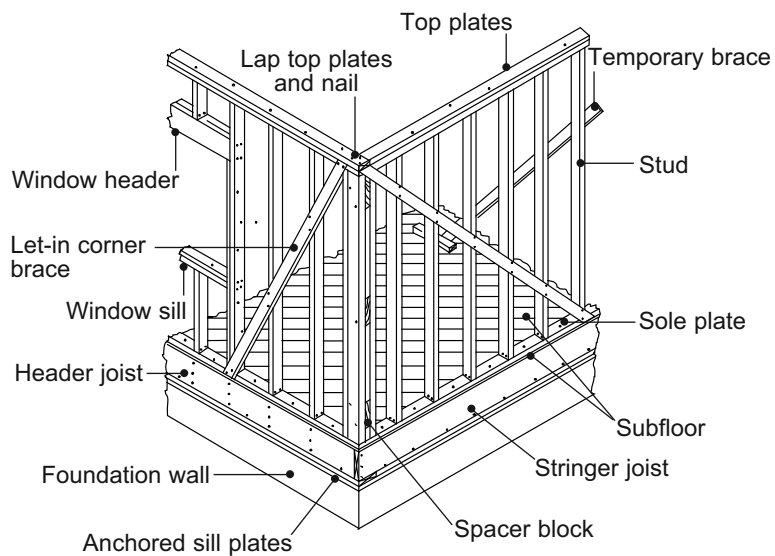
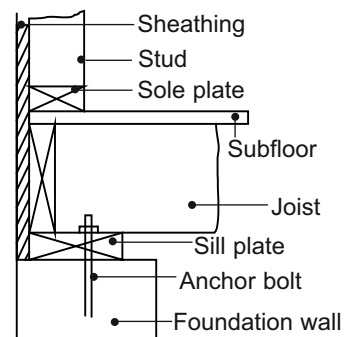
Application of wood sheathing:

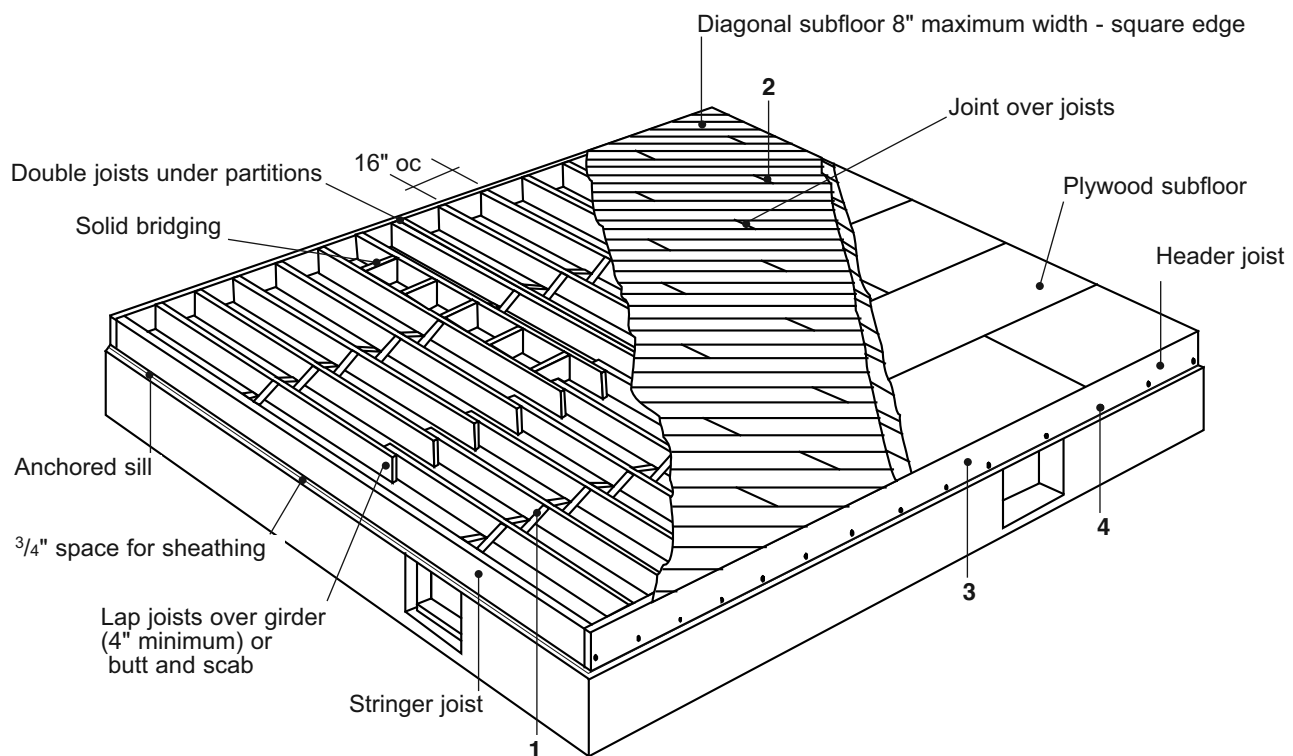
- A** Horizontal and diagonal
- B** Started at subfloor
- C** Started at foundation wall

B



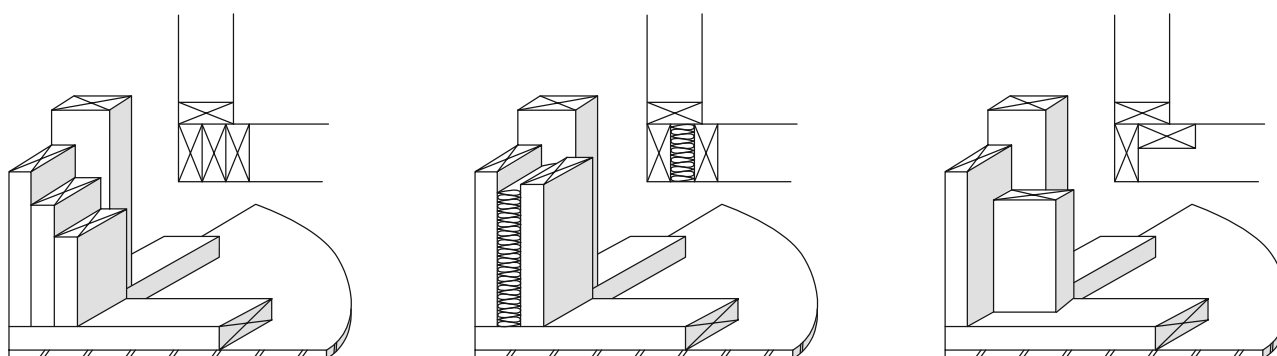
C





Floor framing:

1. Nailing bridge to joists
2. Nailing board subfloor to joists
3. Nailing header to joists
4. Toenailing header to sill



Stud arrangements at exterior corners

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Framing, rough carpentry

Dimension lumber

Beams; set on steel columns, not wood columns

Built-up (2 pieces)

4" x 6" - 10'	Demo	LF	Lg	LB	.024	661.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.028	561.9	---	.93	---	.93	1.31
4" x 6" - 10'	Inst	LF	Lg	2C	.047	339.0	1.72	1.93	.38	4.03	5.06
	Inst	LF	Sm	2C	.056	288.2	1.88	2.30	.45	4.63	5.83
4" x 8" - 10'	Demo	LF	Lg	LB	.027	595.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	505.8	---	1.07	---	1.07	1.49
4" x 8" - 10'	Inst	LF	Lg	2C	.046	350.0	2.31	1.89	.37	4.57	5.67
	Inst	LF	Sm	2C	.054	297.5	2.55	2.22	.44	5.21	6.48
4" x 10" - 10'	Demo	LF	Lg	LB	.030	540.0	---	1.00	---	1.00	1.40
	Demo	LF	Sm	LB	.035	459.0	---	1.17	---	1.17	1.63
4" x 10" - 10'	Inst	LF	Lg	2C	.049	325.0	2.81	2.01	.40	5.22	6.45
	Inst	LF	Sm	2C	.058	276.3	3.11	2.38	.47	5.96	7.38
4" x 12" - 12'	Demo	LF	Lg	LB	.032	495.0	---	1.07	---	1.07	1.49
	Demo	LF	Sm	LB	.038	420.8	---	1.27	---	1.27	1.77
4" x 12" - 12'	Inst	LF	Lg	2C	.053	304.0	4.00	2.18	.43	6.61	8.08
	Inst	LF	Sm	2C	.062	258.4	4.41	2.55	.50	7.46	9.14
6" x 8" - 10'	Demo	LF	Lg	LD	.043	744.0	---	1.60	---	1.60	2.24
	Demo	LF	Sm	LD	.051	632.4	---	1.90	---	1.90	2.66
6" x 8" - 10'	Inst	LF	Lg	CW	.074	435.0	13.50	2.75	.30	16.55	19.70
	Inst	LF	Sm	CW	.087	369.8	14.90	3.24	.35	18.49	22.00
6" x 10" - 10'	Demo	LF	Lg	LD	.047	676.0	---	1.75	---	1.75	2.45
	Demo	LF	Sm	LD	.056	574.6	---	2.08	---	2.08	2.92
6" x 10" - 10'	Inst	LF	Lg	CW	.079	405.0	17.50	2.94	.32	20.76	24.60
	Inst	LF	Sm	CW	.093	344.3	19.30	3.46	.38	23.14	27.40
6" x 12" - 12'	Demo	LF	Lg	LD	.052	619.0	---	1.93	---	1.93	2.71
	Demo	LF	Sm	LD	.061	526.2	---	2.27	---	2.27	3.18
6" x 12" - 12'	Inst	LF	Lg	CW	.084	379.0	20.20	3.12	.34	23.66	27.90
	Inst	LF	Sm	CW	.099	322.2	22.30	3.68	.40	26.38	31.20

Built-up (3 pieces)

6" x 8" - 10'	Demo	LF	Lg	LD	.044	733.0	---	1.64	---	1.64	2.29
	Demo	LF	Sm	LD	.051	623.1	---	1.90	---	1.90	2.66
6" x 8" - 10'	Inst	LF	Lg	CW	.075	425.0	3.52	2.79	.31	6.62	8.26
	Inst	LF	Sm	CW	.089	361.3	3.90	3.31	.36	7.57	9.48
6" x 10" - 10'	Demo	LF	Lg	LD	.048	669.0	---	1.79	---	1.79	2.50
	Demo	LF	Sm	LD	.056	568.7	---	2.08	---	2.08	2.92
6" x 10" - 10'	Inst	LF	Lg	CW	.081	397.0	4.28	3.01	.33	7.62	9.47
	Inst	LF	Sm	CW	.095	337.5	4.75	3.53	.39	8.67	10.80

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
6" x 12" - 12'	Demo	LF	Lg	LD	.053	609.0	---	1.97	---	1.97	2.76
	Demo	LF	Sm	LD	.062	517.7	---	2.31	---	2.31	3.23
6" x 12" - 12'	Inst	LF	Lg	CW	.087	368.0	6.07	3.24	.35	9.66	11.90
	Inst	LF	Sm	CW	.102	312.8	6.69	3.79	.42	10.90	13.40
9" x 10" - 12'	Demo	LF	Lg	LD	.059	541.0	---	2.19	---	2.19	3.07
	Demo	LF	Sm	LD	.070	459.9	---	2.60	---	2.60	3.64
9" x 10" - 12'	Inst	LF	Lg	CW	.095	338.0	26.30	3.53	.38	30.21	35.60
	Inst	LF	Sm	CW	.111	287.3	29.00	4.13	.45	33.58	39.60
9" x 12" - 12'	Demo	LF	Lg	LD	.065	493.0	---	2.42	---	2.42	3.38
	Demo	LF	Sm	LD	.076	419.1	---	2.83	---	2.83	3.96
9" x 12" - 12'	Inst	LF	Lg	CW	.102	315.0	30.40	3.79	.41	34.60	40.60
	Inst	LF	Sm	CW	.120	267.8	33.50	4.46	.49	38.45	45.20
Single member											
2" x 6"	Demo	LF	Lg	LB	.017	947.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	805.0	---	.67	---	.67	.93
2" x 6"	Inst	LF	Lg	2C	.031	520.0	1.06	1.27	.25	2.58	3.25
	Inst	LF	Sm	2C	.036	442.0	1.16	1.48	.29	2.93	3.69
2" x 8"	Demo	LF	Lg	LB	.018	874.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.022	742.9	---	.73	---	.73	1.03
2" x 8"	Inst	LF	Lg	2C	.033	491.0	1.35	1.35	.26	2.96	3.71
	Inst	LF	Sm	2C	.038	417.4	1.49	1.56	.31	3.36	4.21
2" x 10"	Demo	LF	Lg	LB	.020	811.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	689.4	---	.77	---	.77	1.07
2" x 10"	Inst	LF	Lg	2C	.034	465.0	1.61	1.40	.28	3.29	4.09
	Inst	LF	Sm	2C	.040	395.3	1.78	1.64	.33	3.75	4.68
2" x 12"	Demo	LF	Lg	LB	.021	756.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.025	642.6	---	.83	---	.83	1.17
2" x 12"	Inst	LF	Lg	2C	.036	440.0	2.20	1.48	.30	3.98	4.90
	Inst	LF	Sm	2C	.043	374.0	2.43	1.77	.35	4.55	5.62
3" x 6"	Demo	LF	Lg	LB	.019	832.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.023	707.2	---	.77	---	.77	1.07
3" x 6"	Inst	LF	Lg	2C	.034	472.0	3.23	1.40	.28	4.91	5.95
	Inst	LF	Sm	2C	.040	401.2	3.56	1.64	.32	5.52	6.71
3" x 8"	Demo	LF	Lg	LB	.021	756.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.025	642.6	---	.83	---	.83	1.17
3" x 8"	Inst	LF	Lg	2C	.036	440.0	6.95	1.48	.30	8.73	10.40
	Inst	LF	Sm	2C	.043	374.0	7.66	1.77	.35	9.78	11.60
3" x 10"	Demo	LF	Lg	LB	.024	680.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.028	578.0	---	.93	---	.93	1.31
3" x 10"	Inst	LF	Lg	2C	.039	408.0	8.95	1.60	.32	10.87	12.90
	Inst	LF	Sm	2C	.046	346.8	9.86	1.89	.37	12.12	14.40

Framing, rough carpentry, beams

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
3" x 12"	Demo	LF	Lg	LB	.026	623.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.030	529.6	---	1.00	---	1.00	1.40
3" x 12"	Inst	LF	Lg	2C	.042	381.0	10.30	1.72	.34	12.36	14.60
	Inst	LF	Sm	2C	.049	323.9	11.40	2.01	.40	13.81	16.30
3" x 14"	Demo	LF	Lg	LB	.028	575.0	---	.93	---	.93	1.31
	Demo	LF	Sm	LB	.033	488.8	---	1.10	---	1.10	1.54
3" x 14"	Inst	LF	Lg	2C	.045	359.0	12.30	1.85	.36	14.51	17.10
	Inst	LF	Sm	2C	.052	305.2	13.50	2.14	.43	16.07	19.00
4" x 6"	Demo	LF	Lg	LB	.021	745.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.025	633.3	---	.83	---	.83	1.17
4" x 6"	Inst	LF	Lg	2C	.037	433.0	3.23	1.52	.30	5.05	6.14
	Inst	LF	Sm	2C	.043	368.1	3.57	1.77	.35	5.69	6.93
4" x 8"	Demo	LF	Lg	LB	.025	653.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.029	555.1	---	.97	---	.97	1.35
4" x 8"	Inst	LF	Lg	2C	.041	394.0	6.96	1.68	.33	8.97	10.70
	Inst	LF	Sm	2C	.048	334.9	7.66	1.97	.39	10.02	12.00
4" x 10"	Demo	LF	Lg	LB	.027	586.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	498.1	---	1.07	---	1.07	1.49
4" x 10"	Inst	LF	Lg	2C	.044	363.0	8.95	1.81	.36	11.12	13.20
	Inst	LF	Sm	2C	.052	308.6	9.85	2.14	.42	12.41	14.70
4" x 12"	Demo	LF	Lg	LB	.031	522.0	---	1.03	---	1.03	1.45
	Demo	LF	Sm	LB	.036	443.7	---	1.20	---	1.20	1.68
4" x 12"	Inst	LF	Lg	2C	.048	333.0	10.30	1.97	.39	12.66	15.00
	Inst	LF	Sm	2C	.057	283.1	11.30	2.34	.46	14.10	16.80
4" x 14"	Demo	LF	Lg	LH	.037	642.0	---	1.23	---	1.23	1.73
	Demo	LF	Sm	LH	.044	545.7	---	1.47	---	1.47	2.05
4" x 14"	Inst	LF	Lg	CS	.059	404.0	12.30	2.27	.32	14.89	17.60
	Inst	LF	Sm	CS	.070	343.4	13.50	2.69	.38	16.57	19.70
4" x 16"	Demo	LF	Lg	LH	.040	594.0	---	1.33	---	1.33	1.87
	Demo	LF	Sm	LH	.048	504.9	---	1.60	---	1.60	2.24
4" x 16"	Inst	LF	Lg	CS	.063	379.0	14.30	2.42	.34	17.06	20.20
	Inst	LF	Sm	CS	.074	322.2	15.80	2.85	.40	19.05	22.50
6" x 8"	Demo	LF	Lg	LJ	.041	782.0	---	1.37	---	1.37	1.91
	Demo	LF	Sm	LJ	.048	664.7	---	1.60	---	1.60	2.24
6" x 8"	Inst	LF	Lg	CW	.069	466.0	6.34	2.57	.28	9.19	11.20
	Inst	LF	Sm	CW	.081	396.1	6.98	3.01	.33	10.32	12.60
6" x 10"	Demo	LF	Lg	LJ	.046	694.0	---	1.53	---	1.53	2.14
	Demo	LF	Sm	LJ	.054	589.9	---	1.80	---	1.80	2.52
6" x 10"	Inst	LF	Lg	CW	.075	427.0	7.91	2.79	.30	11.00	13.30
	Inst	LF	Sm	CW	.088	363.0	8.71	3.27	.36	12.34	15.00
6" x 12"	Demo	LF	Lg	LJ	.051	631.0	---	1.70	---	1.70	2.38
	Demo	LF	Sm	LJ	.060	536.4	---	2.00	---	2.00	2.80
6" x 12"	Inst	LF	Lg	CW	.081	396.0	9.24	3.01	.33	12.58	15.20
	Inst	LF	Sm	CW	.095	336.6	10.20	3.53	.39	14.12	17.10

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
6" x 14"	Demo	LF	Lg	LJ	.056	567.0	---	1.87	---	1.87	2.61
	Demo	LF	Sm	LJ	.066	482.0	---	2.20	---	2.20	3.08
6" x 14"	Inst	LF	Lg	CW	.088	365.0	10.80	3.27	.36	14.43	17.40
	Inst	LF	Sm	CW	.103	310.3	11.90	3.83	.42	16.15	19.50
6" x 16"	Demo	LF	Lg	LJ	.061	523.0	---	2.03	---	2.03	2.84
	Demo	LF	Sm	LJ	.072	444.6	---	2.40	---	2.40	3.36
6" x 16"	Inst	LF	Lg	CW	.094	342.0	12.60	3.50	.38	16.48	19.70
	Inst	LF	Sm	CW	.110	290.7	13.80	4.09	.45	18.34	22.10
8" x 8"	Demo	LF	Lg	LJ	.048	668.0	---	1.60	---	1.60	2.24
	Demo	LF	Sm	LJ	.056	567.8	---	1.87	---	1.87	2.61
8" x 8"	Inst	LF	Lg	CW	.077	413.0	8.77	2.86	.31	11.94	14.40
	Inst	LF	Sm	CW	.091	351.1	9.67	3.38	.37	13.42	16.20
8" x 10"	Demo	LF	Lg	LJ	.058	556.0	---	1.93	---	1.93	2.70
	Demo	LF	Sm	LJ	.068	472.6	---	2.27	---	2.27	3.17
8" x 10"	Inst	LF	Lg	CW	.088	363.0	11.10	3.27	.36	14.73	17.70
	Inst	LF	Sm	CW	.104	308.6	12.20	3.87	.42	16.49	19.80
8" x 12"	Demo	LF	Lg	LJ	.062	515.0	---	2.07	---	2.07	2.89
	Demo	LF	Sm	LJ	.073	437.8	---	2.43	---	2.43	3.40
8" x 12"	Inst	LF	Lg	CW	.094	341.0	13.00	3.50	.38	16.88	20.30
	Inst	LF	Sm	CW	.110	289.9	14.40	4.09	.45	18.94	22.70
8" x 14"	Demo	LF	Lg	LJ	.068	468.0	---	2.27	---	2.27	3.17
	Demo	LF	Sm	LJ	.080	397.8	---	2.66	---	2.66	3.73
8" x 14"	Inst	LF	Lg	CW	.101	316.0	15.30	3.76	.41	19.47	23.20
	Inst	LF	Sm	CW	.119	268.6	16.80	4.43	.48	21.71	26.00
8" x 16"	Demo	LF	Lg	LJ	.076	423.0	---	2.53	---	2.53	3.54
	Demo	LF	Sm	LJ	.089	359.6	---	2.96	---	2.96	4.15
8" x 16"	Inst	LF	Lg	CW	.110	292.0	17.50	4.09	.45	22.04	26.30
	Inst	LF	Sm	CW	.129	248.2	19.30	4.80	.52	24.62	29.40

Blocking, horizontal, for studs

2" x 4" - 12"	Demo	LF	Lg	1L	.011	710.0	---	.37	---	.37	.51
	Demo	LF	Sm	1L	.013	603.5	---	.43	---	.43	.61
2" x 4" - 12"	Inst	LF	Lg	CA	.036	224.0	.62	1.48	.58	2.68	3.36
	Inst	LF	Sm	CA	.042	190.4	.69	1.72	.68	3.09	3.89
2" x 4" - 16"	Demo	LF	Lg	1L	.011	761.0	---	.37	---	.37	.51
	Demo	LF	Sm	1L	.012	646.9	---	.40	---	.40	.56
2" x 4" - 16"	Inst	LF	Lg	CA	.029	274.0	.62	1.19	.47	2.28	2.85
	Inst	LF	Sm	CA	.034	232.9	.69	1.40	.56	2.65	3.31
2" x 4" - 24"	Demo	LF	Lg	1L	.010	810.0	---	.33	---	.33	.47
	Demo	LF	Sm	1L	.012	688.5	---	.40	---	.40	.56
2" x 4" - 24"	Inst	LF	Lg	CA	.023	350.0	.62	.94	.37	1.93	2.41
	Inst	LF	Sm	CA	.027	297.5	.69	1.11	.44	2.24	2.79

Framing, rough carpentry, beams

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 6" - 12"	Demo	LF	Lg	1L	.013	608.0	---	.43	---	.43	.61
	Demo	LF	Sm	1L	.015	516.8	---	.50	---	.50	.70
2" x 6" - 12"	Inst	LF	Lg	CA	.039	207.0	.82	1.60	.63	3.05	3.81
	Inst	LF	Sm	CA	.045	176.0	.90	1.85	.74	3.49	4.36
2" x 6" - 16"	Demo	LF	Lg	1L	.012	647.0	---	.40	---	.40	.56
	Demo	LF	Sm	1L	.015	550.0	---	.50	---	.50	.70
2" x 6" - 16"	Inst	LF	Lg	CA	.032	252.0	.82	1.31	.52	2.65	3.30
	Inst	LF	Sm	CA	.037	214.2	.90	1.52	.61	3.03	3.77
2" x 6" - 24"	Demo	LF	Lg	1L	.012	683.0	---	.40	---	.40	.56
	Demo	LF	Sm	1L	.014	580.6	---	.47	---	.47	.65
2" x 6" - 24"	Inst	LF	Lg	CA	.025	323.0	.82	1.03	.40	2.25	2.78
	Inst	LF	Sm	CA	.029	274.6	.90	1.19	.47	2.56	3.17
2" x 8" - 12"	Demo	LF	Lg	1L	.015	532.0	---	.50	---	.50	.70
	Demo	LF	Sm	1L	.018	452.2	---	.60	---	.60	.84
2" x 8" - 12"	Inst	LF	Lg	CA	.041	193.0	1.11	1.68	.67	3.46	4.30
	Inst	LF	Sm	CA	.049	164.1	1.23	2.01	.79	4.03	5.02
2" x 8" - 16"	Demo	LF	Lg	1L	.014	564.0	---	.47	---	.47	.65
	Demo	LF	Sm	1L	.017	479.4	---	.57	---	.57	.79
2" x 8" - 16"	Inst	LF	Lg	CA	.034	235.0	1.11	1.40	.55	3.06	3.78
	Inst	LF	Sm	CA	.040	199.8	1.23	1.64	.65	3.52	4.36
2" x 8" - 24"	Demo	LF	Lg	1L	.014	592.0	---	.47	---	.47	.65
	Demo	LF	Sm	1L	.016	503.2	---	.53	---	.53	.75
2" x 8" - 24"	Inst	LF	Lg	CA	.027	299.0	1.11	1.11	.43	2.65	3.26
	Inst	LF	Sm	CA	.031	254.2	1.23	1.27	.51	3.01	3.71

Bracing, diagonal let-ins

Studs, 12" oc

1" x 6"	Demo	Set	Lg	1L	.011	714.0	---	.37	---	.37	.51
	Demo	Set	Sm	1L	.013	606.9	---	.43	---	.43	.61
1" x 6"	Inst	Set	Lg	CA	.056	143.0	1.25	2.30	.91	4.46	5.57
	Inst	Set	Sm	CA	.066	121.6	1.38	2.71	1.07	5.16	6.45

Studs, 16" oc

1" x 6"	Demo	Set	Lg	1L	.010	770.0	---	.33	---	.33	.47
	Demo	Set	Sm	1L	.012	654.5	---	.40	---	.40	.56
1" x 6"	Inst	Set	Lg	CA	.043	184.0	1.25	1.77	.71	3.73	4.62
	Inst	Set	Sm	CA	.051	156.4	1.38	2.09	.83	4.30	5.35

Studs, 24" oc

1" x 6"	Demo	Set	Lg	1L	.010	825.0	---	.33	---	.33	.47
	Demo	Set	Sm	1L	.011	701.3	---	.37	---	.37	.51
1" x 6"	Inst	Set	Lg	CA	.033	242.0	1.25	1.35	.54	3.14	3.87
	Inst	Set	Sm	CA	.039	205.7	1.38	1.60	.63	3.61	4.46

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					per Unit	per Day					

Bridging, "X" type

For joists 12" oc

1" x 3"	Demo	Set	Lg	1L	.015	550.0	---	.50	---	.50	.70
	Demo	Set	Sm	1L	.017	467.5	---	.57	---	.57	.79
1" x 3"	Inst	Set	Lg	CA	.057	140.0	1.34	2.34	.93	4.61	5.75
	Inst	Set	Sm	CA	.067	119.0	1.48	2.75	1.09	5.32	6.64
2" x 2"	Demo	Set	Lg	1L	.015	536.0	---	.50	---	.50	.70
	Demo	Set	Sm	1L	.018	455.6	---	.60	---	.60	.84
2" x 2"	Inst	Set	Lg	CA	.058	139.0	1.91	2.38	.94	5.23	6.47
	Inst	Set	Sm	CA	.068	118.2	2.11	2.79	1.10	6.00	7.44

For joists 16" oc

1" x 3"	Demo	Set	Lg	1L	.015	530.0	---	.50	---	.50	.70
	Demo	Set	Sm	1L	.018	450.5	---	.60	---	.60	.84
1" x 3"	Inst	Set	Lg	CA	.058	137.0	1.43	2.38	.95	4.76	5.93
	Inst	Set	Sm	CA	.069	116.5	1.58	2.83	1.12	5.53	6.90
2" x 2"	Demo	Set	Lg	1L	.016	515.0	---	.53	---	.53	.75
	Demo	Set	Sm	1L	.018	437.8	---	.60	---	.60	.84
2" x 2"	Inst	Set	Lg	CA	.059	136.0	2.03	2.42	.96	5.41	6.69
	Inst	Set	Sm	CA	.069	115.6	2.25	2.83	1.12	6.20	7.67

For joists 24" oc

1" x 3"	Demo	Set	Lg	1L	.016	507.0	---	.53	---	.53	.75
	Demo	Set	Sm	1L	.019	431.0	---	.63	---	.63	.89
1" x 3"	Inst	Set	Lg	CA	.016	492.0	1.59	.66	.26	2.51	3.01
	Inst	Set	Sm	CA	.019	418.2	1.75	.78	.31	2.84	3.41
2" x 2"	Demo	Set	Lg	1L	.060	134.0	---	2.00	---	2.00	2.80
	Demo	Set	Sm	1L	.070	113.9	---	2.33	---	2.33	3.26
2" x 2"	Inst	Set	Lg	CA	.060	133.0	2.26	2.46	.98	5.70	7.03
	Inst	Set	Sm	CA	.071	113.1	2.50	2.92	1.15	6.57	8.11

Bridging, solid, between joists

2" x 6" - 12"	Demo	Set	Lg	1L	.014	590.0	---	.47	---	.47	.65
	Demo	Set	Sm	1L	.016	501.5	---	.53	---	.53	.75
2" x 6" - 12"	Inst	Set	Lg	CA	.040	199.0	.82	1.64	.65	3.11	3.89
	Inst	Set	Sm	CA	.047	169.2	.90	1.93	.77	3.60	4.51
2" x 8" - 12"	Demo	Set	Lg	1L	.015	517.0	---	.50	---	.50	.70
	Demo	Set	Sm	1L	.018	439.5	---	.60	---	.60	.84
2" x 8" - 12"	Inst	Set	Lg	CA	.043	185.0	1.11	1.77	.70	3.58	4.45
	Inst	Set	Sm	CA	.051	157.3	1.23	2.09	.83	4.15	5.18
2" x 10" - 12"	Demo	Set	Lg	1L	.018	455.0	---	.60	---	.60	.84
	Demo	Set	Sm	1L	.021	386.8	---	.70	---	.70	.98
2" x 10" - 12"	Inst	Set	Lg	CA	.046	174.0	1.37	1.89	.75	4.01	4.97
	Inst	Set	Sm	CA	.054	147.9	1.52	2.22	.88	4.62	5.73

Framing, rough carpentry, bridging

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours per Unit	Output per Day					
2" x 12" - 12"	Demo	Set	Lg	1L	.019	412.0	---	.63	---	.63	.89
	Demo	Set	Sm	1L	.023	350.2	---	.77	---	.77	1.07
2" x 12" - 12"	Inst	Set	Lg	CA	.049	164.0	1.96	2.01	.79	4.76	5.86
	Inst	Set	Sm	CA	.057	139.4	2.16	2.34	.93	5.43	6.69
2" x 6" - 16"	Demo	Set	Lg	1L	.013	628.0	---	.43	---	.43	.61
	Demo	Set	Sm	1L	.015	533.8	---	.50	---	.50	.70
2" x 6" - 16"	Inst	Set	Lg	CA	.033	243.0	.82	1.35	.53	2.70	3.37
	Inst	Set	Sm	CA	.039	206.6	.90	1.60	.63	3.13	3.91
2" x 8" - 16"	Demo	Set	Lg	1L	.015	548.0	---	.50	---	.50	.70
	Demo	Set	Sm	1L	.017	465.8	---	.57	---	.57	.79
2" x 8" - 16"	Inst	Set	Lg	CA	.035	226.0	1.11	1.44	.58	3.13	3.87
	Inst	Set	Sm	CA	.042	192.1	1.23	1.72	.68	3.63	4.51
2" x 10" - 16"	Demo	Set	Lg	1L	.017	481.0	---	.57	---	.57	.79
	Demo	Set	Sm	1L	.020	408.9	---	.67	---	.67	.93
2" x 10" - 16"	Inst	Set	Lg	CA	.038	211.0	1.37	1.56	.62	3.55	4.38
	Inst	Set	Sm	CA	.045	179.4	1.52	1.85	.72	4.09	5.05
2" x 12" - 16"	Demo	Set	Lg	1L	.018	434.0	---	.60	---	.60	.84
	Demo	Set	Sm	1L	.022	368.9	---	.73	---	.73	1.03
2" x 12" - 16"	Inst	Set	Lg	CA	.040	198.0	1.96	1.64	.66	4.26	5.21
	Inst	Set	Sm	CA	.048	168.3	2.16	1.97	.77	4.90	6.01
2" x 6" - 24"	Demo	Set	Lg	1L	.012	664.0	---	.40	---	.40	.56
	Demo	Set	Sm	1L	.014	564.4	---	.47	---	.47	.65
2" x 6" - 24"	Inst	Set	Lg	CA	.026	312.0	.82	1.07	.42	2.31	2.86
	Inst	Set	Sm	CA	.030	265.2	.90	1.23	.49	2.62	3.25
2" x 8" - 24"	Demo	Set	Lg	1L	.014	577.0	---	.47	---	.47	.65
	Demo	Set	Sm	1L	.016	490.5	---	.53	---	.53	.75
2" x 8" - 24"	Inst	Set	Lg	CA	.028	289.0	1.11	1.15	.45	2.71	3.34
	Inst	Set	Sm	CA	.033	245.7	1.23	1.35	.53	3.11	3.84
2" x 10" - 24"	Demo	Set	Lg	1L	.016	504.0	---	.53	---	.53	.75
	Demo	Set	Sm	1L	.019	428.4	---	.63	---	.63	.89
2" x 10" - 24"	Inst	Set	Lg	CA	.030	270.0	1.37	1.23	.48	3.08	3.78
	Inst	Set	Sm	CA	.035	229.5	1.52	1.44	.57	3.53	4.33
2" x 12" - 24"	Demo	Set	Lg	1L	.018	453.0	---	.60	---	.60	.84
	Demo	Set	Sm	1L	.021	385.1	---	.70	---	.70	.98
2" x 12" - 24"	Inst	Set	Lg	CA	.032	252.0	1.96	1.31	.52	3.79	4.61
	Inst	Set	Sm	CA	.037	214.2	2.16	1.52	.61	4.29	5.22

[illegible]

Columns or posts, without base or cap, hardware, or chamfer corners

4" x 4" - 8'	Demo	LF	Lg	LB	.027	584.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	496.4	---	1.07	---	1.07	1.49
4" x 4" - 8'	Inst	LF	Lg	2C	.051	315.0	1.83	2.09	.41	4.33	5.45
	Inst	LF	Sm	2C	.060	267.8	2.02	2.46	.49	4.97	6.26
4" x 6" - 8'	Demo	LF	Lg	LB	.030	529.0	---	1.00	---	1.00	1.40
	Demo	LF	Sm	LB	.036	449.7	---	1.20	---	1.20	1.68
4" x 6" - 8'	Inst	LF	Lg	2C	.054	294.0	3.05	2.22	.44	5.71	7.05
	Inst	LF	Sm	2C	.064	249.9	3.37	2.63	.52	6.52	8.07
4" x 8" - 8'	Demo	LF	Lg	LB	.033	479.0	---	1.10	---	1.10	1.54
	Demo	LF	Sm	LB	.039	407.2	---	1.30	---	1.30	1.82
4" x 8" - 8'	Inst	LF	Lg	2C	.058	274.0	6.78	2.38	.47	9.63	11.60
	Inst	LF	Sm	2C	.069	232.9	7.46	2.83	.56	10.85	13.10
6" x 6" - 8'	Demo	LF	Lg	LB	.037	432.0	---	1.23	---	1.23	1.73
	Demo	LF	Sm	LB	.044	367.2	---	1.47	---	1.47	2.05
6" x 6" - 8'	Inst	LF	Lg	2C	.065	248.0	4.57	2.67	.52	7.76	9.51
	Inst	LF	Sm	2C	.076	210.8	5.04	3.12	.62	8.78	10.80
6" x 8" - 8'	Demo	LF	Lg	LB	.042	385.0	---	1.40	---	1.40	1.96
	Demo	LF	Sm	LB	.049	327.3	---	1.63	---	1.63	2.28
6" x 8" - 8'	Inst	LF	Lg	2C	.070	229.0	6.15	2.87	.57	9.59	11.70
	Inst	LF	Sm	2C	.082	194.7	6.78	3.37	.67	10.82	13.20
6" x 10" - 8'	Demo	LF	Lg	LB	.046	345.0	---	1.53	---	1.53	2.14
	Demo	LF	Sm	LB	.055	293.3	---	1.83	---	1.83	2.56
6" x 10" - 8'	Inst	LF	Lg	2C	.075	212.0	7.72	3.08	.61	11.41	13.80
	Inst	LF	Sm	2C	.089	180.2	8.50	3.65	.72	12.87	15.60
8" x 8" - 8'	Demo	LF	Lg	LB	.050	319.0	---	1.67	---	1.67	2.33
	Demo	LF	Sm	LB	.059	271.2	---	1.97	---	1.97	2.75
8" x 8" - 8'	Inst	LF	Lg	2C	.082	196.0	8.58	3.37	.66	12.61	15.20
	Inst	LF	Sm	2C	.096	166.6	9.47	3.94	.78	14.19	17.20
8" x 10" - 8'	Demo	LF	Lg	LB	.059	269.0	---	1.97	---	1.97	2.75
	Demo	LF	Sm	LB	.070	228.7	---	2.33	---	2.33	3.26
8" x 10" - 8'	Inst	LF	Lg	2C	.092	174.0	10.90	3.78	.75	15.43	18.50
	Inst	LF	Sm	2C	.108	147.9	12.00	4.43	.88	17.31	20.90

Fascia

1" x 4" - 12'	Demo	LF	Lg	LB	.012	1315	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1118	---	.47	---	.47	.65
1" x 4" - 12'	Inst	LF	Lg	2C	.041	386.0	.52	1.68	.34	2.54	3.29
	Inst	LF	Sm	2C	.049	328.1	.57	2.01	.40	2.98	3.87

Furring strips on ceilings

1" x 3" on wood	Demo	LF	Lg	LB	.026	625.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.030	531.3	---	1.00	---	1.00	1.40
1" x 3" on wood	Inst	LF	Lg	2C	.028	574.0	.41	1.15	.23	1.79	2.31
	Inst	LF	Sm	2C	.033	487.9	.46	1.35	.27	2.08	2.70

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					

Furring strips on walls

1" x 3" on wood	Demo	LF	Lg	LB	.020	805.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	684.3	---	.77	---	.77	1.07
1" x 3" on wood	Inst	LF	Lg	2C	.022	741.0	.41	.90	.18	1.49	1.92
	Inst	LF	Sm	2C	.025	629.9	.46	1.03	.21	1.70	2.18
1" x 3" on masonry	Demo	LF	Lg	LB	.026	625.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.030	531.3	---	1.00	---	1.00	1.40
1" x 3" on masonry	Inst	LF	Lg	2C	.028	574.0	.41	1.15	.23	1.79	2.31
	Inst	LF	Sm	2C	.033	487.9	.46	1.35	.27	2.08	2.70
1" x 3" on concrete	Demo	LF	Lg	LB	.035	456.0	---	1.17	---	1.17	1.63
	Demo	LF	Sm	LB	.041	387.6	---	1.37	---	1.37	1.91
1" x 3" on concrete	Inst	LF	Lg	2C	.038	418.0	.41	1.56	.31	2.28	2.97
	Inst	LF	Sm	2C	.045	355.3	.46	1.85	.37	2.68	3.49

Headers or lintels, over openings

4 feet wide

4" x 6"	Demo	LF	Lg	1L	.024	338.0	---	.80	---	.80	1.12
	Demo	LF	Sm	1L	.028	287.3	---	.93	---	.93	1.31
4" x 6"	Inst	LF	Lg	CA	.040	198.0	3.02	1.64	.66	5.32	6.43
	Inst	LF	Sm	CA	.048	168.3	3.34	1.97	.77	6.08	7.37
4" x 8"	Demo	LF	Lg	1L	.026	302.0	---	.87	---	.87	1.21
	Demo	LF	Sm	1L	.031	256.7	---	1.03	---	1.03	1.45
4" x 8"	Inst	LF	Lg	CA	.043	186.0	6.75	1.77	.70	9.22	10.90
	Inst	LF	Sm	CA	.051	158.1	7.43	2.09	.82	10.34	12.30
4" x 12"	Demo	LF	Lg	1L	.032	250.0	---	1.07	---	1.07	1.49
	Demo	LF	Sm	1L	.038	212.5	---	1.27	---	1.27	1.77
4" x 12"	Inst	LF	Lg	CA	.049	164.0	10.10	2.01	.79	12.90	15.20
	Inst	LF	Sm	CA	.057	139.4	11.10	2.34	.93	14.37	17.00
4" x 14"	Demo	LF	Lg	1L	.034	236.0	---	1.13	---	1.13	1.59
	Demo	LF	Sm	1L	.040	200.6	---	1.33	---	1.33	1.87
4" x 14"	Inst	LF	Lg	CA	.051	158.0	12.10	2.09	.82	15.01	17.60
	Inst	LF	Sm	CA	.060	134.3	13.30	2.46	.97	16.73	19.70

6 feet wide

4" x 12"	Demo	LF	Lg	LB	.027	583.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	495.6	---	1.07	---	1.07	1.49
4" x 12"	Inst	LF	Lg	2C	.041	392.0	10.10	1.68	.33	12.11	14.30
	Inst	LF	Sm	2C	.048	333.2	11.10	1.97	.39	13.46	15.90

8 feet wide

4" x 12"	Demo	LF	Lg	LB	.024	655.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.029	556.8	---	.97	---	.97	1.35
4" x 12"	Inst	LF	Lg	2C	.035	453.0	10.10	1.44	.29	11.83	13.90
	Inst	LF	Sm	2C	.042	385.1	11.10	1.72	.34	13.16	15.50

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
10 feet wide											
4" x 12"	Demo	LF	Lg	LB	.022	743.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.025	631.6	---	.83	---	.83	1.17
4" x 12"	Inst	LF	Lg	2C	.030	535.0	10.10	1.23	.24	11.57	13.60
	Inst	LF	Sm	2C	.035	454.8	11.10	1.44	.29	12.83	15.10
4" x 14"	Demo	LF	Lg	LB	.026	627.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.030	533.0	---	1.00	---	1.00	1.40
4" x 14"	Inst	LF	Lg	2C	.035	455.0	12.10	1.44	.29	13.83	16.20
	Inst	LF	Sm	2C	.041	386.8	13.30	1.68	.34	15.32	18.00
12 feet wide											
4" x 14"	Demo	LF	Lg	LB	.024	667.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.028	567.0	---	.93	---	.93	1.31
4" x 14"	Inst	LF	Lg	2C	.033	491.0	12.10	1.35	.26	13.71	16.00
	Inst	LF	Sm	2C	.038	417.4	13.30	1.56	.31	15.17	17.80
4" x 16"	Demo	LF	Lg	LB	.028	562.0	---	.93	---	.93	1.31
	Demo	LF	Sm	LB	.033	477.7	---	1.10	---	1.10	1.54
4" x 16"	Inst	LF	Lg	2C	.037	429.0	14.10	1.52	.30	15.92	18.60
	Inst	LF	Sm	2C	.044	364.7	15.50	1.81	.36	17.67	20.80
14 feet wide											
4" x 16"	Demo	LF	Lg	LB	.027	588.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	499.8	---	1.07	---	1.07	1.49
4" x 16"	Inst	LF	Lg	2C	.035	453.0	14.10	1.44	.29	15.83	18.50
	Inst	LF	Sm	2C	.042	385.1	15.50	1.72	.34	17.56	20.60
16 feet wide											
4" x 16"	Demo	LF	Lg	LB	.026	611.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.031	519.4	---	1.03	---	1.03	1.45
4" x 16"	Inst	LF	Lg	2C	.034	475.0	14.10	1.40	.27	15.77	18.40
	Inst	LF	Sm	2C	.040	403.8	15.50	1.64	.32	17.46	20.50
18 feet wide											
4" x 16"	Demo	LF	Lg	LB	.025	632.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.030	537.2	---	1.00	---	1.00	1.40
4" x 16"	Inst	LF	Lg	2C	.032	495.0	14.10	1.31	.26	15.67	18.30
	Inst	LF	Sm	2C	.038	420.8	15.50	1.56	.31	17.37	20.40
Joists, ceiling/floor, per LF of stick											
2" x 4" - 6'	Demo	LF	Lg	LB	.016	1024	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.018	870.4	---	.60	---	.60	.84
2" x 4" - 6'	Inst	LF	Lg	2C	.019	844.0	.62	.78	.15	1.55	1.96
	Inst	LF	Sm	2C	.022	717.4	.69	.90	.18	1.77	2.24
2" x 4" - 8'	Demo	LF	Lg	LB	.013	1213	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.016	1031	---	.53	---	.53	.75
2" x 4" - 8'	Inst	LF	Lg	2C	.016	1004	.62	.66	.13	1.41	1.76
	Inst	LF	Sm	2C	.019	853.4	.69	.78	.15	1.62	2.04

Framing, rough carpentry, joists

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 4" - 10'	Demo	LF	Lg	LB	.012	1367	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1162	---	.47	---	.47	.65
2" x 4" - 10'	Inst	LF	Lg	2C	.014	1134	.62	.57	.11	1.30	1.63
	Inst	LF	Sm	2C	.017	963.9	.69	.70	.13	1.52	1.90
2" x 4" - 12'	Demo	LF	Lg	LB	.011	1498	---	.37	---	.37	.51
	Demo	LF	Sm	LB	.013	1273	---	.43	---	.43	.61
2" x 4" - 12'	Inst	LF	Lg	2C	.013	1245	.62	.53	.10	1.25	1.56
	Inst	LF	Sm	2C	.015	1058	.69	.62	.12	1.43	1.78
2" x 6" - 8'	Demo	LF	Lg	LB	.015	1064	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.018	904.4	---	.60	---	.60	.84
2" x 6" - 8'	Inst	LF	Lg	2C	.018	891.0	.82	.74	.15	1.71	2.13
	Inst	LF	Sm	2C	.021	757.4	.90	.86	.17	1.93	2.41
2" x 6" - 10'	Demo	LF	Lg	LB	.013	1195	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.016	1016	---	.53	---	.53	.75
2" x 6" - 10'	Inst	LF	Lg	2C	.016	1005	.82	.66	.13	1.61	1.99
	Inst	LF	Sm	2C	.019	854.3	.90	.78	.15	1.83	2.28
2" x 6" - 12'	Demo	LF	Lg	LB	.012	1307	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1111	---	.47	---	.47	.65
2" x 6" - 12'	Inst	LF	Lg	2C	.015	1102	.82	.62	.12	1.56	1.93
	Inst	LF	Sm	2C	.017	936.7	.90	.70	.14	1.74	2.15
2" x 6" - 14'	Demo	LF	Lg	LB	.011	1405	---	.37	---	.37	.51
	Demo	LF	Sm	LB	.013	1194	---	.43	---	.43	.61
2" x 6" - 14'	Inst	LF	Lg	2C	.013	1187	.82	.53	.11	1.46	1.80
	Inst	LF	Sm	2C	.016	1009	.90	.66	.13	1.69	2.08
2" x 8" - 10'	Demo	LF	Lg	LB	.015	1060	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.018	901.0	---	.60	---	.60	.84
2" x 8" - 10'	Inst	LF	Lg	2C	.018	901.0	1.11	.74	.14	1.99	2.45
	Inst	LF	Sm	2C	.021	765.9	1.23	.86	.17	2.26	2.79
2" x 8" - 12'	Demo	LF	Lg	LB	.014	1156	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.016	982.6	---	.53	---	.53	.75
2" x 8" - 12'	Inst	LF	Lg	2C	.016	986.0	1.11	.66	.13	1.90	2.33
	Inst	LF	Sm	2C	.019	838.1	1.23	.78	.16	2.17	2.67
2" x 8" - 14'	Demo	LF	Lg	LB	.013	1239	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.015	1053	---	.50	---	.50	.70
2" x 8" - 14'	Inst	LF	Lg	2C	.015	1059	1.11	.62	.12	1.85	2.26
	Inst	LF	Sm	2C	.018	900.2	1.23	.74	.14	2.11	2.59
2" x 8" - 16'	Demo	LF	Lg	LB	.012	1313	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1116	---	.47	---	.47	.65
2" x 8" - 16'	Inst	LF	Lg	2C	.014	1124	1.11	.57	.12	1.80	2.20
	Inst	LF	Sm	2C	.017	955.4	1.23	.70	.14	2.07	2.53

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 10" - 12'	Demo	LF	Lg	LB	.015	1034	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.018	878.9	---	.60	---	.60	.84
2" x 10" - 12'	Inst	LF	Lg	2C	.018	890.0	1.37	.74	.15	2.26	2.76
	Inst	LF	Sm	2C	.021	756.5	1.52	.86	.17	2.55	3.13
2" x 10" - 14'	Demo	LF	Lg	LB	.014	1106	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.017	940.1	---	.57	---	.57	.79
2" x 10" - 14'	Inst	LF	Lg	2C	.017	955.0	1.37	.70	.14	2.21	2.69
	Inst	LF	Sm	2C	.020	811.8	1.52	.82	.16	2.50	3.06
2" x 10" - 16'	Demo	LF	Lg	LB	.014	1171	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.016	995.4	---	.53	---	.53	.75
2" x 10" - 16'	Inst	LF	Lg	2C	.016	1013	1.37	.66	.13	2.16	2.63
	Inst	LF	Sm	2C	.019	861.1	1.52	.78	.15	2.45	2.99
2" x 10" - 18'	Demo	LF	Lg	LB	.013	1229	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.015	1045	---	.50	---	.50	.70
2" x 10" - 18'	Inst	LF	Lg	2C	.015	1065	1.37	.62	.12	2.11	2.56
	Inst	LF	Sm	2C	.018	905.3	1.52	.74	.14	2.40	2.92
2" x 12" - 14'	Demo	LF	Lg	LB	.016	998.0	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	848.3	---	.63	---	.63	.89
2" x 12" - 14'	Inst	LF	Lg	2C	.018	869.0	1.96	.74	.15	2.85	3.44
	Inst	LF	Sm	2C	.022	738.7	2.16	.90	.18	3.24	3.93
2" x 12" - 16'	Demo	LF	Lg	LB	.015	1054	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.018	895.9	---	.60	---	.60	.84
2" x 12" - 16'	Inst	LF	Lg	2C	.017	920.0	1.96	.70	.14	2.80	3.37
	Inst	LF	Sm	2C	.020	782.0	2.16	.82	.17	3.15	3.80
2" x 12" - 18'	Demo	LF	Lg	LB	.014	1106	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.017	940.1	---	.57	---	.57	.79
2" x 12" - 18'	Inst	LF	Lg	2C	.017	967.0	1.96	.70	.13	2.79	3.36
	Inst	LF	Sm	2C	.019	822.0	2.16	.78	.16	3.10	3.74
2" x 12" - 20'	Demo	LF	Lg	LB	.014	1151	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.016	978.4	---	.53	---	.53	.75
2" x 12" - 20'	Inst	LF	Lg	2C	.016	1009	1.96	.66	.13	2.75	3.30
	Inst	LF	Sm	2C	.019	857.7	2.16	.78	.15	3.09	3.73
3" x 8" - 12'	Demo	LF	Lg	LB	.017	942.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	800.7	---	.67	---	.67	.93
3" x 8" - 12'	Inst	LF	Lg	2C	.020	816.0	6.71	.82	.16	7.69	9.03
	Inst	LF	Sm	2C	.023	693.6	7.40	.94	.19	8.53	10.00
3" x 8" - 14'	Demo	LF	Lg	LB	.016	1007	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	856.0	---	.63	---	.63	.89
3" x 8" - 14'	Inst	LF	Lg	2C	.018	876.0	6.71	.74	.15	7.60	8.90
	Inst	LF	Sm	2C	.021	744.6	7.40	.86	.17	8.43	9.89
3" x 8" - 16'	Demo	LF	Lg	LB	.015	1065	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.018	905.3	---	.60	---	.60	.84
3" x 8" - 16'	Inst	LF	Lg	2C	.017	929.0	6.71	.70	.14	7.55	8.83
	Inst	LF	Sm	2C	.020	789.7	7.40	.82	.16	8.38	9.82

Framing, rough carpentry, joists

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
3" x 8" - 18'	Demo	LF	Lg	LB	.014	1117	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.017	949.5	---	.57	---	.57	.79
3" x 8" - 18'	Inst	LF	Lg	2C	.016	976.0	6.71	.66	.13	7.50	8.77
	Inst	LF	Sm	2C	.019	829.6	7.40	.78	.16	8.34	9.76
3" x 10" - 16'	Demo	LF	Lg	LB	.017	918.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.021	780.3	---	.70	---	.70	.98
3" x 10" - 16'	Inst	LF	Lg	2C	.020	811.0	8.72	.82	.16	9.70	11.30
	Inst	LF	Sm	2C	.023	689.4	9.60	.94	.19	10.73	12.60
3" x 10" - 18'	Demo	LF	Lg	LB	.017	961.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	816.9	---	.67	---	.67	.93
3" x 10" - 18'	Inst	LF	Lg	2C	.019	851.0	8.72	.78	.15	9.65	11.30
	Inst	LF	Sm	2C	.022	723.4	9.60	.90	.18	10.68	12.50
3" x 10" - 20'	Demo	LF	Lg	LB	.016	1001	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	850.9	---	.63	---	.63	.89
3" x 10" - 20'	Inst	LF	Lg	2C	.018	888.0	8.72	.74	.15	9.61	11.20
	Inst	LF	Sm	2C	.021	754.8	9.60	.86	.17	10.63	12.40
3" x 12" - 16'	Demo	LF	Lg	LB	.019	821.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.023	697.9	---	.77	---	.77	1.07
3" x 12" - 16'	Inst	LF	Lg	2C	.022	732.0	8.39	.90	.18	9.47	11.10
	Inst	LF	Sm	2C	.026	622.2	9.24	1.07	.21	10.52	12.30
3" x 12" - 18'	Demo	LF	Lg	LB	.018	873.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.022	742.1	---	.73	---	.73	1.03
3" x 12" - 18'	Inst	LF	Lg	2C	.020	781.0	10.10	.82	.17	11.09	12.90
	Inst	LF	Sm	2C	.024	663.9	11.10	.99	.20	12.29	14.30
3" x 12" - 20'	Demo	LF	Lg	LB	.018	898.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.021	763.3	---	.70	---	.70	.98
3" x 12" - 20'	Inst	LF	Lg	2C	.020	805.0	10.10	.82	.16	11.08	12.90
	Inst	LF	Sm	2C	.023	684.3	11.10	.94	.19	12.23	14.30
3" x 12" - 22'	Demo	LF	Lg	LB	.017	925.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	786.3	---	.67	---	.67	.93
3" x 12" - 22'	Inst	LF	Lg	2C	.019	830.0	10.10	.78	.16	11.04	12.80
	Inst	LF	Sm	2C	.023	705.5	11.10	.94	.18	12.22	14.20

Joists, ceiling/floor, per SF of area

2" x 4" - 6', 12" oc	Demo	SF	Lg	LB	.016	998.0	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	848.3	---	.63	---	.63	.89
2" x 4" - 6', 12" oc	Inst	SF	Lg	2C	.019	823.0	.63	.78	.16	1.57	1.98
	Inst	SF	Sm	2C	.023	699.6	.70	.94	.19	1.83	2.32
2" x 4" - 6', 16" oc	Demo	SF	Lg	LB	.013	1188	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.016	1010	---	.53	---	.53	.75
2" x 4" - 6', 16" oc	Inst	SF	Lg	2C	.016	979.0	.48	.66	.13	1.27	1.60
	Inst	SF	Sm	2C	.019	832.2	.54	.78	.16	1.48	1.87

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
2" x 4" - 6', 24" oc	Demo	SF	Lg	LB	.010	1559	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.012	1325	---	.40	---	.40	.56
2" x 4" - 6', 24" oc	Inst	SF	Lg	2C	.012	1285	.33	.49	.10	.92	1.17
	Inst	SF	Sm	2C	.015	1092	.37	.62	.12	1.11	1.41
2" x 6" - 8', 12" oc	Demo	SF	Lg	LB	.015	1037	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.018	881.5	---	.60	---	.60	.84
2" x 6" - 8', 12" oc	Inst	SF	Lg	2C	.018	869.0	.84	.74	.15	1.73	2.15
	Inst	SF	Sm	2C	.022	738.7	.92	.90	.18	2.00	2.50
2" x 6" - 8', 16" oc	Demo	SF	Lg	LB	.013	1235	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1050	---	.50	---	.50	.70
2" x 6" - 8', 16" oc	Inst	SF	Lg	2C	.015	1034	.64	.62	.13	1.39	1.73
	Inst	SF	Sm	2C	.018	878.9	.71	.74	.15	1.60	2.00
2" x 6" - 8', 24" oc	Demo	SF	Lg	LB	.010	1622	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.012	1379	---	.40	---	.40	.56
2" x 6" - 8', 24" oc	Inst	SF	Lg	2C	.012	1359	.45	.49	.10	1.04	1.31
	Inst	SF	Sm	2C	.014	1155	.49	.57	.11	1.17	1.48
2" x 8" - 10', 12" oc	Demo	SF	Lg	LB	.015	1033	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.018	878.1	---	.60	---	.60	.84
2" x 8" - 10', 12" oc	Inst	SF	Lg	2C	.018	878.0	1.14	.74	.15	2.03	2.50
	Inst	SF	Sm	2C	.021	746.3	1.26	.86	.17	2.29	2.83
2" x 8" - 10', 16" oc	Demo	SF	Lg	LB	.013	1231	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1046	---	.50	---	.50	.70
2" x 8" - 10', 16" oc	Inst	SF	Lg	2C	.015	1046	.86	.62	.12	1.60	1.97
	Inst	SF	Sm	2C	.018	889.1	.96	.74	.15	1.85	2.29
2" x 8" - 10', 24" oc	Demo	SF	Lg	LB	.010	1614	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.012	1372	---	.40	---	.40	.56
2" x 8" - 10', 24" oc	Inst	SF	Lg	2C	.012	1372	.60	.49	.09	1.18	1.47
	Inst	SF	Sm	2C	.014	1166	.66	.57	.11	1.34	1.67
2" x 10" - 12', 12" oc	Demo	SF	Lg	LB	.016	1008	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	856.8	---	.63	---	.63	.89
2" x 10" - 12', 12" oc	Inst	SF	Lg	2C	.018	868.0	1.40	.74	.15	2.29	2.79
	Inst	SF	Sm	2C	.022	737.8	1.55	.90	.18	2.63	3.23
2" x 10" - 12', 16" oc	Demo	SF	Lg	LB	.013	1200	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.016	1020	---	.53	---	.53	.75
2" x 10" - 12', 16" oc	Inst	SF	Lg	2C	.015	1033	1.06	.62	.13	1.81	2.21
	Inst	SF	Sm	2C	.018	878.1	1.18	.74	.15	2.07	2.54

Framing, rough carpentry, joists

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
2" x 10" - 12', 24" oc	Demo	SF	Lg	LB	.010	1575	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.012	1339	---	.40	---	.40	.56
2" x 10" - 12', 24" oc	Inst	SF	Lg	2C	.012	1356	.73	.49	.10	1.32	1.63
	Inst	SF	Sm	2C	.014	1153	.81	.57	.11	1.49	1.85
2" x 12" - 14', 12" oc	Demo	SF	Lg	LB	.016	974.0	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	827.9	---	.63	---	.63	.89
2" x 12" - 14', 12" oc	Inst	SF	Lg	2C	.019	848.0	2.01	.78	.15	2.94	3.55
	Inst	SF	Sm	2C	.022	720.8	2.22	.90	.18	3.30	4.00
2" x 12" - 14', 16" oc	Demo	SF	Lg	LB	.014	1159	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	985.2	---	.53	---	.53	.75
2" x 12" - 14', 16" oc	Inst	SF	Lg	2C	.016	1009	1.53	.66	.13	2.32	2.81
	Inst	SF	Sm	2C	.019	857.7	1.68	.78	.15	2.61	3.17
2" x 12" - 14', 24" oc	Demo	SF	Lg	LB	.011	1521	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.012	1293	---	.40	---	.40	.56
2" x 12" - 14', 24" oc	Inst	SF	Lg	2C	.012	1324	1.04	.49	.10	1.63	1.99
	Inst	SF	Sm	2C	.014	1125	1.15	.57	.12	1.84	2.25
3" x 8" - 14', 12" oc	Demo	SF	Lg	LB	.016	983.0	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	835.6	---	.63	---	.63	.89
3" x 8" - 14', 12" oc	Inst	SF	Lg	2C	.019	855.0	6.88	.78	.15	7.81	9.15
	Inst	SF	Sm	2C	.022	726.8	7.58	.90	.18	8.66	10.20
3" x 8" - 14', 16" oc	Demo	SF	Lg	LB	.014	1170	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	994.5	---	.53	---	.53	.75
3" x 8" - 14', 16" oc	Inst	SF	Lg	2C	.016	1017	5.21	.66	.13	6.00	7.04
	Inst	SF	Sm	2C	.019	864.5	5.74	.78	.15	6.67	7.84
3" x 8" - 14', 24" oc	Demo	SF	Lg	LB	.010	1535	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.012	1305	---	.40	---	.40	.56
3" x 8" - 14', 24" oc	Inst	SF	Lg	2C	.012	1335	3.54	.49	.10	4.13	4.86
	Inst	SF	Sm	2C	.014	1135	3.90	.57	.11	4.58	5.40
3" x 10" - 16', 12" oc	Demo	SF	Lg	LB	.018	896.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.021	761.6	---	.70	---	.70	.98
3" x 10" - 16', 12" oc	Inst	SF	Lg	2C	.020	792.0	8.92	.82	.16	9.90	11.60
	Inst	SF	Sm	2C	.024	673.2	9.83	.99	.19	11.01	12.90
3" x 10" - 16', 16" oc	Demo	SF	Lg	LB	.015	1066	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.018	906.1	---	.60	---	.60	.84
3" x 10" - 16', 16" oc	Inst	SF	Lg	2C	.017	943.0	6.77	.70	.14	7.61	8.90
	Inst	SF	Sm	2C	.020	801.6	7.46	.82	.16	8.44	9.89
3" x 10" - 16', 24" oc	Demo	SF	Lg	LB	.011	1399	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.013	1189	---	.43	---	.43	.61
3" x 10" - 16', 24" oc	Inst	SF	Lg	2C	.013	1236	4.58	.53	.11	5.22	6.12
	Inst	SF	Sm	2C	.015	1051	5.04	.62	.12	5.78	6.78

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
3" x 12" - 18', 12" oc	Demo	SF	Lg	LB	.019	851.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	723.4	---	.73	---	.73	1.03
3" x 12" - 18', 12" oc	Inst	SF	Lg	2C	.021	762.0	10.30	.86	.17	11.33	13.30
	Inst	SF	Sm	2C	.025	647.7	11.40	1.03	.20	12.63	14.70
3" x 12" - 18', 16" oc	Demo	SF	Lg	LB	.016	1013	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	861.1	---	.63	---	.63	.89
3" x 12" - 18', 16" oc	Inst	SF	Lg	2C	.018	907.0	7.82	.74	.14	8.70	10.20
	Inst	SF	Sm	2C	.021	771.0	8.62	.86	.17	9.65	11.30
3" x 12" - 18', 24" oc	Demo	SF	Lg	LB	.012	1330	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.014	1131	---	.47	---	.47	.65
3" x 12" - 18', 24" oc	Inst	SF	Lg	2C	.013	1190	5.31	.53	.11	5.95	6.96
	Inst	SF	Sm	2C	.016	1012	5.85	.66	.13	6.64	7.78

Ledgers

Nailed

2" x 4" - 12'	Demo	LF	Lg	LB	.013	1220	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.015	1037	---	.50	---	.50	.70
2" x 4" - 12'	Inst	LF	Lg	2C	.019	857.0	.75	.78	.15	1.68	2.10
	Inst	LF	Sm	2C	.022	728.5	.83	.90	.18	1.91	2.40
2" x 6" - 12'	Demo	LF	Lg	LB	.015	1082	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.017	919.7	---	.57	---	.57	.79
2" x 6" - 12'	Inst	LF	Lg	2C	.021	774.0	.95	.86	.17	1.98	2.47
	Inst	LF	Sm	2C	.024	657.9	1.04	.99	.20	2.23	2.78
2" x 8" - 12'	Demo	LF	Lg	LB	.016	973.0	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	827.1	---	.63	---	.63	.89
2" x 8" - 12'	Inst	LF	Lg	2C	.023	706.0	1.24	.94	.18	2.36	2.93
	Inst	LF	Sm	2C	.027	600.1	1.37	1.11	.22	2.70	3.35

Bolted

Labor/material costs are for ledgers with pre-embedded bolts.

Labor costs include securing ledgers

3" x 6" - 12'	Demo	LF	Lg	LB	.022	718.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.026	610.3	---	.87	---	.87	1.21
3" x 6" - 12'	Inst	LF	Lg	2C	.031	513.0	2.97	1.27	.25	4.49	5.45
	Inst	LF	Sm	2C	.037	436.1	3.27	1.52	.30	5.09	6.19
3" x 8" - 12'	Demo	LF	Lg	LB	.024	654.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.029	555.9	---	.97	---	.97	1.35
3" x 8" - 12'	Inst	LF	Lg	2C	.034	475.0	6.69	1.40	.27	8.36	9.92
	Inst	LF	Sm	2C	.040	403.8	7.37	1.64	.32	9.33	11.10
3" x 10" - 12'	Demo	LF	Lg	LB	.027	593.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	504.1	---	1.07	---	1.07	1.49
3" x 10" - 12'	Inst	LF	Lg	2C	.037	438.0	8.69	1.52	.30	10.51	12.40
	Inst	LF	Sm	2C	.043	372.3	9.57	1.77	.35	11.69	13.80
3" x 12" - 12'	Demo	LF	Lg	LB	.029	547.0	---	.97	---	.97	1.35
	Demo	LF	Sm	LB	.034	465.0	---	1.13	---	1.13	1.59
3" x 12" - 12'	Inst	LF	Lg	2C	.039	408.0	10.00	1.60	.32	11.92	14.10
	Inst	LF	Sm	2C	.046	346.8	11.10	1.89	.37	13.36	15.70

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Patio framing

Wood deck: 4" x 4" rough sawn beams (4'-0" oc) leveled 1/16" to 1/8" and nailed to pre-set concrete piers with woodblock on top; 2" T x 4" W decking (S4S) with 1/2" spacing, double-nailed beam junctures

Fir	Demo	SF	Lg	LB	.042	380.0	---	1.40	---	1.40	1.96
	Demo	SF	Sm	LB	.050	323.0	---	1.67	---	1.67	2.33
Fir	Inst	SF	Lg	CN	.061	330.0	5.33	2.41	.39	8.13	9.89
	Inst	SF	Sm	CN	.071	280.5	5.89	2.81	.46	9.16	11.20
Redwood	Demo	SF	Lg	LB	.042	380.0	---	1.40	---	1.40	1.96
	Demo	SF	Sm	LB	.050	323.0	---	1.67	---	1.67	2.33
Redwood	Inst	SF	Lg	CN	.061	330.0	23.60	2.41	.39	26.40	30.90
	Inst	SF	Sm	CN	.071	280.5	26.00	2.81	.46	29.27	34.30

Wood awning: 4" x 4" columns (10'-0" oc) nailed to wood; 2" x 6" beams nailed horizontally either side of columns; 2" x 6" ledger nailed to wall studs; 2" x 6" joists (4'-0" oc) nailed to ledger and toe-nailed on top of beams; 2" x 2" (4" oc) nailed to joists for sunscreen

Redwood, rough sawn	Demo	SF	Lg	LB	.055	290.0	---	1.83	---	1.83	2.56
	Demo	SF	Sm	LB	.065	246.5	---	2.17	---	2.17	3.03
Redwood, rough sawn	Inst	SF	Lg	CS	.096	250.0	21.80	3.69	.52	26.01	30.80
	Inst	SF	Sm	CS	.113	212.5	24.10	4.35	.61	29.06	34.40

Plates; joined with studs before setting**Double top, nailed**

2" x 4" - 8'	Demo	LF	Lg	LB	.020	820.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	697.0	---	.77	---	.77	1.07
2" x 4" - 8'	Inst	LF	Lg	2C	.039	410.0	1.36	1.60	.32	3.28	4.13
	Inst	LF	Sm	2C	.046	348.5	1.51	1.89	.37	3.77	4.75
2" x 6" - 8'	Demo	LF	Lg	LB	.020	820.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	697.0	---	.77	---	.77	1.07
2" x 6" - 8'	Inst	LF	Lg	2C	.039	410.0	1.75	1.60	.32	3.67	4.57
	Inst	LF	Sm	2C	.046	348.5	1.92	1.89	.37	4.18	5.22

Single bottom, nailed

2" x 4" - 8'	Demo	LF	Lg	LB	.012	1360	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1156	---	.47	---	.47	.65
2" x 4" - 8'	Inst	LF	Lg	2C	.020	815.0	.67	.82	.16	1.65	2.08
	Inst	LF	Sm	2C	.023	692.8	.74	.94	.19	1.87	2.36
2" x 6" - 8'	Demo	LF	Lg	LB	.012	1360	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1156	---	.47	---	.47	.65
2" x 6" - 8'	Inst	LF	Lg	2C	.020	815.0	.86	.82	.16	1.84	2.30
	Inst	LF	Sm	2C	.023	692.8	.95	.94	.19	2.08	2.60

Sill or bottom, bolted. Labor/material costs are for plates with pre-embedded bolts.

Labor cost includes securing plates

2" x 4" - 8'	Demo	LF	Lg	LB	.023	685.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	582.3	---	.90	---	.90	1.26
2" x 4" - 8'	Inst	LF	Lg	2C	.029	560.0	.56	1.19	.23	1.98	2.54
	Inst	LF	Sm	2C	.034	476.0	.63	1.40	.27	2.30	2.95
2" x 6" - 8'	Demo	LF	Lg	LB	.023	685.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	582.3	---	.90	---	.90	1.26
2" x 6" - 8'	Inst	LF	Lg	2C	.029	560.0	.76	1.19	.23	2.18	2.77
	Inst	LF	Sm	2C	.034	476.0	.83	1.40	.27	2.50	3.18

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Rafters, per LF of stick**Common, gable or hip, to 1/3 pitch**

2" x 4" - 8' Avg.	Demo	LF	Lg	LB	.022	744.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.025	632.4	---	.83	---	.83	1.17
2" x 4" - 8' Avg.	Inst	LF	Lg	2C	.023	683.0	.62	.94	.19	1.75	2.23
	Inst	LF	Sm	2C	.028	580.6	.69	1.15	.22	2.06	2.62
2" x 4" - 10' Avg.	Demo	LF	Lg	LB	.019	861.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	731.9	---	.73	---	.73	1.03
2" x 4" - 10' Avg.	Inst	LF	Lg	2C	.020	793.0	.62	.82	.16	1.60	2.02
	Inst	LF	Sm	2C	.024	674.1	.69	.99	.19	1.87	2.36
2" x 4" - 12' Avg.	Demo	LF	Lg	LB	.017	963.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	818.6	---	.67	---	.67	.93
2" x 4" - 12' Avg.	Inst	LF	Lg	2C	.018	887.0	.62	.74	.15	1.51	1.90
	Inst	LF	Sm	2C	.021	754.0	.69	.86	.17	1.72	2.17
2" x 4" - 14' Avg.	Demo	LF	Lg	LB	.015	1053	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.018	895.1	---	.60	---	.60	.84
2" x 4" - 14' Avg.	Inst	LF	Lg	2C	.016	971.0	.62	.66	.13	1.41	1.76
	Inst	LF	Sm	2C	.019	825.4	.69	.78	.16	1.63	2.05
2" x 4" - 16' Avg.	Demo	LF	Lg	LB	.014	1134	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.017	963.9	---	.57	---	.57	.79
2" x 4" - 16' Avg.	Inst	LF	Lg	2C	.015	1047	.62	.62	.12	1.36	1.70
	Inst	LF	Sm	2C	.018	890.0	.69	.74	.15	1.58	1.98
2" x 6" - 10' Avg.	Demo	LF	Lg	LB	.021	748.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.025	635.8	---	.83	---	.83	1.17
2" x 6" - 10' Avg.	Inst	LF	Lg	2C	.023	691.0	.82	.94	.19	1.95	2.46
	Inst	LF	Sm	2C	.027	587.4	.90	1.11	.22	2.23	2.81
2" x 6" - 12' Avg.	Demo	LF	Lg	LB	.019	843.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	716.6	---	.73	---	.73	1.03
2" x 6" - 12' Avg.	Inst	LF	Lg	2C	.021	779.0	.82	.86	.17	1.85	2.32
	Inst	LF	Sm	2C	.024	662.2	.90	.99	.20	2.09	2.61
2" x 6" - 14' Avg.	Demo	LF	Lg	LB	.017	929.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	789.7	---	.67	---	.67	.93
2" x 6" - 14' Avg.	Inst	LF	Lg	2C	.019	860.0	.82	.78	.15	1.75	2.19
	Inst	LF	Sm	2C	.022	731.0	.90	.90	.18	1.98	2.48
2" x 6" - 16' Avg.	Demo	LF	Lg	LB	.016	1008	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	856.8	---	.63	---	.63	.89
2" x 6" - 16' Avg.	Inst	LF	Lg	2C	.017	933.0	.82	.70	.14	1.66	2.06
	Inst	LF	Sm	2C	.020	793.1	.90	.82	.16	1.88	2.34
2" x 6" - 18' Avg.	Demo	LF	Lg	LB	.015	1081	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.017	918.9	---	.57	---	.57	.79
2" x 6" - 18' Avg.	Inst	LF	Lg	2C	.016	1001	.82	.66	.13	1.61	1.99
	Inst	LF	Sm	2C	.019	850.9	.90	.78	.15	1.83	2.28

Framing, rough carpentry, rafters

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 8" - 12' Avg.	Demo	LF	Lg	LB	.022	737.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.026	626.5	---	.87	---	.87	1.21
2" x 8" - 12' Avg.	Inst	LF	Lg	2C	.023	684.0	1.11	.94	.19	2.24	2.79
	Inst	LF	Sm	2C	.028	581.4	1.23	1.15	.22	2.60	3.24
2" x 8" - 14' Avg.	Demo	LF	Lg	LB	.020	804.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	683.4	---	.77	---	.77	1.07
2" x 8" - 14' Avg.	Inst	LF	Lg	2C	.021	748.0	1.11	.86	.17	2.14	2.65
	Inst	LF	Sm	2C	.025	635.8	1.23	1.03	.20	2.46	3.05
2" x 8" - 16' Avg.	Demo	LF	Lg	LB	.019	864.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	734.4	---	.73	---	.73	1.03
2" x 8" - 16' Avg.	Inst	LF	Lg	2C	.020	805.0	1.11	.82	.16	2.09	2.59
	Inst	LF	Sm	2C	.023	684.3	1.23	.94	.19	2.36	2.93
2" x 8" - 18' Avg.	Demo	LF	Lg	LB	.017	918.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.021	780.3	---	.70	---	.70	.98
2" x 8" - 18' Avg.	Inst	LF	Lg	2C	.019	856.0	1.11	.78	.15	2.04	2.52
	Inst	LF	Sm	2C	.022	727.6	1.23	.90	.18	2.31	2.86
2" x 8" - 20' Avg.	Demo	LF	Lg	LB	.017	967.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.019	822.0	---	.63	---	.63	.89
2" x 8" - 20' Avg.	Inst	LF	Lg	2C	.018	902.0	1.11	.74	.14	1.99	2.45
	Inst	LF	Sm	2C	.021	766.7	1.23	.86	.17	2.26	2.79

Common, gable or hip, to 3/8-1/2 pitch

2" x 4" - 8' Avg.	Demo	LF	Lg	LB	.025	632.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.030	537.2	---	1.00	---	1.00	1.40
2" x 4" - 8' Avg.	Inst	LF	Lg	2C	.028	580.0	.62	1.15	.22	1.99	2.54
	Inst	LF	Sm	2C	.032	493.0	.69	1.31	.26	2.26	2.89
2" x 4" - 10' Avg.	Demo	LF	Lg	LB	.022	740.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.025	629.0	---	.83	---	.83	1.17
2" x 4" - 10' Avg.	Inst	LF	Lg	2C	.024	680.0	.62	.99	.19	1.80	2.28
	Inst	LF	Sm	2C	.028	578.0	.69	1.15	.22	2.06	2.62
2" x 4" - 12' Avg.	Demo	LF	Lg	LB	.019	836.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.023	710.6	---	.77	---	.77	1.07
2" x 4" - 12' Avg.	Inst	LF	Lg	2C	.021	769.0	.62	.86	.17	1.65	2.09
	Inst	LF	Sm	2C	.024	653.7	.69	.99	.20	1.88	2.37
2" x 4" - 14' Avg.	Demo	LF	Lg	LB	.017	922.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	783.7	---	.67	---	.67	.93
2" x 4" - 14' Avg.	Inst	LF	Lg	2C	.019	849.0	.62	.78	.15	1.55	1.96
	Inst	LF	Sm	2C	.022	721.7	.69	.90	.18	1.77	2.24
2" x 4" - 16' Avg.	Demo	LF	Lg	LB	.016	999.0	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	849.2	---	.63	---	.63	.89
2" x 4" - 16' Avg.	Inst	LF	Lg	2C	.017	921.0	.62	.70	.14	1.46	1.83
	Inst	LF	Sm	2C	.020	782.9	.69	.82	.17	1.68	2.11

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 6" - 10' Avg.	Demo	LF	Lg	LB	.024	655.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.029	556.8	---	.97	---	.97	1.35
2" x 6" - 10' Avg.	Inst	LF	Lg	2C	.026	604.0	.82	1.07	.22	2.11	2.66
	Inst	LF	Sm	2C	.031	513.4	.90	1.27	.25	2.42	3.07
2" x 6" - 12' Avg.	Demo	LF	Lg	LB	.022	743.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.025	631.6	---	.83	---	.83	1.17
2" x 6" - 12' Avg.	Inst	LF	Lg	2C	.023	686.0	.82	.94	.19	1.95	2.46
	Inst	LF	Sm	2C	.027	583.1	.90	1.11	.22	2.23	2.81
2" x 6" - 14' Avg.	Demo	LF	Lg	LB	.019	825.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.023	701.3	---	.77	---	.77	1.07
2" x 6" - 14' Avg.	Inst	LF	Lg	2C	.021	762.0	.82	.86	.17	1.85	2.32
	Inst	LF	Sm	2C	.025	647.7	.90	1.03	.20	2.13	2.67
2" x 6" - 16' Avg.	Demo	LF	Lg	LB	.018	901.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.021	765.9	---	.70	---	.70	.98
2" x 6" - 16' Avg.	Inst	LF	Lg	2C	.019	833.0	.82	.78	.16	1.76	2.20
	Inst	LF	Sm	2C	.023	708.1	.90	.94	.18	2.02	2.54
2" x 6" - 18' Avg.	Demo	LF	Lg	LB	.016	971.0	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	825.4	---	.63	---	.63	.89
2" x 6" - 18' Avg.	Inst	LF	Lg	2C	.018	898.0	.82	.74	.14	1.70	2.12
	Inst	LF	Sm	2C	.021	763.3	.90	.86	.17	1.93	2.41
2" x 8" - 12' Avg.	Demo	LF	Lg	LB	.024	660.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.029	561.0	---	.97	---	.97	1.35
2" x 8" - 12' Avg.	Inst	LF	Lg	2C	.026	612.0	1.11	1.07	.21	2.39	2.98
	Inst	LF	Sm	2C	.031	520.2	1.23	1.27	.25	2.75	3.45
2" x 8" - 14' Avg.	Demo	LF	Lg	LB	.022	725.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.026	616.3	---	.87	---	.87	1.21
2" x 8" - 14' Avg.	Inst	LF	Lg	2C	.024	673.0	1.11	.99	.19	2.29	2.85
	Inst	LF	Sm	2C	.028	572.1	1.23	1.15	.23	2.61	3.25
2" x 8" - 16' Avg.	Demo	LF	Lg	LB	.020	784.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.024	666.4	---	.80	---	.80	1.12
2" x 8" - 16' Avg.	Inst	LF	Lg	2C	.022	728.0	1.11	.90	.18	2.19	2.72
	Inst	LF	Sm	2C	.026	618.8	1.23	1.07	.21	2.51	3.12
2" x 8" - 18' Avg.	Demo	LF	Lg	LB	.019	837.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	711.5	---	.73	---	.73	1.03
2" x 8" - 18' Avg.	Inst	LF	Lg	2C	.021	779.0	1.11	.86	.17	2.14	2.65
	Inst	LF	Sm	2C	.024	662.2	1.23	.99	.20	2.42	2.99
2" x 8" - 20' Avg.	Demo	LF	Lg	LB	.018	885.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.021	752.3	---	.70	---	.70	.98
2" x 8" - 20' Avg.	Inst	LF	Lg	2C	.019	825.0	1.11	.78	.16	2.05	2.53
	Inst	LF	Sm	2C	.023	701.3	1.23	.94	.19	2.36	2.93

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Common, cut-up roofs, to 1/3 pitch

2" x 4" - 8' Avg.	Demo	LF	Lg	LB	.027	588.0	---	.90	---	.90	1.26
	Demo	LF	Sm	LB	.032	499.8	---	1.07	---	1.07	1.49
2" x 4" - 8' Avg.	Inst	LF	Lg	2C	.030	539.0	.63	1.23	.24	2.10	2.69
	Inst	LF	Sm	2C	.035	458.2	.70	1.44	.28	2.42	3.10
2" x 4" - 10' Avg.	Demo	LF	Lg	LB	.023	692.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	588.2	---	.90	---	.90	1.26
2" x 4" - 10' Avg.	Inst	LF	Lg	2C	.025	635.0	.63	1.03	.20	1.86	2.36
	Inst	LF	Sm	2C	.030	539.8	.70	1.23	.24	2.17	2.77
2" x 4" - 12' Avg.	Demo	LF	Lg	LB	.020	783.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.024	665.6	---	.80	---	.80	1.12
2" x 4" - 12' Avg.	Inst	LF	Lg	2C	.022	720.0	.63	.90	.18	1.71	2.17
	Inst	LF	Sm	2C	.026	612.0	.70	1.07	.21	1.98	2.51
2" x 4" - 14' Avg.	Demo	LF	Lg	LB	.018	868.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.022	737.8	---	.73	---	.73	1.03
2" x 4" - 14' Avg.	Inst	LF	Lg	2C	.020	799.0	.63	.82	.16	1.61	2.03
	Inst	LF	Sm	2C	.024	679.2	.70	.99	.19	1.88	2.37
2" x 4" - 16' Avg.	Demo	LF	Lg	LB	.017	945.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	803.3	---	.67	---	.67	.93
2" x 4" - 16' Avg.	Inst	LF	Lg	2C	.018	870.0	.63	.74	.15	1.52	1.91
	Inst	LF	Sm	2C	.022	739.5	.70	.90	.18	1.78	2.25
2" x 6" - 10' Avg.	Demo	LF	Lg	LB	.026	617.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.031	524.5	---	1.03	---	1.03	1.45
2" x 6" - 10' Avg.	Inst	LF	Lg	2C	.028	569.0	.83	1.15	.23	2.21	2.79
	Inst	LF	Sm	2C	.033	483.7	.91	1.35	.27	2.53	3.21
2" x 6" - 12' Avg.	Demo	LF	Lg	LB	.023	703.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	597.6	---	.90	---	.90	1.26
2" x 6" - 12' Avg.	Inst	LF	Lg	2C	.025	648.0	.83	1.03	.20	2.06	2.59
	Inst	LF	Sm	2C	.029	550.8	.91	1.19	.24	2.34	2.95
2" x 6" - 14' Avg.	Demo	LF	Lg	LB	.020	781.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.024	663.9	---	.80	---	.80	1.12
2" x 6" - 14' Avg.	Inst	LF	Lg	2C	.022	721.0	.83	.90	.18	1.91	2.40
	Inst	LF	Sm	2C	.026	612.9	.91	1.07	.21	2.19	2.75
2" x 6" - 16' Avg.	Demo	LF	Lg	LB	.019	855.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	726.8	---	.73	---	.73	1.03
2" x 6" - 16' Avg.	Inst	LF	Lg	2C	.020	789.0	.83	.82	.16	1.81	2.26
	Inst	LF	Sm	2C	.024	670.7	.91	.99	.19	2.09	2.62
2" x 6" - 18' Avg.	Demo	LF	Lg	LB	.017	923.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	784.6	---	.67	---	.67	.93
2" x 6" - 18' Avg.	Inst	LF	Lg	2C	.019	853.0	.83	.78	.15	1.76	2.20
	Inst	LF	Sm	2C	.022	725.1	.91	.90	.18	1.99	2.49

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
2" x 8" - 12' Avg.	Demo	LF	Lg	LB	.026	627.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.030	533.0	---	1.00	---	1.00	1.40
2" x 8" - 12' Avg.	Inst	LF	Lg	2C	.028	580.0	1.13	1.15	.22	2.50	3.13
	Inst	LF	Sm	2C	.032	493.0	1.25	1.31	.26	2.82	3.54
2" x 8" - 14' Avg.	Demo	LF	Lg	LB	.023	691.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	587.4	---	.90	---	.90	1.26
2" x 8" - 14' Avg.	Inst	LF	Lg	2C	.025	641.0	1.13	1.03	.20	2.36	2.94
	Inst	LF	Sm	2C	.029	544.9	1.25	1.19	.24	2.68	3.34
2" x 8" - 16' Avg.	Demo	LF	Lg	LB	.021	749.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.025	636.7	---	.83	---	.83	1.17
2" x 8" - 16' Avg.	Inst	LF	Lg	2C	.023	695.0	1.13	.94	.19	2.26	2.81
	Inst	LF	Sm	2C	.027	590.8	1.25	1.11	.22	2.58	3.21
2" x 8" - 18' Avg.	Demo	LF	Lg	LB	.020	802.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	681.7	---	.77	---	.77	1.07
2" x 8" - 18' Avg.	Inst	LF	Lg	2C	.021	745.0	1.13	.86	.17	2.16	2.68
	Inst	LF	Sm	2C	.025	633.3	1.25	1.03	.21	2.49	3.08
2" x 8" - 20' Avg.	Demo	LF	Lg	LB	.019	850.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	722.5	---	.73	---	.73	1.03
2" x 8" - 20' Avg.	Inst	LF	Lg	2C	.020	791.0	1.13	.82	.16	2.11	2.61
	Inst	LF	Sm	2C	.024	672.4	1.25	.99	.19	2.43	3.01

Common, cut-up roofs, to 3/8-1/2 pitch

2" x 4" - 8' Avg.	Demo	LF	Lg	LB	.031	516.0	---	1.03	---	1.03	1.45
	Demo	LF	Sm	LB	.036	438.6	---	1.20	---	1.20	1.68
2" x 4" - 8' Avg.	Inst	LF	Lg	2C	.034	473.0	.63	1.40	.27	2.30	2.95
	Inst	LF	Sm	2C	.040	402.1	.70	1.64	.32	2.66	3.42
2" x 4" - 10' Avg.	Demo	LF	Lg	LB	.026	612.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.031	520.2	---	1.03	---	1.03	1.45
2" x 4" - 10' Avg.	Inst	LF	Lg	2C	.028	562.0	.63	1.15	.23	2.01	2.56
	Inst	LF	Sm	2C	.033	477.7	.70	1.35	.27	2.32	2.97
2" x 4" - 12' Avg.	Demo	LF	Lg	LB	.023	697.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	592.5	---	.90	---	.90	1.26
2" x 4" - 12' Avg.	Inst	LF	Lg	2C	.025	640.0	.63	1.03	.20	1.86	2.36
	Inst	LF	Sm	2C	.029	544.0	.70	1.19	.24	2.13	2.71
2" x 4" - 14' Avg.	Demo	LF	Lg	LB	.021	777.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.024	660.5	---	.80	---	.80	1.12
2" x 4" - 14' Avg.	Inst	LF	Lg	2C	.022	714.0	.63	.90	.18	1.71	2.17
	Inst	LF	Sm	2C	.026	606.9	.70	1.07	.21	1.98	2.51
2" x 4" - 16' Avg.	Demo	LF	Lg	LB	.019	849.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	721.7	---	.73	---	.73	1.03
2" x 4" - 16' Avg.	Inst	LF	Lg	2C	.021	780.0	.63	.86	.17	1.66	2.10
	Inst	LF	Sm	2C	.024	663.0	.70	.99	.20	1.89	2.38

Framing, rough carpentry, rafters

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 6" - 10' Avg.	Demo	LF	Lg	LB	.029	552.0	---	.97	---	.97	1.35
	Demo	LF	Sm	LB	.034	469.2	---	1.13	---	1.13	1.59
2" x 6" - 10' Avg.	Inst	LF	Lg	2C	.031	508.0	.83	1.27	.26	2.36	3.00
	Inst	LF	Sm	2C	.037	431.8	.91	1.52	.30	2.73	3.47
2" x 6" - 12' Avg.	Demo	LF	Lg	LB	.025	633.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.030	538.1	---	1.00	---	1.00	1.40
2" x 6" - 12' Avg.	Inst	LF	Lg	2C	.027	583.0	.83	1.11	.22	2.16	2.73
	Inst	LF	Sm	2C	.032	495.6	.91	1.31	.26	2.48	3.15
2" x 6" - 14' Avg.	Demo	LF	Lg	LB	.023	706.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	600.1	---	.90	---	.90	1.26
2" x 6" - 14' Avg.	Inst	LF	Lg	2C	.025	651.0	.83	1.03	.20	2.06	2.59
	Inst	LF	Sm	2C	.029	553.4	.91	1.19	.23	2.33	2.94
2" x 6" - 16' Avg.	Demo	LF	Lg	LB	.021	776.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.024	659.6	---	.80	---	.80	1.12
2" x 6" - 16' Avg.	Inst	LF	Lg	2C	.022	715.0	.83	.90	.18	1.91	2.40
	Inst	LF	Sm	2C	.026	607.8	.91	1.07	.21	2.19	2.75
2" x 6" - 18' Avg.	Demo	LF	Lg	LB	.019	842.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	715.7	---	.73	---	.73	1.03
2" x 6" - 18' Avg.	Inst	LF	Lg	2C	.021	777.0	.83	.86	.17	1.86	2.33
	Inst	LF	Sm	2C	.024	660.5	.91	.99	.20	2.10	2.63
2" x 8" - 12' Avg.	Demo	LF	Lg	LB	.028	570.0	---	.93	---	.93	1.31
	Demo	LF	Sm	LB	.033	484.5	---	1.10	---	1.10	1.54
2" x 8" - 12' Avg.	Inst	LF	Lg	2C	.030	527.0	1.13	1.23	.25	2.61	3.27
	Inst	LF	Sm	2C	.036	448.0	1.25	1.48	.29	3.02	3.80
2" x 8" - 14' Avg.	Demo	LF	Lg	LB	.025	632.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.030	537.2	---	1.00	---	1.00	1.40
2" x 8" - 14' Avg.	Inst	LF	Lg	2C	.027	585.0	1.13	1.11	.22	2.46	3.07
	Inst	LF	Sm	2C	.032	497.3	1.25	1.31	.26	2.82	3.54
2" x 8" - 16' Avg.	Demo	LF	Lg	LB	.023	688.0	---	.77	---	.77	1.07
	Demo	LF	Sm	LB	.027	584.8	---	.90	---	.90	1.26
2" x 8" - 16' Avg.	Inst	LF	Lg	2C	.025	638.0	1.13	1.03	.20	2.36	2.94
	Inst	LF	Sm	2C	.030	542.3	1.25	1.23	.24	2.72	3.40
2" x 8" - 18' Avg.	Demo	LF	Lg	LB	.022	739.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.025	628.2	---	.83	---	.83	1.17
2" x 8" - 18' Avg.	Inst	LF	Lg	2C	.023	686.0	1.13	.94	.19	2.26	2.81
	Inst	LF	Sm	2C	.027	583.1	1.25	1.11	.22	2.58	3.21
2" x 8" - 20' Avg.	Demo	LF	Lg	LB	.020	787.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.024	669.0	---	.80	---	.80	1.12
2" x 8" - 20' Avg.	Inst	LF	Lg	2C	.022	731.0	1.13	.90	.18	2.21	2.74
	Inst	LF	Sm	2C	.026	621.4	1.25	1.07	.21	2.53	3.14

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Rafters, per SF of area**Gable or hip, to 1/3 pitch**

2" x 4" - 12" oc	Demo	SF	Lg	LB	.019	840.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	714.0	---	.73	---	.73	1.03
2" x 4" - 12" oc	Inst	SF	Lg	2C	.021	774.0	.74	.86	.17	1.77	2.23
	Inst	SF	Sm	2C	.024	657.9	.82	.99	.20	2.01	2.52
2" x 4" - 16" oc	Demo	SF	Lg	LB	.016	1000	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	850.0	---	.63	---	.63	.89
2" x 4" - 16" oc	Inst	SF	Lg	2C	.017	921.0	.59	.70	.14	1.43	1.80
	Inst	SF	Sm	2C	.020	782.9	.65	.82	.17	1.64	2.07
2" x 4" - 24" oc	Demo	SF	Lg	LB	.012	1312	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.014	1115	---	.47	---	.47	.65
2" x 4" - 24" oc	Inst	SF	Lg	2C	.013	1208	.44	.53	.11	1.08	1.36
	Inst	SF	Sm	2C	.016	1027	.49	.66	.13	1.28	1.61
2" x 6" - 12" oc	Demo	SF	Lg	LB	.019	821.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.023	697.9	---	.77	---	.77	1.07
2" x 6" - 12" oc	Inst	SF	Lg	2C	.021	760.0	.95	.86	.17	1.98	2.47
	Inst	SF	Sm	2C	.025	646.0	1.04	1.03	.20	2.27	2.83
2" x 6" - 16" oc	Demo	SF	Lg	LB	.016	978.0	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	831.3	---	.63	---	.63	.89
2" x 6" - 16" oc	Inst	SF	Lg	2C	.018	905.0	.75	.74	.14	1.63	2.04
	Inst	SF	Sm	2C	.021	769.3	.82	.86	.17	1.85	2.32
2" x 6" - 24" oc	Demo	SF	Lg	LB	.012	1284	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.015	1091	---	.50	---	.50	.70
2" x 6" - 24" oc	Inst	SF	Lg	2C	.013	1187	.55	.53	.11	1.19	1.49
	Inst	SF	Sm	2C	.016	1009	.61	.66	.13	1.40	1.75
2" x 8" - 12" oc	Demo	SF	Lg	LB	.020	785.0	---	.67	---	.67	.93
	Demo	SF	Sm	LB	.024	667.3	---	.80	---	.80	1.12
2" x 8" - 12" oc	Inst	SF	Lg	2C	.022	730.0	1.25	.90	.18	2.33	2.88
	Inst	SF	Sm	2C	.026	620.5	1.38	1.07	.21	2.66	3.29
2" x 8" - 16" oc	Demo	SF	Lg	LB	.017	933.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.020	793.1	---	.67	---	.67	.93
2" x 8" - 16" oc	Inst	SF	Lg	2C	.018	868.0	.97	.74	.15	1.86	2.30
	Inst	SF	Sm	2C	.022	737.8	1.07	.90	.18	2.15	2.68
2" x 8" - 24" oc	Demo	SF	Lg	LB	.013	1225	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1041	---	.50	---	.50	.70
2" x 8" - 24" oc	Inst	SF	Lg	2C	.014	1140	.70	.57	.11	1.38	1.72
	Inst	SF	Sm	2C	.017	969.0	.78	.70	.13	1.61	2.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Gable or hip, to 3/8-1/2 pitch											
2" x 4" - 12" oc	Demo	SF	Lg	LB	.022	723.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	614.6	---	.87	---	.87	1.21
2" x 4" - 12" oc	Inst	SF	Lg	2C	.024	664.0	.74	.99	.20	1.93	2.43
	Inst	SF	Sm	2C	.028	564.4	.82	1.15	.23	2.20	2.78
2" x 4" - 16" oc	Demo	SF	Lg	LB	.019	859.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	730.2	---	.73	---	.73	1.03
2" x 4" - 16" oc	Inst	SF	Lg	2C	.020	789.0	.59	.82	.16	1.57	1.99
	Inst	SF	Sm	2C	.024	670.7	.65	.99	.19	1.83	2.32
2" x 4" - 24" oc	Demo	SF	Lg	LB	.014	1127	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.017	958.0	---	.57	---	.57	.79
2" x 4" - 24" oc	Inst	SF	Lg	2C	.015	1036	.44	.62	.13	1.19	1.50
	Inst	SF	Sm	2C	.018	880.6	.49	.74	.15	1.38	1.75
2" x 6" - 12" oc	Demo	SF	Lg	LB	.022	725.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	616.3	---	.87	---	.87	1.21
2" x 6" - 12" oc	Inst	SF	Lg	2C	.024	669.0	.95	.99	.19	2.13	2.66
	Inst	SF	Sm	2C	.028	568.7	1.04	1.15	.23	2.42	3.04
2" x 6" - 16" oc	Demo	SF	Lg	LB	.019	862.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	732.7	---	.73	---	.73	1.03
2" x 6" - 16" oc	Inst	SF	Lg	2C	.020	796.0	.75	.82	.16	1.73	2.17
	Inst	SF	Sm	2C	.024	676.6	.82	.99	.19	2.00	2.51
2" x 6" - 24" oc	Demo	SF	Lg	LB	.014	1132	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.017	962.2	---	.57	---	.57	.79
2" x 6" - 24" oc	Inst	SF	Lg	2C	.015	1045	.55	.62	.12	1.29	1.61
	Inst	SF	Sm	2C	.018	888.3	.61	.74	.15	1.50	1.89
2" x 8" - 12" oc	Demo	SF	Lg	LB	.023	708.0	---	.77	---	.77	1.07
	Demo	SF	Sm	LB	.027	601.8	---	.90	---	.90	1.26
2" x 8" - 12" oc	Inst	SF	Lg	2C	.024	657.0	1.25	.99	.20	2.44	3.02
	Inst	SF	Sm	2C	.029	558.5	1.38	1.19	.23	2.80	3.48
2" x 8" - 16" oc	Demo	SF	Lg	LB	.019	841.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	714.9	---	.73	---	.73	1.03
2" x 8" - 16" oc	Inst	SF	Lg	2C	.020	781.0	.97	.82	.17	1.96	2.44
	Inst	SF	Sm	2C	.024	663.9	1.07	.99	.20	2.26	2.81
2" x 8" - 24" oc	Demo	SF	Lg	LB	.012	1351	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.014	1148	---	.47	---	.47	.65
2" x 8" - 24" oc	Inst	SF	Lg	2C	.013	1260	.70	.53	.10	1.33	1.65
	Inst	SF	Sm	2C	.015	1071	.78	.62	.12	1.52	1.88

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
Cut-up roofs, to 1/3 pitch											
2" x 4" - 12" oc	Demo	SF	Lg	LB	.024	674.0	---	.80	---	.80	1.12
	Demo	SF	Sm	LB	.028	572.9	---	.93	---	.93	1.31
2" x 4" - 12" oc	Inst	SF	Lg	2C	.026	619.0	.75	1.07	.21	2.03	2.57
	Inst	SF	Sm	2C	.030	526.2	.83	1.23	.25	2.31	2.93
2" x 4" - 16" oc	Demo	SF	Lg	LB	.020	804.0	---	.67	---	.67	.93
	Demo	SF	Sm	LB	.023	683.4	---	.77	---	.77	1.07
2" x 4" - 16" oc	Inst	SF	Lg	2C	.022	738.0	.60	.90	.18	1.68	2.13
	Inst	SF	Sm	2C	.026	627.3	.66	1.07	.21	1.94	2.46
2" x 4" - 24" oc	Demo	SF	Lg	LB	.015	1055	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.018	896.8	---	.60	---	.60	.84
2" x 4" - 24" oc	Inst	SF	Lg	2C	.017	968.0	.45	.70	.13	1.28	1.62
	Inst	SF	Sm	2C	.019	822.8	.49	.78	.16	1.43	1.82
2" x 6" - 12" oc	Demo	SF	Lg	LB	.023	686.0	---	.77	---	.77	1.07
	Demo	SF	Sm	LB	.027	583.1	---	.90	---	.90	1.26
2" x 6" - 12" oc	Inst	SF	Lg	2C	.025	633.0	.96	1.03	.21	2.20	2.75
	Inst	SF	Sm	2C	.030	538.1	1.06	1.23	.24	2.53	3.18
2" x 6" - 16" oc	Demo	SF	Lg	LB	.020	816.0	---	.67	---	.67	.93
	Demo	SF	Sm	LB	.023	693.6	---	.77	---	.77	1.07
2" x 6" - 16" oc	Inst	SF	Lg	2C	.021	752.0	.76	.86	.17	1.79	2.25
	Inst	SF	Sm	2C	.025	639.2	.84	1.03	.20	2.07	2.60
2" x 6" - 24" oc	Demo	SF	Lg	LB	.015	1070	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.018	909.5	---	.60	---	.60	.84
2" x 6" - 24" oc	Inst	SF	Lg	2C	.016	987.0	.56	.66	.13	1.35	1.69
	Inst	SF	Sm	2C	.019	839.0	.61	.78	.15	1.54	1.94
2" x 8" - 12" oc	Demo	SF	Lg	LB	.024	674.0	---	.80	---	.80	1.12
	Demo	SF	Sm	LB	.028	572.9	---	.93	---	.93	1.31
2" x 8" - 12" oc	Inst	SF	Lg	2C	.026	625.0	1.27	1.07	.21	2.55	3.16
	Inst	SF	Sm	2C	.030	531.3	1.40	1.23	.24	2.87	3.57
2" x 8" - 16" oc	Demo	SF	Lg	LB	.020	802.0	---	.67	---	.67	.93
	Demo	SF	Sm	LB	.023	681.7	---	.77	---	.77	1.07
2" x 8" - 16" oc	Inst	SF	Lg	2C	.022	744.0	.99	.90	.17	2.06	2.57
	Inst	SF	Sm	2C	.025	632.4	1.09	1.03	.21	2.33	2.90
2" x 8" - 24" oc	Demo	SF	Lg	LB	.015	1053	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.018	895.1	---	.60	---	.60	.84
2" x 8" - 24" oc	Inst	SF	Lg	2C	.016	976.0	.71	.66	.13	1.50	1.87
	Inst	SF	Sm	2C	.019	829.6	.79	.78	.16	1.73	2.16

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Cut-up roofs, to 3/8-1/2 pitch											
2" x 4" - 12" oc	Demo	SF	Lg	LB	.027	596.0	---	.90	---	.90	1.26
	Demo	SF	Sm	LB	.032	506.6	---	1.07	---	1.07	1.49
2" x 4" - 12" oc	Inst	SF	Lg	2C	.029	547.0	.75	1.19	.24	2.18	2.77
	Inst	SF	Sm	2C	.034	465.0	.83	1.40	.28	2.51	3.19
2" x 4" - 16" oc	Demo	SF	Lg	LB	.022	712.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	605.2	---	.87	---	.87	1.21
2" x 4" - 16" oc	Inst	SF	Lg	2C	.025	653.0	.60	1.03	.20	1.83	2.33
	Inst	SF	Sm	2C	.029	555.1	.66	1.19	.23	2.08	2.66
2" x 4" - 24" oc	Demo	SF	Lg	LB	.017	932.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.020	792.2	---	.67	---	.67	.93
2" x 4" - 24" oc	Inst	SF	Lg	2C	.019	855.0	.45	.78	.15	1.38	1.76
	Inst	SF	Sm	2C	.022	726.8	.49	.90	.18	1.57	2.01
2" x 6" - 12" oc	Demo	SF	Lg	LB	.026	618.0	---	.87	---	.87	1.21
	Demo	SF	Sm	LB	.030	525.3	---	1.00	---	1.00	1.40
2" x 6" - 12" oc	Inst	SF	Lg	2C	.028	569.0	.96	1.15	.23	2.34	2.94
	Inst	SF	Sm	2C	.033	483.7	1.06	1.35	.27	2.68	3.39
2" x 6" - 16" oc	Demo	SF	Lg	LB	.022	735.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	624.8	---	.87	---	.87	1.21
2" x 6" - 16" oc	Inst	SF	Lg	2C	.024	677.0	.76	.99	.19	1.94	2.44
	Inst	SF	Sm	2C	.028	575.5	.84	1.15	.23	2.22	2.81
2" x 6" - 24" oc	Demo	SF	Lg	LB	.017	963.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.020	818.6	---	.67	---	.67	.93
2" x 6" - 24" oc	Inst	SF	Lg	2C	.018	887.0	.56	.74	.15	1.45	1.83
	Inst	SF	Sm	2C	.021	754.0	.61	.86	.17	1.64	2.08
2" x 8" - 12" oc	Demo	SF	Lg	LB	.026	616.0	---	.87	---	.87	1.21
	Demo	SF	Sm	LB	.031	523.6	---	1.03	---	1.03	1.45
2" x 8" - 12" oc	Inst	SF	Lg	2C	.028	570.0	1.27	1.15	.23	2.65	3.30
	Inst	SF	Sm	2C	.033	484.5	1.40	1.35	.27	3.02	3.78
2" x 8" - 16" oc	Demo	SF	Lg	LB	.022	734.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	623.9	---	.87	---	.87	1.21
2" x 8" - 16" oc	Inst	SF	Lg	2C	.024	679.0	.99	.99	.19	2.17	2.71
	Inst	SF	Sm	2C	.028	577.2	1.09	1.15	.23	2.47	3.09
2" x 8" - 24" oc	Demo	SF	Lg	LB	.017	962.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.020	817.7	---	.67	---	.67	.93
2" x 8" - 24" oc	Inst	SF	Lg	2C	.018	891.0	.71	.74	.15	1.60	2.00
	Inst	SF	Sm	2C	.021	757.4	.79	.86	.17	1.82	2.29

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Roof decking, solid, T&G, dry for plank-and-beam construction

2" x 6" - 12'	Demo	SF	Lg	LB	.025	645.0	---	.83	---	.83	1.17
	Demo	SF	Sm	LB	.029	548.3	---	.97	---	.97	1.35
2" x 6" - 12'	Inst	SF	Lg	2C	.033	480.0	.26	1.35	.27	1.88	2.47
	Inst	SF	Sm	2C	.039	408.0	.29	1.60	.32	2.21	2.90
2" x 8" - 12'	Demo	SF	Lg	LB	.018	900.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.021	765.0	---	.70	---	.70	.98
2" x 8" - 12'	Inst	SF	Lg	2C	.024	670.0	.18	.99	.19	1.36	1.78
	Inst	SF	Sm	2C	.028	569.5	.20	1.15	.23	1.58	2.07

Studs/plates, per LF of stick**Walls or partitions**

2" x 4" - 8' Avg.	Demo	LF	Lg	LB	.016	1031	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.018	876.4	---	.60	---	.60	.84
2" x 4" - 8' Avg.	Inst	LF	Lg	2C	.019	848.0	.59	.78	.15	1.52	1.92
	Inst	LF	Sm	2C	.022	720.8	.66	.90	.18	1.74	2.20
2" x 4" - 10' Avg.	Demo	LF	Lg	LB	.014	1172	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.016	996.2	---	.53	---	.53	.75
2" x 4" - 10' Avg.	Inst	LF	Lg	2C	.017	969.0	.59	.70	.13	1.42	1.79
	Inst	LF	Sm	2C	.019	823.7	.66	.78	.16	1.60	2.01
2" x 4" - 12' Avg.	Demo	LF	Lg	LB	.012	1308	---	.40	---	.40	.56
	Demo	LF	Sm	LB	.014	1112	---	.47	---	.47	.65
2" x 4" - 12' Avg.	Inst	LF	Lg	2C	.015	1082	.59	.62	.12	1.33	1.66
	Inst	LF	Sm	2C	.017	919.7	.66	.70	.14	1.50	1.88
2" x 6" - 8' Avg.	Demo	LF	Lg	LB	.018	904.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.021	768.4	---	.70	---	.70	.98
2" x 6" - 8' Avg.	Inst	LF	Lg	2C	.021	752.0	.78	.86	.17	1.81	2.27
	Inst	LF	Sm	2C	.025	639.2	.86	1.03	.20	2.09	2.63
2" x 6" - 10' Avg.	Demo	LF	Lg	LB	.016	1032	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.018	877.2	---	.60	---	.60	.84
2" x 6" - 10' Avg.	Inst	LF	Lg	2C	.019	861.0	.78	.78	.15	1.71	2.14
	Inst	LF	Sm	2C	.022	731.9	.86	.90	.18	1.94	2.43
2" x 6" - 12' Avg.	Demo	LF	Lg	LB	.014	1142	---	.47	---	.47	.65
	Demo	LF	Sm	LB	.016	970.7	---	.53	---	.53	.75
2" x 6" - 12' Avg.	Inst	LF	Lg	2C	.017	956.0	.78	.70	.14	1.62	2.01
	Inst	LF	Sm	2C	.020	812.6	.86	.82	.16	1.84	2.30

Framing, rough carpentry, studs/plates

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 8" - 8' Avg.	Demo	LF	Lg	LB	.020	802.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	681.7	---	.77	---	.77	1.07
2" x 8" - 8' Avg.	Inst	LF	Lg	2C	.024	673.0	1.06	.99	.19	2.24	2.79
	Inst	LF	Sm	2C	.028	572.1	1.17	1.15	.23	2.55	3.18
2" x 8" - 10' Avg.	Demo	LF	Lg	LB	.017	915.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.021	777.8	---	.70	---	.70	.98
2" x 8" - 10' Avg.	Inst	LF	Lg	2C	.021	771.0	1.06	.86	.17	2.09	2.60
	Inst	LF	Sm	2C	.024	655.4	1.17	.99	.20	2.36	2.93
2" x 8" - 12' Avg.	Demo	LF	Lg	LB	.016	1010	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	858.5	---	.63	---	.63	.89
2" x 8" - 12' Avg.	Inst	LF	Lg	2C	.019	855.0	1.06	.78	.15	1.99	2.46
	Inst	LF	Sm	2C	.022	726.8	1.17	.90	.18	2.25	2.79

Gable ends

2" x 4" - 3' Avg.	Demo	LF	Lg	LB	.024	660.0	---	.80	---	.80	1.12
	Demo	LF	Sm	LB	.029	561.0	---	.97	---	.97	1.35
2" x 4" - 3' Avg.	Inst	LF	Lg	2C	.047	344.0	.62	1.93	.38	2.93	3.79
	Inst	LF	Sm	2C	.055	292.4	.69	2.26	.44	3.39	4.39
2" x 4" - 4' Avg.	Demo	LF	Lg	LB	.020	818.0	---	.67	---	.67	.93
	Demo	LF	Sm	LB	.023	695.3	---	.77	---	.77	1.07
2" x 4" - 4' Avg.	Inst	LF	Lg	2C	.037	431.0	.62	1.52	.30	2.44	3.14
	Inst	LF	Sm	2C	.044	366.4	.69	1.81	.35	2.85	3.67
2" x 4" - 5' Avg.	Demo	LF	Lg	LB	.017	960.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	816.0	---	.67	---	.67	.93
2" x 4" - 5' Avg.	Inst	LF	Lg	2C	.031	511.0	.62	1.27	.25	2.14	2.74
	Inst	LF	Sm	2C	.037	434.4	.69	1.52	.30	2.51	3.22
2" x 4" - 6' Avg.	Demo	LF	Lg	LB	.015	1082	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.017	919.7	---	.57	---	.57	.79
2" x 4" - 6' Avg.	Inst	LF	Lg	2C	.028	580.0	.62	1.15	.22	1.99	2.54
	Inst	LF	Sm	2C	.032	493.0	.69	1.31	.26	2.26	2.89
2" x 6" - 3' Avg.	Demo	LF	Lg	LB	.025	634.0	---	.83	---	.83	1.17
	Demo	LF	Sm	LB	.030	538.9	---	1.00	---	1.00	1.40
2" x 6" - 3' Avg.	Inst	LF	Lg	2C	.047	337.0	.82	1.93	.39	3.14	4.03
	Inst	LF	Sm	2C	.056	286.5	.90	2.30	.45	3.65	4.70
2" x 6" - 4' Avg.	Demo	LF	Lg	LB	.021	778.0	---	.70	---	.70	.98
	Demo	LF	Sm	LB	.024	661.3	---	.80	---	.80	1.12
2" x 6" - 4' Avg.	Inst	LF	Lg	2C	.038	420.0	.82	1.56	.31	2.69	3.44
	Inst	LF	Sm	2C	.045	357.0	.90	1.85	.36	3.11	3.98

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 6" - 5' Avg.	Demo	LF	Lg	LB	.018	906.0	---	.60	---	.60	.84
	Demo	LF	Sm	LB	.021	770.1	---	.70	---	.70	.98
2" x 6" - 5' Avg.	Inst	LF	Lg	2C	.032	495.0	.82	1.31	.26	2.39	3.04
	Inst	LF	Sm	2C	.038	420.8	.90	1.56	.31	2.77	3.53
2" x 6" - 6' Avg.	Demo	LF	Lg	LB	.016	1013	---	.53	---	.53	.75
	Demo	LF	Sm	LB	.019	861.1	---	.63	---	.63	.89
2" x 6" - 6' Avg.	Inst	LF	Lg	2C	.029	560.0	.82	1.19	.23	2.24	2.84
	Inst	LF	Sm	2C	.034	476.0	.90	1.40	.27	2.57	3.26
2" x 8" - 3' Avg.	Demo	LF	Lg	LB	.026	610.0	---	.87	---	.87	1.21
	Demo	LF	Sm	LB	.031	518.5	---	1.03	---	1.03	1.45
2" x 8" - 3' Avg.	Inst	LF	Lg	2C	.048	330.0	1.11	1.97	.39	3.47	4.43
	Inst	LF	Sm	2C	.057	280.5	1.23	2.34	.46	4.03	5.15
2" x 8" - 4' Avg.	Demo	LF	Lg	LB	.022	742.0	---	.73	---	.73	1.03
	Demo	LF	Sm	LB	.025	630.7	---	.83	---	.83	1.17
2" x 8" - 4' Avg.	Inst	LF	Lg	2C	.039	409.0	1.11	1.60	.32	3.03	3.84
	Inst	LF	Sm	2C	.046	347.7	1.23	1.89	.37	3.49	4.43
2" x 8" - 5' Avg.	Demo	LF	Lg	LB	.019	857.0	---	.63	---	.63	.89
	Demo	LF	Sm	LB	.022	728.5	---	.73	---	.73	1.03
2" x 8" - 5' Avg.	Inst	LF	Lg	2C	.033	480.0	1.11	1.35	.27	2.73	3.44
	Inst	LF	Sm	2C	.039	408.0	1.23	1.60	.32	3.15	3.98
2" x 8" - 6' Avg.	Demo	LF	Lg	LB	.017	953.0	---	.57	---	.57	.79
	Demo	LF	Sm	LB	.020	810.1	---	.67	---	.67	.93
2" x 8" - 6' Avg.	Inst	LF	Lg	2C	.030	541.0	1.11	1.23	.24	2.58	3.24
	Inst	LF	Sm	2C	.035	459.9	1.23	1.44	.28	2.95	3.71

Studs/plates, per SF of area

Walls or partitions

2" x 4" - 8', 12" oc	Demo	SF	Lg	LB	.027	601.0	---	.90	---	.90	1.26
	Demo	SF	Sm	LB	.031	510.9	---	1.03	---	1.03	1.45
2" x 4" - 8', 12" oc	Inst	SF	Lg	2C	.032	495.0	1.04	1.31	.26	2.61	3.30
	Inst	SF	Sm	2C	.038	420.8	1.15	1.56	.31	3.02	3.82
2" x 4" - 8', 16" oc	Demo	SF	Lg	LB	.024	674.0	---	.80	---	.80	1.12
	Demo	SF	Sm	LB	.028	572.9	---	.93	---	.93	1.31
2" x 4" - 8', 16" oc	Inst	SF	Lg	2C	.029	555.0	.85	1.19	.23	2.27	2.87
	Inst	SF	Sm	2C	.034	471.8	.95	1.40	.28	2.63	3.33
2" x 4" - 8', 24" oc	Demo	SF	Lg	LB	.020	793.0	---	.67	---	.67	.93
	Demo	SF	Sm	LB	.024	674.1	---	.80	---	.80	1.12
2" x 4" - 8', 24" oc	Inst	SF	Lg	2C	.025	652.0	.66	1.03	.20	1.89	2.40
	Inst	SF	Sm	2C	.029	554.2	.73	1.19	.23	2.15	2.74

Framing, rough carpentry, studs/plates

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 4" - 10', 12" oc	Demo	SF	Lg	LB	.022	723.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	614.6	---	.87	---	.87	1.21
2" x 4" - 10', 12" oc	Inst	SF	Lg	2C	.027	597.0	.99	1.11	.22	2.32	2.91
	Inst	SF	Sm	2C	.032	507.5	1.11	1.31	.26	2.68	3.38
2" x 4" - 10', 16" oc	Demo	SF	Lg	LB	.020	816.0	---	.67	---	.67	.93
	Demo	SF	Sm	LB	.023	693.6	---	.77	---	.77	1.07
2" x 4" - 10', 16" oc	Inst	SF	Lg	2C	.024	674.0	.81	.99	.19	1.99	2.50
	Inst	SF	Sm	2C	.028	572.9	.90	1.15	.23	2.28	2.87
2" x 4" - 10', 24" oc	Demo	SF	Lg	LB	.016	973.0	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	827.1	---	.63	---	.63	.89
2" x 4" - 10', 24" oc	Inst	SF	Lg	2C	.020	803.0	.63	.82	.16	1.61	2.03
	Inst	SF	Sm	2C	.023	682.6	.69	.94	.19	1.82	2.31
2" x 4" - 12', 12" oc	Demo	SF	Lg	LB	.019	826.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.023	702.1	---	.77	---	.77	1.07
2" x 4" - 12', 12" oc	Inst	SF	Lg	2C	.023	683.0	.97	.94	.19	2.10	2.63
	Inst	SF	Sm	2C	.028	580.6	1.08	1.15	.22	2.45	3.07
2" x 4" - 12', 16" oc	Demo	SF	Lg	LB	.017	941.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.020	799.9	---	.67	---	.67	.93
2" x 4" - 12', 16" oc	Inst	SF	Lg	2C	.021	778.0	.78	.86	.17	1.81	2.27
	Inst	SF	Sm	2C	.024	661.3	.86	.99	.20	2.05	2.57
2" x 4" - 12', 24" oc	Demo	SF	Lg	LB	.014	1142	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	970.7	---	.53	---	.53	.75
2" x 4" - 12', 24" oc	Inst	SF	Lg	2C	.017	944.0	.59	.70	.14	1.43	1.80
	Inst	SF	Sm	2C	.020	802.4	.66	.82	.16	1.64	2.07
2" x 6" - 8', 12" oc	Demo	SF	Lg	LB	.030	528.0	---	1.00	---	1.00	1.40
	Demo	SF	Sm	LB	.036	448.8	---	1.20	---	1.20	1.68
2" x 6" - 8', 12" oc	Inst	SF	Lg	2C	.036	439.0	1.37	1.48	.30	3.15	3.94
	Inst	SF	Sm	2C	.043	373.2	1.51	1.77	.35	3.63	4.56
2" x 6" - 8', 16" oc	Demo	SF	Lg	LB	.027	591.0	---	.90	---	.90	1.26
	Demo	SF	Sm	LB	.032	502.4	---	1.07	---	1.07	1.49
2" x 6" - 8', 16" oc	Inst	SF	Lg	2C	.033	491.0	1.12	1.35	.26	2.73	3.44
	Inst	SF	Sm	2C	.038	417.4	1.23	1.56	.31	3.10	3.91
2" x 6" - 8', 24" oc	Demo	SF	Lg	LB	.023	696.0	---	.77	---	.77	1.07
	Demo	SF	Sm	LB	.027	591.6	---	.90	---	.90	1.26
2" x 6" - 8', 24" oc	Inst	SF	Lg	2C	.028	579.0	.87	1.15	.22	2.24	2.83
	Inst	SF	Sm	2C	.033	492.2	.95	1.35	.26	2.56	3.25

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 6" - 10', 12" oc	Demo	SF	Lg	LB	.025	632.0	---	.83	---	.83	1.17
	Demo	SF	Sm	LB	.030	537.2	---	1.00	---	1.00	1.40
2" x 6" - 10', 12" oc	Inst	SF	Lg	2C	.030	528.0	1.31	1.23	.25	2.79	3.48
	Inst	SF	Sm	2C	.036	448.8	1.44	1.48	.29	3.21	4.02
2" x 6" - 10', 16" oc	Demo	SF	Lg	LB	.022	714.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	606.9	---	.87	---	.87	1.21
2" x 6" - 10', 16" oc	Inst	SF	Lg	2C	.027	596.0	1.06	1.11	.22	2.39	2.99
	Inst	SF	Sm	2C	.032	506.6	1.17	1.31	.26	2.74	3.44
2" x 6" - 10', 24" oc	Demo	SF	Lg	LB	.019	852.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	724.2	---	.73	---	.73	1.03
2" x 6" - 10', 24" oc	Inst	SF	Lg	2C	.023	711.0	.81	.94	.18	1.93	2.43
	Inst	SF	Sm	2C	.026	604.4	.89	1.07	.22	2.18	2.74
2" x 6" - 12', 12" oc	Demo	SF	Lg	LB	.022	721.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	612.9	---	.87	---	.87	1.21
2" x 6" - 12', 12" oc	Inst	SF	Lg	2C	.027	603.0	1.27	1.11	.22	2.60	3.23
	Inst	SF	Sm	2C	.031	512.6	1.40	1.27	.25	2.92	3.64
2" x 6" - 12', 16" oc	Demo	SF	Lg	LB	.019	822.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.023	698.7	---	.77	---	.77	1.07
2" x 6" - 12', 16" oc	Inst	SF	Lg	2C	.023	688.0	1.02	.94	.19	2.15	2.69
	Inst	SF	Sm	2C	.027	584.8	1.12	1.11	.22	2.45	3.06
2" x 6" - 12', 24" oc	Demo	SF	Lg	LB	.016	996.0	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.019	846.6	---	.63	---	.63	.89
2" x 6" - 12', 24" oc	Inst	SF	Lg	2C	.019	834.0	.77	.78	.16	1.71	2.14
	Inst	SF	Sm	2C	.023	708.9	.85	.94	.18	1.97	2.48
2" x 8" - 8', 12" oc	Demo	SF	Lg	LB	.034	468.0	---	1.13	---	1.13	1.59
	Demo	SF	Sm	LB	.040	397.8	---	1.33	---	1.33	1.87
2" x 8" - 8', 12" oc	Inst	SF	Lg	2C	.041	392.0	1.85	1.68	.33	3.86	4.81
	Inst	SF	Sm	2C	.048	333.2	2.05	1.97	.39	4.41	5.51
2" x 8" - 8', 16" oc	Demo	SF	Lg	LB	.030	525.0	---	1.00	---	1.00	1.40
	Demo	SF	Sm	LB	.036	446.3	---	1.20	---	1.20	1.68
2" x 8" - 8', 16" oc	Inst	SF	Lg	2C	.036	441.0	1.50	1.48	.29	3.27	4.08
	Inst	SF	Sm	2C	.043	374.9	1.66	1.77	.35	3.78	4.73
2" x 8" - 8', 24" oc	Demo	SF	Lg	LB	.026	618.0	---	.87	---	.87	1.21
	Demo	SF	Sm	LB	.030	525.3	---	1.00	---	1.00	1.40
2" x 8" - 8', 24" oc	Inst	SF	Lg	2C	.031	518.0	1.16	1.27	.25	2.68	3.37
	Inst	SF	Sm	2C	.036	440.3	1.28	1.48	.30	3.06	3.84

Framing, rough carpentry, studs/plates

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
2" x 8" - 10', 12" oc	Demo	SF	Lg	LB	.029	560.0	---	.97	---	.97	1.35
	Demo	SF	Sm	LB	.034	476.0	---	1.13	---	1.13	1.59
2" x 8" - 10', 12" oc	Inst	SF	Lg	2C	.034	472.0	1.77	1.40	.28	3.45	4.27
	Inst	SF	Sm	2C	.040	401.2	1.96	1.64	.32	3.92	4.87
2" x 8" - 10', 16" oc	Demo	SF	Lg	LB	.025	633.0	---	.83	---	.83	1.17
	Demo	SF	Sm	LB	.030	538.1	---	1.00	---	1.00	1.40
2" x 8" - 10', 16" oc	Inst	SF	Lg	2C	.030	533.0	1.42	1.23	.24	2.89	3.60
	Inst	SF	Sm	2C	.035	453.1	1.58	1.44	.29	3.31	4.12
2" x 8" - 10', 24" oc	Demo	SF	Lg	LB	.021	754.0	---	.70	---	.70	.98
	Demo	SF	Sm	LB	.025	640.9	---	.83	---	.83	1.17
2" x 8" - 10', 24" oc	Inst	SF	Lg	2C	.025	636.0	1.08	1.03	.20	2.31	2.88
	Inst	SF	Sm	2C	.030	540.6	1.20	1.23	.24	2.67	3.34
2" x 8" - 12', 12" oc	Demo	SF	Lg	LB	.025	638.0	---	.83	---	.83	1.17
	Demo	SF	Sm	LB	.030	542.3	---	1.00	---	1.00	1.40
2" x 8" - 12', 12" oc	Inst	SF	Lg	2C	.030	540.0	1.72	1.23	.24	3.19	3.94
	Inst	SF	Sm	2C	.035	459.0	1.90	1.44	.28	3.62	4.48
2" x 8" - 12', 16" oc	Demo	SF	Lg	LB	.022	728.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	618.8	---	.87	---	.87	1.21
2" x 8" - 12', 16" oc	Inst	SF	Lg	2C	.026	615.0	1.38	1.07	.21	2.66	3.29
	Inst	SF	Sm	2C	.031	522.8	1.53	1.27	.25	3.05	3.79
2" x 8" - 12', 24" oc	Demo	SF	Lg	LB	.018	881.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.021	748.9	---	.70	---	.70	.98
2" x 8" - 12', 24" oc	Inst	SF	Lg	2C	.021	745.0	1.03	.86	.17	2.06	2.56
	Inst	SF	Sm	2C	.025	633.3	1.14	1.03	.21	2.38	2.96

Gable ends

2" x 4" - 3' Avg., 12" oc	Demo	SF	Lg	LB	.074	216.0	---	2.46	---	2.46	3.45
	Demo	SF	Sm	LB	.087	183.6	---	2.90	---	2.90	4.06
2" x 4" - 3' Avg., 12" oc	Inst	SF	Lg	2C	.142	113.0	1.87	5.83	1.15	8.85	11.50
	Inst	SF	Sm	2C	.167	96.05	2.08	6.86	1.35	10.29	13.30
2" x 4" - 3' Avg., 16" oc	Demo	SF	Lg	LB	.069	231.0	---	2.30	---	2.30	3.22
	Demo	SF	Sm	LB	.081	196.4	---	2.70	---	2.70	3.78
2" x 4" - 3' Avg., 16" oc	Inst	SF	Lg	2C	.132	121.0	1.76	5.42	1.07	8.25	10.70
	Inst	SF	Sm	2C	.156	102.9	1.96	6.41	1.26	9.63	12.50
2" x 4" - 3' Avg., 24" oc	Demo	SF	Lg	LB	.063	253.0	---	2.10	---	2.10	2.94
	Demo	SF	Sm	LB	.074	215.1	---	2.46	---	2.46	3.45
2" x 4" - 3' Avg., 24" oc	Inst	SF	Lg	2C	.121	132.0	1.62	4.97	.98	7.57	9.80
	Inst	SF	Sm	2C	.143	112.2	1.80	5.87	1.16	8.83	11.50

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P
2" x 4" - 4' Avg., 12" oc	Demo	SF	Lg	LB	.050	323.0	---	1.67	---	1.67	2.33
	Demo	SF	Sm	LB	.058	274.6	---	1.93	---	1.93	2.70
2" x 4" - 4' Avg., 12" oc	Inst	SF	Lg	2C	.094	170.0	1.57	3.86	.76	6.19	7.97
	Inst	SF	Sm	2C	.111	144.5	1.74	4.56	.90	7.20	9.28
2" x 4" - 4' Avg., 16" oc	Demo	SF	Lg	LB	.046	348.0	---	1.53	---	1.53	2.14
	Demo	SF	Sm	LB	.054	295.8	---	1.80	---	1.80	2.52
2" x 4" - 4' Avg., 16" oc	Inst	SF	Lg	2C	.087	183.0	1.46	3.57	.71	5.74	7.39
	Inst	SF	Sm	2C	.103	155.6	1.62	4.23	.84	6.69	8.62
2" x 4" - 4' Avg., 24" oc	Demo	SF	Lg	LB	.042	384.0	---	1.40	---	1.40	1.96
	Demo	SF	Sm	LB	.049	326.4	---	1.63	---	1.63	2.28
2" x 4" - 4' Avg., 24" oc	Inst	SF	Lg	2C	.079	202.0	1.32	3.24	.64	5.20	6.70
	Inst	SF	Sm	2C	.093	171.7	1.47	3.82	.76	6.05	7.80
2" x 4" - 5' Avg., 12" oc	Demo	SF	Lg	LB	.039	412.0	---	1.30	---	1.30	1.82
	Demo	SF	Sm	LB	.046	350.2	---	1.53	---	1.53	2.14
2" x 4" - 5' Avg., 12" oc	Inst	SF	Lg	2C	.073	219.0	1.44	3.00	.59	5.03	6.44
	Inst	SF	Sm	2C	.086	186.2	1.60	3.53	.70	5.83	7.48
2" x 4" - 5' Avg., 16" oc	Demo	SF	Lg	LB	.035	454.0	---	1.17	---	1.17	1.63
	Demo	SF	Sm	LB	.041	385.9	---	1.37	---	1.37	1.91
2" x 4" - 5' Avg., 16" oc	Inst	SF	Lg	2C	.066	241.0	1.32	2.71	.54	4.57	5.85
	Inst	SF	Sm	2C	.078	204.9	1.47	3.20	.63	5.30	6.80
2" x 4" - 5' Avg., 24" oc	Demo	SF	Lg	LB	.031	514.0	---	1.03	---	1.03	1.45
	Demo	SF	Sm	LB	.037	436.9	---	1.23	---	1.23	1.73
2" x 4" - 5' Avg., 24" oc	Inst	SF	Lg	2C	.059	273.0	1.18	2.42	.48	4.08	5.23
	Inst	SF	Sm	2C	.069	232.1	1.31	2.83	.56	4.70	6.03
2" x 4" - 6' Avg., 12" oc	Demo	SF	Lg	LB	.032	501.0	---	1.07	---	1.07	1.49
	Demo	SF	Sm	LB	.038	425.9	---	1.27	---	1.27	1.77
2" x 4" - 6' Avg., 12" oc	Inst	SF	Lg	2C	.059	269.0	1.35	2.42	.48	4.25	5.42
	Inst	SF	Sm	2C	.070	228.7	1.50	2.87	.57	4.94	6.32
2" x 4" - 6' Avg., 16" oc	Demo	SF	Lg	LB	.028	564.0	---	.93	---	.93	1.31
	Demo	SF	Sm	LB	.033	479.4	---	1.10	---	1.10	1.54
2" x 4" - 6' Avg., 16" oc	Inst	SF	Lg	2C	.053	302.0	1.20	2.18	.43	3.81	4.86
	Inst	SF	Sm	2C	.062	256.7	1.33	2.55	.51	4.39	5.60
2" x 4" - 6' Avg., 24" oc	Demo	SF	Lg	LB	.025	650.0	---	.83	---	.83	1.17
	Demo	SF	Sm	LB	.029	552.5	---	.97	---	.97	1.35
2" x 4" - 6' Avg., 24" oc	Inst	SF	Lg	2C	.046	349.0	1.06	1.89	.37	3.32	4.23
	Inst	SF	Sm	2C	.054	296.7	1.17	2.22	.44	3.83	4.89

Framing, rough carpentry, studs/plates

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 6" - 3' Avg., 12" oc	Demo	SF	Lg	LB	.077	208.0	---	2.56	---	2.56	3.59
	Demo	SF	Sm	LB	.090	176.8	---	3.00	---	3.00	4.20
2" x 6" - 3' Avg., 12" oc	Inst	SF	Lg	2C	.145	110.0	2.50	5.95	1.18	9.63	12.40
	Inst	SF	Sm	2C	.171	93.50	2.75	7.02	1.39	11.16	14.40
2" x 6" - 3' Avg., 16" oc	Demo	SF	Lg	LB	.072	222.0	---	2.40	---	2.40	3.36
	Demo	SF	Sm	LB	.085	188.7	---	2.83	---	2.83	3.96
2" x 6" - 3' Avg., 16" oc	Inst	SF	Lg	2C	.136	118.0	2.35	5.58	1.10	9.03	11.60
	Inst	SF	Sm	2C	.160	100.3	2.58	6.57	1.30	10.45	13.50
2" x 6" - 3' Avg., 24" oc	Demo	SF	Lg	LB	.066	243.0	---	2.20	---	2.20	3.08
	Demo	SF	Sm	LB	.077	206.6	---	2.56	---	2.56	3.59
2" x 6" - 3' Avg., 24" oc	Inst	SF	Lg	2C	.124	129.0	2.16	5.09	1.01	8.26	10.60
	Inst	SF	Sm	2C	.146	109.7	2.37	5.99	1.19	9.55	12.30
2" x 6" - 4' Avg., 12" oc	Demo	SF	Lg	LB	.052	307.0	---	1.73	---	1.73	2.42
	Demo	SF	Sm	LB	.061	261.0	---	2.03	---	2.03	2.84
2" x 6" - 4' Avg., 12" oc	Inst	SF	Lg	2C	.096	166.0	2.09	3.94	.78	6.81	8.70
	Inst	SF	Sm	2C	.113	141.1	2.29	4.64	.92	7.85	10.10
2" x 6" - 4' Avg., 16" oc	Demo	SF	Lg	LB	.048	331.0	---	1.60	---	1.60	2.24
	Demo	SF	Sm	LB	.057	281.4	---	1.90	---	1.90	2.66
2" x 6" - 4' Avg., 16" oc	Inst	SF	Lg	2C	.089	179.0	1.94	3.65	.73	6.32	8.08
	Inst	SF	Sm	2C	.105	152.2	2.13	4.31	.85	7.29	9.33
2" x 6" - 4' Avg., 24" oc	Demo	SF	Lg	LB	.044	366.0	---	1.47	---	1.47	2.05
	Demo	SF	Sm	LB	.051	311.1	---	1.70	---	1.70	2.38
2" x 6" - 4' Avg., 24" oc	Inst	SF	Lg	2C	.081	197.0	1.76	3.33	.66	5.75	7.34
	Inst	SF	Sm	2C	.096	167.5	1.93	3.94	.78	6.65	8.52
2" x 6" - 5' Avg., 12" oc	Demo	SF	Lg	LB	.041	389.0	---	1.37	---	1.37	1.91
	Demo	SF	Sm	LB	.048	330.7	---	1.60	---	1.60	2.24
2" x 6" - 5' Avg., 12" oc	Inst	SF	Lg	2C	.075	212.0	1.92	3.08	.61	5.61	7.13
	Inst	SF	Sm	2C	.089	180.2	2.10	3.65	.72	6.47	8.25
2" x 6" - 5' Avg., 16" oc	Demo	SF	Lg	LB	.037	428.0	---	1.23	---	1.23	1.73
	Demo	SF	Sm	LB	.044	363.8	---	1.47	---	1.47	2.05
2" x 6" - 5' Avg., 16" oc	Inst	SF	Lg	2C	.068	234.0	1.76	2.79	.56	5.11	6.49
	Inst	SF	Sm	2C	.080	198.9	1.93	3.28	.65	5.86	7.47
2" x 6" - 5' Avg., 24" oc	Demo	SF	Lg	LB	.033	484.0	---	1.10	---	1.10	1.54
	Demo	SF	Sm	LB	.039	411.4	---	1.30	---	1.30	1.82
2" x 6" - 5' Avg., 24" oc	Inst	SF	Lg	2C	.060	265.0	1.56	2.46	.49	4.51	5.73
	Inst	SF	Sm	2C	.071	225.3	1.71	2.92	.58	5.21	6.63

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
2" x 6" - 6' Avg., 12" oc	Demo	SF	Lg	LB	.034	469.0	---	1.13	---	1.13	1.59
	Demo	SF	Sm	LB	.040	398.7	---	1.33	---	1.33	1.87
2" x 6" - 6' Avg., 12" oc	Inst	SF	Lg	2C	.062	259.0	1.79	2.55	.50	4.84	6.12
	Inst	SF	Sm	2C	.073	220.2	1.96	3.00	.59	5.55	7.04
2" x 6" - 6' Avg., 16" oc	Demo	SF	Lg	LB	.030	528.0	---	1.00	---	1.00	1.40
	Demo	SF	Sm	LB	.036	448.8	---	1.20	---	1.20	1.68
2" x 6" - 6' Avg., 16" oc	Inst	SF	Lg	2C	.055	292.0	1.59	2.26	.45	4.30	5.44
	Inst	SF	Sm	2C	.064	248.2	1.75	2.63	.52	4.90	6.21
2" x 6" - 6' Avg., 24" oc	Demo	SF	Lg	LB	.026	609.0	---	.87	---	.87	1.21
	Demo	SF	Sm	LB	.031	517.7	---	1.03	---	1.03	1.45
2" x 6" - 6' Avg., 24" oc	Inst	SF	Lg	2C	.048	336.0	1.39	1.97	.39	3.75	4.75
	Inst	SF	Sm	2C	.056	285.6	1.53	2.30	.46	4.29	5.44
2" x 8" - 3' Avg., 12" oc	Demo	SF	Lg	LB	.080	200.0	---	2.66	---	2.66	3.73
	Demo	SF	Sm	LB	.094	170.0	---	3.13	---	3.13	4.38
2" x 8" - 3' Avg., 12" oc	Inst	SF	Lg	2C	.148	108.0	3.39	6.08	1.20	10.67	13.60
	Inst	SF	Sm	2C	.174	91.80	3.76	7.14	1.42	12.32	15.80
2" x 8" - 3' Avg., 16" oc	Demo	SF	Lg	LB	.075	213.0	---	2.50	---	2.50	3.50
	Demo	SF	Sm	LB	.088	181.1	---	2.93	---	2.93	4.10
2" x 8" - 3' Avg., 16" oc	Inst	SF	Lg	2C	.138	116.0	3.19	5.67	1.12	9.98	12.70
	Inst	SF	Sm	2C	.162	98.60	3.53	6.65	1.32	11.50	14.70
2" x 8" - 3' Avg., 24" oc	Demo	SF	Lg	LB	.068	234.0	---	2.27	---	2.27	3.17
	Demo	SF	Sm	LB	.080	198.9	---	2.66	---	2.66	3.73
2" x 8" - 3' Avg., 24" oc	Inst	SF	Lg	2C	.126	127.0	2.92	5.17	1.02	9.11	11.60
	Inst	SF	Sm	2C	.148	108.0	3.24	6.08	1.20	10.52	13.40
2" x 8" - 4' Avg., 12" oc	Demo	SF	Lg	LB	.055	293.0	---	1.83	---	1.83	2.56
	Demo	SF	Sm	LB	.064	249.1	---	2.13	---	2.13	2.98
2" x 8" - 4' Avg., 12" oc	Inst	SF	Lg	2C	.099	161.0	2.83	4.06	.81	7.70	9.76
	Inst	SF	Sm	2C	.117	136.9	3.14	4.80	.95	8.89	11.30
2" x 8" - 4' Avg., 16" oc	Demo	SF	Lg	LB	.051	316.0	---	1.70	---	1.70	2.38
	Demo	SF	Sm	LB	.060	268.6	---	2.00	---	2.00	2.80
2" x 8" - 4' Avg., 16" oc	Inst	SF	Lg	2C	.092	174.0	2.63	3.78	.75	7.16	9.06
	Inst	SF	Sm	2C	.108	147.9	2.91	4.43	.88	8.22	10.40
2" x 8" - 4' Avg., 24" oc	Demo	SF	Lg	LB	.046	349.0	---	1.53	---	1.53	2.14
	Demo	SF	Sm	LB	.054	296.7	---	1.80	---	1.80	2.52
2" x 8" - 4' Avg., 24" oc	Inst	SF	Lg	2C	.083	192.0	2.37	3.41	.68	6.46	8.18
	Inst	SF	Sm	2C	.098	163.2	2.63	4.02	.80	7.45	9.46

Framing, rough carpentry, studs/plates

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
2" x 8" - 5' Avg., 12" oc	Demo	SF	Lg	LB	.043	368.0	---	1.43	---	1.43	2.01
	Demo	SF	Sm	LB	.051	312.8	---	1.70	---	1.70	2.38
2" x 8" - 5' Avg., 12" oc	Inst	SF	Lg	2C	.078	206.0	2.59	3.20	.63	6.42	8.09
	Inst	SF	Sm	2C	.091	175.1	2.87	3.74	.74	7.35	9.27
2" x 8" - 5' Avg., 16" oc	Demo	SF	Lg	LB	.040	405.0	---	1.33	---	1.33	1.87
	Demo	SF	Sm	LB	.046	344.3	---	1.53	---	1.53	2.14
2" x 8" - 5' Avg., 16" oc	Inst	SF	Lg	2C	.070	227.0	2.33	2.87	.57	5.77	7.27
	Inst	SF	Sm	2C	.083	193.0	2.58	3.41	.67	6.66	8.41
2" x 8" - 5' Avg., 24" oc	Demo	SF	Lg	LB	.035	458.0	---	1.17	---	1.17	1.63
	Demo	SF	Sm	LB	.041	389.3	---	1.37	---	1.37	1.91
2" x 8" - 5' Avg., 24" oc	Inst	SF	Lg	2C	.062	257.0	2.06	2.55	.51	5.12	6.44
	Inst	SF	Sm	2C	.073	218.5	2.28	3.00	.59	5.87	7.41
2" x 8" - 6' Avg., 12" oc	Demo	SF	Lg	LB	.036	441.0	---	1.20	---	1.20	1.68
	Demo	SF	Sm	LB	.043	374.9	---	1.43	---	1.43	2.01
2" x 8" - 6' Avg., 12" oc	Inst	SF	Lg	2C	.064	251.0	2.42	2.63	.52	5.57	6.98
	Inst	SF	Sm	2C	.075	213.4	2.68	3.08	.61	6.37	8.00
2" x 8" - 6' Avg., 16" oc	Demo	SF	Lg	LB	.032	497.0	---	1.07	---	1.07	1.49
	Demo	SF	Sm	LB	.038	422.5	---	1.27	---	1.27	1.77
2" x 8" - 6' Avg., 16" oc	Inst	SF	Lg	2C	.057	282.0	2.15	2.34	.46	4.95	6.21
	Inst	SF	Sm	2C	.067	239.7	2.38	2.75	.54	5.67	7.13
2" x 8" - 6' Avg., 24" oc	Demo	SF	Lg	LB	.028	573.0	---	.93	---	.93	1.31
	Demo	SF	Sm	LB	.033	487.1	---	1.10	---	1.10	1.54
2" x 8" - 6' Avg., 24" oc	Inst	SF	Lg	2C	.049	325.0	1.88	2.01	.40	4.29	5.38
	Inst	SF	Sm	2C	.058	276.3	2.08	2.38	.47	4.93	6.20

Studs/plates, per LF of wall or partition

Walls or partitions

2" x 4" - 8', 12" oc	Demo	LF	Lg	LB	.213	75.00	---	7.10	---	7.10	9.93
	Demo	LF	Sm	LB	.251	63.75	---	8.36	---	8.36	11.70
2" x 4" - 8', 12" oc	Inst	LF	Lg	2C	.258	62.00	7.74	10.60	2.10	20.44	25.80
	Inst	LF	Sm	2C	.304	52.70	8.61	12.50	2.47	23.58	29.90
2" x 4" - 10', 12" oc	Demo	LF	Lg	LB	.222	72.00	---	7.39	---	7.39	10.40
	Demo	LF	Sm	LB	.261	61.20	---	8.69	---	8.69	12.20
2" x 4" - 10', 12" oc	Inst	LF	Lg	2C	.271	59.00	9.24	11.10	2.20	22.54	28.40
	Inst	LF	Sm	2C	.319	50.15	10.30	13.10	2.59	25.99	32.70
2" x 4" - 12', 12" oc	Demo	LF	Lg	LB	.232	69.00	---	7.73	---	7.73	10.80
	Demo	LF	Sm	LB	.273	58.65	---	9.09	---	9.09	12.70
2" x 4" - 12', 12" oc	Inst	LF	Lg	2C	.281	57.00	10.80	11.50	2.28	24.58	30.80
	Inst	LF	Sm	2C	.330	48.45	12.00	13.60	2.68	28.28	35.40

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 4" - 8', 16" oc	Demo	LF	Lg	LB	.188	85.00	---	6.26	---	6.26	8.77
	Demo	LF	Sm	LB	.221	72.25	---	7.36	---	7.36	10.30
2" x 4" - 8', 16" oc	Inst	LF	Lg	2C	.229	70.00	6.26	9.40	1.86	17.52	22.20
	Inst	LF	Sm	2C	.269	59.50	6.97	11.10	2.18	20.25	25.70
2" x 4" - 10', 16" oc	Demo	LF	Lg	LB	.198	81.00	---	6.60	---	6.60	9.23
	Demo	LF	Sm	LB	.232	68.85	---	7.73	---	7.73	10.80
2" x 4" - 10', 16" oc	Inst	LF	Lg	2C	.239	67.00	7.39	9.81	1.94	19.14	24.20
	Inst	LF	Sm	2C	.281	56.95	8.22	11.50	2.28	22.00	27.90
2" x 4" - 12', 16" oc	Demo	LF	Lg	LB	.205	78.00	---	6.83	---	6.83	9.56
	Demo	LF	Sm	LB	.241	66.30	---	8.03	---	8.03	11.20
2" x 4" - 12', 16" oc	Inst	LF	Lg	2C	.246	65.00	8.45	10.10	2.00	20.55	25.90
	Inst	LF	Sm	2C	.290	55.25	9.39	11.90	2.35	23.64	29.80
2" x 4" - 8', 24" oc	Demo	LF	Lg	LB	.162	99.00	---	5.40	---	5.40	7.55
	Demo	LF	Sm	LB	.190	84.15	---	6.33	---	6.33	8.86
2" x 4" - 8', 24" oc	Inst	LF	Lg	2C	.198	81.00	4.72	8.13	1.60	14.45	18.40
	Inst	LF	Sm	2C	.232	68.85	5.25	9.53	1.89	16.67	21.30
2" x 4" - 10', 24" oc	Demo	LF	Lg	LB	.165	97.00	---	5.50	---	5.50	7.69
	Demo	LF	Sm	LB	.194	82.45	---	6.46	---	6.46	9.05
2" x 4" - 10', 24" oc	Inst	LF	Lg	2C	.200	80.00	5.54	8.21	1.63	15.38	19.50
	Inst	LF	Sm	2C	.235	68.00	6.16	9.65	1.91	17.72	22.50
2" x 4" - 12', 24" oc	Demo	LF	Lg	LB	.168	95.00	---	5.60	---	5.60	7.83
	Demo	LF	Sm	LB	.198	80.75	---	6.60	---	6.60	9.23
2" x 4" - 12', 24" oc	Inst	LF	Lg	2C	.203	79.00	6.23	8.34	1.65	16.22	20.50
	Inst	LF	Sm	2C	.238	67.15	6.93	9.77	1.94	18.64	23.60
2" x 6" - 8', 12" oc	Demo	LF	Lg	LB	.242	66.00	---	8.06	---	8.06	11.30
	Demo	LF	Sm	LB	.285	56.10	---	9.49	---	9.49	13.30
2" x 6" - 8', 12" oc	Inst	LF	Lg	2C	.291	55.00	10.40	12.00	2.36	24.76	31.10
	Inst	LF	Sm	2C	.342	46.75	11.40	14.00	2.78	28.18	35.60
2" x 6" - 10', 12" oc	Demo	LF	Lg	LB	.254	63.00	---	8.46	---	8.46	11.80
	Demo	LF	Sm	LB	.299	53.55	---	9.96	---	9.96	13.90
2" x 6" - 10', 12" oc	Inst	LF	Lg	2C	.302	53.00	12.40	12.40	2.45	27.25	34.10
	Inst	LF	Sm	2C	.355	45.05	13.60	14.60	2.89	31.09	39.00
2" x 6" - 12', 12" oc	Demo	LF	Lg	LB	.267	60.00	---	8.89	---	8.89	12.50
	Demo	LF	Sm	LB	.314	51.00	---	10.50	---	10.50	14.60
2" x 6" - 12', 12" oc	Inst	LF	Lg	2C	.320	50.00	14.40	13.10	2.60	30.10	37.60
	Inst	LF	Sm	2C	.376	42.50	15.80	15.40	3.06	34.26	42.90
2" x 6" - 8', 16" oc	Demo	LF	Lg	LB	.216	74.00	---	7.19	---	7.19	10.10
	Demo	LF	Sm	LB	.254	62.90	---	8.46	---	8.46	11.80
2" x 6" - 8', 16" oc	Inst	LF	Lg	2C	.262	61.00	8.43	10.80	2.13	21.36	26.90
	Inst	LF	Sm	2C	.309	51.85	9.24	12.70	2.51	24.45	30.90

Framing, rough carpentry, studs/plates

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P
2" x 6" - 10', 16" oc	Demo	LF	Lg	LB	.225	71.00	---	7.49	---	7.49	10.50
	Demo	LF	Sm	LB	.265	60.35	---	8.83	---	8.83	12.40
2" x 6" - 10', 16" oc	Inst	LF	Lg	2C	.271	59.00	9.91	11.10	2.20	23.21	29.20
	Inst	LF	Sm	2C	.319	50.15	10.90	13.10	2.59	26.59	33.40
2" x 6" - 12', 16" oc	Demo	LF	Lg	LB	.232	69.00	---	7.73	---	7.73	10.80
	Demo	LF	Sm	LB	.273	58.65	---	9.09	---	9.09	12.70
2" x 6" - 12', 16" oc	Inst	LF	Lg	2C	.276	58.00	11.40	11.30	2.24	24.94	31.20
	Inst	LF	Sm	2C	.325	49.30	12.50	13.30	2.64	28.44	35.70
2" x 6" - 8', 24" oc	Demo	LF	Lg	LB	.184	87.00	---	6.13	---	6.13	8.58
	Demo	LF	Sm	LB	.216	73.95	---	7.19	---	7.19	10.10
2" x 6" - 8', 24" oc	Inst	LF	Lg	2C	.222	72.00	6.37	9.12	1.81	17.30	21.90
	Inst	LF	Sm	2C	.261	61.20	6.99	10.70	2.12	19.81	25.20
2" x 6" - 10', 24" oc	Demo	LF	Lg	LB	.188	85.00	---	6.26	---	6.26	8.77
	Demo	LF	Sm	LB	.221	72.25	---	7.36	---	7.36	10.30
2" x 6" - 10', 24" oc	Inst	LF	Lg	2C	.225	71.00	7.41	9.24	1.83	18.48	23.30
	Inst	LF	Sm	2C	.265	60.35	8.13	10.90	2.15	21.18	26.70
2" x 6" - 12', 24" oc	Demo	LF	Lg	LB	.190	84.00	---	6.33	---	6.33	8.86
	Demo	LF	Sm	LB	.224	71.40	---	7.46	---	7.46	10.50
2" x 6" - 12', 24" oc	Inst	LF	Lg	2C	.229	70.00	8.43	9.40	1.86	19.69	24.70
	Inst	LF	Sm	2C	.269	59.50	9.24	11.10	2.18	22.52	28.30
2" x 8" - 8', 12" oc	Demo	LF	Lg	LB	.271	59.00	---	9.03	---	9.03	12.60
	Demo	LF	Sm	LB	.319	50.15	---	10.60	---	10.60	14.90
2" x 8" - 8', 12" oc	Inst	LF	Lg	2C	.327	49.00	14.30	13.40	2.65	30.35	37.80
	Inst	LF	Sm	2C	.384	41.65	15.80	15.80	3.12	34.72	43.40
2" x 8" - 10', 12" oc	Demo	LF	Lg	LB	.286	56.00	---	9.53	---	9.53	13.30
	Demo	LF	Sm	LB	.336	47.60	---	11.20	---	11.20	15.70
2" x 8" - 10', 12" oc	Inst	LF	Lg	2C	.340	47.00	16.90	14.00	2.77	33.67	41.80
	Inst	LF	Sm	2C	.401	39.95	18.80	16.50	3.25	38.55	47.90
2" x 8" - 12', 12" oc	Demo	LF	Lg	LB	.302	53.00	---	10.10	---	10.10	14.10
	Demo	LF	Sm	LB	.355	45.05	---	11.80	---	11.80	16.60
2" x 8" - 12', 12" oc	Inst	LF	Lg	2C	.356	45.00	19.80	14.60	2.89	37.29	46.10
	Inst	LF	Sm	2C	.418	38.25	21.90	17.20	3.40	42.50	52.60
2" x 8" - 8', 16" oc	Demo	LF	Lg	LB	.242	66.00	---	8.06	---	8.06	11.30
	Demo	LF	Sm	LB	.285	56.10	---	9.49	---	9.49	13.30
2" x 8" - 8', 16" oc	Inst	LF	Lg	2C	.291	55.00	11.50	12.00	2.36	25.86	32.30
	Inst	LF	Sm	2C	.342	46.75	12.70	14.00	2.78	29.48	37.00
2" x 8" - 10', 16" oc	Demo	LF	Lg	LB	.254	63.00	---	8.46	---	8.46	11.80
	Demo	LF	Sm	LB	.299	53.55	---	9.96	---	9.96	13.90
2" x 8" - 10', 16" oc	Inst	LF	Lg	2C	.302	53.00	13.50	12.40	2.45	28.35	35.40
	Inst	LF	Sm	2C	.355	45.05	15.00	14.60	2.89	32.49	40.50
2" x 8" - 12', 16" oc	Demo	LF	Lg	LB	.262	61.00	---	8.73	---	8.73	12.20
	Demo	LF	Sm	LB	.309	51.85	---	10.30	---	10.30	14.40
2" x 8" - 12', 16" oc	Inst	LF	Lg	2C	.308	52.00	15.70	12.70	2.50	30.90	38.20
	Inst	LF	Sm	2C	.362	44.20	17.30	14.90	2.94	35.14	43.70

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
2" x 8" - 8', 24" oc	Demo	LF	Lg	LB	.205	78.00	---	6.83	---	6.83	9.56
	Demo	LF	Sm	LB	.241	66.30	---	8.03	---	8.03	11.20
2" x 8" - 8', 24" oc	Inst	LF	Lg	2C	.246	65.00	8.72	10.10	2.00	20.82	26.20
	Inst	LF	Sm	2C	.290	55.25	9.66	11.90	2.35	23.91	30.10
2" x 8" - 10', 24" oc	Demo	LF	Lg	LB	.211	76.00	---	7.03	---	7.03	9.84
	Demo	LF	Sm	LB	.248	64.60	---	8.26	---	8.26	11.60
2" x 8" - 10', 24" oc	Inst	LF	Lg	2C	.250	64.00	10.10	10.30	2.03	22.43	28.00
	Inst	LF	Sm	2C	.294	54.40	11.20	12.10	2.39	25.69	32.20
2" x 8" - 12', 24" oc	Demo	LF	Lg	LB	.216	74.00	---	7.19	---	7.19	10.10
	Demo	LF	Sm	LB	.254	62.90	---	8.46	---	8.46	11.80
2" x 8" - 12', 24" oc	Inst	LF	Lg	2C	.258	62.00	11.50	10.60	2.10	24.20	30.10
	Inst	LF	Sm	2C	.304	52.70	12.70	12.50	2.47	27.67	34.50

Sheathing, walls

Boards, 1" x 8"

Horizontal	Demo	SF	Lg	LB	.021	755.0	---	.70	---	.70	.98
	Demo	SF	Sm	LB	.025	641.8	---	.83	---	.83	1.17
Horizontal	Inst	SF	Lg	2C	.023	695.0	2.55	.94	.19	3.68	4.44
	Inst	SF	Sm	2C	.027	590.8	2.81	1.11	.22	4.14	5.00
Diagonal	Demo	SF	Lg	LB	.024	672.0	---	.80	---	.80	1.12
	Demo	SF	Sm	LB	.028	571.2	---	.93	---	.93	1.31
Diagonal	Inst	SF	Lg	2C	.026	618.0	2.80	1.07	.21	4.08	4.92
	Inst	SF	Sm	2C	.030	525.3	3.08	1.23	.25	4.56	5.52

Plywood

3/8"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
3/8"	Inst	SF	Lg	2C	.015	1059	.74	.62	.12	1.48	1.83
	Inst	SF	Sm	2C	.018	900.2	.81	.74	.14	1.69	2.11
1/2"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
1/2"	Inst	SF	Lg	2C	.015	1059	.93	.62	.12	1.67	2.05
	Inst	SF	Sm	2C	.018	900.2	1.03	.74	.14	1.91	2.36
5/8"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
5/8"	Inst	SF	Lg	2C	.015	1059	1.06	.62	.12	1.80	2.20
	Inst	SF	Sm	2C	.018	900.2	1.17	.74	.14	2.05	2.52

Particleboard

1/2"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
1/2"	Inst	SF	Lg	2C	.015	1059	.92	.62	.12	1.66	2.04
	Inst	SF	Sm	2C	.018	900.2	1.02	.74	.14	1.90	2.35

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

OSB strand board

3/8"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
3/8"	Inst	SF	Lg	2C	.015	1059	.47	.62	.12	1.21	1.52
	Inst	SF	Sm	2C	.018	900.2	.51	.74	.14	1.39	1.76
1/2"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
1/2"	Inst	SF	Lg	2C	.015	1059	.54	.62	.12	1.28	1.60
	Inst	SF	Sm	2C	.018	900.2	.60	.74	.14	1.48	1.86
5/8"	Demo	SF	Lg	LB	.014	1145	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.016	973.3	---	.53	---	.53	.75
5/8"	Inst	SF	Lg	2C	.015	1059	.82	.62	.12	1.56	1.93
	Inst	SF	Sm	2C	.018	900.2	.90	.74	.14	1.78	2.21

Sheathing, roof**Boards, 1" x 8"**

Horizontal	Demo	SF	Lg	LB	.018	884.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.021	751.4	---	.70	---	.70	.98
Horizontal	Inst	SF	Lg	2C	.020	819.0	2.55	.82	.16	3.53	4.24
	Inst	SF	Sm	2C	.023	696.2	2.81	.94	.19	3.94	4.74
Diagonal	Demo	SF	Lg	LB	.021	775.0	---	.70	---	.70	.98
	Demo	SF	Sm	LB	.024	658.8	---	.80	---	.80	1.12
Diagonal	Inst	SF	Lg	2C	.022	715.0	2.80	.90	.18	3.88	4.66
	Inst	SF	Sm	2C	.026	607.8	3.08	1.07	.21	4.36	5.25

Plywood

1/2"	Demo	SF	Lg	LB	.013	1277	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1085	---	.50	---	.50	.70
1/2"	Inst	SF	Lg	2C	.013	1187	.89	.53	.11	1.53	1.88
	Inst	SF	Sm	2C	.016	1009	.98	.66	.13	1.77	2.18
5/8"	Demo	SF	Lg	LB	.013	1277	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1085	---	.50	---	.50	.70
5/8"	Inst	SF	Lg	2C	.013	1187	1.01	.53	.11	1.65	2.02
	Inst	SF	Sm	2C	.016	1009	1.12	.66	.13	1.91	2.34
3/4"	Demo	SF	Lg	LB	.013	1187	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.016	1009	---	.53	---	.53	.75
3/4"	Inst	SF	Lg	2C	.015	1102	1.20	.62	.12	1.94	2.36
	Inst	SF	Sm	2C	.017	936.7	1.33	.70	.14	2.17	2.65

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Sheathing, subfloor**Boards, 1" x 8"**

Horizontal	Demo	SF	Lg	LB	.019	828.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.023	703.8	---	.77	---	.77	1.07
Horizontal	Inst	SF	Lg	2C	.021	764.0	2.62	.86	.17	3.65	4.39
	Inst	SF	Sm	2C	.025	649.4	2.88	1.03	.20	4.11	4.95
Diagonal	Demo	SF	Lg	LB	.022	729.0	---	.73	---	.73	1.03
	Demo	SF	Sm	LB	.026	619.7	---	.87	---	.87	1.21
Diagonal	Inst	SF	Lg	2C	.024	672.0	2.86	.99	.19	4.04	4.86
	Inst	SF	Sm	2C	.028	571.2	3.15	1.15	.23	4.53	5.46

Plywood

5/8"	Demo	SF	Lg	LB	.013	1216	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1034	---	.50	---	.50	.70
5/8"	Inst	SF	Lg	2C	.014	1127	1.06	.57	.12	1.75	2.14
	Inst	SF	Sm	2C	.017	958.0	1.17	.70	.14	2.01	2.46
3/4"	Demo	SF	Lg	LB	.014	1134	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.017	963.9	---	.57	---	.57	.79
3/4"	Inst	SF	Lg	2C	.015	1050	1.26	.62	.12	2.00	2.43
	Inst	SF	Sm	2C	.018	892.5	1.39	.74	.15	2.28	2.78
1-1/8"	Demo	SF	Lg	LB	.019	854.0	---	.63	---	.63	.89
	Demo	SF	Sm	LB	.022	725.9	---	.73	---	.73	1.03
1-1/8"	Inst	SF	Lg	2C	.020	798.0	1.80	.82	.16	2.78	3.38
	Inst	SF	Sm	2C	.024	678.3	1.98	.99	.19	3.16	3.85

Particleboard

5/8"	Demo	SF	Lg	LB	.013	1216	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1034	---	.50	---	.50	.70
5/8"	Inst	SF	Lg	2C	.014	1127	1.08	.57	.12	1.77	2.17
	Inst	SF	Sm	2C	.017	958.0	1.20	.70	.14	2.04	2.50
3/4"	Demo	SF	Lg	LB	.014	1134	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.017	963.9	---	.57	---	.57	.79
3/4"	Inst	SF	Lg	2C	.015	1050	1.13	.62	.12	1.87	2.28
	Inst	SF	Sm	2C	.018	892.5	1.24	.74	.15	2.13	2.61

Underlayment

Plywood, 3/8"	Demo	SF	Lg	LB	.013	1216	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1034	---	.50	---	.50	.70
Plywood, 3/8"	Inst	SF	Lg	2C	.014	1127	1.34	.57	.12	2.03	2.47
	Inst	SF	Sm	2C	.017	958.0	1.47	.70	.14	2.31	2.81
Hardboard, 0.215"	Demo	SF	Lg	LB	.013	1216	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.015	1034	---	.50	---	.50	.70
Hardboard, 0.215"	Inst	SF	Lg	2C	.014	1127	1.13	.57	.12	1.82	2.22
	Inst	SF	Sm	2C	.017	958.0	1.25	.70	.14	2.09	2.55

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Trusses, shop fabricated, wood "W" type**1/8 pitch**

3" rise in 12" run

20' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
20' span	Inst	Ea	Lg	CX	.941	34.00	55.90	38.60	3.82	98.32	122.00
	Inst	Ea	Sm	CX	1.11	28.90	62.20	45.60	4.50	112.30	140.00
22' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
22' span	Inst	Ea	Lg	CX	.941	34.00	62.30	38.60	3.82	104.72	130.00
	Inst	Ea	Sm	CX	1.11	28.90	69.20	45.60	4.50	119.30	148.00
24' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
24' span	Inst	Ea	Lg	CX	.941	34.00	65.30	38.60	3.82	107.72	133.00
	Inst	Ea	Sm	CX	1.11	28.90	72.60	45.60	4.50	122.70	152.00
26' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
26' span	Inst	Ea	Lg	CX	.941	34.00	71.70	38.60	3.82	114.12	140.00
	Inst	Ea	Sm	CX	1.11	28.90	79.60	45.60	4.50	129.70	160.00
28' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
28' span	Inst	Ea	Lg	CX	.941	34.00	74.70	38.60	3.82	117.12	144.00
	Inst	Ea	Sm	CX	1.11	28.90	83.10	45.60	4.50	133.20	164.00
30' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
30' span	Inst	Ea	Lg	CX	1.00	32.00	81.10	41.10	4.06	126.26	155.00
	Inst	Ea	Sm	CX	1.18	27.20	90.10	48.50	4.78	143.38	176.00
32' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
32' span	Inst	Ea	Lg	CX	1.00	32.00	83.30	41.10	4.06	128.46	157.00
	Inst	Ea	Sm	CX	1.18	27.20	92.60	48.50	4.78	145.88	179.00
34' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
34' span	Inst	Ea	Lg	CX	1.00	32.00	87.20	41.10	4.06	132.36	162.00
	Inst	Ea	Sm	CX	1.18	27.20	96.90	48.50	4.78	150.18	184.00
36' span	Demo	Ea	Lg	LJ	.970	33.00	---	32.30	---	32.30	45.20
	Demo	Ea	Sm	LJ	1.14	28.05	---	38.00	---	38.00	53.20
36' span	Inst	Ea	Lg	CX	1.03	31.00	93.50	42.30	4.19	139.99	171.00
	Inst	Ea	Sm	CX	1.21	26.35	104.00	49.70	4.93	158.63	194.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
5/24 pitch											
5" rise in 12" run											
20' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
20' span	Inst	Ea	Lg	CX	.941	34.00	44.40	38.60	3.82	86.82	109.00
	Inst	Ea	Sm	CX	1.11	28.90	49.30	45.60	4.50	99.40	125.00
22' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
22' span	Inst	Ea	Lg	CX	.941	34.00	49.70	38.60	3.82	92.12	115.00
	Inst	Ea	Sm	CX	1.11	28.90	55.30	45.60	4.50	105.40	132.00
24' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
24' span	Inst	Ea	Lg	CX	.941	34.00	52.60	38.60	3.82	95.02	118.00
	Inst	Ea	Sm	CX	1.11	28.90	58.50	45.60	4.50	108.60	136.00
26' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
26' span	Inst	Ea	Lg	CX	.941	34.00	58.80	38.60	3.82	101.22	125.00
	Inst	Ea	Sm	CX	1.11	28.90	65.30	45.60	4.50	115.40	143.00
28' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
28' span	Inst	Ea	Lg	CX	.941	34.00	69.80	38.60	3.82	112.22	138.00
	Inst	Ea	Sm	CX	1.11	28.90	77.60	45.60	4.50	127.70	158.00
30' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
30' span	Inst	Ea	Lg	CX	1.00	32.00	75.10	41.10	4.06	120.26	148.00
	Inst	Ea	Sm	CX	1.18	27.20	83.50	48.50	4.78	136.78	169.00
32' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
32' span	Inst	Ea	Lg	CX	1.00	32.00	77.20	41.10	4.06	122.36	150.00
	Inst	Ea	Sm	CX	1.18	27.20	85.80	48.50	4.78	139.08	171.00
34' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
34' span	Inst	Ea	Lg	CX	1.00	32.00	85.00	41.10	4.06	130.16	159.00
	Inst	Ea	Sm	CX	1.18	27.20	94.50	48.50	4.78	147.78	181.00
36' span	Demo	Ea	Lg	LJ	.970	33.00	---	32.30	---	32.30	45.20
	Demo	Ea	Sm	LJ	1.14	28.05	---	38.00	---	38.00	53.20
36' span	Inst	Ea	Lg	CX	1.03	31.00	87.90	42.30	4.19	134.39	164.00
	Inst	Ea	Sm	CX	1.21	26.35	97.70	49.70	4.93	152.33	187.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
1/4 pitch											
6" rise in 12" run											
20' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
20' span	Inst	Ea	Lg	CX	.941	34.00	45.20	38.60	3.82	87.62	110.00
	Inst	Ea	Sm	CX	1.11	28.90	50.30	45.60	4.50	100.40	126.00
22' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
22' span	Inst	Ea	Lg	CX	.941	34.00	50.50	38.60	3.82	92.92	116.00
	Inst	Ea	Sm	CX	1.11	28.90	56.20	45.60	4.50	106.30	133.00
24' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
24' span	Inst	Ea	Lg	CX	.941	34.00	56.70	38.60	3.82	99.12	123.00
	Inst	Ea	Sm	CX	1.11	28.90	63.00	45.60	4.50	113.10	141.00
26' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
26' span	Inst	Ea	Lg	CX	.941	34.00	58.80	38.60	3.82	101.22	125.00
	Inst	Ea	Sm	CX	1.11	28.90	65.30	45.60	4.50	115.40	143.00
28' span	Demo	Ea	Lg	LJ	.865	37.00	---	28.80	---	28.80	40.30
	Demo	Ea	Sm	LJ	1.02	31.45	---	34.00	---	34.00	47.60
28' span	Inst	Ea	Lg	CX	.941	34.00	70.60	38.60	3.82	113.02	139.00
	Inst	Ea	Sm	CX	1.11	28.90	78.50	45.60	4.50	128.60	159.00
30' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
30' span	Inst	Ea	Lg	CX	1.00	32.00	73.50	41.10	4.06	118.66	146.00
	Inst	Ea	Sm	CX	1.18	27.20	81.70	48.50	4.78	134.98	167.00
32' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
32' span	Inst	Ea	Lg	CX	1.00	32.00	79.70	41.10	4.06	124.86	153.00
	Inst	Ea	Sm	CX	1.18	27.20	88.60	48.50	4.78	141.88	174.00
34' span	Demo	Ea	Lg	LJ	.914	35.00	---	30.50	---	30.50	42.60
	Demo	Ea	Sm	LJ	1.08	29.75	---	36.00	---	36.00	50.40
34' span	Inst	Ea	Lg	CX	1.00	32.00	85.80	41.10	4.06	130.96	160.00
	Inst	Ea	Sm	CX	1.18	27.20	95.40	48.50	4.78	148.68	182.00
36' span	Demo	Ea	Lg	LJ	.970	33.00	---	32.30	---	32.30	45.20
	Demo	Ea	Sm	LJ	1.14	28.05	---	38.00	---	38.00	53.20
36' span	Inst	Ea	Lg	CX	1.03	31.00	90.30	42.30	4.19	136.79	167.00
	Inst	Ea	Sm	CX	1.21	26.35	100.00	49.70	4.93	154.63	190.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Garage doors

Detach & reset operations

Wood, aluminum, or hardboard

Single	Reset	Ea	Lg	LB	2.67	6.00	---	88.90	---	88.90	125.00
	Reset	Ea	Sm	LB	3.56	4.50	---	119.00	---	119.00	166.00
Double	Reset	Ea	Lg	LB	3.56	4.50	---	119.00	---	119.00	166.00
	Reset	Ea	Sm	LB	4.73	3.38	---	158.00	---	158.00	221.00

Steel

Single	Reset	Ea	Lg	LB	3.20	5.00	---	107.00	---	107.00	149.00
	Reset	Ea	Sm	LB	4.27	3.75	---	142.00	---	142.00	199.00
Double	Reset	Ea	Lg	LB	4.00	4.00	---	133.00	---	133.00	187.00
	Reset	Ea	Sm	LB	4.92	3.25	---	164.00	---	164.00	229.00

Remove operations

Wood, aluminum, or hardboard

Single	Demo	Ea	Lg	LB	2.00	8.00	---	66.60	---	66.60	93.30
	Demo	Ea	Sm	LB	3.08	5.20	---	103.00	---	103.00	144.00
Double	Demo	Ea	Lg	LB	2.67	6.00	---	88.90	---	88.90	125.00
	Demo	Ea	Sm	LB	4.10	3.90	---	137.00	---	137.00	191.00

Steel

Single	Demo	Ea	Lg	LB	2.29	7.00	---	76.30	---	76.30	107.00
	Demo	Ea	Sm	LB	3.52	4.55	---	117.00	---	117.00	164.00
Double	Demo	Ea	Lg	LB	3.20	5.00	---	107.00	---	107.00	149.00
	Demo	Ea	Sm	LB	4.92	3.25	---	164.00	---	164.00	229.00

Replace operations

Aluminum frame with plastic skin bonded to polystyrene foam core

Jamb type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	667.00	164.00	---	831.00	997.00
	Inst	Ea	Sm	2C	5.71	2.80	735.00	234.00	---	969.00	1170.00
8' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	890.00	164.00	---	1054.00	1250.00
	Inst	Ea	Sm	2C	5.71	2.80	980.00	234.00	---	1214.00	1460.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	681.00	164.00	---	845.00	1010.00
	Inst	Ea	Sm	2C	5.71	2.80	750.00	234.00	---	984.00	1190.00
9' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	907.00	164.00	---	1071.00	1270.00
	Inst	Ea	Sm	2C	5.71	2.80	1000.00	234.00	---	1234.00	1480.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1070.00	219.00	---	1289.00	1530.00
	Inst	Ea	Sm	2C	7.62	2.10	1170.00	313.00	---	1483.00	1790.00
16' x 8', double	Inst	Ea	Lg	2C	5.33	3.00	1370.00	219.00	---	1589.00	1880.00
	Inst	Ea	Sm	2C	7.62	2.10	1510.00	313.00	---	1823.00	2170.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Track type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	636.00	164.00	---	800.00	961.00
	Inst	Ea	Sm	2C	5.71	2.80	700.00	234.00	---	934.00	1130.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	648.00	164.00	---	812.00	975.00
	Inst	Ea	Sm	2C	5.71	2.80	714.00	234.00	---	948.00	1150.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1000.00	219.00	---	1219.00	1460.00
	Inst	Ea	Sm	2C	7.62	2.10	1110.00	313.00	---	1423.00	1710.00

Sectional type with hardware and key lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	864.00	164.00	---	1028.00	1220.00
	Inst	Ea	Sm	2C	5.71	2.80	952.00	234.00	---	1186.00	1420.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	881.00	164.00	---	1045.00	1240.00
	Inst	Ea	Sm	2C	5.71	2.80	971.00	234.00	---	1205.00	1440.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1330.00	219.00	---	1549.00	1830.00
	Inst	Ea	Sm	2C	7.62	2.10	1460.00	313.00	---	1773.00	2120.00

Fiberglass

Jamb type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	626.00	164.00	---	790.00	949.00
	Inst	Ea	Sm	2C	5.71	2.80	689.00	234.00	---	923.00	1120.00
8' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	834.00	164.00	---	998.00	1190.00
	Inst	Ea	Sm	2C	5.71	2.80	919.00	234.00	---	1153.00	1390.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	638.00	164.00	---	802.00	964.00
	Inst	Ea	Sm	2C	5.71	2.80	703.00	234.00	---	937.00	1140.00
9' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	851.00	164.00	---	1015.00	1210.00
	Inst	Ea	Sm	2C	5.71	2.80	937.00	234.00	---	1171.00	1410.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1000.00	219.00	---	1219.00	1460.00
	Inst	Ea	Sm	2C	7.62	2.10	1100.00	313.00	---	1413.00	1700.00
16' x 8', double	Inst	Ea	Lg	2C	5.33	3.00	1280.00	219.00	---	1499.00	1780.00
	Inst	Ea	Sm	2C	7.62	2.10	1410.00	313.00	---	1723.00	2060.00

Track type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	596.00	164.00	---	760.00	915.00
	Inst	Ea	Sm	2C	5.71	2.80	657.00	234.00	---	891.00	1080.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	608.00	164.00	---	772.00	929.00
	Inst	Ea	Sm	2C	5.71	2.80	670.00	234.00	---	904.00	1100.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	940.00	219.00	---	1159.00	1390.00
	Inst	Ea	Sm	2C	7.62	2.10	1040.00	313.00	---	1353.00	1630.00

Sectional type with hardware and key lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	810.00	164.00	---	974.00	1160.00
	Inst	Ea	Sm	2C	5.71	2.80	892.00	234.00	---	1126.00	1350.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	826.00	164.00	---	990.00	1180.00
	Inst	Ea	Sm	2C	5.71	2.80	910.00	234.00	---	1144.00	1370.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1240.00	219.00	---	1459.00	1740.00
	Inst	Ea	Sm	2C	7.62	2.10	1370.00	313.00	---	1683.00	2010.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Steel

Jamb type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	834.00	164.00	---	998.00	1190.00
	Inst	Ea	Sm	2C	5.71	2.80	919.00	234.00	---	1153.00	1390.00
8' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	1110.00	164.00	---	1274.00	1510.00
	Inst	Ea	Sm	2C	5.71	2.80	1230.00	234.00	---	1464.00	1740.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	851.00	164.00	---	1015.00	1210.00
	Inst	Ea	Sm	2C	5.71	2.80	938.00	234.00	---	1172.00	1410.00
9' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	1130.00	164.00	---	1294.00	1530.00
	Inst	Ea	Sm	2C	5.71	2.80	1250.00	234.00	---	1484.00	1770.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1330.00	219.00	---	1549.00	1840.00
	Inst	Ea	Sm	2C	7.62	2.10	1470.00	313.00	---	1783.00	2130.00
16' x 8', double	Inst	Ea	Lg	2C	5.33	3.00	1710.00	219.00	---	1929.00	2270.00
	Inst	Ea	Sm	2C	7.62	2.10	1880.00	313.00	---	2193.00	2600.00

Track type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	794.00	164.00	---	958.00	1140.00
	Inst	Ea	Sm	2C	5.71	2.80	875.00	234.00	---	1109.00	1330.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	810.00	164.00	---	974.00	1160.00
	Inst	Ea	Sm	2C	5.71	2.80	893.00	234.00	---	1127.00	1360.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1250.00	219.00	---	1469.00	1750.00
	Inst	Ea	Sm	2C	7.62	2.10	1380.00	313.00	---	1693.00	2030.00

Sectional type with hardware and key lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	1080.00	164.00	---	1244.00	1470.00
	Inst	Ea	Sm	2C	5.71	2.80	1190.00	234.00	---	1424.00	1700.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	1100.00	164.00	---	1264.00	1500.00
	Inst	Ea	Sm	2C	5.71	2.80	1210.00	234.00	---	1444.00	1720.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1660.00	219.00	---	1879.00	2210.00
	Inst	Ea	Sm	2C	7.62	2.10	1830.00	313.00	---	2143.00	2540.00

Wood

Jamb type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	751.00	164.00	---	915.00	1090.00
	Inst	Ea	Sm	2C	5.71	2.80	827.00	234.00	---	1061.00	1280.00
8' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	1000.00	164.00	---	1164.00	1380.00
	Inst	Ea	Sm	2C	5.71	2.80	1100.00	234.00	---	1334.00	1600.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	766.00	164.00	---	930.00	1110.00
	Inst	Ea	Sm	2C	5.71	2.80	844.00	234.00	---	1078.00	1300.00
9' x 8', single	Inst	Ea	Lg	2C	4.00	4.00	1020.00	164.00	---	1184.00	1400.00
	Inst	Ea	Sm	2C	5.71	2.80	1120.00	234.00	---	1354.00	1620.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1200.00	219.00	---	1419.00	1690.00
	Inst	Ea	Sm	2C	7.62	2.10	1320.00	313.00	---	1633.00	1960.00
16' x 8', double	Inst	Ea	Lg	2C	5.33	3.00	1540.00	219.00	---	1759.00	2070.00
	Inst	Ea	Sm	2C	7.62	2.10	1690.00	313.00	---	2003.00	2390.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Track type with hardware and deluxe lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	715.00	164.00	---	879.00	1050.00
	Inst	Ea	Sm	2C	5.71	2.80	788.00	234.00	---	1022.00	1230.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	729.00	164.00	---	893.00	1070.00
	Inst	Ea	Sm	2C	5.71	2.80	804.00	234.00	---	1038.00	1250.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1130.00	219.00	---	1349.00	1600.00
	Inst	Ea	Sm	2C	7.62	2.10	1240.00	313.00	---	1553.00	1870.00

Sectional type with hardware and key lock

8' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	972.00	164.00	---	1136.00	1350.00
	Inst	Ea	Sm	2C	5.71	2.80	1070.00	234.00	---	1304.00	1560.00
9' x 7', single	Inst	Ea	Lg	2C	4.00	4.00	991.00	164.00	---	1155.00	1370.00
	Inst	Ea	Sm	2C	5.71	2.80	1090.00	234.00	---	1324.00	1580.00
16' x 7', double	Inst	Ea	Lg	2C	5.33	3.00	1490.00	219.00	---	1709.00	2020.00
	Inst	Ea	Sm	2C	7.62	2.10	1640.00	313.00	---	1953.00	2330.00

Garage door operators

Radio controlled for single or double doors. Labor includes wiring, connection and installation.

Belt drive, with receiver and 2 transmitters, time delay light

3/4 HP	Inst	LS	Lg	ED	5.33	3.00	184.00	229.00	---	413.00	544.00
	Inst	LS	Sm	ED	7.11	2.25	203.00	306.00	---	509.00	677.00
1 HP	Inst	LS	Lg	ED	5.33	3.00	243.00	229.00	---	472.00	612.00
	Inst	LS	Sm	ED	7.11	2.25	268.00	306.00	---	574.00	751.00

Chain drive, with receiver and 2 transmitters, time delay light

1/2 HP	Inst	LS	Lg	ED	5.33	3.00	156.00	229.00	---	385.00	511.00
	Inst	LS	Sm	ED	7.11	2.25	172.00	306.00	---	478.00	641.00
3/4 HP	Inst	LS	Lg	ED	5.33	3.00	194.00	229.00	---	423.00	555.00
	Inst	LS	Sm	ED	7.11	2.25	214.00	306.00	---	520.00	689.00

Screw-worm drive, with receiver and 2 transmitters, time delay light

2 HP, Standard	Inst	LS	Lg	ED	5.33	3.00	293.00	229.00	---	522.00	669.00
	Inst	LS	Sm	ED	7.11	2.25	323.00	306.00	---	629.00	814.00
2 HP, Good	Inst	LS	Lg	ED	5.33	3.00	319.00	229.00	---	548.00	698.00
	Inst	LS	Sm	ED	7.11	2.25	351.00	306.00	---	657.00	847.00
2 HP, Premium	Inst	LS	Lg	ED	5.33	3.00	358.00	229.00	---	587.00	743.00
	Inst	LS	Sm	ED	7.11	2.25	394.00	306.00	---	700.00	896.00

Additional transmitters

	Inst	Ea	Lg	EA	---	---	32.30	---	---	32.30	37.20
	Inst	Ea	Sm	EA	---	---	35.60	---	---	35.60	41.00

Wired Keyless Entry Pad

	Inst	Ea	Lg	EA	.667	12.00	43.10	29.90	---	73.00	93.00
	Inst	Ea	Sm	EA	.889	9.00	47.50	39.90	---	87.40	112.00

Sensors only, per pair

	Inst	Pr	Lg	EA	.667	12.00	37.70	29.90	---	67.60	86.80
	Inst	Pr	Sm	EA	.889	9.00	41.60	39.90	---	81.50	106.00

Detach & Reset unit and receiver

	Inst	LS	Lg	2C	2.67	6.00	---	110.00	---	110.00	153.00
	Inst	LS	Sm	2C	3.56	4.50	---	146.00	---	146.00	205.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Garbage disposers

Includes wall switch and labor includes rough-in.

See also Trash compactors, page 417

Frequently encountered applications

Detach & reset operations

Garbage disposer	Reset	Ea	Lg	SA	2.67	3.00	---	128.00	---	128.00	186.00
	Reset	Ea	Sm	SA	3.56	2.25	---	171.00	---	171.00	248.00

Remove operations

Garbage disposer	Demo	Ea	Lg	SA	2.67	3.00	---	128.00	---	128.00	186.00
	Demo	Ea	Sm	SA	3.56	2.25	---	171.00	---	171.00	248.00

Replace operations

Economy	Inst	Ea	Lg	SA	2.67	3.00	92.30	128.00	---	220.30	292.00
	Inst	Ea	Sm	SA	3.56	2.25	102.00	171.00	---	273.00	365.00
Standard	Inst	Ea	Lg	SA	2.67	3.00	116.00	128.00	---	244.00	319.00
	Inst	Ea	Sm	SA	3.56	2.25	128.00	171.00	---	299.00	395.00
Average	Inst	Ea	Lg	SA	2.67	3.00	136.00	128.00	---	264.00	342.00
	Inst	Ea	Sm	SA	3.56	2.25	150.00	171.00	---	321.00	420.00
High	Inst	Ea	Lg	SA	2.67	3.00	203.00	128.00	---	331.00	419.00
	Inst	Ea	Sm	SA	3.56	2.25	224.00	171.00	---	395.00	505.00
Premium	Inst	Ea	Lg	SA	2.67	3.00	225.00	128.00	---	353.00	445.00
	Inst	Ea	Sm	SA	3.56	2.25	248.00	171.00	---	419.00	533.00

In-Sink-Erator Products

Model Badger 1, 1/3 HP, continuous feed, 1 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	92.30	128.00	---	220.30	292.00
Inst	Ea	Sm	SA	3.56	2.25	102.00	171.00	---	273.00	365.00

Model Badger 5, 1/2 HP, continuous feed, 1 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	116.00	128.00	---	244.00	319.00
Inst	Ea	Sm	SA	3.56	2.25	128.00	171.00	---	299.00	395.00

Model Badger 5 XP, 3/4 HP, continuous feed, 3 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	136.00	128.00	---	264.00	342.00
Inst	Ea	Sm	SA	3.56	2.25	150.00	171.00	---	321.00	420.00

Evolution, Compact, 3/4 HP, continuous feed, 4 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	203.00	128.00	---	331.00	419.00
Inst	Ea	Sm	SA	3.56	2.25	224.00	171.00	---	395.00	505.00

Evolution, Essential, 3/4 HP, continuous feed, 6 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	225.00	128.00	---	353.00	445.00
Inst	Ea	Sm	SA	3.56	2.25	248.00	171.00	---	419.00	533.00

Evolution, Excel, 1.0 HP, continuous feed, 7 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	254.00	128.00	---	382.00	478.00
Inst	Ea	Sm	SA	3.56	2.25	280.00	171.00	---	451.00	569.00

Evolution, Cover Control Plus, 1 HP, batch feed, 9 year parts protection

Inst	Ea	Lg	SA	2.67	3.00	308.00	128.00	---	436.00	540.00
Inst	Ea	Sm	SA	3.56	2.25	339.00	171.00	---	510.00	638.00

Garbage disposers

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Evolution, Septic, 4 year parts protection, stainless steel grind elements

Inst	Ea	Lg	SA	2.67	3.00		418.00	128.00	---	546.00	667.00
Inst	Ea	Sm	SA	3.56	2.25		461.00	171.00	---	632.00	778.00

Adjustments

To only remove and reset garbage disposer

Reset	Ea	Lg	SA	2.67	3.00		---	128.00	---	128.00	186.00
Reset	Ea	Sm	SA	3.56	2.25		---	171.00	---	171.00	248.00

To only remove garbage disposer

Demo	Ea	Lg	SA	2.67	3.00		---	128.00	---	128.00	186.00
Demo	Ea	Sm	SA	3.56	2.25		---	171.00	---	171.00	248.00

Parts and accessories

Color Stopper Assembly	Inst	Ea	Lg	---	---	---	60.20	---	---	60.20	69.20
	Inst	Ea	Sm	---	---	---	66.30	---	---	66.30	76.30
Stainless steel stopper	Inst	Ea	Lg	---	---	---	27.20	---	---	27.20	31.30
	Inst	Ea	Sm	---	---	---	30.00	---	---	30.00	34.50
Dishwasher connector kit	Inst	Ea	Lg	---	---	---	23.50	---	---	23.50	27.10
	Inst	Ea	Sm	---	---	---	25.90	---	---	25.90	29.80
Flexible tail pipe	Inst	Ea	Lg	---	---	---	31.40	---	---	31.40	31.40
	Inst	Ea	Sm	---	---	---	34.60	---	---	34.60	34.60
Power cord accessory kit	Inst	Ea	Lg	---	---	---	26.50	---	---	26.50	30.40
	Inst	Ea	Sm	---	---	---	29.20	---	---	29.20	33.50
Service wrench	Inst	Ea	Lg	---	---	---	14.10	---	---	14.10	14.10
	Inst	Ea	Sm	---	---	---	15.60	---	---	15.60	15.60
Plastic stopper	Inst	Ea	Lg	---	---	---	14.10	---	---	14.10	16.20
	Inst	Ea	Sm	---	---	---	15.60	---	---	15.60	17.90
Deluxe mounting gasket	Inst	Ea	Lg	---	---	---	19.40	---	---	19.40	22.30
	Inst	Ea	Sm	---	---	---	21.40	---	---	21.40	24.60
Septic replacement cartridge	Inst	Ea	Lg	---	---	---	38.80	---	---	38.80	44.60
	Inst	Ea	Sm	---	---	---	42.80	---	---	42.80	49.20

Girders. See Framing, page 169

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Glass and glazing

3/16" T tempered with putty and points in wood sash

8" x 12"	Demo	SF	Lg	GA	.320	25.00	---	12.80	---	12.80	18.10
	Demo	SF	Sm	GA	.457	17.50	---	18.20	---	18.20	25.90
8" x 12"	Inst	SF	Lg	GA	.267	30.00	9.15	10.60	---	19.75	25.60
	Inst	SF	Sm	GA	.381	21.00	10.10	15.20	---	25.30	33.20
12" x 16"	Demo	SF	Lg	GA	.178	45.00	---	7.09	---	7.09	10.10
	Demo	SF	Sm	GA	.254	31.50	---	10.10	---	10.10	14.40
12" x 16"	Inst	SF	Lg	GA	.145	55.00	8.42	5.78	---	14.20	17.90
	Inst	SF	Sm	GA	.208	38.50	9.28	8.29	---	17.57	22.40
14" x 20"	Demo	SF	Lg	GA	.145	55.00	---	5.78	---	5.78	8.20
	Demo	SF	Sm	GA	.208	38.50	---	8.29	---	8.29	11.80
14" x 20"	Inst	SF	Lg	GA	.114	70.00	7.69	4.54	---	12.23	15.30
	Inst	SF	Sm	GA	.163	49.00	8.48	6.49	---	14.97	19.00
16" x 24"	Demo	SF	Lg	GA	.114	70.00	---	4.54	---	4.54	6.45
	Demo	SF	Sm	GA	.163	49.00	---	6.49	---	6.49	9.22
16" x 24"	Inst	SF	Lg	GA	.089	90.00	6.96	3.55	---	10.51	13.00
	Inst	SF	Sm	GA	.127	63.00	7.67	5.06	---	12.73	16.00
24" x 26"	Demo	SF	Lg	GA	.084	95.00	---	3.35	---	3.35	4.75
	Demo	SF	Sm	GA	.120	66.50	---	4.78	---	4.78	6.79
24" x 26"	Inst	SF	Lg	GA	.067	120.0	6.22	2.67	---	8.89	10.90
	Inst	SF	Sm	GA	.095	84.00	6.86	3.78	---	10.64	13.30
36" x 24"	Demo	SF	Lg	GA	.064	125.0	---	2.55	---	2.55	3.62
	Demo	SF	Sm	GA	.091	87.50	---	3.63	---	3.63	5.15
36" x 24"	Inst	SF	Lg	GA	.052	155.0	5.49	2.07	---	7.56	9.26
	Inst	SF	Sm	GA	.074	108.5	6.05	2.95	---	9.00	11.10

1/8" T tempered with putty in steel sash

12" x 16"	Demo	SF	Lg	GA	.178	45.00	---	7.09	---	7.09	10.10
	Demo	SF	Sm	GA	.254	31.50	---	10.10	---	10.10	14.40
12" x 16"	Inst	SF	Lg	GA	.145	55.00	8.71	5.78	---	14.49	18.20
	Inst	SF	Sm	GA	.208	38.50	9.60	8.29	---	17.89	22.80
16" x 20"	Demo	SF	Lg	GA	.123	65.00	---	4.90	---	4.90	6.96
	Demo	SF	Sm	GA	.176	45.50	---	7.01	---	7.01	9.96
16" x 20"	Inst	SF	Lg	GA	.100	80.00	8.02	3.98	---	12.00	14.90
	Inst	SF	Sm	GA	.143	56.00	8.83	5.70	---	14.53	18.20
16" x 24"	Demo	SF	Lg	GA	.114	70.00	---	4.54	---	4.54	6.45
	Demo	SF	Sm	GA	.163	49.00	---	6.49	---	6.49	9.22
16" x 24"	Inst	SF	Lg	GA	.089	90.00	7.32	3.55	---	10.87	13.50
	Inst	SF	Sm	GA	.127	63.00	8.07	5.06	---	13.13	16.50
24" x 24"	Demo	SF	Lg	GA	.084	95.00	---	3.35	---	3.35	4.75
	Demo	SF	Sm	GA	.120	66.50	---	4.78	---	4.78	6.79
24" x 24"	Inst	SF	Lg	GA	.067	120.0	6.62	2.67	---	9.29	11.40
	Inst	SF	Sm	GA	.095	84.00	7.30	3.78	---	11.08	13.80
28" x 32"	Demo	SF	Lg	GA	.062	130.0	---	2.47	---	2.47	3.51
	Demo	SF	Sm	GA	.088	91.00	---	3.51	---	3.51	4.98

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
28" x 32"	Inst	SF	Lg	GA	.050	160.0	5.93	1.99	---	7.92	9.65
	Inst	SF	Sm	GA	.071	112.0	6.53	2.83	---	9.36	11.50
36" x 36"	Demo	SF	Lg	GA	.050	160.0	---	1.99	---	1.99	2.83
	Demo	SF	Sm	GA	.071	112.0	---	2.83	---	2.83	4.02
36" x 36"	Inst	SF	Lg	GA	.039	205.0	5.22	1.55	---	6.77	8.21
	Inst	SF	Sm	GA	.056	143.5	5.76	2.23	---	7.99	9.79
36" x 48"	Demo	SF	Lg	GA	.042	190.0	---	1.67	---	1.67	2.38
	Demo	SF	Sm	GA	.060	133.0	---	2.39	---	2.39	3.39
36" x 48"	Inst	SF	Lg	GA	.032	250.0	4.53	1.27	---	5.80	7.02
	Inst	SF	Sm	GA	.046	175.0	4.99	1.83	---	6.82	8.34

1/4" T tempered

With putty and points in wood sash

72" x 48"	Demo	SF	Lg	GA	.043	185.0	---	1.71	---	1.71	2.43
	Demo	SF	Sm	GA	.062	129.5	---	2.47	---	2.47	3.51
72" x 48"	Inst	SF	Lg	GB	.052	305.0	3.81	2.07	---	5.88	7.32
	Inst	SF	Sm	GB	.075	213.5	4.20	2.99	---	7.19	9.07

With aluminum channel and rigid neoprene rubber in aluminum sash

48" x 96"	Demo	SF	Lg	GA	.046	175.0	---	1.83	---	1.83	2.60
	Demo	SF	Sm	GA	.065	122.5	---	2.59	---	2.59	3.68
48" x 96"	Inst	SF	Lg	GB	.046	350.0	2.96	1.83	---	4.79	6.01
	Inst	SF	Sm	GB	.065	245.0	3.26	2.59	---	5.85	7.43
96" x 96"	Demo	SF	Lg	GA	.044	180.0	---	1.75	---	1.75	2.49
	Demo	SF	Sm	GA	.063	126.0	---	2.51	---	2.51	3.56
96" x 96"	Inst	SF	Lg	GC	.037	645.0	2.12	1.47	---	3.59	4.53
	Inst	SF	Sm	GC	.053	451.5	2.33	2.11	---	4.44	5.68

1" T insulating glass (2 pieces 1/4" T float with 1/2" air space) with putty and points in wood sash

To 6.0 SF	Demo	SF	Lg	GA	.160	50.00	---	6.37	---	6.37	9.05
	Demo	SF	Sm	GA	.229	35.00	---	9.12	---	9.12	13.00
To 6.0 SF	Inst	SF	Lg	GA	.133	60.00	16.40	5.30	---	21.70	26.30
	Inst	SF	Sm	GA	.190	42.00	18.00	7.57	---	25.57	31.50
6.1 SF to 12.0 SF	Demo	SF	Lg	GA	.073	110.0	---	2.91	---	2.91	4.13
	Demo	SF	Sm	GA	.104	77.00	---	4.14	---	4.14	5.88
6.1 SF to 12.0 SF	Inst	SF	Lg	GA	.059	135.0	12.50	2.35	---	14.85	17.70
	Inst	SF	Sm	GA	.085	94.50	13.80	3.39	---	17.19	20.70
12.1 SF to 18.0 SF	Demo	SF	Lg	GA	.053	150.0	---	2.11	---	2.11	3.00
	Demo	SF	Sm	GA	.076	105.0	---	3.03	---	3.03	4.30
12.1 SF to 18.0 SF	Inst	SF	Lg	GA	.044	180.0	10.60	1.75	---	12.35	14.70
	Inst	SF	Sm	GA	.063	126.0	11.70	2.51	---	14.21	17.00
18.1 SF to 24.0 SF	Demo	SF	Lg	GA	.055	145.0	---	2.19	---	2.19	3.11
	Demo	SF	Sm	GA	.079	101.5	---	3.15	---	3.15	4.47
18.1 SF to 24.0 SF	Inst	SF	Lg	GB	.064	250.0	8.66	2.55	---	11.21	13.60
	Inst	SF	Sm	GB	.091	175.0	9.55	3.63	---	13.18	16.10

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Aluminum sliding door glass with aluminum channel and rigid neoprene rubber

3/16" T tempered glass

34" W x 76" H	Demo	SF	Lg	GA	.041	195.0	---	1.63	---	1.63	2.32
	Demo	SF	Sm	GA	.059	136.5	---	2.35	---	2.35	3.34
34" W x 76" H	Inst	SF	Lg	GA	.033	245.0	4.03	1.31	---	5.34	6.50
	Inst	SF	Sm	GA	.047	171.5	4.44	1.87	---	6.31	7.76
46" W x 76" H	Demo	SF	Lg	GA	.033	245.0	---	1.31	---	1.31	1.87
	Demo	SF	Sm	GA	.047	171.5	---	1.87	---	1.87	2.66
46" W x 76" H	Inst	SF	Lg	GB	.048	330.0	3.29	1.91	---	5.20	6.50
	Inst	SF	Sm	GB	.069	231.0	3.63	2.75	---	6.38	8.08

5/8" T insulating glass (2 pieces 3/16" T tempered with 1/4" T air space)

34" W x 76" H	Demo	SF	Lg	GA	.047	170.0	---	1.87	---	1.87	2.66
	Demo	SF	Sm	GA	.067	119.0	---	2.67	---	2.67	3.79
34" W x 76" H	Inst	SF	Lg	GA	.035	230.0	9.15	1.39	---	10.54	12.50
	Inst	SF	Sm	GA	.050	161.0	10.10	1.99	---	12.09	14.40
46" W x 76" H	Demo	SF	Lg	GA	.037	215.0	---	1.47	---	1.47	2.09
	Demo	SF	Sm	GA	.053	150.5	---	2.11	---	2.11	3.00
46" W x 76" H	Inst	SF	Lg	GB	.052	310.0	7.49	2.07	---	9.56	11.60
	Inst	SF	Sm	GB	.074	217.0	8.25	2.95	---	11.20	13.70

Grading. See Concrete, page 90

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Mat'l	Labor	Equip	Total	Price
					Unit	Day	Unit	Unit	Unit	Unit	Incl
							Cost	Cost	Cost	Cost	O&P

Glu-lam products

Beams

3-1/8" thick, SF pricing based on 16" oc

9" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
9" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	12.90	6.02	.72	19.64	24.00
	Inst	LF	Sm	CY	.222	252.0	14.20	8.57	1.02	23.79	29.40
9" deep, 20' long	Demo	BF	Lg	LK	.044	1080	---	1.68	.24	1.92	2.59
	Demo	BF	Sm	LK	.063	756.0	---	2.41	.34	2.75	3.71
9" deep, 20' long	Inst	BF	Lg	CY	.052	1080	4.29	2.01	.24	6.54	7.98
	Inst	BF	Sm	CY	.074	756.0	4.73	2.86	.34	7.93	9.78
9" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
9" deep, 20' long	Inst	SF	Lg	CY	.009	6545	.71	.35	.04	1.10	1.34
	Inst	SF	Sm	CY	.012	4582	.78	.46	.06	1.30	1.61
10-1/2" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
10-1/2" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	15.00	6.02	.72	21.74	26.40
	Inst	LF	Sm	CY	.222	252.0	16.60	8.57	1.02	26.19	32.10
10-1/2" deep, 20' long	Demo	BF	Lg	LK	.038	1260	---	1.45	.20	1.65	2.23
	Demo	BF	Sm	LK	.054	882.0	---	2.06	.29	2.35	3.18
10-1/2" deep, 20' long	Inst	BF	Lg	CY	.044	1260	4.29	1.70	.20	6.19	7.51
	Inst	BF	Sm	CY	.063	882.0	4.73	2.43	.29	7.45	9.13
10-1/2" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
10-1/2" deep, 20' long	Inst	SF	Lg	CY	.009	6545	.83	.35	.04	1.22	1.48
	Inst	SF	Sm	CY	.012	4582	.91	.46	.06	1.43	1.75
12" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
12" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	17.20	6.02	.72	23.94	28.90
	Inst	LF	Sm	CY	.222	252.0	18.90	8.57	1.02	28.49	34.80
12" deep, 20' long	Demo	BF	Lg	LK	.033	1440	---	1.26	.18	1.44	1.94
	Demo	BF	Sm	LK	.048	1008	---	1.83	.26	2.09	2.83
12" deep, 20' long	Inst	BF	Lg	CY	.039	1440	4.29	1.51	.18	5.98	7.22
	Inst	BF	Sm	CY	.056	1008	4.73	2.16	.26	7.15	8.73
12" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
12" deep, 20' long	Inst	SF	Lg	CY	.009	6545	.94	.35	.04	1.33	1.61
	Inst	SF	Sm	CY	.012	4582	1.04	.46	.06	1.56	1.90
13-1/2" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
13-1/2" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	19.30	6.02	.72	26.04	31.40
	Inst	LF	Sm	CY	.222	252.0	21.30	8.57	1.02	30.89	37.50
13-1/2" deep, 20' long	Demo	BF	Lg	LK	.030	1620	---	1.15	.16	1.31	1.76
	Demo	BF	Sm	LK	.042	1134	---	1.60	.23	1.83	2.48

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
13-1/2" deep, 20' long	Inst	BF	Lg	CY	.035	1620	4.29	1.35	.16	5.80	6.98
	Inst	BF	Sm	CY	.049	1134	4.73	1.89	.23	6.85	8.32
13-1/2" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
13-1/2" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.06	.35	.04	1.45	1.75
	Inst	SF	Sm	CY	.012	4582	1.17	.46	.06	1.69	2.05
15" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
15" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	21.40	6.02	.72	28.14	33.80
	Inst	LF	Sm	CY	.222	252.0	23.70	8.57	1.02	33.29	40.30
15" deep, 20' long	Demo	BF	Lg	LK	.027	1800	---	1.03	.14	1.17	1.58
	Demo	BF	Sm	LK	.038	1260	---	1.45	.20	1.65	2.23
15" deep, 20' long	Inst	BF	Lg	CY	.031	1800	4.29	1.20	.14	5.63	6.75
	Inst	BF	Sm	CY	.044	1260	4.74	1.70	.20	6.64	8.03
15" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
15" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.18	.35	.04	1.57	1.88
	Inst	SF	Sm	CY	.012	4582	1.30	.46	.06	1.82	2.20
16-1/2" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
16-1/2" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	23.60	6.02	.72	30.34	36.30
	Inst	LF	Sm	CY	.222	252.0	26.00	8.57	1.02	35.59	43.00
16-1/2" deep, 20' long	Demo	BF	Lg	LK	.024	1980	---	.92	.13	1.05	1.41
	Demo	BF	Sm	LK	.035	1386	---	1.34	.19	1.53	2.06
16-1/2" deep, 20' long	Inst	BF	Lg	CY	.028	1980	4.29	1.08	.13	5.50	6.58
	Inst	BF	Sm	CY	.040	1386	4.73	1.54	.19	6.46	7.79
16-1/2" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
16-1/2" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.30	.35	.04	1.69	2.02
	Inst	SF	Sm	CY	.012	4582	1.43	.46	.06	1.95	2.35
18" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
18" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	25.80	6.02	.72	32.54	38.80
	Inst	LF	Sm	CY	.222	252.0	28.40	8.57	1.02	37.99	45.70
18" deep, 20' long	Demo	BF	Lg	LK	.022	2160	---	.84	.12	.96	1.30
	Demo	BF	Sm	LK	.032	1512	---	1.22	.17	1.39	1.88
18" deep, 20' long	Inst	BF	Lg	CY	.026	2160	4.29	1.00	.12	5.41	6.46
	Inst	BF	Sm	CY	.037	1512	4.73	1.43	.17	6.33	7.61
18" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
18" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.42	.35	.04	1.81	2.16
	Inst	SF	Sm	CY	.012	4582	1.56	.46	.06	2.08	2.50

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

3-1/8" thick, SF pricing based on 16" oc (continued)

19-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
19-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	27.90	6.02	.72	34.64	41.20
	Inst	LF	Sm	CY	.222	252.0	30.80	8.57	1.02	40.39	48.40
19-1/2" deep, 30' long	Demo	BF	Lg	LK	.021	2340	---	.80	.11	.91	1.23
	Demo	BF	Sm	LK	.029	1638	---	1.11	.16	1.27	1.71
19-1/2" deep, 30' long	Inst	BF	Lg	CY	.024	2340	4.29	.93	.11	5.33	6.34
	Inst	BF	Sm	CY	.034	1638	4.73	1.31	.16	6.20	7.44
19-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
19-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	1.53	.35	.04	1.92	2.29
	Inst	SF	Sm	CY	.012	4582	1.69	.46	.06	2.21	2.65
21" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
21" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	30.00	6.02	.72	36.74	43.70
	Inst	LF	Sm	CY	.222	252.0	33.10	8.57	1.02	42.69	51.10
21" deep, 30' long	Demo	BF	Lg	LK	.019	2520	---	.73	.10	.83	1.12
	Demo	BF	Sm	LK	.027	1764	---	1.03	.15	1.18	1.59
21" deep, 30' long	Inst	BF	Lg	CY	.022	2520	4.29	.85	.10	5.24	6.22
	Inst	BF	Sm	CY	.032	1764	4.73	1.24	.15	6.12	7.32
21" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
21" deep, 30' long	Inst	SF	Lg	CY	.009	6545	1.65	.35	.04	2.04	2.42
	Inst	SF	Sm	CY	.012	4582	1.82	.46	.06	2.34	2.80
22-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
22-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	32.20	6.02	.72	38.94	46.10
	Inst	LF	Sm	CY	.222	252.0	35.50	8.57	1.02	45.09	53.80
22-1/2" deep, 30' long	Demo	BF	Lg	LK	.018	2700	---	.69	.10	.79	1.06
	Demo	BF	Sm	LK	.025	1890	---	.95	.14	1.09	1.48
22-1/2" deep, 30' long	Inst	BF	Lg	CY	.021	2700	4.29	.81	.10	5.20	6.17
	Inst	BF	Sm	CY	.030	1890	4.73	1.16	.14	6.03	7.20
22-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
22-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	1.77	.35	.04	2.16	2.56
	Inst	SF	Sm	CY	.012	4582	1.95	.46	.06	2.47	2.95
24" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
24" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	34.30	6.02	.72	41.04	48.60
	Inst	LF	Sm	CY	.222	252.0	37.90	8.57	1.02	47.49	56.60
24" deep, 30' long	Demo	BF	Lg	LK	.017	2880	---	.65	.09	.74	1.00
	Demo	BF	Sm	LK	.024	2016	---	.92	.13	1.05	1.41

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
24" deep, 30' long	Inst	BF	Lg	CY	.019	2880	4.29	.73	.09	5.11	6.05
	Inst	BF	Sm	CY	.028	2016	4.74	1.08	.13	5.95	7.09
24" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
24" deep, 30' long	Inst	SF	Lg	CY	.009	6545	1.89	.35	.04	2.28	2.70
	Inst	SF	Sm	CY	.012	4582	2.08	.46	.06	2.60	3.10
25-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
25-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	36.50	6.02	.72	43.24	51.10
	Inst	LF	Sm	CY	.222	252.0	40.20	8.57	1.02	49.79	59.30
25-1/2" deep, 30' long	Demo	BF	Lg	LK	.016	3060	---	.61	.08	.69	.94
	Demo	BF	Sm	LK	.022	2142	---	.84	.12	.96	1.30
25-1/2" deep, 30' long	Inst	BF	Lg	CY	.018	3060	4.29	.69	.08	5.06	5.99
	Inst	BF	Sm	CY	.026	2142	4.73	1.00	.12	5.85	6.96
25-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
25-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	2.01	.35	.04	2.40	2.84
	Inst	SF	Sm	CY	.012	4582	2.21	.46	.06	2.73	3.25
27" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
27" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	38.60	6.02	.72	45.34	53.50
	Inst	LF	Sm	CY	.222	252.0	42.60	8.57	1.02	52.19	62.00
27" deep, 30' long	Demo	BF	Lg	LK	.015	3240	---	.57	.08	.65	.88
	Demo	BF	Sm	LK	.021	2268	---	.80	.11	.91	1.23
27" deep, 30' long	Inst	BF	Lg	CY	.017	3240	4.29	.66	.08	5.03	5.93
	Inst	BF	Sm	CY	.025	2268	4.73	.97	.11	5.81	6.90
27" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
27" deep, 30' long	Inst	SF	Lg	CY	.009	6545	2.12	.35	.04	2.51	2.96
	Inst	SF	Sm	CY	.012	4582	2.34	.46	.06	2.86	3.40

5-1/8" thick, SF pricing based on 16" oc

12" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
12" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	22.90	6.02	.72	29.64	35.50
	Inst	LF	Sm	CY	.222	252.0	25.20	8.57	1.02	34.79	42.00
12" deep, 20' long	Demo	BF	Lg	LK	.022	2160	---	.84	.12	.96	1.30
	Demo	BF	Sm	LK	.032	1512	---	1.22	.17	1.39	1.88
12" deep, 20' long	Inst	BF	Lg	CY	.026	2160	3.81	1.00	.12	4.93	5.91
	Inst	BF	Sm	CY	.037	1512	4.20	1.43	.17	5.80	7.00
12" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
12" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.26	.35	.04	1.65	1.98
	Inst	SF	Sm	CY	.012	4582	1.39	.46	.06	1.91	2.31

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
13-1/2" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
13-1/2" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	25.80	6.02	.72	32.54	38.80
	Inst	LF	Sm	CY	.222	252.0	28.40	8.57	1.02	37.99	45.60
13-1/2" deep, 20' long	Demo	BF	Lg	LK	.020	2430	---	.76	.11	.87	1.18
	Demo	BF	Sm	LK	.028	1701	---	1.07	.15	1.22	1.65
13-1/2" deep, 20' long	Inst	BF	Lg	CY	.023	2430	3.82	.89	.11	4.82	5.75
	Inst	BF	Sm	CY	.033	1701	4.20	1.27	.15	5.62	6.76
13-1/2" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
13-1/2" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.42	.35	.04	1.81	2.16
	Inst	SF	Sm	CY	.012	4582	1.56	.46	.06	2.08	2.50
15" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
15" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	28.60	6.02	.72	35.34	42.00
	Inst	LF	Sm	CY	.222	252.0	31.50	8.57	1.02	41.09	49.30
15" deep, 20' long	Demo	BF	Lg	LK	.018	2700	---	.69	.10	.79	1.06
	Demo	BF	Sm	LK	.025	1890	---	.95	.14	1.09	1.48
15" deep, 20' long	Inst	BF	Lg	CY	.021	2700	3.81	.81	.10	4.72	5.62
	Inst	BF	Sm	CY	.030	1890	4.20	1.16	.14	5.50	6.59
15" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
15" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.57	.35	.04	1.96	2.33
	Inst	SF	Sm	CY	.012	4582	1.73	.46	.06	2.25	2.70
16-1/2" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
16-1/2" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	31.50	6.02	.72	38.24	45.40
	Inst	LF	Sm	CY	.222	252.0	34.70	8.57	1.02	44.29	52.90
16-1/2" deep, 20' long	Demo	BF	Lg	LK	.016	2970	---	.61	.09	.70	.95
	Demo	BF	Sm	LK	.023	2079	---	.88	.12	1.00	1.35
16-1/2" deep, 20' long	Inst	BF	Lg	CY	.019	2970	3.82	.73	.09	4.64	5.51
	Inst	BF	Sm	CY	.027	2079	4.20	1.04	.12	5.36	6.41
16-1/2" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
16-1/2" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.73	.35	.04	2.12	2.52
	Inst	SF	Sm	CY	.012	4582	1.91	.46	.06	2.43	2.90
18" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
18" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	34.30	6.02	.72	41.04	48.60
	Inst	LF	Sm	CY	.222	252.0	37.80	8.57	1.02	47.39	56.50
18" deep, 20' long	Demo	BF	Lg	LK	.015	3240	---	.57	.08	.65	.88
	Demo	BF	Sm	LK	.021	2268	---	.80	.11	.91	1.23

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
18" deep, 20' long	Inst	BF	Lg	CY	.017	3240	3.81	.66	.08	4.55	5.38
	Inst	BF	Sm	CY	.025	2268	4.20	.97	.11	5.28	6.29
18" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
18" deep, 20' long	Inst	SF	Lg	CY	.009	6545	1.89	.35	.04	2.28	2.70
	Inst	SF	Sm	CY	.012	4582	2.08	.46	.06	2.60	3.10
19-1/2" deep, 20' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
19-1/2" deep, 20' long	Inst	LF	Lg	CY	.156	360.0	37.20	6.02	.72	43.94	51.90
	Inst	LF	Sm	CY	.222	252.0	41.00	8.57	1.02	50.59	60.10
19-1/2" deep, 20' long	Demo	BF	Lg	LK	.014	3510	---	.53	.07	.60	.82
	Demo	BF	Sm	LK	.020	2457	---	.76	.10	.86	1.17
19-1/2" deep, 20' long	Inst	BF	Lg	CY	.016	3510	3.82	.62	.07	4.51	5.33
	Inst	BF	Sm	CY	.023	2457	4.20	.89	.10	5.19	6.17
19-1/2" deep, 20' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
19-1/2" deep, 20' long	Inst	SF	Lg	CY	.009	6545	2.05	.35	.04	2.44	2.88
	Inst	SF	Sm	CY	.012	4582	2.25	.46	.06	2.77	3.30
21" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
21" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	40.00	6.02	.72	46.74	55.20
	Inst	LF	Sm	CY	.222	252.0	44.10	8.57	1.02	53.69	63.80
21" deep, 30' long	Demo	BF	Lg	LK	.013	3780	---	.50	.07	.57	.77
	Demo	BF	Sm	LK	.018	2646	---	.69	.10	.79	1.06
21" deep, 30' long	Inst	BF	Lg	CY	.015	3780	3.81	.58	.07	4.46	5.26
	Inst	BF	Sm	CY	.021	2646	4.20	.81	.10	5.11	6.06
21" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
21" deep, 30' long	Inst	SF	Lg	CY	.009	6545	2.20	.35	.04	2.59	3.06
	Inst	SF	Sm	CY	.012	4582	2.43	.46	.06	2.95	3.50
22-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
22-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	42.90	6.02	.72	49.64	58.50
	Inst	LF	Sm	CY	.222	252.0	47.30	8.57	1.02	56.89	67.40
22-1/2" deep, 30' long	Demo	BF	Lg	LK	.012	4050	---	.46	.06	.52	.70
	Demo	BF	Sm	LK	.017	2835	---	.65	.09	.74	1.00
22-1/2" deep, 30' long	Inst	BF	Lg	CY	.014	4050	3.82	.54	.06	4.42	5.21
	Inst	BF	Sm	CY	.020	2835	4.20	.77	.09	5.06	6.00
22-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
22-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	2.36	.35	.04	2.75	3.24
	Inst	SF	Sm	CY	.012	4582	2.60	.46	.06	3.12	3.70

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	Cost

5-1/8" thick, SF pricing based on 16" oc (continued)

24" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
24" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	45.80	6.02	.72	52.54	61.80
	Inst	LF	Sm	CY	.222	252.0	50.40	8.57	1.02	59.99	71.00
24" deep, 30' long	Demo	BF	Lg	LK	.011	4320	---	.42	.06	.48	.65
	Demo	BF	Sm	LK	.016	3024	---	.61	.09	.70	.95
24" deep, 30' long	Inst	BF	Lg	CY	.013	4320	3.81	.50	.06	4.37	5.14
	Inst	BF	Sm	CY	.019	3024	4.20	.73	.09	5.02	5.95
24" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
24" deep, 30' long	Inst	SF	Lg	CY	.009	6545	2.52	.35	.04	2.91	3.42
	Inst	SF	Sm	CY	.012	4582	2.77	.46	.06	3.29	3.89
25-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
25-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	48.60	6.02	.72	55.34	65.10
	Inst	LF	Sm	CY	.222	252.0	53.60	8.57	1.02	63.19	74.70
25-1/2" deep, 30' long	Demo	BF	Lg	LK	.010	4590	---	.38	.06	.44	.59
	Demo	BF	Sm	LK	.015	3213	---	.57	.08	.65	.88
25-1/2" deep, 30' long	Inst	BF	Lg	CY	.012	4590	3.81	.46	.06	4.33	5.09
	Inst	BF	Sm	CY	.017	3213	4.20	.66	.08	4.94	5.83
25-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
25-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	2.68	.35	.04	3.07	3.61
	Inst	SF	Sm	CY	.012	4582	2.95	.46	.06	3.47	4.10
27" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
27" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	51.50	6.02	.72	58.24	68.40
	Inst	LF	Sm	CY	.222	252.0	56.70	8.57	1.02	66.29	78.20
27" deep, 40' long	Demo	BF	Lg	LK	.010	4860	---	.38	.05	.43	.58
	Demo	BF	Sm	LK	.014	3402	---	.53	.08	.61	.83
27" deep, 40' long	Inst	BF	Lg	CY	.012	4860	3.81	.46	.05	4.32	5.08
	Inst	BF	Sm	CY	.016	3402	4.20	.62	.08	4.90	5.77
27" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
27" deep, 40' long	Inst	SF	Lg	CY	.009	6545	2.83	.35	.04	3.22	3.78
	Inst	SF	Sm	CY	.012	4582	3.12	.46	.06	3.64	4.30
28-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
28-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	54.40	6.02	.72	61.14	71.70
	Inst	LF	Sm	CY	.222	252.0	59.90	8.57	1.02	69.49	81.90
28-1/2" deep, 40' long	Demo	BF	Lg	LK	.009	5130	---	.34	.05	.39	.53
	Demo	BF	Sm	LK	.013	3591	---	.50	.07	.57	.77
28-1/2" deep, 40' long	Inst	BF	Lg	CY	.011	5130	3.81	.42	.05	4.28	5.03
	Inst	BF	Sm	CY	.016	3591	4.20	.62	.07	4.89	5.76

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
28-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
28-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	2.99	.35	.04	3.38	3.96
	Inst	SF	Sm	CY	.012	4582	3.29	.46	.06	3.81	4.49
30" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
30" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	57.20	6.02	.72	63.94	74.90
	Inst	LF	Sm	CY	.222	252.0	63.00	8.57	1.02	72.59	85.50
30" deep, 40' long	Demo	BF	Lg	LK	.009	5400	---	.34	.05	.39	.53
	Demo	BF	Sm	LK	.013	3780	---	.50	.07	.57	.77
30" deep, 40' long	Inst	BF	Lg	CY	.010	5400	3.81	.39	.05	4.25	4.97
	Inst	BF	Sm	CY	.015	3780	4.20	.58	.07	4.85	5.71
30" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
30" deep, 40' long	Inst	SF	Lg	CY	.009	6545	3.15	.35	.04	3.54	4.15
	Inst	SF	Sm	CY	.012	4582	3.47	.46	.06	3.99	4.70
31-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
31-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	60.10	6.02	.72	66.84	78.20
	Inst	LF	Sm	CY	.222	252.0	66.20	8.57	1.02	75.79	89.20
31-1/2" deep, 40' long	Demo	BF	Lg	LK	.008	5670	---	.31	.05	.36	.48
	Demo	BF	Sm	LK	.012	3969	---	.46	.06	.52	.70
31-1/2" deep, 40' long	Inst	BF	Lg	CY	.010	5670	3.81	.39	.05	4.25	4.97
	Inst	BF	Sm	CY	.014	3969	4.20	.54	.06	4.80	5.65
31-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
31-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	3.30	.35	.04	3.69	4.32
	Inst	SF	Sm	CY	.012	4582	3.64	.46	.06	4.16	4.89
33" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
33" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	62.90	6.02	.72	69.64	81.50
	Inst	LF	Sm	CY	.222	252.0	69.40	8.57	1.02	78.99	92.80
33" deep, 40' long	Demo	BF	Lg	LK	.008	5940	---	.31	.04	.35	.47
	Demo	BF	Sm	LK	.012	4158	---	.46	.06	.52	.70
33" deep, 40' long	Inst	BF	Lg	CY	.009	5940	3.81	.35	.04	4.20	4.91
	Inst	BF	Sm	CY	.013	4158	4.20	.50	.06	4.76	5.59
33" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
33" deep, 40' long	Inst	SF	Lg	CY	.009	6545	3.46	.35	.04	3.85	4.51
	Inst	SF	Sm	CY	.012	4582	3.81	.46	.06	4.33	5.09
34-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
34-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	65.80	6.02	.72	72.54	84.80
	Inst	LF	Sm	CY	.222	252.0	72.50	8.57	1.02	82.09	96.40
34-1/2" deep, 40' long	Demo	BF	Lg	LK	.008	6210	---	.31	.04	.35	.47
	Demo	BF	Sm	LK	.011	4347	---	.42	.06	.48	.65

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
34-1/2" deep, 40' long	Inst	BF	Lg	CY	.009	6210	3.81	.35	.04	4.20	4.91
	Inst	BF	Sm	CY	.013	4347	4.20	.50	.06	4.76	5.59
34-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
34-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	3.62	.35	.04	4.01	4.69
	Inst	SF	Sm	CY	.012	4582	3.99	.46	.06	4.51	5.30
36" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
36" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	68.60	6.02	.72	75.34	88.10
	Inst	LF	Sm	CY	.222	252.0	75.60	8.57	1.02	85.19	100.00
36" deep, 50' long	Demo	BF	Lg	LK	.007	6480	---	.27	.04	.31	.41
	Demo	BF	Sm	LK	.011	4536	---	.42	.06	.48	.65
36" deep, 50' long	Inst	BF	Lg	CY	.009	6480	3.81	.35	.04	4.20	4.91
	Inst	BF	Sm	CY	.012	4536	4.20	.46	.06	4.72	5.54
36" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
36" deep, 50' long	Inst	SF	Lg	CY	.009	6545	3.78	.35	.04	4.17	4.87
	Inst	SF	Sm	CY	.012	4582	4.16	.46	.06	4.68	5.49
37-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
37-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	71.50	6.02	.72	78.24	91.40
	Inst	LF	Sm	CY	.222	252.0	78.80	8.57	1.02	88.39	104.00
37-1/2" deep, 50' long	Demo	BF	Lg	LK	.007	6750	---	.27	.04	.31	.41
	Demo	BF	Sm	LK	.010	4725	---	.38	.05	.43	.58
37-1/2" deep, 50' long	Inst	BF	Lg	CY	.008	6750	3.81	.31	.04	4.16	4.85
	Inst	BF	Sm	CY	.012	4725	4.20	.46	.05	4.71	5.53
37-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
37-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	3.93	.35	.04	4.32	5.05
	Inst	SF	Sm	CY	.012	4582	4.33	.46	.06	4.85	5.69
39" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
39" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	74.40	6.02	.72	81.14	94.70
	Inst	LF	Sm	CY	.222	252.0	82.00	8.57	1.02	91.59	107.00
39" deep, 50' long	Demo	BF	Lg	LK	.007	7020	---	.27	.04	.31	.41
	Demo	BF	Sm	LK	.010	4914	---	.38	.05	.43	.58
39" deep, 50' long	Inst	BF	Lg	CY	.008	7020	3.81	.31	.04	4.16	4.85
	Inst	BF	Sm	CY	.011	4914	4.20	.42	.05	4.67	5.47
39" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
39" deep, 50' long	Inst	SF	Lg	CY	.009	6545	4.09	.35	.04	4.48	5.23
	Inst	SF	Sm	CY	.012	4582	4.51	.46	.06	5.03	5.89

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

6-3/4" thick, SF pricing based on 16" oc

30" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
30" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	79.40	6.02	.72	86.14	100.00
	Inst	LF	Sm	CY	.222	252.0	87.40	8.57	1.02	96.99	114.00
30" deep, 30' long	Demo	BF	Lg	LK	.007	7200	---	.27	.04	.31	.41
	Demo	BF	Sm	LK	.010	5040	---	.38	.05	.43	.58
30" deep, 30' long	Inst	BF	Lg	CY	.008	7200	3.97	.31	.04	4.32	5.04
	Inst	BF	Sm	CY	.011	5040	4.37	.42	.05	4.84	5.67
30" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
30" deep, 30' long	Inst	SF	Lg	CY	.009	6545	4.36	.35	.04	4.75	5.54
	Inst	SF	Sm	CY	.012	4582	4.81	.46	.06	5.33	6.24
31-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
31-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	83.30	6.02	.72	90.04	105.00
	Inst	LF	Sm	CY	.222	252.0	91.80	8.57	1.02	101.39	119.00
31-1/2" deep, 30' long	Demo	BF	Lg	LK	.006	7560	---	.23	.03	.26	.35
	Demo	BF	Sm	LK	.009	5292	---	.34	.05	.39	.53
31-1/2" deep, 30' long	Inst	BF	Lg	CY	.007	7560	3.97	.27	.03	4.27	4.97
	Inst	BF	Sm	CY	.011	5292	4.37	.42	.05	4.84	5.67
31-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
31-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	4.58	.35	.04	4.97	5.79
	Inst	SF	Sm	CY	.012	4582	5.05	.46	.06	5.57	6.52
33" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
33" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	87.30	6.02	.72	94.04	110.00
	Inst	LF	Sm	CY	.222	252.0	96.20	8.57	1.02	105.79	124.00
33" deep, 30' long	Demo	BF	Lg	LK	.006	7920	---	.23	.03	.26	.35
	Demo	BF	Sm	LK	.009	5544	---	.34	.05	.39	.53
33" deep, 30' long	Inst	BF	Lg	CY	.007	7920	3.97	.27	.03	4.27	4.97
	Inst	BF	Sm	CY	.010	5544	4.37	.39	.05	4.81	5.62
33" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
33" deep, 30' long	Inst	SF	Lg	CY	.009	6545	4.80	.35	.04	5.19	6.05
	Inst	SF	Sm	CY	.012	4582	5.29	.46	.06	5.81	6.79
34-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
34-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	91.20	6.02	.72	97.94	114.00
	Inst	LF	Sm	CY	.222	252.0	101.00	8.57	1.02	110.59	129.00
34-1/2" deep, 40' long	Demo	BF	Lg	LK	.006	8280	---	.23	.03	.26	.35
	Demo	BF	Sm	LK	.008	5796	---	.31	.04	.35	.47

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
34-1/2" deep, 40' long	Inst	BF	Lg	CY	.007	8280	3.97	.27	.03	4.27	4.97
	Inst	BF	Sm	CY	.010	5796	4.37	.39	.04	4.80	5.61
34-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
34-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	5.02	.35	.04	5.41	6.30
	Inst	SF	Sm	CY	.012	4582	5.53	.46	.06	6.05	7.07
36" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
36" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	95.20	6.02	.72	101.94	119.00
	Inst	LF	Sm	CY	.222	252.0	105.00	8.57	1.02	114.59	134.00
36" deep, 40' long	Demo	BF	Lg	LK	.006	8640	---	.23	.03	.26	.35
	Demo	BF	Sm	LK	.008	6048	---	.31	.04	.35	.47
36" deep, 40' long	Inst	BF	Lg	CY	.006	8640	3.97	.23	.03	4.23	4.92
	Inst	BF	Sm	CY	.009	6048	4.37	.35	.04	4.76	5.55
36" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
36" deep, 40' long	Inst	SF	Lg	CY	.009	6545	5.24	.35	.04	5.63	6.55
	Inst	SF	Sm	CY	.012	4582	5.77	.46	.06	6.29	7.34
37-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
37-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	99.20	6.02	.72	105.94	123.00
	Inst	LF	Sm	CY	.222	252.0	109.00	8.57	1.02	118.59	139.00
37-1/2" deep, 40' long	Demo	BF	Lg	LK	.005	9000	---	.19	.03	.22	.30
	Demo	BF	Sm	LK	.008	6300	---	.31	.04	.35	.47
37-1/2" deep, 40' long	Inst	BF	Lg	CY	.006	9000	3.97	.23	.03	4.23	4.92
	Inst	BF	Sm	CY	.009	6300	4.37	.35	.04	4.76	5.55
37-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
37-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	5.45	.35	.04	5.84	6.79
	Inst	SF	Sm	CY	.012	4582	6.01	.46	.06	6.53	7.62
39" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
39" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	103.00	6.02	.72	109.74	128.00
	Inst	LF	Sm	CY	.222	252.0	114.00	8.57	1.02	123.59	144.00
39" deep, 50' long	Demo	BF	Lg	LK	.005	9360	---	.19	.03	.22	.30
	Demo	BF	Sm	LK	.007	6552	---	.27	.04	.31	.41
39" deep, 50' long	Inst	BF	Lg	CY	.006	9360	3.97	.23	.03	4.23	4.92
	Inst	BF	Sm	CY	.009	6552	4.37	.35	.04	4.76	5.55
39" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
39" deep, 50' long	Inst	SF	Lg	CY	.009	6545	5.67	.35	.04	6.06	7.05
	Inst	SF	Sm	CY	.012	4582	6.25	.46	.06	6.77	7.90

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
40-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
40-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	107.00	6.02	.72	113.74	132.00
	Inst	LF	Sm	CY	.222	252.0	118.00	8.57	1.02	127.59	149.00
40-1/2" deep, 50' long	Demo	BF	Lg	LK	.005	9720	---	.19	.03	.22	.30
	Demo	BF	Sm	LK	.007	6804	---	.27	.04	.31	.41
40-1/2" deep, 50' long	Inst	BF	Lg	CY	.006	9720	3.97	.23	.03	4.23	4.92
	Inst	BF	Sm	CY	.008	6804	4.37	.31	.04	4.72	5.50
40-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
40-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	5.89	.35	.04	6.28	7.30
	Inst	SF	Sm	CY	.012	4582	6.49	.46	.06	7.01	8.17
42" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
42" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	111.00	6.02	.72	117.74	137.00
	Inst	LF	Sm	CY	.222	252.0	122.00	8.57	1.02	131.59	154.00
42" deep, 50' long	Demo	BF	Lg	LK	.005	10080	---	.19	.03	.22	.30
	Demo	BF	Sm	LK	.007	7056	---	.27	.04	.31	.41
42" deep, 50' long	Inst	BF	Lg	CY	.006	10080	3.97	.23	.03	4.23	4.92
	Inst	BF	Sm	CY	.008	7056	4.37	.31	.04	4.72	5.50
42" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
42" deep, 50' long	Inst	SF	Lg	CY	.009	6545	6.11	.35	.04	6.50	7.55
	Inst	SF	Sm	CY	.012	4582	6.73	.46	.06	7.25	8.45
43-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
43-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	115.00	6.02	.72	121.74	141.00
	Inst	LF	Sm	CY	.222	252.0	127.00	8.57	1.02	136.59	159.00
43-1/2" deep, 50' long	Demo	BF	Lg	LK	.005	10440	---	.19	.02	.21	.29
	Demo	BF	Sm	LK	.007	7308	---	.27	.04	.31	.41
43-1/2" deep, 50' long	Inst	BF	Lg	CY	.005	10440	3.97	.19	.02	4.18	4.86
	Inst	BF	Sm	CY	.008	7308	4.37	.31	.04	4.72	5.50
43-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
43-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	6.33	.35	.04	6.72	7.81
	Inst	SF	Sm	CY	.012	4582	6.97	.46	.06	7.49	8.72
45" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
45" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	119.00	6.02	.72	125.74	146.00
	Inst	LF	Sm	CY	.222	252.0	131.00	8.57	1.02	140.59	164.00
45" deep, 50' long	Demo	BF	Lg	LK	.004	10800	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.006	7560	---	.23	.03	.26	.35
45" deep, 50' long	Inst	BF	Lg	CY	.005	10800	3.97	.19	.02	4.18	4.86
	Inst	BF	Sm	CY	.007	7560	4.37	.27	.03	4.67	5.43
45" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
45" deep, 50' long	Inst	SF	Lg	CY	.009	6545	6.55	.35	.04	6.94	8.06
	Inst	SF	Sm	CY	.012	4582	7.21	.46	.06	7.73	9.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

8-3/4" thick, SF pricing based on 16" oc

36" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
36" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	117.00	6.02	.72	123.74	144.00
	Inst	LF	Sm	CY	.222	252.0	129.00	8.57	1.02	138.59	162.00
36" deep, 30' long	Demo	BF	Lg	LK	.004	10800	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.006	7560	---	.23	.03	.26	.35
36" deep, 30' long	Inst	BF	Lg	CY	.005	10800	3.92	.19	.02	4.13	4.80
	Inst	BF	Sm	CY	.007	7560	4.31	.27	.03	4.61	5.36
36" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
36" deep, 30' long	Inst	SF	Lg	CY	.009	6545	6.46	.35	.04	6.85	7.96
	Inst	SF	Sm	CY	.012	4582	7.11	.46	.06	7.63	8.88
37-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
37-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	122.00	6.02	.72	128.74	150.00
	Inst	LF	Sm	CY	.222	252.0	135.00	8.57	1.02	144.59	168.00
37-1/2" deep, 30' long	Demo	BF	Lg	LK	.004	11250	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.006	7875	---	.23	.03	.26	.35
37-1/2" deep, 30' long	Inst	BF	Lg	CY	.005	11250	3.92	.19	.02	4.13	4.80
	Inst	BF	Sm	CY	.007	7875	4.31	.27	.03	4.61	5.36
37-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
37-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	6.73	.35	.04	7.12	8.27
	Inst	SF	Sm	CY	.012	4582	7.41	.46	.06	7.93	9.23
39" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
39" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	127.00	6.02	.72	133.74	155.00
	Inst	LF	Sm	CY	.222	252.0	140.00	8.57	1.02	149.59	174.00
39" deep, 30' long	Demo	BF	Lg	LK	.004	11700	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.006	8190	---	.23	.03	.26	.35
39" deep, 30' long	Inst	BF	Lg	CY	.005	11700	3.92	.19	.02	4.13	4.80
	Inst	BF	Sm	CY	.007	8190	4.31	.27	.03	4.61	5.36
39" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
39" deep, 30' long	Inst	SF	Lg	CY	.009	6545	7.00	.35	.04	7.39	8.58
	Inst	SF	Sm	CY	.012	4582	7.70	.46	.06	8.22	9.56
40-1/2" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
40-1/2" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	132.00	6.02	.72	138.74	161.00
	Inst	LF	Sm	CY	.222	252.0	145.00	8.57	1.02	154.59	180.00
40-1/2" deep, 30' long	Demo	BF	Lg	LK	.004	12150	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.006	8505	---	.23	.03	.26	.35
40-1/2" deep, 30' long	Inst	BF	Lg	CY	.005	12150	3.92	.19	.02	4.13	4.80
	Inst	BF	Sm	CY	.007	8505	4.31	.27	.03	4.61	5.36
40-1/2" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
40-1/2" deep, 30' long	Inst	SF	Lg	CY	.009	6545	7.27	.35	.04	7.66	8.89
	Inst	SF	Sm	CY	.012	4582	8.00	.46	.06	8.52	9.91

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
42" deep, 30' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
42" deep, 30' long	Inst	LF	Lg	CY	.156	360.0	137.00	6.02	.72	143.74	167.00
	Inst	LF	Sm	CY	.222	252.0	151.00	8.57	1.02	160.59	186.00
42" deep, 30' long	Demo	BF	Lg	LK	.004	12600	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.005	8820	---	.19	.03	.22	.30
42" deep, 30' long	Inst	BF	Lg	CY	.004	12600	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.006	8820	4.31	.23	.03	4.57	5.31
42" deep, 30' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
42" deep, 30' long	Inst	SF	Lg	CY	.009	6545	7.54	.35	.04	7.93	9.20
	Inst	SF	Sm	CY	.012	4582	8.30	.46	.06	8.82	10.30
43-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
43-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	142.00	6.02	.72	148.74	172.00
	Inst	LF	Sm	CY	.222	252.0	156.00	8.57	1.02	165.59	193.00
43-1/2" deep, 40' long	Demo	BF	Lg	LK	.004	13050	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.005	9135	---	.19	.03	.22	.30
43-1/2" deep, 40' long	Inst	BF	Lg	CY	.004	13050	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.006	9135	4.31	.23	.03	4.57	5.31
43-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
43-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	7.81	.35	.04	8.20	9.51
	Inst	SF	Sm	CY	.012	4582	8.59	.46	.06	9.11	10.60
45" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
45" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	147.00	6.02	.72	153.74	178.00
	Inst	LF	Sm	CY	.222	252.0	162.00	8.57	1.02	171.59	199.00
45" deep, 40' long	Demo	BF	Lg	LK	.004	13500	---	.15	.02	.17	.23
	Demo	BF	Sm	LK	.005	9450	---	.19	.03	.22	.30
45" deep, 40' long	Inst	BF	Lg	CY	.004	13500	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.006	9450	4.31	.23	.03	4.57	5.31
45" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
45" deep, 40' long	Inst	SF	Lg	CY	.009	6545	8.08	.35	.04	8.47	9.82
	Inst	SF	Sm	CY	.012	4582	8.89	.46	.06	9.41	10.90
46-1/2" deep, 40' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
46-1/2" deep, 40' long	Inst	LF	Lg	CY	.156	360.0	152.00	6.02	.72	158.74	184.00
	Inst	LF	Sm	CY	.222	252.0	167.00	8.57	1.02	176.59	205.00
46-1/2" deep, 40' long	Demo	BF	Lg	LK	.003	13950	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.005	9765	---	.19	.03	.22	.30

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

8-3/4" thick, SF pricing based on 16" oc (continued)

46-1/2" deep, 40' long	Inst	BF	Lg	CY	.004	13950	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.006	9765	4.31	.23	.03	4.57	5.31
46-1/2" deep, 40' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
46-1/2" deep, 40' long	Inst	SF	Lg	CY	.009	6545	8.34	.35	.04	8.73	10.10
	Inst	SF	Sm	CY	.012	4582	9.19	.46	.06	9.71	11.30
48" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
48" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	157.00	6.02	.72	163.74	189.00
	Inst	LF	Sm	CY	.222	252.0	172.00	8.57	1.02	181.59	211.00
48" deep, 50' long	Demo	BF	Lg	LK	.003	14400	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.005	10080	---	.19	.03	.22	.30
48" deep, 50' long	Inst	BF	Lg	CY	.004	14400	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.006	10080	4.31	.23	.03	4.57	5.31
48" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
48" deep, 50' long	Inst	SF	Lg	CY	.009	6545	8.61	.35	.04	9.00	10.40
	Inst	SF	Sm	CY	.012	4582	9.48	.46	.06	10.00	11.60
49-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
49-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	162.00	6.02	.72	168.74	195.00
	Inst	LF	Sm	CY	.222	252.0	178.00	8.57	1.02	187.59	217.00
49-1/2" deep, 50' long	Demo	BF	Lg	LK	.003	14850	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.005	10395	---	.19	.02	.21	.29
49-1/2" deep, 50' long	Inst	BF	Lg	CY	.004	14850	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.005	10395	4.31	.19	.02	4.52	5.25
49-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
49-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	8.88	.35	.04	9.27	10.70
	Inst	SF	Sm	CY	.012	4582	9.78	.46	.06	10.30	12.00
51" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
51" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	166.00	6.02	.72	172.74	201.00
	Inst	LF	Sm	CY	.222	252.0	183.00	8.57	1.02	192.59	224.00
51" deep, 50' long	Demo	BF	Lg	LK	.003	15300	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	10710	---	.15	.02	.17	.23
51" deep, 50' long	Inst	BF	Lg	CY	.004	15300	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.005	10710	4.31	.19	.02	4.52	5.25
51" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
51" deep, 50' long	Inst	SF	Lg	CY	.009	6545	9.15	.35	.04	9.54	11.10
	Inst	SF	Sm	CY	.012	4582	10.10	.46	.06	10.62	12.30

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
52-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
52-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	171.00	6.02	.72	177.74	206.00
	Inst	LF	Sm	CY	.222	252.0	189.00	8.57	1.02	198.59	230.00
52-1/2" deep, 50' long	Demo	BF	Lg	LK	.003	15750	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	11025	---	.15	.02	.17	.23
52-1/2" deep, 50' long	Inst	BF	Lg	CY	.004	15750	3.92	.15	.02	4.09	4.74
	Inst	BF	Sm	CY	.005	11025	4.31	.19	.02	4.52	5.25
52-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
52-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	9.42	.35	.04	9.81	11.40
	Inst	SF	Sm	CY	.012	4582	10.40	.46	.06	10.92	12.60
54" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
54" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	176.00	6.02	.72	182.74	212.00
	Inst	LF	Sm	CY	.222	252.0	194.00	8.57	1.02	203.59	236.00
54" deep, 50' long	Demo	BF	Lg	LK	.003	16200	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	11340	---	.15	.02	.17	.23
54" deep, 50' long	Inst	BF	Lg	CY	.003	16200	3.92	.12	.02	4.06	4.69
	Inst	BF	Sm	CY	.005	11340	4.31	.19	.02	4.52	5.25
54" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
54" deep, 50' long	Inst	SF	Lg	CY	.009	6545	9.69	.35	.04	10.08	11.70
	Inst	SF	Sm	CY	.012	4582	10.70	.46	.06	11.22	13.00
55-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
55-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	181.00	6.02	.72	187.74	217.00
	Inst	LF	Sm	CY	.222	252.0	199.00	8.57	1.02	208.59	242.00
55-1/2" deep, 50' long	Demo	BF	Lg	LK	.003	16650	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	11655	---	.15	.02	.17	.23
55-1/2" deep, 50' long	Inst	BF	Lg	CY	.003	16650	3.92	.12	.02	4.06	4.69
	Inst	BF	Sm	CY	.005	11655	4.31	.19	.02	4.52	5.25
55-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
55-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	9.96	.35	.04	10.35	12.00
	Inst	SF	Sm	CY	.012	4582	11.00	.46	.06	11.52	13.30
57" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
57" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	186.00	6.02	.72	192.74	223.00
	Inst	LF	Sm	CY	.222	252.0	205.00	8.57	1.02	214.59	248.00
57" deep, 50' long	Demo	BF	Lg	LK	.003	17100	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	11970	---	.15	.02	.17	.23
57" deep, 50' long	Inst	BF	Lg	CY	.003	17100	3.92	.12	.02	4.06	4.69
	Inst	BF	Sm	CY	.005	11970	4.31	.19	.02	4.52	5.25
57" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
57" deep, 50' long	Inst	SF	Lg	CY	.009	6545	10.20	.35	.04	10.59	12.30
	Inst	SF	Sm	CY	.012	4582	11.30	.46	.06	11.82	13.70

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

10-3/4" thick, SF pricing based on 16' oc

42" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
42" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	196.00	6.02	.72	202.74	235.00
	Inst	LF	Sm	CY	.222	252.0	217.00	8.57	1.02	226.59	262.00
42" deep, 50' long	Demo	BF	Lg	LK	.003	15120	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.005	10584	---	.19	.02	.21	.29
42" deep, 50' long	Inst	BF	Lg	CY	.004	15120	4.68	.15	.02	4.85	5.62
	Inst	BF	Sm	CY	.005	10584	5.16	.19	.02	5.37	6.22
42" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
42" deep, 50' long	Inst	SF	Lg	CY	.009	6545	10.80	.35	.04	11.19	13.00
	Inst	SF	Sm	CY	.012	4582	11.90	.46	.06	12.42	14.40
43-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
43-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	203.00	6.02	.72	209.74	243.00
	Inst	LF	Sm	CY	.222	252.0	224.00	8.57	1.02	233.59	271.00
43-1/2" deep, 50' long	Demo	BF	Lg	LK	.003	15660	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	10962	---	.15	.02	.17	.23
43-1/2" deep, 50' long	Inst	BF	Lg	CY	.004	15660	4.68	.15	.02	4.85	5.62
	Inst	BF	Sm	CY	.005	10962	5.16	.19	.02	5.37	6.22
43-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
43-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	11.20	.35	.04	11.59	13.40
	Inst	SF	Sm	CY	.012	4582	12.30	.46	.06	12.82	14.90
45" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
45" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	210.00	6.02	.72	216.74	251.00
	Inst	LF	Sm	CY	.222	252.0	232.00	8.57	1.02	241.59	280.00
45" deep, 50' long	Demo	BF	Lg	LK	.003	16200	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	11340	---	.15	.02	.17	.23
45" deep, 50' long	Inst	BF	Lg	CY	.003	16200	4.68	.12	.02	4.82	5.56
	Inst	BF	Sm	CY	.005	11340	5.16	.19	.02	5.37	6.22
45" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
45" deep, 50' long	Inst	SF	Lg	CY	.009	6545	11.60	.35	.04	11.99	13.80
	Inst	SF	Sm	CY	.012	4582	12.80	.46	.06	13.32	15.40
46-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
46-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	217.00	6.02	.72	223.74	259.00
	Inst	LF	Sm	CY	.222	252.0	240.00	8.57	1.02	249.59	289.00
46-1/2" deep, 50' long	Demo	BF	Lg	LK	.003	16740	---	.11	.02	.13	.18
	Demo	BF	Sm	LK	.004	11718	---	.15	.02	.17	.23
46-1/2" deep, 50' long	Inst	BF	Lg	CY	.003	16740	4.68	.12	.02	4.82	5.56
	Inst	BF	Sm	CY	.005	11718	5.16	.19	.02	5.37	6.22
46-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
46-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	12.00	.35	.04	12.39	14.30
	Inst	SF	Sm	CY	.012	4582	13.20	.46	.06	13.72	15.90

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
48" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
48" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	225.00	6.02	.72	231.74	267.00
	Inst	LF	Sm	CY	.222	252.0	248.00	8.57	1.02	257.59	298.00
48" deep, 50' long	Demo	BF	Lg	LK	.003	17280	---	.11	.01	.12	.17
	Demo	BF	Sm	LK	.004	12096	---	.15	.02	.17	.23
48" deep, 50' long	Inst	BF	Lg	CY	.003	17280	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.005	12096	5.16	.19	.02	5.37	6.22
48" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
48" deep, 50' long	Inst	SF	Lg	CY	.009	6545	12.40	.35	.04	12.79	14.70
	Inst	SF	Sm	CY	.012	4582	13.60	.46	.06	14.12	16.40
49-1/2" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
49-1/2" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	232.00	6.02	.72	238.74	275.00
	Inst	LF	Sm	CY	.222	252.0	255.00	8.57	1.02	264.59	307.00
49-1/2" deep, 50' long	Demo	BF	Lg	LK	.003	17820	---	.11	.01	.12	.17
	Demo	BF	Sm	LK	.004	12474	---	.15	.02	.17	.23
49-1/2" deep, 50' long	Inst	BF	Lg	CY	.003	17820	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	12474	5.16	.15	.02	5.33	6.17
49-1/2" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
49-1/2" deep, 50' long	Inst	SF	Lg	CY	.009	6545	12.70	.35	.04	13.09	15.20
	Inst	SF	Sm	CY	.012	4582	14.00	.46	.06	14.52	16.90
51" deep, 50' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
51" deep, 50' long	Inst	LF	Lg	CY	.156	360.0	239.00	6.02	.72	245.74	283.00
	Inst	LF	Sm	CY	.222	252.0	263.00	8.57	1.02	272.59	316.00
51" deep, 50' long	Demo	BF	Lg	LK	.003	18360	---	.11	.01	.12	.17
	Demo	BF	Sm	LK	.004	12852	---	.15	.02	.17	.23
51" deep, 50' long	Inst	BF	Lg	CY	.003	18360	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	12852	5.16	.15	.02	5.33	6.17
51" deep, 50' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
51" deep, 50' long	Inst	SF	Lg	CY	.009	6545	13.10	.35	.04	13.49	15.60
	Inst	SF	Sm	CY	.012	4582	14.50	.46	.06	15.02	17.40
52-1/2" deep, 60' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
52-1/2" deep, 60' long	Inst	LF	Lg	CY	.156	360.0	246.00	6.02	.72	252.74	292.00
	Inst	LF	Sm	CY	.222	252.0	271.00	8.57	1.02	280.59	324.00
52-1/2" deep, 60' long	Demo	BF	Lg	LK	.003	18900	---	.11	.01	.12	.17
	Demo	BF	Sm	LK	.004	13230	---	.15	.02	.17	.23
52-1/2" deep, 60' long	Inst	BF	Lg	CY	.003	18900	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	13230	5.16	.15	.02	5.33	6.17
52-1/2" deep, 60' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
52-1/2" deep, 60' long	Inst	SF	Lg	CY	.009	6545	13.50	.35	.04	13.89	16.10
	Inst	SF	Sm	CY	.012	4582	14.90	.46	.06	15.42	17.80

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

10-3/4" thick, SF pricing based on 16' oc (continued)

54" deep, 60' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
54" deep, 60' long	Inst	LF	Lg	CY	.156	360.0	253.00	6.02	.72	259.74	300.00
	Inst	LF	Sm	CY	.222	252.0	278.00	8.57	1.02	287.59	333.00
54" deep, 60' long	Demo	BF	Lg	LK	.002	19440	---	.08	.01	.09	.12
	Demo	BF	Sm	LK	.004	13608	---	.15	.02	.17	.23
54" deep, 60' long	Inst	BF	Lg	CY	.003	19440	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	13608	5.16	.15	.02	5.33	6.17
54" deep, 60' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
54" deep, 60' long	Inst	SF	Lg	CY	.009	6545	13.90	.35	.04	14.29	16.50
	Inst	SF	Sm	CY	.012	4582	15.30	.46	.06	15.82	18.30
55-1/2" deep, 60' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
55-1/2" deep, 60' long	Inst	LF	Lg	CY	.156	360.0	260.00	6.02	.72	266.74	308.00
	Inst	LF	Sm	CY	.222	252.0	286.00	8.57	1.02	295.59	342.00
55-1/2" deep, 60' long	Demo	BF	Lg	LK	.002	19980	---	.08	.01	.09	.12
	Demo	BF	Sm	LK	.003	13986	---	.11	.02	.13	.18
55-1/2" deep, 60' long	Inst	BF	Lg	CY	.003	19980	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	13986	5.16	.15	.02	5.33	6.17
55-1/2" deep, 60' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
55-1/2" deep, 60' long	Inst	SF	Lg	CY	.009	6545	14.30	.35	.04	14.69	17.00
	Inst	SF	Sm	CY	.012	4582	15.70	.46	.06	16.22	18.80
57" deep, 60' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
57" deep, 60' long	Inst	LF	Lg	CY	.156	360.0	267.00	6.02	.72	273.74	316.00
	Inst	LF	Sm	CY	.222	252.0	294.00	8.57	1.02	303.59	351.00
57" deep, 60' long	Demo	BF	Lg	LK	.002	20520	---	.08	.01	.09	.12
	Demo	BF	Sm	LK	.003	14364	---	.11	.02	.13	.18
57" deep, 60' long	Inst	BF	Lg	CY	.003	20520	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	14364	5.16	.15	.02	5.33	6.17
57" deep, 60' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
57" deep, 60' long	Inst	SF	Lg	CY	.009	6545	14.70	.35	.04	15.09	17.40
	Inst	SF	Sm	CY	.012	4582	16.20	.46	.06	16.72	19.30
58-1/2" deep, 60' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
58-1/2" deep, 60' long	Inst	LF	Lg	CY	.156	360.0	274.00	6.02	.72	280.74	324.00
	Inst	LF	Sm	CY	.222	252.0	302.00	8.57	1.02	311.59	360.00
58-1/2" deep, 60' long	Demo	BF	Lg	LK	.002	21060	---	.08	.01	.09	.12
	Demo	BF	Sm	LK	.003	14742	---	.11	.02	.13	.18
58-1/2" deep, 60' long	Inst	BF	Lg	CY	.003	21060	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	14742	5.16	.15	.02	5.33	6.17
58-1/2" deep, 60' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
58-1/2" deep, 60' long	Inst	SF	Lg	CY	.009	6545	15.10	.35	.04	15.49	17.80
	Inst	SF	Sm	CY	.012	4582	16.60	.46	.06	17.12	19.80

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
60" deep, 60' long	Demo	LF	Lg	LK	.133	360.0	---	5.08	.72	5.80	7.83
	Demo	LF	Sm	LK	.190	252.0	---	7.26	1.02	8.28	11.20
60" deep, 60' long	Inst	LF	Lg	CY	.156	360.0	281.00	6.02	.72	287.74	332.00
	Inst	LF	Sm	CY	.222	252.0	309.00	8.57	1.02	318.59	369.00
60" deep, 60' long	Demo	BF	Lg	LK	.002	21600	---	.08	.01	.09	.12
	Demo	BF	Sm	LK	.003	15120	---	.11	.02	.13	.18
60" deep, 60' long	Inst	BF	Lg	CY	.003	21600	4.68	.12	.01	4.81	5.55
	Inst	BF	Sm	CY	.004	15120	5.16	.15	.02	5.33	6.17
60" deep, 60' long	Demo	SF	Lg	LK	.007	6545	---	.27	.04	.31	.41
	Demo	SF	Sm	LK	.010	4582	---	.38	.06	.44	.59
60" deep, 60' long	Inst	SF	Lg	CY	.009	6545	15.40	.35	.04	15.79	18.30
	Inst	SF	Sm	CY	.012	4582	17.00	.46	.06	17.52	20.30

Purlins

16' long, STR #1, SF pricing based on 8' oc

2" x 8"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
2" x 8"	Inst	LF	Lg	CZ	.067	1080	1.98	2.57	.24	4.79	6.11
	Inst	LF	Sm	CZ	.095	756	2.18	3.64	.34	6.16	7.94
2" x 8"	Demo	BF	Lg	LL	.022	2155	---	.81	.12	.93	1.26
	Demo	BF	Sm	LL	.032	1508	---	1.18	.17	1.35	1.82
2" x 8"	Inst	BF	Lg	CZ	.050	1436	1.49	1.91	.18	3.58	4.57
	Inst	BF	Sm	CZ	.072	1005	1.64	2.76	.26	4.66	6.01
2" x 8"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
2" x 8"	Inst	SF	Lg	CZ	.007	9818	.22	.27	.03	.52	.66
	Inst	SF	Sm	CZ	.010	6873	.24	.38	.04	.66	.85
2" x 10"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
2" x 10"	Inst	LF	Lg	CZ	.067	1080	2.44	2.57	.24	5.25	6.64
	Inst	LF	Sm	CZ	.095	756.0	2.70	3.64	.34	6.68	8.54
2" x 10"	Demo	BF	Lg	LL	.018	2705	---	.66	.10	.76	1.03
	Demo	BF	Sm	LL	.025	1894	---	.92	.14	1.06	1.43
2" x 10"	Inst	BF	Lg	CZ	.040	1804	1.46	1.53	.14	3.13	3.96
	Inst	BF	Sm	CZ	.057	1263	1.62	2.18	.20	4.00	5.12
2" x 10"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
2" x 10"	Inst	SF	Lg	CZ	.007	9818	.27	.27	.03	.57	.72
	Inst	SF	Sm	CZ	.010	6873	.30	.38	.04	.72	.92

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 12"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
2" x 12"	Inst	LF	Lg	CZ	.067	1080	3.50	2.57	.24	6.31	7.86
	Inst	LF	Sm	CZ	.095	756.0	3.86	3.64	.34	7.84	9.87
2" x 12"	Demo	BF	Lg	LL	.015	3240	---	.55	.08	.63	.85
	Demo	BF	Sm	LL	.021	2268	---	.77	.11	.88	1.19
2" x 12"	Inst	BF	Lg	CZ	.033	2160	1.75	1.26	.12	3.13	3.90
	Inst	BF	Sm	CZ	.048	1512	1.93	1.84	.17	3.94	4.96
2" x 12"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
2" x 12"	Inst	SF	Lg	CZ	.007	9818	.39	.27	.03	.69	.85
	Inst	SF	Sm	CZ	.010	6873	.42	.38	.04	.84	1.06
3" x 8"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
3" x 8"	Inst	LF	Lg	CZ	.067	1080	7.92	2.57	.24	10.73	12.90
	Inst	LF	Sm	CZ	.095	756.0	8.76	3.64	.34	12.74	15.50
3" x 8"	Demo	BF	Lg	LL	.015	3240	---	.55	.08	.63	.85
	Demo	BF	Sm	LL	.021	2268	---	.77	.11	.88	1.19
3" x 8"	Inst	BF	Lg	CZ	.033	2160	3.96	1.26	.12	5.34	6.44
	Inst	BF	Sm	CZ	.048	1512	4.38	1.84	.17	6.39	7.78
3" x 8"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
3" x 8"	Inst	SF	Lg	CZ	.007	9818	.87	.27	.03	1.17	1.41
	Inst	SF	Sm	CZ	.010	6873	.96	.38	.04	1.38	1.68
3" x 10"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
3" x 10"	Inst	LF	Lg	CZ	.067	1080	9.80	2.57	.24	12.61	15.10
	Inst	LF	Sm	CZ	.095	756.0	10.80	3.64	.34	14.78	17.80
3" x 10"	Demo	BF	Lg	LL	.012	4050	---	.44	.06	.50	.68
	Demo	BF	Sm	LL	.017	2835	---	.63	.09	.72	.97
3" x 10"	Inst	BF	Lg	CZ	.027	2700	3.92	1.03	.10	5.05	6.06
	Inst	BF	Sm	CZ	.038	1890	4.30	1.46	.14	5.90	7.12
3" x 10"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
3" x 10"	Inst	SF	Lg	CZ	.007	9818	1.08	.27	.03	1.38	1.65
	Inst	SF	Sm	CZ	.010	6873	1.18	.38	.04	1.60	1.93
3" x 12"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
3" x 12"	Inst	LF	Lg	CZ	.067	1080	14.00	2.57	.24	16.81	20.00
	Inst	LF	Sm	CZ	.095	756.0	15.50	3.64	.34	19.48	23.20
3" x 12"	Demo	BF	Lg	LL	.010	4860	---	.37	.05	.42	.57
	Demo	BF	Sm	LL	.014	3402	---	.52	.08	.60	.80
3" x 12"	Inst	BF	Lg	CZ	.022	3240	4.68	.84	.08	5.60	6.64
	Inst	BF	Sm	CZ	.032	2268	5.16	1.23	.11	6.50	7.76
3" x 12"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
3" x 12"	Inst	SF	Lg	CZ	.007	9818	1.54	.27	.03	1.84	2.18
	Inst	SF	Sm	CZ	.010	6873	1.70	.38	.04	2.12	2.53

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
3" x 14"	Demo	LF	Lg	LL	.030	1620	---	1.11	.16	1.27	1.71
	Demo	LF	Sm	LL	.042	1134	---	1.55	.23	1.78	2.40
3" x 14"	Inst	LF	Lg	CZ	.067	1080	16.90	2.57	.24	19.71	23.20
	Inst	LF	Sm	CZ	.095	756.0	18.60	3.64	.34	22.58	26.80
3" x 14"	Demo	BF	Lg	LL	.008	5670	---	.30	.05	.35	.46
	Demo	BF	Sm	LL	.012	3969	---	.44	.06	.50	.68
3" x 14"	Inst	BF	Lg	CZ	.019	3780	4.82	.73	.07	5.62	6.63
	Inst	BF	Sm	CZ	.027	2646	5.31	1.03	.10	6.44	7.65
3" x 14"	Demo	SF	Lg	LL	.003	14727	---	.11	.02	.13	.17
	Demo	SF	Sm	LL	.005	10309	---	.18	.02	.20	.28
3" x 14"	Inst	SF	Lg	CZ	.007	9818	1.86	.27	.03	2.16	2.54
	Inst	SF	Sm	CZ	.010	6873	2.05	.38	.04	2.47	2.93

Sub-purlins

8' long, STR #1, SF pricing based on 2' oc

2" x 4"	Demo	LF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	LF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
2" x 4"	Inst	LF	Lg	CZ	.030	2420	1.08	1.15	.11	2.34	2.96
	Inst	LF	Sm	CZ	.043	1694	1.18	1.65	.15	2.98	3.81
2" x 4"	Demo	BF	Lg	LL	.020	2432	---	.74	.11	.85	1.14
	Demo	BF	Sm	LL	.028	1702	---	1.03	.15	1.18	1.60
2" x 4"	Inst	BF	Lg	CZ	.044	1621	1.61	1.68	.16	3.45	4.37
	Inst	BF	Sm	CZ	.063	1135	1.76	2.41	.23	4.40	5.63
2" x 4"	Demo	SF	Lg	LL	.006	8067	---	.22	.03	.25	.34
	Demo	SF	Sm	LL	.009	5647	---	.33	.05	.38	.51
2" x 4"	Inst	SF	Lg	CZ	.013	5378	.49	.50	.05	1.04	1.31
	Inst	SF	Sm	CZ	.019	3764	.53	.73	.07	1.33	1.70
2" x 6"	Demo	LF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	LF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
2" x 6"	Inst	LF	Lg	CZ	.030	2420	1.44	1.15	.11	2.70	3.37
	Inst	LF	Sm	CZ	.043	1694	1.58	1.65	.15	3.38	4.27
2" x 6"	Demo	BF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	BF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
2" x 6"	Inst	BF	Lg	CZ	.030	2420	1.44	1.15	.11	2.70	3.37
	Inst	BF	Sm	CZ	.043	1694	1.58	1.65	.15	3.38	4.27
2" x 6"	Demo	SF	Lg	LL	.006	8067	---	.22	.03	.25	.34
	Demo	SF	Sm	LL	.009	5647	---	.33	.05	.38	.51
2" x 6"	Inst	SF	Lg	CZ	.013	5378	.65	.50	.05	1.20	1.49
	Inst	SF	Sm	CZ	.019	3764	.71	.73	.07	1.51	1.90

Glu-lam products, sub-purlins

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
2" x 8"	Demo	LF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	LF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
2" x 8"	Inst	LF	Lg	CZ	.030	2420	1.98	1.15	.11	3.24	4.00
	Inst	LF	Sm	CZ	.043	1694	2.18	1.65	.15	3.98	4.96
2" x 8"	Demo	BF	Lg	LL	.010	4828	---	.37	.05	.42	.57
	Demo	BF	Sm	LL	.014	3380	---	.52	.08	.60	.80
2" x 8"	Inst	BF	Lg	CZ	.022	3219	1.49	.84	.08	2.41	2.97
	Inst	BF	Sm	CZ	.032	2253	1.64	1.23	.11	2.98	3.71
2" x 8"	Demo	SF	Lg	LL	.006	8067	---	.22	.03	.25	.34
	Demo	SF	Sm	LL	.009	5647	---	.33	.05	.38	.51
2" x 8"	Inst	SF	Lg	CZ	.013	5378	.89	.50	.05	1.44	1.77
	Inst	SF	Sm	CZ	.019	3764	.98	.73	.07	1.78	2.22
3" x 4"	Demo	LF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	LF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
3" x 4"	Inst	LF	Lg	CZ	.030	2420	2.14	1.15	.11	3.40	4.18
	Inst	LF	Sm	CZ	.043	1694	2.36	1.65	.15	4.16	5.17
3" x 4"	Demo	BF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	BF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
3" x 4"	Inst	BF	Lg	CZ	.030	2420	2.14	1.15	.11	3.40	4.18
	Inst	BF	Sm	CZ	.043	1694	2.36	1.65	.15	4.16	5.17
3" x 4"	Demo	SF	Lg	LL	.006	8067	---	.22	.03	.25	.34
	Demo	SF	Sm	LL	.009	5647	---	.33	.05	.38	.51
3" x 4"	Inst	SF	Lg	CZ	.013	5378	.96	.50	.05	1.51	1.85
	Inst	SF	Sm	CZ	.019	3764	1.06	.73	.07	1.86	2.31
3" x 6"	Demo	LF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	LF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
3" x 6"	Inst	LF	Lg	CZ	.030	2420	2.86	1.15	.11	4.12	5.01
	Inst	LF	Sm	CZ	.043	1694	3.16	1.65	.15	4.96	6.09
3" x 6"	Demo	BF	Lg	LL	.009	5445	---	.33	.05	.38	.51
	Demo	BF	Sm	LL	.013	3812	---	.48	.07	.55	.74
3" x 6"	Inst	BF	Lg	CZ	.020	3630	1.91	.77	.07	2.75	3.34
	Inst	BF	Sm	CZ	.028	2541	2.11	1.07	.10	3.28	4.03
3" x 6"	Demo	SF	Lg	LL	.006	8067	---	.22	.03	.25	.34
	Demo	SF	Sm	LL	.009	5647	---	.33	.05	.38	.51
3" x 6"	Inst	SF	Lg	CZ	.013	5378	1.29	.50	.05	1.84	2.23
	Inst	SF	Sm	CZ	.019	3764	1.42	.73	.07	2.22	2.72
3" x 8"	Demo	LF	Lg	LL	.013	3630	---	.48	.07	.55	.74
	Demo	LF	Sm	LL	.019	2541	---	.70	.10	.80	1.08
3" x 8"	Inst	LF	Lg	CZ	.030	2420	7.92	1.15	.11	9.18	10.80
	Inst	LF	Sm	CZ	.043	1694	8.76	1.65	.15	10.56	12.50
3" x 8"	Demo	BF	Lg	LL	.007	7260	---	.26	.04	.30	.40
	Demo	BF	Sm	LL	.009	5082	---	.33	.05	.38	.51
3" x 8"	Inst	BF	Lg	CZ	.015	4840	3.96	.57	.05	4.58	5.41
	Inst	BF	Sm	CZ	.021	3388	4.38	.80	.08	5.26	6.24
3" x 8"	Demo	SF	Lg	LL	.006	8067	---	.22	.03	.25	.34
	Demo	SF	Sm	LL	.009	5647	---	.33	.05	.38	.51
3" x 8"	Inst	SF	Lg	CZ	.013	5378	3.56	.50	.05	4.11	4.84
	Inst	SF	Sm	CZ	.019	3764	3.94	.73	.07	4.74	5.62

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Ledgers

Bolts 2' oc

3" x 8"	Demo	LF	Lg	LC	.037	648.0	---	1.33	.40	1.73	2.26
	Demo	LF	Sm	LC	.053	453.6	---	1.90	.57	2.47	3.23
3" x 8"	Inst	LF	Lg	CS	.056	432.0	7.92	2.15	.60	10.67	12.70
	Inst	LF	Sm	CS	.079	302.4	8.76	3.04	.85	12.65	15.20
3" x 8"	Demo	BF	Lg	LC	.019	1296	---	.68	.20	.88	1.15
	Demo	BF	Sm	LC	.026	907.2	---	.93	.28	1.21	1.59
3" x 8"	Inst	BF	Lg	CS	.028	864.0	3.96	1.08	.30	5.34	6.36
	Inst	BF	Sm	CS	.040	604.8	4.38	1.54	.43	6.35	7.62
3" x 8"	Demo	SF	Lg	LC	.002	12597	---	.07	.02	.09	.12
	Demo	SF	Sm	LC	.003	8818	---	.11	.03	.14	.18
3" x 8"	Inst	SF	Lg	CS	.003	8398	.41	.12	.03	.56	.66
	Inst	SF	Sm	CS	.004	5879	.45	.15	.04	.64	.77
3" x 10"	Demo	LF	Lg	LC	.037	648.0	---	1.33	.40	1.73	2.26
	Demo	LF	Sm	LC	.053	453.6	---	1.90	.57	2.47	3.23
3" x 10"	Inst	LF	Lg	CS	.056	432.0	9.80	2.15	.60	12.55	14.90
	Inst	LF	Sm	CS	.079	302.4	10.80	3.04	.85	14.69	17.50
3" x 10"	Demo	BF	Lg	LC	.015	1620	---	.54	.16	.70	.91
	Demo	BF	Sm	LC	.021	1134	---	.75	.23	.98	1.29
3" x 10"	Inst	BF	Lg	CS	.022	1080	3.92	.85	.24	5.01	5.93
	Inst	BF	Sm	CS	.032	756.0	4.30	1.23	.34	5.87	7.01
3" x 10"	Demo	SF	Lg	LC	.002	12597	---	.07	.02	.09	.12
	Demo	SF	Sm	LC	.003	8818	---	.11	.03	.14	.18
3" x 10"	Inst	SF	Lg	CS	.003	8398	.50	.12	.03	.65	.77
	Inst	SF	Sm	CS	.004	5879	.55	.15	.04	.74	.89
3" x 12"	Demo	LF	Lg	LC	.037	648.0	---	1.33	.40	1.73	2.26
	Demo	LF	Sm	LC	.053	453.6	---	1.90	.57	2.47	3.23
3" x 12"	Inst	LF	Lg	CS	.056	432.0	14.00	2.15	.60	16.75	19.80
	Inst	LF	Sm	CS	.079	302.4	15.50	3.04	.85	19.39	22.90
3" x 12"	Demo	BF	Lg	LC	.012	1944	---	.43	.13	.56	.73
	Demo	BF	Sm	LC	.018	1361	---	.65	.19	.84	1.09
3" x 12"	Inst	BF	Lg	CS	.019	1296	4.68	.73	.20	5.61	6.61
	Inst	BF	Sm	CS	.026	907.2	5.16	1.00	.28	6.44	7.61
3" x 12"	Demo	SF	Lg	LC	.002	12597	---	.07	.02	.09	.12
	Demo	SF	Sm	LC	.003	8818	---	.11	.03	.14	.18
3" x 12"	Inst	SF	Lg	CS	.003	8398	.72	.12	.03	.87	1.02
	Inst	SF	Sm	CS	.004	5879	.80	.15	.04	.99	1.18

Glu-lam products, ledgers

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					
4" x 8"	Demo	LF	Lg	LC	.037	648.0	---	1.33	.40	1.73	2.26
	Demo	LF	Sm	LC	.053	453.6	---	1.90	.57	2.47	3.23
4" x 8"	Inst	LF	Lg	CS	.056	432.0	12.10	2.15	.60	14.85	17.60
	Inst	LF	Sm	CS	.079	302.4	13.40	3.04	.85	17.29	20.50
4" x 8"	Demo	BF	Lg	LC	.014	1730	---	.50	.15	.65	.85
	Demo	BF	Sm	LC	.020	1211	---	.72	.21	.93	1.22
4" x 8"	Inst	BF	Lg	CS	.021	1153	4.55	.81	.22	5.58	6.58
	Inst	BF	Sm	CS	.030	807.4	5.01	1.15	.32	6.48	7.70
4" x 8"	Demo	SF	Lg	LC	.002	12597	---	.07	.02	.09	.12
	Demo	SF	Sm	LC	.003	8818	---	.11	.03	.14	.18
4" x 8"	Inst	SF	Lg	CS	.003	8398	.62	.12	.03	.77	.90
	Inst	SF	Sm	CS	.004	5879	.69	.15	.04	.88	1.05
4" x 10"	Demo	LF	Lg	LC	.037	648.0	---	1.33	.40	1.73	2.26
	Demo	LF	Sm	LC	.053	453.6	---	1.90	.57	2.47	3.23
4" x 10"	Inst	LF	Lg	CS	.056	432.0	15.80	2.15	.60	18.55	21.80
	Inst	LF	Sm	CS	.079	302.4	17.40	3.04	.85	21.29	25.10
4" x 10"	Demo	BF	Lg	LC	.011	2158	---	.39	.12	.51	.67
	Demo	BF	Sm	LC	.016	1510	---	.57	.17	.74	.97
4" x 10"	Inst	BF	Lg	CS	.017	1439	4.75	.65	.18	5.58	6.56
	Inst	BF	Sm	CS	.024	1007	5.23	.92	.26	6.41	7.57
4" x 10"	Demo	SF	Lg	LC	.002	12597	---	.07	.02	.09	.12
	Demo	SF	Sm	LC	.003	8818	---	.11	.03	.14	.18
4" x 10"	Inst	SF	Lg	CS	.003	8398	.81	.12	.03	.96	1.12
	Inst	SF	Sm	CS	.004	5879	.90	.15	.04	1.09	1.29
4" x 12"	Demo	LF	Lg	LC	.037	648.0	---	1.33	.40	1.73	2.26
	Demo	LF	Sm	LC	.053	453.6	---	1.90	.57	2.47	3.23
4" x 12"	Inst	LF	Lg	CS	.056	432.0	18.20	2.15	.60	20.95	24.60
	Inst	LF	Sm	CS	.079	302.4	20.10	3.04	.85	23.99	28.20
4" x 12"	Demo	BF	Lg	LC	.009	2592	---	.32	.10	.42	.55
	Demo	BF	Sm	LC	.013	1814	---	.47	.14	.61	.79
4" x 12"	Inst	BF	Lg	CS	.014	1728	4.56	.54	.15	5.25	6.15
	Inst	BF	Sm	CS	.020	1210	5.02	.77	.21	6.00	7.06
4" x 12"	Demo	SF	Lg	LC	.002	12597	---	.07	.02	.09	.12
	Demo	SF	Sm	LC	.003	8818	---	.11	.03	.14	.18
4" x 12"	Inst	SF	Lg	CS	.003	8398	.94	.12	.03	1.09	1.27
	Inst	SF	Sm	CS	.004	5879	1.03	.15	.04	1.22	1.44

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Gutters and Downspouts, with fittings and caulk

Aluminum, baked on enamel finish

Gutter, 5", and Downspout, 2"x3"

Inst	LF	Lg	UB	.074	215.0	5.36	3.44	---	8.80	11.10
Inst	LF	Sm	UB	.106	150.5	5.90	4.93	---	10.83	13.80

Gutter, 6", and Downspout, 3"x4"

Inst	LF	Lg	UB	.074	215.0	8.16	3.44	---	11.60	14.30
Inst	LF	Sm	UB	.106	150.5	8.98	4.93	---	13.91	17.30

Gutter, 7" to 8", and Downspout, 4"x5"

Inst	LF	Lg	UB	.074	215.0	14.70	3.44	---	18.14	21.80
Inst	LF	Sm	UB	.106	150.5	16.20	4.93	---	21.13	25.70

Gutter, box, 6", and Downspout, 3"x4"

Inst	LF	Lg	UB	.074	215.0	9.01	3.44	---	12.45	15.30
Inst	LF	Sm	UB	.106	150.5	9.92	4.93	---	14.85	18.40

Gutter, box, 7" to 8", and Downspout, 4"x5"

Inst	LF	Lg	UB	.074	215.0	18.00	3.44	---	21.44	25.60
Inst	LF	Sm	UB	.106	150.5	19.80	4.93	---	24.73	29.80

Copper

Gutter, 5", and Downspout, 2"x3"

Inst	LF	Lg	UB	.084	190.0	19.40	3.91	---	23.31	27.80
Inst	LF	Sm	UB	.120	133.0	21.30	5.58	---	26.88	32.50

Gutter, 6", and Downspout, 3"x4"

Inst	LF	Lg	UB	.084	190.0	24.90	3.91	---	28.81	34.20
Inst	LF	Sm	UB	.120	133.0	27.40	5.58	---	32.98	39.40

Gutter, 7" to 8", and Downspout, 4"x5"

Inst	LF	Lg	UB	.084	190.0	40.70	3.91	---	44.61	52.40
Inst	LF	Sm	UB	.120	133.0	44.80	5.58	---	50.38	59.50

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours per Unit	Output per Day					
							Cost	Cost	Cost	Cost	O&P

Steel, galvanized

Gutter, 5", and Downspout, 2"x3"

	Inst	LF	Lg	UB	.078	205.0	3.47	3.63	---	7.10	9.14
	Inst	LF	Sm	UB	.111	143.5	3.83	5.16	---	8.99	11.70

Gutter, box, 6", and Downspout, 3"x4"

	Inst	LF	Lg	UB	.078	205.0	8.39	3.63	---	12.02	14.80
	Inst	LF	Sm	UB	.111	143.5	9.23	5.16	---	14.39	18.00

Gutter, box, 7" to 8", and Downspout, 4"x5"

	Inst	LF	Lg	UB	.078	205.0	13.00	3.63	---	16.63	20.10
	Inst	LF	Sm	UB	.111	143.5	14.30	5.16	---	19.46	23.80

Vinyl, extruded 5" PVC

Gutter, 5", and Downspout, 2"x3"

	Inst	LF	Lg	UB	.074	215.0	3.16	3.44	---	6.60	8.52
	Inst	LF	Sm	UB	.106	150.5	3.48	4.93	---	8.41	11.00

Accessories, gutter

Leaf guard or screen

Standard	Inst	LF	Lg	UB	.053	300.0	1.50	2.47	---	3.97	5.23
	Inst	LF	Sm	UB	.076	210.0	1.66	3.54	---	5.20	6.93
High	Inst	LF	Lg	UB	.053	300.0	3.76	2.47	---	6.23	7.83
	Inst	LF	Sm	UB	.076	210.0	4.14	3.54	---	7.68	9.78
Premium	Inst	LF	Lg	UB	.053	300.0	6.36	2.47	---	8.83	10.80
	Inst	LF	Sm	UB	.076	210.0	7.00	3.54	---	10.54	13.10

Splash guard

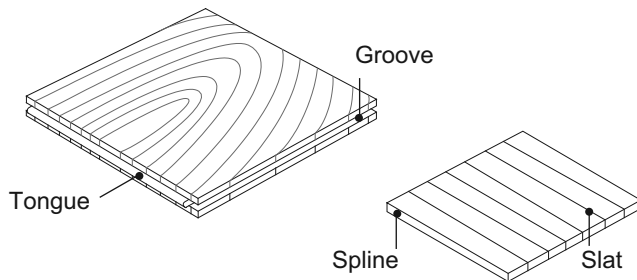
	Inst	LF	Lg	UB	.320	50.0	3.57	14.90	---	18.47	25.30
	Inst	LF	Sm	UB	.457	35.0	3.93	21.30	---	25.23	34.70

Hardboard. See Paneling, page 314

Hardwood flooring

1. Strip flooring is nailed into place over wood subflooring or over wood sleeper strips. Using $3\frac{1}{4}$ " W strips leaves 25% cutting and fitting waste; $2\frac{1}{4}$ " W strips leave 33% waste. Nails and the respective cutting and fitting waste have been included in the unit costs.
2. Block flooring is laid in mastic applied to felt-covered wood subfloor. Mastic, 5% block waste and felt are included in material unit costs for block or parquet flooring.

Two types of wood block flooring

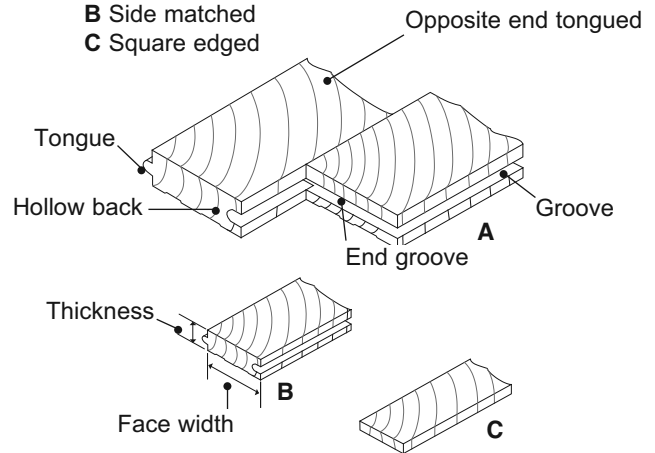


Strip flooring:

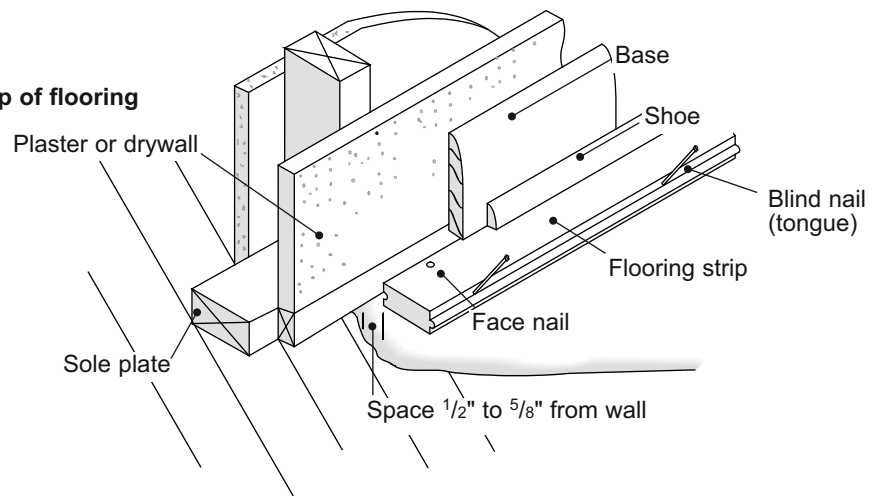
A Side and end matched

B Side matched

C Square edged



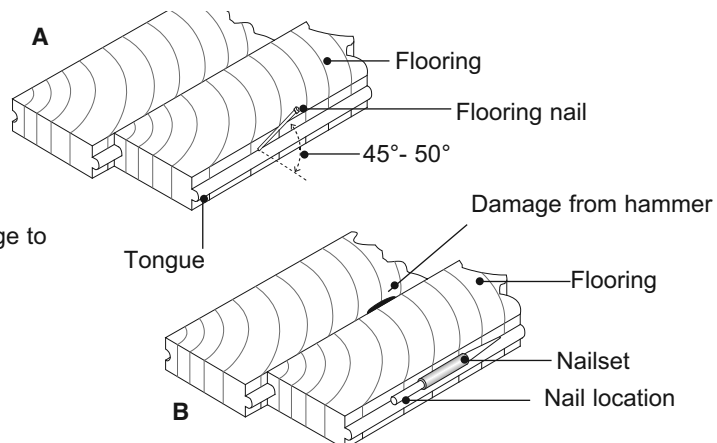
Installation of first strip of flooring



Nailing of flooring:

A Angle of nailing

B Setting the nail without damage to the flooring



Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Hardwood flooring

Includes waste and nails

Strip; installed over wood subfloor

Prefinished oak, prime

25/32" x 3-1/4"

Lay floor	Inst	SF	Lg	FD	.045	400.0	14.70	1.76	---	16.46	19.50
	Inst	SF	Sm	FD	.064	280.0	16.20	2.50	---	18.70	22.20
Wax, polish, machine buff	Inst	SF	Lg	FC	.009	860.0	.11	.36	.10	.57	.74
	Inst	SF	Sm	FC	.013	602.0	.12	.52	.14	.78	1.01

25/32" x 2-1/4"

Lay floor	Inst	SF	Lg	FD	.060	300.0	10.40	2.34	---	12.74	15.30
	Inst	SF	Sm	FD	.086	210.0	11.40	3.36	---	14.76	17.90
Wax, polish, machine buff	Inst	SF	Lg	FC	.009	860.0	.11	.36	.10	.57	.74
	Inst	SF	Sm	FC	.013	602.0	.12	.52	.14	.78	1.01

Unfinished

25/32" x 3-1/4", lay floor only

Fir

Vertical grain	Inst	SF	Lg	FD	.038	480.0	8.57	1.48	---	10.05	12.00
	Inst	SF	Sm	FD	.054	336.0	9.43	2.11	---	11.54	13.80
Flat grain	Inst	SF	Lg	FD	.038	480.0	7.39	1.48	---	8.87	10.60
	Inst	SF	Sm	FD	.054	336.0	8.14	2.11	---	10.25	12.40

Yellow pine

	Inst	SF	Lg	FD	.038	480.0	6.67	1.48	---	8.15	9.78
	Inst	SF	Sm	FD	.054	336.0	7.33	2.11	---	9.44	11.40

25/32" x 2-1/4", lay floor only

Maple

	Inst	SF	Lg	FD	.056	320.0	6.83	2.19	---	9.02	11.00
	Inst	SF	Sm	FD	.080	224.0	7.51	3.13	---	10.64	13.10

Oak

	Inst	SF	Lg	FD	.056	320.0	7.90	2.19	---	10.09	12.20
	Inst	SF	Sm	FD	.080	224.0	8.68	3.13	---	11.81	14.40

Yellow pine

	Inst	SF	Lg	FD	.047	385.0	5.48	1.84	---	7.32	8.91
	Inst	SF	Sm	FD	.067	269.5	6.02	2.62	---	8.64	10.60

Machine sand, fill and finish

New floors	Inst	SF	Lg	FC	.019	430.0	.18	.76	.20	1.14	1.48
	Inst	SF	Sm	FC	.027	301.0	.31	1.07	.29	1.67	2.17
Damaged floors	Inst	SF	Lg	FC	.028	285.0	.18	1.11	.30	1.59	2.09
	Inst	SF	Sm	FC	.040	199.5	.34	1.59	.43	2.36	3.08
Wax, polish and machine buff	Inst	SF	Lg	FC	.009	860.0	.11	.36	.10	.57	.74
	Inst	SF	Sm	FC	.013	602.0	.12	.52	.14	.78	1.01

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Block*Laid in mastic over wood subfloor covered with felt***Oak, 5/16" x 12" x 12"**

Lay floor only

Prefinished	Inst	SF	Lg	FD	.035	520.0	5.79	1.37	---	7.16	8.60
	Inst	SF	Sm	FD	.049	364.0	6.37	1.91	---	8.28	10.00
Unfinished	Inst	SF	Lg	FD	.033	550.0	4.64	1.29	---	5.93	7.17
	Inst	SF	Sm	FD	.047	385.0	5.13	1.84	---	6.97	8.51

Teak, 5/16" x 12" x 12"

Lay floor only

Prefinished	Inst	SF	Lg	FD	.035	520.0	10.90	1.37	---	12.27	14.50
	Inst	SF	Sm	FD	.049	364.0	12.00	1.91	---	13.91	16.60
Unfinished	Inst	SF	Lg	FD	.033	550.0	8.75	1.29	---	10.04	11.90
	Inst	SF	Sm	FD	.047	385.0	9.64	1.84	---	11.48	13.70

Oak, 13/16" x 12" x 12"

Lay floor only

Prefinished	Inst	SF	Lg	FD	.035	520.0	6.42	1.37	---	7.79	9.33
	Inst	SF	Sm	FD	.049	364.0	7.07	1.91	---	8.98	10.90
Unfinished	Inst	SF	Lg	FD	.036	500.0	5.15	1.41	---	6.56	7.92
	Inst	SF	Sm	FD	.051	350.0	5.67	1.99	---	7.66	9.35

Machine sand, fill and finish

New floors

	Inst	SF	Lg	FC	.019	430.0	.16	.76	.20	1.12	1.46
	Inst	SF	Sm	FC	.027	301.0	.31	1.07	.29	1.67	2.17

Damaged floors

	Inst	SF	Lg	FC	.028	285.0	.19	1.11	.30	1.60	2.10
	Inst	SF	Sm	FC	.040	199.5	.34	1.59	.43	2.36	3.08

Wax, polish and machine buff

	Inst	SF	Lg	FC	.009	860.0	.11	.36	.10	.57	.74
	Inst	SF	Sm	FC	.013	602.0	.12	.52	.14	.78	1.01

Parquetry, 5/16" x 9" x 9"

Lay floor only

Oak	Inst	SF	Lg	FD	.036	500.0	5.72	1.41	---	7.13	8.58
	Inst	SF	Sm	FD	.051	350.0	6.30	1.99	---	8.29	10.10
Walnut	Inst	SF	Lg	FD	.036	500.0	14.20	1.41	---	15.61	18.30
	Inst	SF	Sm	FD	.051	350.0	15.70	1.99	---	17.69	20.80
Teak	Inst	SF	Lg	FD	.036	500.0	9.72	1.41	---	11.13	13.20
	Inst	SF	Sm	FD	.051	350.0	10.70	1.99	---	12.69	15.20

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Machine sand, fill and finish

New floors

Inst	SF	Lg	FC	.019	430.0	.28	.76	.20	1.24	1.60
Inst	SF	Sm	FC	.027	301.0	.31	1.07	.29	1.67	2.17

Damaged floors

Inst	SF	Lg	FC	.028	285.0	.31	1.11	.30	1.72	2.24
Inst	SF	Sm	FC	.040	199.5	.34	1.59	.43	2.36	3.08

Wax, polish and machine buff

Inst	SF	Lg	FC	.009	860.0	.11	.36	.10	.57	.74
Inst	SF	Sm	FC	.013	602.0	.12	.52	.14	.78	1.01

Acrylic wood parquet blocks

5/16" x 12" x 12" set in epoxy

Inst	SF	Lg	FD	.036	500.0	4.46	1.41	---	5.87	7.13
Inst	SF	Sm	FD	.051	350.0	4.92	1.99	---	6.91	8.49

Wax, polish and machine buff

Inst	SF	Lg	FC	.009	860.0	.11	.36	.10	.57	.74
Inst	SF	Sm	FC	.013	602.0	.12	.52	.14	.78	1.01

Heating

See also Air Conditioning, Ventilation, page 28

Bathroom heaters, electric, excludes ductwork

Ceiling

Heat only

1 bulb	Inst	Ea	Lg	EA	2.16	3.70	40.20	96.90	---	137.10	187.00
	Inst	Ea	Sm	EA	2.88	2.78	44.30	129.00	---	173.30	238.00
2 bulb	Inst	Ea	Lg	EA	2.16	3.70	57.60	96.90	---	154.50	207.00
	Inst	Ea	Sm	EA	2.88	2.78	63.50	129.00	---	192.50	260.00

Fan, light, heater

Small, 70 CFM, 5,000 BTU	Inst	Ea	Lg	EA	2.29	3.50	143.00	103.00	---	246.00	313.00
	Inst	Ea	Sm	EA	3.04	2.63	157.00	136.00	---	293.00	379.00
Average, 100 CFM, 5,000 BTU	Inst	Ea	Lg	EA	2.29	3.50	203.00	103.00	---	306.00	383.00
	Inst	Ea	Sm	EA	3.04	2.63	224.00	136.00	---	360.00	455.00
Large, 150 CFM, 5,000 BTU	Inst	Ea	Lg	EA	2.29	3.50	304.00	103.00	---	407.00	499.00
	Inst	Ea	Sm	EA	3.04	2.63	335.00	136.00	---	471.00	584.00

Fan, light

Standard, 70 CFM	Inst	Ea	Lg	EA	1.33	6.00	91.40	59.70	---	151.10	192.00
	Inst	Ea	Sm	EA	1.78	4.50	101.00	79.90	---	180.90	232.00
Average, 70 CFM, single light	Inst	Ea	Lg	EA	1.33	6.00	161.00	59.70	---	220.70	272.00
	Inst	Ea	Sm	EA	1.78	4.50	177.00	79.90	---	256.90	320.00
High, 70 CFM, multi lights	Inst	Ea	Lg	EA	1.33	6.00	203.00	59.70	---	262.70	320.00
	Inst	Ea	Sm	EA	1.78	4.50	224.00	79.90	---	303.90	373.00
Premium, 70 CFM, ornate	Inst	Ea	Lg	EA	1.33	6.00	295.00	59.70	---	354.70	426.00
	Inst	Ea	Sm	EA	1.78	4.50	325.00	79.90	---	404.90	490.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Fan

Standard, 50 CFM	Inst	Ea	Lg	EA	1.33	6.00	26.50	59.70	---	86.20	117.00
	Inst	Ea	Sm	EA	1.78	4.50	29.20	79.90	---	109.10	149.00
Average, 70 CFM	Inst	Ea	Lg	EA	1.33	6.00	57.80	59.70	---	117.50	153.00
	Inst	Ea	Sm	EA	1.78	4.50	63.70	79.90	---	143.60	189.00
High, 70 CFM	Inst	Ea	Lg	EA	1.33	6.00	138.00	59.70	---	197.70	245.00
	Inst	Ea	Sm	EA	1.78	4.50	152.00	79.90	---	231.90	290.00
Premium, 70 CFM	Inst	Ea	Lg	EA	1.33	6.00	225.00	59.70	---	284.70	345.00
	Inst	Ea	Sm	EA	1.78	4.50	248.00	79.90	---	327.90	401.00

Wall

Fan forced

Up to 1100 watts	Inst	Ea	Lg	EA	4.00	2.00	148.00	180.00	---	328.00	430.00
	Inst	Ea	Sm	EA	5.33	1.50	163.00	239.00	---	402.00	534.00
1100 to 2500 watts	Inst	Ea	Lg	EA	4.00	2.00	193.00	180.00	---	373.00	483.00
	Inst	Ea	Sm	EA	5.33	1.50	213.00	239.00	---	452.00	592.00
2500 to 4000 watts	Inst	Ea	Lg	EA	4.00	2.00	325.00	180.00	---	505.00	634.00
	Inst	Ea	Sm	EA	5.33	1.50	358.00	239.00	---	597.00	759.00

Radiant heating

1200 watt heating element	Inst	Ea	Lg	EA	4.00	2.00	203.00	180.00	---	383.00	494.00
	Inst	Ea	Sm	EA	5.33	1.50	224.00	239.00	---	463.00	604.00
1500 watt heating element	Inst	Ea	Lg	EA	4.00	2.00	304.00	180.00	---	484.00	610.00
	Inst	Ea	Sm	EA	5.33	1.50	335.00	239.00	---	574.00	733.00

Wiring, connection, and installation in closed wall or ceiling structure

ADD	Inst	Ea	Lg	EA	2.67	3.00	---	120.00	---	120.00	174.00
	Inst	Ea	Sm	EA	3.46	2.31	---	155.00	---	155.00	225.00

Boilers

MBH = 1,000 BTU

Gas, natural or propane, includes standard controls

62 MBH	Inst	Ea	Lg	SF	40.0	0.60	2590.00	1720.00	---	4310.00	5480.00
	Inst	Ea	Sm	SF	53.3	0.45	2860.00	2300.00	---	5160.00	6620.00
95 MBH	Inst	Ea	Lg	SF	43.6	0.55	2900.00	1880.00	---	4780.00	6070.00
	Inst	Ea	Sm	SF	58.5	0.41	3200.00	2520.00	---	5720.00	7340.00
130 MBH	Inst	Ea	Lg	SF	48.0	0.50	3610.00	2070.00	---	5680.00	7150.00
	Inst	Ea	Sm	SF	63.2	0.38	3980.00	2720.00	---	6700.00	8520.00
165 MBH	Inst	Ea	Lg	SF	53.3	0.45	3740.00	2300.00	---	6040.00	7630.00
	Inst	Ea	Sm	SF	70.6	0.34	4120.00	3040.00	---	7160.00	9150.00
200 MBH	Inst	Ea	Lg	SF	60.0	0.40	3770.00	2590.00	---	6360.00	8080.00
	Inst	Ea	Sm	SF	80.0	0.30	4150.00	3450.00	---	7600.00	9780.00
320 MBH	Inst	Ea	Lg	SF	68.6	0.35	6510.00	2960.00	---	9470.00	11800.00
	Inst	Ea	Sm	SF	92.3	0.26	7170.00	3980.00	---	11150.00	14000.00
550 MBH	Inst	Ea	Lg	SF	68.6	0.35	8670.00	2960.00	---	11630.00	14300.00
	Inst	Ea	Sm	SF	92.3	0.26	9560.00	3980.00	---	13540.00	16800.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
800 MBH	Inst	Ea	Lg	SF	120.0	0.20	12700.00	5170.00	---	17870.00	22100.00
	Inst	Ea	Sm	SF	160.0	0.15	14000.00	6900.00	---	20900.00	26100.00
1,050 MBH	Inst	Ea	Lg	SF	160.0	0.15	13700.00	6900.00	---	20600.00	25700.00
	Inst	Ea	Sm	SF	218.2	0.11	15100.00	9400.00	---	24500.00	31000.00

Electric, includes standard controls

55 MBH	Inst	Ea	Lg	SD	60.0	0.40	2620.00	2520.00	---	5140.00	6670.00
	Inst	Ea	Sm	SD	80.0	0.30	2890.00	3360.00	---	6250.00	8200.00
110 MBH	Inst	Ea	Lg	SD	68.6	0.35	3040.00	2890.00	---	5930.00	7690.00
	Inst	Ea	Sm	SD	92.3	0.26	3360.00	3880.00	---	7240.00	9490.00
220 MBH	Inst	Ea	Lg	SD	96.0	0.25	3320.00	4040.00	---	7360.00	9670.00
	Inst	Ea	Sm	SD	126.3	0.19	3660.00	5310.00	---	8970.00	11900.00
325 MBH	Inst	Ea	Lg	SD	120.0	0.20	5130.00	5050.00	---	10180.00	13200.00
	Inst	Ea	Sm	SD	160.0	0.15	5650.00	6730.00	---	12380.00	16300.00

Oil, includes standard controls

62 MBH	Inst	Ea	Lg	SF	36.9	0.65	3180.00	1590.00	---	4770.00	5970.00
	Inst	Ea	Sm	SF	49.0	0.49	3510.00	2110.00	---	5620.00	7100.00
95 MBH	Inst	Ea	Lg	SF	40.0	0.60	3350.00	1720.00	---	5070.00	6350.00
	Inst	Ea	Sm	SF	53.3	0.45	3690.00	2300.00	---	5990.00	7570.00
130 MBH	Inst	Ea	Lg	SF	43.6	0.55	3650.00	1880.00	---	5530.00	6920.00
	Inst	Ea	Sm	SF	59	0.41	4020.00	2540.00	---	6560.00	8310.00
165 MBH	Inst	Ea	Lg	SF	48.0	0.50	3950.00	2070.00	---	6020.00	7540.00
	Inst	Ea	Sm	SF	63	0.38	4350.00	2720.00	---	7070.00	8940.00
200 MBH	Inst	Ea	Lg	SF	53	0.45	4170.00	2280.00	---	6450.00	8110.00
	Inst	Ea	Sm	SF	71	0.34	4590.00	3060.00	---	7650.00	9720.00

Accessories

Check valve, swing ball type

Up to 3/4"	Inst	Ea	Lg	SB	1.14	14.00	15.50	46.40	---	61.90	85.10
	Inst	Ea	Sm	SB	1.5	10.50	17.10	61.00	---	78.10	108.00
7/8" to 1-1/4"	Inst	Ea	Lg	SB	1.14	14.00	26.30	46.40	---	72.70	97.50
	Inst	Ea	Sm	SB	1.5	10.50	29.00	61.00	---	90.00	122.00

Circulator pump

Cast iron

3/4" dia., 1/40 to 1/20 HP	Inst	Ea	Lg	SB	8.00	2.00	205.00	325.00	---	530.00	707.00
	Inst	Ea	Sm	SB	10.7	1.50	226.00	435.00	---	661.00	891.00
1-1/2" dia., 1/8 to 1/6 HP	Inst	Ea	Lg	SB	8.00	2.00	410.00	325.00	---	735.00	943.00
	Inst	Ea	Sm	SB	10.7	1.50	452.00	435.00	---	887.00	1150.00

Bronze

1-1/2" dia., 1/8 to 1/6 HP	Inst	Ea	Lg	SB	8.00	2.00	689.00	325.00	---	1014.00	1260.00
	Inst	Ea	Sm	SB	10.7	1.50	760.00	435.00	---	1195.00	1500.00

Cast iron

20 HP	Inst	Ea	Lg	SB	12.31	1.30	3780.00	501.00	---	4281.00	5070.00
	Inst	Ea	Sm	SB	16.3	0.98	4160.00	663.00	---	4823.00	5750.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Forced air units (FAU), warm air systems

Furnaces, hot air heating with blowers and standard controls

Flue piping not included (see page 418-420)

Electric

65 MBH	Inst	Ea	Lg	UE	20.00	1.00	1480.00	818.00	---	2298.00	2870.00
	Inst	Ea	Sm	UE	26.67	0.75	1630.00	1090.00	---	2720.00	3430.00
75 MBH	Inst	Ea	Lg	UE	20.00	1.00	1500.00	818.00	---	2318.00	2890.00
	Inst	Ea	Sm	UE	26.67	0.75	1660.00	1090.00	---	2750.00	3450.00
100 MBH	Inst	Ea	Lg	UE	20.00	1.00	1770.00	818.00	---	2588.00	3190.00
	Inst	Ea	Sm	UE	26.67	0.75	1950.00	1090.00	---	3040.00	3790.00
120 MBH	Inst	Ea	Lg	UE	20.00	1.00	1780.00	818.00	---	2598.00	3210.00
	Inst	Ea	Sm	UE	26.67	0.75	1970.00	1090.00	---	3060.00	3810.00

Minimum Job Charge

	Inst	Job	Lg	UD	8.00	2.00	---	319.00	---	319.00	454.00
	Inst	Job	Sm	UD	11.4	1.40	---	455.00	---	455.00	646.00

Gas or Oil

65 MBH	Inst	Ea	Lg	UD	26.67	0.60	1850.00	1060.00	---	2910.00	3640.00
	Inst	Ea	Sm	UD	35.56	0.45	2040.00	1420.00	---	3460.00	4360.00
75 MBH	Inst	Ea	Lg	UD	26.67	0.60	1880.00	1060.00	---	2940.00	3670.00
	Inst	Ea	Sm	UD	35.56	0.45	2070.00	1420.00	---	3490.00	4400.00
100 MBH	Inst	Ea	Lg	UD	26.67	0.60	2210.00	1060.00	---	3270.00	4050.00
	Inst	Ea	Sm	UD	35.56	0.45	2430.00	1420.00	---	3850.00	4820.00
120 MBH	Inst	Ea	Lg	UD	26.67	0.60	2230.00	1060.00	---	3290.00	4080.00
	Inst	Ea	Sm	UD	35.56	0.45	2460.00	1420.00	---	3880.00	4840.00
135 MBH	Inst	Ea	Lg	UD	26.67	0.60	2300.00	1060.00	---	3360.00	4160.00
	Inst	Ea	Sm	UD	35.56	0.45	2530.00	1420.00	---	3950.00	4930.00

Minimum Job Charge

	Inst	Job	Lg	UD	8.00	2.00	---	319.00	---	319.00	454.00
	Inst	Job	Sm	UD	11.4	1.40	---	455.00	---	455.00	646.00

Space heaters, gas-fired

Unit includes cabinet, grilles, fan, controls, burner and thermostat;

flue piping not included (see page 418-420)

Ceiling hung, gas

30 MBH	Inst	Ea	Lg	SB	22.86	0.70	648.00	929.00	---	1577.00	2090.00
	Inst	Ea	Sm	SB	30.19	0.53	714.00	1230.00	---	1944.00	2600.00
100 MBH	Inst	Ea	Lg	SB	24.62	0.65	1010.00	1000.00	---	2010.00	2610.00
	Inst	Ea	Sm	SB	32.65	0.49	1110.00	1330.00	---	2440.00	3210.00
225 MBH	Inst	Ea	Lg	SB	26.67	0.60	1520.00	1080.00	---	2600.00	3320.00
	Inst	Ea	Sm	SB	35.56	0.45	1680.00	1450.00	---	3130.00	4020.00
320 MBH	Inst	Ea	Lg	SB	29.09	0.55	2490.00	1180.00	---	3670.00	4580.00
	Inst	Ea	Sm	SB	39.0	0.41	2740.00	1590.00	---	4330.00	5450.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Floor mounted

35 MBH	Inst	Ea	Lg	SB	12.80	1.25	1230.00	520.00	---	1750.00	2170.00
	Inst	Ea	Sm	SB	17.02	0.94	1350.00	692.00	---	2042.00	2560.00
50 MBHP	Inst	Ea	Lg	SB	12.80	1.25	1350.00	520.00	---	1870.00	2310.00
	Inst	Ea	Sm	SB	17.02	0.94	1490.00	692.00	---	2182.00	2720.00
65 MBH	Inst	Ea	Lg	SB	12.80	1.25	1480.00	520.00	---	2000.00	2460.00
	Inst	Ea	Sm	SB	17.02	0.94	1630.00	692.00	---	2322.00	2880.00

Wall furnace, self-contained thermostat

Single capacity, recessed or surface mounted, 1-speed fan

15 MBHP	Inst	Ea	Lg	SB	11.43	1.40	431.00	465.00	---	896.00	1170.00
	Inst	Ea	Sm	SB	15.24	1.05	475.00	620.00	---	1095.00	1440.00
25 MBHP	Inst	Ea	Lg	SB	11.43	1.40	912.00	465.00	---	1377.00	1720.00
	Inst	Ea	Sm	SB	15.24	1.05	1010.00	620.00	---	1630.00	2050.00
35 MBHP	Inst	Ea	Lg	SB	11.43	1.40	1140.00	465.00	---	1605.00	1980.00
	Inst	Ea	Sm	SB	15.24	1.05	1260.00	620.00	---	1880.00	2340.00

Dual capacity, recessed or surface mounted, 2-speed blowers

50 MBHP (direct vent)	Inst	Ea	Lg	SB	11.43	1.40	1370.00	465.00	---	1835.00	2250.00
	Inst	Ea	Sm	SB	15.2	1.05	1510.00	618.00	---	2128.00	2630.00
60 MBHP (up vent)	Inst	Ea	Lg	SB	11.43	1.40	1540.00	465.00	---	2005.00	2440.00
	Inst	Ea	Sm	SB	15.2	1.05	1700.00	618.00	---	2318.00	2850.00

Register kit for circulating heat to second room

	Inst	Ea	Lg	SB	2.00	8.00	78.40	81.30	---	159.70	208.00
	Inst	Ea	Sm	SB	2.67	6.00	86.40	109.00	---	195.40	257.00

Minimum Job Charge

	Inst	Job	Lg	SB	8.00	2.00	---	325.00	---	325.00	472.00
	Inst	Job	Sm	SB	11.4	1.40	---	464.00	---	464.00	672.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Insulation

Batt or roll

With wall or ceiling finish already removed

Joists, 16" or 24" oc	Demo	SF	Lg	LB	.005	2935	---	.17	---	.17	.23
	Demo	SF	Sm	LB	.007	2201	---	.23	---	.23	.33
Rafters, 16" or 24" oc	Demo	SF	Lg	LB	.006	2560	---	.20	---	.20	.28
	Demo	SF	Sm	LB	.008	1920	---	.27	---	.27	.37
Studs, 16" or 24" oc	Demo	SF	Lg	LB	.005	3285	---	.17	---	.17	.23
	Demo	SF	Sm	LB	.006	2464	---	.20	---	.20	.28

Place and/or staple, Johns-Manville and/or Owens Corning fiberglass

Allowance made for joists, rafters, studs

Joists

Unfaced

3-1/2" T (R-11)

16" oc	Inst	SF	Lg	CA	.008	975.0	.44	.33	---	.77	.97
	Inst	SF	Sm	CA	.011	731.3	.48	.45	---	.93	1.18
24" oc	Inst	SF	Lg	CA	.005	1460	.49	.21	---	.70	.85
	Inst	SF	Sm	CA	.007	1095	.54	.29	---	.83	1.02

3-1/2" T (R-12)

16" oc	Inst	SF	Lg	CA	.008	975.0	.51	.33	---	.84	1.05
	Inst	SF	Sm	CA	.011	731.3	.56	.45	---	1.01	1.28
24" oc	Inst	SF	Lg	CA	.005	1460	.57	.21	---	.78	.94
	Inst	SF	Sm	CA	.007	1095	.63	.29	---	.92	1.13

3-1/2" T (R-13)

16" oc	Inst	SF	Lg	CA	.008	975.0	.55	.33	---	.88	1.09
	Inst	SF	Sm	CA	.011	731.3	.61	.45	---	1.06	1.33
24" oc	Inst	SF	Lg	CA	.005	1460	.62	.21	---	.83	1.00
	Inst	SF	Sm	CA	.007	1095	.68	.29	---	.97	1.18

5-1/2" T (R-19)

16" oc	Inst	SF	Lg	CA	.008	975.0	.80	.33	---	1.13	1.38
	Inst	SF	Sm	CA	.011	731.3	.88	.45	---	1.33	1.64
24" oc	Inst	SF	Lg	CA	.005	1460	.90	.21	---	1.11	1.32
	Inst	SF	Sm	CA	.007	1095	.99	.29	---	1.28	1.54

5-1/2" T (R-20)

16" oc	Inst	SF	Lg	CA	.008	975.0	.92	.33	---	1.25	1.52
	Inst	SF	Sm	CA	.011	731.3	1.02	.45	---	1.47	1.81
24" oc	Inst	SF	Lg	CA	.005	1460	1.04	.21	---	1.25	1.48
	Inst	SF	Sm	CA	.007	1095	1.14	.29	---	1.43	1.71

5-1/2" T (R-22)

16" oc	Inst	SF	Lg	CA	.008	975.0	1.10	.33	---	1.43	1.72
	Inst	SF	Sm	CA	.011	731.3	1.21	.45	---	1.66	2.02
24" oc	Inst	SF	Lg	CA	.005	1460	1.23	.21	---	1.44	1.70
	Inst	SF	Sm	CA	.007	1095	1.36	.29	---	1.65	1.97

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
7-1/2" T (R-28)											
16" oc	Inst	SF	Lg	CA	.008	975.0	.97	.33	---	1.30	1.58
	Inst	SF	Sm	CA	.011	731.3	1.06	.45	---	1.51	1.85
24" oc	Inst	SF	Lg	CA	.005	1460	1.08	.21	---	1.29	1.53
	Inst	SF	Sm	CA	.007	1095	1.19	.29	---	1.48	1.77
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.008	975.0	1.24	.33	---	1.57	1.89
	Inst	SF	Sm	CA	.011	731.3	1.36	.45	---	1.81	2.20
24" oc	Inst	SF	Lg	CA	.005	1460	1.38	.21	---	1.59	1.87
	Inst	SF	Sm	CA	.007	1095	1.53	.29	---	1.82	2.16
11-1/2" T (R-38)											
16" oc	Inst	SF	Lg	CA	.008	975.0	1.49	.33	---	1.82	2.17
	Inst	SF	Sm	CA	.011	731.3	1.64	.45	---	2.09	2.52
24" oc	Inst	SF	Lg	CA	.005	1460	1.66	.21	---	1.87	2.20
	Inst	SF	Sm	CA	.007	1095	1.83	.29	---	2.12	2.51
Kraft-faced											
3-1/2" T (R-11)											
16" oc	Inst	SF	Lg	CA	.008	975.0	.65	.33	---	.98	1.21
	Inst	SF	Sm	CA	.011	731.3	.72	.45	---	1.17	1.46
24" oc	Inst	SF	Lg	CA	.005	1460	.73	.21	---	.94	1.13
	Inst	SF	Sm	CA	.007	1095	.81	.29	---	1.10	1.33
3-1/2" T (R-13)											
16" oc	Inst	SF	Lg	CA	.008	975.0	.70	.33	---	1.03	1.26
	Inst	SF	Sm	CA	.011	731.3	.77	.45	---	1.22	1.52
24" oc	Inst	SF	Lg	CA	.005	1460	.78	.21	---	.99	1.18
	Inst	SF	Sm	CA	.007	1095	.86	.29	---	1.15	1.39
3-1/2" T (R-15)											
16" oc	Inst	SF	Lg	CA	.008	975.0	.90	.33	---	1.23	1.49
	Inst	SF	Sm	CA	.011	731.3	1.00	.45	---	1.45	1.78
24" oc	Inst	SF	Lg	CA	.005	1460	1.01	.21	---	1.22	1.45
	Inst	SF	Sm	CA	.007	1095	1.12	.29	---	1.41	1.69
5-1/2" T (R-19)											
16" oc	Inst	SF	Lg	CA	.008	975.0	.83	.33	---	1.16	1.41
	Inst	SF	Sm	CA	.011	731.3	.92	.45	---	1.37	1.69
24" oc	Inst	SF	Lg	CA	.005	1460	.93	.21	---	1.14	1.36
	Inst	SF	Sm	CA	.007	1095	1.03	.29	---	1.32	1.59
5-1/2" T (R-22)											
16" oc	Inst	SF	Lg	CA	.008	975.0	1.10	.33	---	1.43	1.72
	Inst	SF	Sm	CA	.011	731.3	1.21	.45	---	1.66	2.02
24" oc	Inst	SF	Lg	CA	.005	1460	1.23	.21	---	1.44	1.70
	Inst	SF	Sm	CA	.007	1095	1.36	.29	---	1.65	1.97

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Mat'l	Labor	Equip	Total	Price
					Unit	Day	Unit	Unit	Unit	Unit	Incl
							Cost	Cost	Cost	Cost	O&P
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.008	975.0	1.31	.33	---	1.64	1.97
	Inst	SF	Sm	CA	.011	731.3	1.44	.45	---	1.89	2.29
24" oc	Inst	SF	Lg	CA	.005	1460	1.47	.21	---	1.68	1.98
	Inst	SF	Sm	CA	.007	1095	1.62	.29	---	1.91	2.27
11-1/2" T (R-38)											
16" oc	Inst	SF	Lg	CA	.008	975.0	1.54	.33	---	1.87	2.23
	Inst	SF	Sm	CA	.011	731.3	1.69	.45	---	2.14	2.58
24" oc	Inst	SF	Lg	CA	.005	1460	1.72	.21	---	1.93	2.27
	Inst	SF	Sm	CA	.007	1095	1.90	.29	---	2.19	2.59
Foil-faced											
5-1/2" T (R-19)											
16" oc	Inst	SF	Lg	CA	.008	975.0	.83	.33	---	1.16	1.41
	Inst	SF	Sm	CA	.011	731.3	.92	.45	---	1.37	1.69
24" oc	Inst	SF	Lg	CA	.005	1460	.93	.21	---	1.14	1.36
	Inst	SF	Sm	CA	.007	1095	1.03	.29	---	1.32	1.59
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.008	975.0	1.31	.33	---	1.64	1.97
	Inst	SF	Sm	CA	.011	731.3	1.44	.45	---	1.89	2.29
24" oc	Inst	SF	Lg	CA	.005	1460	1.47	.21	---	1.68	1.98
	Inst	SF	Sm	CA	.007	1095	1.62	.29	---	1.91	2.27
Rafters											
Unfaced											
3-1/2" T (R-11)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.44	.49	---	.93	1.20
	Inst	SF	Sm	CA	.016	487.5	.48	.66	---	1.14	1.47
24" oc	Inst	SF	Lg	CA	.008	975	.49	.33	---	.82	1.02
	Inst	SF	Sm	CA	.011	731	.54	.45	---	.99	1.25
3-1/2" T (R-12)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.51	.49	---	1.00	1.28
	Inst	SF	Sm	CA	.016	487.5	.56	.66	---	1.22	1.56
24" oc	Inst	SF	Lg	CA	.008	975	.57	.33	---	.90	1.12
	Inst	SF	Sm	CA	.011	731	.63	.45	---	1.08	1.36
3-1/2" T (R-13)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.55	.49	---	1.04	1.32
	Inst	SF	Sm	CA	.016	487.5	.61	.66	---	1.27	1.62
24" oc	Inst	SF	Lg	CA	.008	975	.62	.33	---	.95	1.17
	Inst	SF	Sm	CA	.011	731	.68	.45	---	1.13	1.41
5-1/2" T (R-19)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.80	.49	---	1.29	1.61
	Inst	SF	Sm	CA	.016	487.5	.88	.66	---	1.54	1.93
24" oc	Inst	SF	Lg	CA	.008	975	.90	.33	---	1.23	1.49
	Inst	SF	Sm	CA	.011	731	.99	.45	---	1.44	1.77
5-1/2" T (R-20)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.92	.49	---	1.41	1.75
	Inst	SF	Sm	CA	.016	487.5	1.02	.66	---	1.68	2.09
24" oc	Inst	SF	Lg	CA	.008	975	1.04	.33	---	1.37	1.66
	Inst	SF	Sm	CA	.011	731	1.14	.45	---	1.59	1.94
5-1/2" T (R-22)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.10	.49	---	1.59	1.95
	Inst	SF	Sm	CA	.016	487.5	1.21	.66	---	1.87	2.31
24" oc	Inst	SF	Lg	CA	.008	975	1.23	.33	---	1.56	1.87
	Inst	SF	Sm	CA	.011	731	1.36	.45	---	1.81	2.20

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
7-1/2" T (R-28)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.97	.49	---	1.46	1.81
	Inst	SF	Sm	CA	.016	487.5	1.06	.66	---	1.72	2.14
24" oc	Inst	SF	Lg	CA	.008	975	1.08	.33	---	1.41	1.70
	Inst	SF	Sm	CA	.011	731	1.19	.45	---	1.64	2.00
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.24	.49	---	1.73	2.12
	Inst	SF	Sm	CA	.016	487.5	1.36	.66	---	2.02	2.48
24" oc	Inst	SF	Lg	CA	.008	975	1.38	.33	---	1.71	2.05
	Inst	SF	Sm	CA	.011	731	1.53	.45	---	1.98	2.39
11-1/2" T (R-38)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.49	.49	---	1.98	2.40
	Inst	SF	Sm	CA	.016	487.5	1.64	.66	---	2.30	2.81
24" oc	Inst	SF	Lg	CA	.008	975	1.66	.33	---	1.99	2.37
	Inst	SF	Sm	CA	.011	731	1.83	.45	---	2.28	2.74
Kraft-faced											
3-1/2" T (R-11)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.65	.49	---	1.14	1.44
	Inst	SF	Sm	CA	.016	487.5	.72	.66	---	1.38	1.75
24" oc	Inst	SF	Lg	CA	.008	975	.73	.33	---	1.06	1.30
	Inst	SF	Sm	CA	.011	731	.81	.45	---	1.26	1.56
3-1/2" T (R-13)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.70	.49	---	1.19	1.49
	Inst	SF	Sm	CA	.016	487.5	.77	.66	---	1.43	1.81
24" oc	Inst	SF	Lg	CA	.008	975	.78	.33	---	1.11	1.36
	Inst	SF	Sm	CA	.011	731	.86	.45	---	1.31	1.62
3-1/2" T (R-15)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.90	.49	---	1.39	1.72
	Inst	SF	Sm	CA	.016	487.5	1.00	.66	---	1.66	2.07
24" oc	Inst	SF	Lg	CA	.008	975	1.01	.33	---	1.34	1.62
	Inst	SF	Sm	CA	.011	731	1.12	.45	---	1.57	1.92
5-1/2" T (R-19)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.83	.49	---	1.32	1.64
	Inst	SF	Sm	CA	.016	487.5	.92	.66	---	1.58	1.98
24" oc	Inst	SF	Lg	CA	.008	975	.93	.33	---	1.26	1.53
	Inst	SF	Sm	CA	.011	731	1.03	.45	---	1.48	1.82
5-1/2" T (R-22)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.10	.49	---	1.59	1.95
	Inst	SF	Sm	CA	.016	487.5	1.21	.66	---	1.87	2.31
24" oc	Inst	SF	Lg	CA	.008	975	1.23	.33	---	1.56	1.87
	Inst	SF	Sm	CA	.011	731	1.36	.45	---	1.81	2.20
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.31	.49	---	1.80	2.20
	Inst	SF	Sm	CA	.016	487.5	1.44	.66	---	2.10	2.58
24" oc	Inst	SF	Lg	CA	.008	975	1.47	.33	---	1.80	2.15
	Inst	SF	Sm	CA	.011	731	1.62	.45	---	2.07	2.50
11-1/2" T (R-38)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.54	.49	---	2.03	2.46
	Inst	SF	Sm	CA	.016	487.5	1.69	.66	---	2.35	2.86
24" oc	Inst	SF	Lg	CA	.008	975	1.72	.33	---	2.05	2.44
	Inst	SF	Sm	CA	.011	731	1.90	.45	---	2.35	2.82

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Foil-faced											
5-1/2" T (R-19)											
16" oc	Inst	SF	Lg	CA	.012	650.0	.83	.49	---	1.32	1.64
	Inst	SF	Sm	CA	.016	487.5	.92	.66	---	1.58	1.98
24" oc	Inst	SF	Lg	CA	.008	975	.93	.33	---	1.26	1.53
	Inst	SF	Sm	CA	.011	731	1.03	.45	---	1.48	1.82
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.012	650.0	1.31	.49	---	1.80	2.20
	Inst	SF	Sm	CA	.016	487.5	1.44	.66	---	2.10	2.58
24" oc	Inst	SF	Lg	CA	.008	975	1.47	.33	---	1.80	2.15
	Inst	SF	Sm	CA	.011	731	1.62	.45	---	2.07	2.50
Studs											
Unfaced											
3-1/2" T (R-11)											
16" oc	Inst	SF	Lg	CA	.010	815.0	.44	.41	---	.85	1.08
	Inst	SF	Sm	CA	.013	611.3	.48	.53	---	1.01	1.30
24" oc	Inst	SF	Lg	CA	.007	1220	.49	.29	---	.78	.97
	Inst	SF	Sm	CA	.009	915	.54	.37	---	.91	1.14
3-1/2" T (R-12)											
16" oc	Inst	SF	Lg	CA	.010	815.0	.51	.41	---	.92	1.16
	Inst	SF	Sm	CA	.013	611.3	.56	.53	---	1.09	1.39
24" oc	Inst	SF	Lg	CA	.007	1220	.57	.29	---	.86	1.06
	Inst	SF	Sm	CA	.009	915	.63	.37	---	1.00	1.24
3-1/2" T (R-13)											
16" oc	Inst	SF	Lg	CA	.010	815.0	.55	.41	---	.96	1.21
	Inst	SF	Sm	CA	.013	611.3	.61	.53	---	1.14	1.45
24" oc	Inst	SF	Lg	CA	.007	1220	.62	.29	---	.91	1.12
	Inst	SF	Sm	CA	.009	915	.68	.37	---	1.05	1.30
5-1/2" T (R-19)											
16" oc	Inst	SF	Lg	CA	.010	815.0	.80	.41	---	1.21	1.49
	Inst	SF	Sm	CA	.013	611.3	.88	.53	---	1.41	1.76
24" oc	Inst	SF	Lg	CA	.007	1220	.90	.29	---	1.19	1.44
	Inst	SF	Sm	CA	.009	915	.99	.37	---	1.36	1.66
5-1/2" T (R-20)											
16" oc	Inst	SF	Lg	CA	.010	815.0	.92	.41	---	1.33	1.63
	Inst	SF	Sm	CA	.013	611.3	1.02	.53	---	1.55	1.92
24" oc	Inst	SF	Lg	CA	.007	1220	1.04	.29	---	1.33	1.60
	Inst	SF	Sm	CA	.009	915	1.14	.37	---	1.51	1.83
5-1/2" T (R-22)											
16" oc	Inst	SF	Lg	CA	.010	815.0	1.10	.41	---	1.51	1.84
	Inst	SF	Sm	CA	.013	611.3	1.21	.53	---	1.74	2.14
24" oc	Inst	SF	Lg	CA	.007	1220	1.23	.29	---	1.52	1.82
	Inst	SF	Sm	CA	.009	915	1.36	.37	---	1.73	2.08
7-1/2" T (R-28)											
16" oc	Inst	SF	Lg	CA	.010	815.0	.97	.41	---	1.38	1.69
	Inst	SF	Sm	CA	.013	611.3	1.06	.53	---	1.59	1.97
24" oc	Inst	SF	Lg	CA	.007	1220	1.08	.29	---	1.37	1.64
	Inst	SF	Sm	CA	.009	915	1.19	.37	---	1.56	1.89
9-1/2" T (R-30)											
16" oc	Inst	SF	Lg	CA	.010	815.0	1.24	.41	---	1.65	2.00
	Inst	SF	Sm	CA	.013	611.3	1.36	.53	---	1.89	2.31
24" oc	Inst	SF	Lg	CA	.007	1220	1.38	.29	---	1.67	1.99
	Inst	SF	Sm	CA	.009	915	1.53	.37	---	1.90	2.28

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg					
					hours	Output						Mat'l	Labor	Equip	Total	Price
					per	per						Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P					
11-1/2" T (R-38)																
16" oc	Inst	SF	Lg	CA	.010	815.0	1.49	.41	---	1.90	2.29					
	Inst	SF	Sm	CA	.013	611.3	1.64	.53	---	2.17	2.63					
24" oc	Inst	SF	Lg	CA	.007	1220	1.66	.29	---	1.95	2.31					
	Inst	SF	Sm	CA	.009	915	1.83	.37	---	2.20	2.62					
Kraft-faced																
3-1/2" T (R-11)																
16" oc	Inst	SF	Lg	CA	.010	815.0	.65	.41	---	1.06	1.32					
	Inst	SF	Sm	CA	.013	611.3	.72	.53	---	1.25	1.58					
24" oc	Inst	SF	Lg	CA	.007	1220	.73	.29	---	1.02	1.24					
	Inst	SF	Sm	CA	.009	915	.81	.37	---	1.18	1.45					
3-1/2" T (R-13)																
16" oc	Inst	SF	Lg	CA	.010	815.0	.70	.41	---	1.11	1.38					
	Inst	SF	Sm	CA	.013	611.3	.77	.53	---	1.30	1.63					
24" oc	Inst	SF	Lg	CA	.007	1220	.78	.29	---	1.07	1.30					
	Inst	SF	Sm	CA	.009	915	.86	.37	---	1.23	1.51					
3-1/2" T (R-15)																
16" oc	Inst	SF	Lg	CA	.010	815.0	.90	.41	---	1.31	1.61					
	Inst	SF	Sm	CA	.013	611.3	1.00	.53	---	1.53	1.90					
24" oc	Inst	SF	Lg	CA	.007	1220	1.01	.29	---	1.30	1.56					
	Inst	SF	Sm	CA	.009	915	1.12	.37	---	1.49	1.81					
5-1/2" T (R-19)																
16" oc	Inst	SF	Lg	CA	.010	815.0	.83	.41	---	1.24	1.53					
	Inst	SF	Sm	CA	.013	611.3	.92	.53	---	1.45	1.81					
24" oc	Inst	SF	Lg	CA	.007	1220	.93	.29	---	1.22	1.47					
	Inst	SF	Sm	CA	.009	915	1.03	.37	---	1.40	1.70					
5-1/2" T (R-22)																
16" oc	Inst	SF	Lg	CA	.010	815.0	1.10	.41	---	1.51	1.84					
	Inst	SF	Sm	CA	.013	611.3	1.21	.53	---	1.74	2.14					
24" oc	Inst	SF	Lg	CA	.007	1220	1.23	.29	---	1.52	1.82					
	Inst	SF	Sm	CA	.009	915	1.36	.37	---	1.73	2.08					
9-1/2" T (R-30)																
16" oc	Inst	SF	Lg	CA	.010	815.0	1.31	.41	---	1.72	2.08					
	Inst	SF	Sm	CA	.013	611.3	1.44	.53	---	1.97	2.40					
24" oc	Inst	SF	Lg	CA	.007	1220	1.47	.29	---	1.76	2.09					
	Inst	SF	Sm	CA	.009	915	1.62	.37	---	1.99	2.38					
11-1/2" T (R-38)																
16" oc	Inst	SF	Lg	CA	.010	815.0	1.54	.41	---	1.95	2.35					
	Inst	SF	Sm	CA	.013	611.3	1.69	.53	---	2.22	2.69					
24" oc	Inst	SF	Lg	CA	.007	1220	1.72	.29	---	2.01	2.38					
	Inst	SF	Sm	CA	.009	915	1.90	.37	---	2.27	2.70					
Foil-faced																
5-1/2" T (R-19)																
16" oc	Inst	SF	Lg	CA	.010	815.0	.83	.41	---	1.24	1.53					
	Inst	SF	Sm	CA	.013	611.3	.92	.53	---	1.45	1.81					
24" oc	Inst	SF	Lg	CA	.007	1220	.93	.29	---	1.22	1.47					
	Inst	SF	Sm	CA	.009	915	1.03	.37	---	1.40	1.70					
9-1/2" T (R-30)																
16" oc	Inst	SF	Lg	CA	.010	815.0	1.31	.41	---	1.72	2.08					
	Inst	SF	Sm	CA	.013	611.3	1.44	.53	---	1.97	2.40					
24" oc	Inst	SF	Lg	CA	.007	1220	1.47	.29	---	1.76	2.09					
	Inst	SF	Sm	CA	.009	915	1.62	.37	---	1.99	2.38					

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Loose fill**With ceiling finish in place**

Joists, 16" or 24" oc

4-1/2" T	Demo	SF	Lg	LB	.005	3400	---	.17	.08	.25	.31
	Demo	SF	Sm	LB	.006	2550	---	.20	.11	.31	.39
6-1/2" T	Demo	SF	Lg	LB	.007	2380	---	.23	.12	.35	.45
	Demo	SF	Sm	LB	.009	1785	---	.30	.16	.46	.58
7-1/2" T	Demo	SF	Lg	LB	.008	2040	---	.27	.14	.41	.51
	Demo	SF	Sm	LB	.010	1530	---	.33	.19	.52	.66
8-3/4" T	Demo	SF	Lg	LB	.009	1700	---	.30	.17	.47	.59
	Demo	SF	Sm	LB	.013	1275	---	.43	.22	.65	.83
10-1/4" T	Demo	SF	Lg	LB	.011	1445	---	.37	.20	.57	.71
	Demo	SF	Sm	LB	.015	1084	---	.50	.26	.76	.96

Allowance made for joists, cavities, and cores**Fiberglass Insulation (28.5 lbs/bag nominal weight)**

Joists, @ 8.13 lbs/CF density, using appropriate machine with 2-1/2" hose

16" oc

4-1/2" T, R-13, 6.6 bags/1,000 SF	Inst	SF	Lg	CH	.003	4000	.55	.12	.07	.74	.86
	Inst	SF	Sm	CH	.004	3000	.60	.15	.10	.85	1.01
6-1/2" T, R-19, 9.4 bags/1,000 SF	Inst	SF	Lg	CH	.004	2800	.55	.15	.10	.80	.95
	Inst	SF	Sm	CH	.006	2100	.60	.23	.14	.97	1.15
7-1/2" T, R-22, 11.1 bags/1,000 SF	Inst	SF	Lg	CH	.005	2400	.55	.19	.12	.86	1.02
	Inst	SF	Sm	CH	.007	1800	.60	.27	.16	1.03	1.23
8-3/4" T, R-25, 13.3 bags/1,000 SF	Inst	SF	Lg	CH	.006	2000	.55	.23	.14	.92	1.10
	Inst	SF	Sm	CH	.008	1500	.60	.31	.19	1.10	1.31
10-1/4" T, R-30, 15.3 bags/1,000 SF	Inst	SF	Lg	CH	.007	1700	1.09	.27	.17	1.53	1.80
	Inst	SF	Sm	CH	.009	1275	1.20	.35	.22	1.77	2.08

24" oc

4-1/2" T, R-13, 6.6 bags/1,000 SF	Inst	SF	Lg	CH	.003	3600	.55	.12	.08	.75	.87
	Inst	SF	Sm	CH	.004	2700	.60	.15	.11	.86	1.02
6-1/2" T, R-19, 9.4 bags/1,000 SF	Inst	SF	Lg	CH	.005	2500	.55	.19	.11	.85	1.01
	Inst	SF	Sm	CH	.006	1875	.60	.23	.15	.98	1.16
7-1/2" T, R-22, 11.1 bags/1,000 SF	Inst	SF	Lg	CH	.006	2100	.55	.23	.14	.92	1.10
	Inst	SF	Sm	CH	.008	1575	.60	.31	.18	1.09	1.30
8-3/4" T, R-25, 13.3 bags/1,000 SF	Inst	SF	Lg	CH	.007	1750	.55	.27	.16	.98	1.17
	Inst	SF	Sm	CH	.009	1313	.60	.35	.22	1.17	1.39
10-1/4" T, R-30, 15.3 bags/1,000 SF	Inst	SF	Lg	CH	.008	1500	1.09	.31	.19	1.59	1.87
	Inst	SF	Sm	CH	.011	1125	1.20	.42	.25	1.87	2.22

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Vermiculite/Perlite (approximately 10 lbs/bag, 4 CF/bag)

Joists

16" oc

4" T	Inst	SF	Lg	CH	.006	2000	1.16	.23	---	1.39	1.66
	Inst	SF	Sm	CH	.008	1500	1.27	.31	---	1.58	1.89
6" T	Inst	SF	Lg	CH	.009	1400	1.88	.35	---	2.23	2.65
	Inst	SF	Sm	CH	.011	1050.0	2.07	.42	---	2.49	2.97

24" oc

4" T	Inst	SF	Lg	CH	.007	1700	1.30	.27	---	1.57	1.87
	Inst	SF	Sm	CH	.009	1275.0	1.43	.35	---	1.78	2.13
6" T	Inst	SF	Lg	CH	.010	1190.0	1.88	.38	---	2.26	2.70
	Inst	SF	Sm	CH	.013	892.5	2.07	.50	---	2.57	3.08

Cavity walls

1" T	Inst	SF	Lg	CH	.004	3070	.29	.15	---	.44	.55
	Inst	SF	Sm	CH	.005	2303	.32	.19	---	.51	.64
2" T	Inst	SF	Lg	CH	.007	1690	.58	.27	---	.85	1.04
	Inst	SF	Sm	CH	.009	1268	.64	.35	---	.99	1.22

Block walls (2 cores/block)

8" T block	Inst	SF	Lg	CH	.015	815.0	1.01	.58	---	1.59	1.97
	Inst	SF	Sm	CH	.020	611.3	1.11	.77	---	1.88	2.35
12" T block	Inst	SF	Lg	CH	.020	610.0	1.88	.77	---	2.65	3.24
	Inst	SF	Sm	CH	.026	457.5	2.07	1.00	---	3.07	3.78

Rigid insulating board (Demo)

Roofs

1/2" T	Demo	SQ	Lg	LB	.941	17.00	---	31.30	---	31.30	43.90
	Demo	SQ	Sm	LB	1.25	12.75	---	41.60	---	41.60	58.30
1" T	Demo	SQ	Lg	LB	1.07	15.00	---	35.60	---	35.60	49.90
	Demo	SQ	Sm	LB	1.42	11.25	---	47.30	---	47.30	66.20

Walls

1/2" T	Demo	SF	Lg	LB	.007	2140	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1605	---	.33	---	.33	.47
3/4" T	Demo	SF	Lg	LB	.007	2140	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1605	---	.33	---	.33	.47
1" T	Demo	SF	Lg	LB	.009	1820	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.012	1365	---	.40	---	.40	.56
2" T	Demo	SF	Lg	LB	.010	1550	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.014	1163	---	.47	---	.47	.65

Rigid insulating board (Install)**Roofs, over wood decks, 5% waste included****Normal (dry) moisture conditions within building**

Fasten one ply felt, then set and fasten:

1" ISO board	Inst	SQ	Lg	RT	1.50	16.0	82.20	63.60	---	145.80	188.00
	Inst	SQ	Sm	RT	2.00	12.0	90.60	84.80	---	175.40	229.00
1" perlite board	Inst	SQ	Lg	RT	1.50	16.0	84.60	63.60	---	148.20	191.00
	Inst	SQ	Sm	RT	2.00	12.0	93.20	84.80	---	178.00	232.00
1" polystyrene board	Inst	SQ	Lg	RT	1.50	16.0	61.90	63.60	---	125.50	165.00
	Inst	SQ	Sm	RT	2.00	12.0	68.20	84.80	---	153.00	203.00
1" urethane board	Inst	SQ	Lg	RT	1.50	16.0	67.50	63.60	---	131.10	171.00
	Inst	SQ	Sm	RT	2.00	12.0	74.30	84.80	---	159.10	210.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					

Excessive (humid) moisture conditions within building

Nail and overlap three plies 15 lb felt, mop laps and surface one coat and embed:

1" ISO board	Inst	SQ	Lg	RT	3.00	8.0	123.00	127.00	---	250.00	329.00
	Inst	SQ	Sm	RT	4.00	6.0	136.00	170.00	---	306.00	406.00
1" perlite board	Inst	SQ	Lg	RT	3.00	8.0	126.00	127.00	---	253.00	331.00
	Inst	SQ	Sm	RT	4.00	6.0	138.00	170.00	---	308.00	409.00
1" polystyrene board	Inst	SQ	Lg	RT	3.00	8.0	103.00	127.00	---	230.00	305.00
	Inst	SQ	Sm	RT	4.00	6.0	113.00	170.00	---	283.00	380.00
1" urethane board	Inst	SQ	Lg	RT	3.00	8.0	108.00	127.00	---	235.00	312.00
	Inst	SQ	Sm	RT	4.00	6.0	120.00	170.00	---	290.00	387.00

Roofs, over noncombustible decks, 5% waste included**Normal (dry) moisture conditions within building**

Mop one coat and embed:

1" ISO board	Inst	SQ	Lg	RT	1.71	14.0	98.50	72.50	---	171.00	220.00
	Inst	SQ	Sm	RT	2.29	10.5	109.00	97.10	---	206.10	268.00
1" perlite board	Inst	SQ	Lg	RT	1.71	14.0	101.00	72.50	---	173.50	223.00
	Inst	SQ	Sm	RT	2.29	10.5	111.00	97.10	---	208.10	271.00
1" polystyrene board	Inst	SQ	Lg	RT	1.71	14.0	78.10	72.50	---	150.60	196.00
	Inst	SQ	Sm	RT	2.29	10.5	86.10	97.10	---	183.20	242.00
1" urethane board	Inst	SQ	Lg	RT	1.71	14.0	83.70	72.50	---	156.20	203.00
	Inst	SQ	Sm	RT	2.29	10.5	92.20	97.10	---	189.30	249.00

Excessive (humid) moisture conditions within building

Mop one coat, embed two plies 15 lb felt, mop and embed:

1" ISO board	Inst	SQ	Lg	RT	3.69	6.5	124.00	156.00	---	280.00	373.00
	Inst	SQ	Sm	RT	4.92	4.9	137.00	209.00	---	346.00	464.00
1" perlite board	Inst	SQ	Lg	RT	3.69	6.5	126.00	156.00	---	282.00	375.00
	Inst	SQ	Sm	RT	4.92	4.9	139.00	209.00	---	348.00	467.00
1" polystyrene board	Inst	SQ	Lg	RT	3.69	6.5	104.00	156.00	---	260.00	349.00
	Inst	SQ	Sm	RT	4.92	4.9	114.00	209.00	---	323.00	438.00
1" urethane board	Inst	SQ	Lg	RT	3.69	6.5	109.00	156.00	---	265.00	356.00
	Inst	SQ	Sm	RT	4.92	4.9	120.00	209.00	---	329.00	445.00

[illegible]

Walls, extruded polystyrene (XPS) rigid foam insulation, 5% waste included

4' x 8' x 1/2", square edge

Straight wall	Inst	SF	Lg	2C	.011	1440	.99	.45	---	1.44	1.77
	Inst	SF	Sm	2C	.015	1080	1.09	.62	---	1.71	2.12
Cut-up wall	Inst	SF	Lg	2C	.013	1200	.99	.53	---	1.52	1.89
	Inst	SF	Sm	2C	.018	900.0	1.09	.74	---	1.83	2.29

4' x 8' x 1", tongue-and-groove

Straight wall	Inst	SF	Lg	2C	.011	1440	1.15	.45	---	1.60	1.95
	Inst	SF	Sm	2C	.015	1080	1.27	.62	---	1.89	2.32
Cut-up wall	Inst	SF	Lg	2C	.013	1200	1.15	.53	---	1.68	2.07
	Inst	SF	Sm	2C	.018	900.0	1.27	.74	---	2.01	2.50

4' x 8' x 1-1/2", tongue-and-groove

Straight wall	Inst	SF	Lg	2C	.011	1440	1.55	.45	---	2.00	2.41
	Inst	SF	Sm	2C	.015	1080	1.71	.62	---	2.33	2.83
Cut-up wall	Inst	SF	Lg	2C	.013	1200	1.55	.53	---	2.08	2.53
	Inst	SF	Sm	2C	.018	900.0	1.71	.74	---	2.45	3.00

4' x 8' x 2", scored square edge

Straight wall	Inst	SF	Lg	2C	.011	1440	1.98	.45	---	2.43	2.91
	Inst	SF	Sm	2C	.015	1080	2.18	.62	---	2.80	3.37
Cut-up wall	Inst	SF	Lg	2C	.013	1200	1.98	.53	---	2.51	3.02
	Inst	SF	Sm	2C	.018	900.0	2.18	.74	---	2.92	3.54

Intercom systems. See Electrical, page 151

Jacuzzi whirlpools. See Spas, page 404

Lath & plaster. See Plaster, page 319

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Lighting fixtures

Labor includes hanging and connecting fixtures; no bulbs included.

Indoor lighting

Fluorescent

Acoustic grid fixture, LED capable

Two (2) bulb / tube, 2'x4'

Average grade	Inst	Ea	Lg	EA	.800	10.00	69.60	35.90	---	105.50	132.00
	Inst	Ea	Sm	EA	1.14	7.00	76.70	51.20	---	127.90	162.00
High grade	Inst	Ea	Lg	EA	.800	10.00	168.00	35.90	---	203.90	246.00
	Inst	Ea	Sm	EA	1.14	7.00	186.00	51.20	---	237.20	288.00

Four (4) bulb / tube, 2'x4'

Average grade	Inst	Ea	Lg	EA	.800	10.00	92.10	35.90	---	128.00	158.00
	Inst	Ea	Sm	EA	1.14	7.00	102.00	51.20	---	153.20	191.00
High grade	Inst	Ea	Lg	EA	.800	10.00	243.00	35.90	---	278.90	332.00
	Inst	Ea	Sm	EA	1.140	7.00	268.00	51.20	---	319.20	382.00

Surface mounted fixture w/ lens, LED capable

One (1) bulb / tube

2' L	Inst	Ea	Lg	EA	.800	10.00	36.80	35.90	---	72.70	94.40
	Inst	Ea	Sm	EA	1.14	7.00	40.50	51.20	---	91.70	121.00
4' L	Inst	Ea	Lg	EA	.800	10.00	49.20	35.90	---	85.10	109.00
	Inst	Ea	Sm	EA	1.14	7.00	54.30	51.20	---	105.50	137.00
6' L	Inst	Ea	Lg	EA	1.000	8.00	51.70	44.90	---	96.60	125.00
	Inst	Ea	Sm	EA	1.43	5.60	57.00	64.20	---	121.20	159.00
8' L	Inst	Ea	Lg	EA	1.000	8.00	83.70	44.90	---	128.60	161.00
	Inst	Ea	Sm	EA	1.43	5.60	92.30	64.20	---	156.50	199.00

Two (2) bulb / tube

4' L	Inst	Ea	Lg	EA	.800	10.00	58.80	35.90	---	94.70	120.00
	Inst	Ea	Sm	EA	1.14	7.00	64.80	51.20	---	116.00	149.00
6' L	Inst	Ea	Lg	EA	1.000	8.00	67.00	44.90	---	111.90	142.00
	Inst	Ea	Sm	EA	1.43	5.60	73.80	64.20	---	138.00	178.00
8' L	Inst	Ea	Lg	EA	1.000	8.00	102.00	44.90	---	146.90	183.00
	Inst	Ea	Sm	EA	1.43	5.60	113.00	64.20	---	177.20	223.00

Four (4) bulb / tube

4' L	Inst	Ea	Lg	EA	.800	10.00	86.50	35.90	---	122.40	151.00
	Inst	Ea	Sm	EA	1.14	7.00	95.30	51.20	---	146.50	184.00
6' L	Inst	Ea	Lg	EA	1.000	8.00	92.50	44.90	---	137.40	171.00
	Inst	Ea	Sm	EA	1.43	5.60	102.00	64.20	---	166.20	210.00
8' L	Inst	Ea	Lg	EA	1.000	8.00	136.00	44.90	---	180.90	221.00
	Inst	Ea	Sm	EA	1.43	5.60	149.00	64.20	---	213.20	265.00

Lens only, wraparound

Inst	Ea	Lg	EA	.333	24.00	18.30	15.00	---	33.30	42.70
Inst	Ea	Sm	EA	0.48	16.80	20.10	21.50	---	41.60	54.40

Lighting fixtures, incandescent

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Mat'l	Labor	Equip	Total	Price
					Unit	Day	Unit	Unit	Unit	Unit	Incl
							Cost	Cost	Cost	Cost	O&P

Surface mounted strip fixture w/o lens, LED capable

One (1) bulb / tube

2' L	Inst	Ea	Lg	EA	.800	10.00	30.60	35.90	---	66.50	87.30
	Inst	Ea	Sm	EA	1.14	7.00	33.70	51.20	---	84.90	113.00
4' L	Inst	Ea	Lg	EA	.800	10.00	38.80	35.90	---	74.70	96.70
	Inst	Ea	Sm	EA	1.14	7.00	42.80	51.20	---	94.00	123.00
6' L	Inst	Ea	Lg	EA	1.000	8.00	41.90	44.90	---	86.80	113.00
	Inst	Ea	Sm	EA	1.43	5.60	46.20	64.20	---	110.40	146.00
8' L	Inst	Ea	Lg	EA	1.000	8.00	60.70	44.90	---	105.60	135.00
	Inst	Ea	Sm	EA	1.43	5.60	66.80	64.20	---	131.00	170.00

Two (2) bulb / tube

4' L	Inst	Ea	Lg	EA	.800	10.00	45.60	35.90	---	81.50	104.00
	Inst	Ea	Sm	EA	1.14	7.00	50.20	51.20	---	101.40	132.00
6' L	Inst	Ea	Lg	EA	1.000	8.00	50.10	44.90	---	95.00	123.00
	Inst	Ea	Sm	EA	1.43	5.60	55.20	64.20	---	119.40	157.00
8' L	Inst	Ea	Lg	EA	1.000	8.00	83.30	44.90	---	128.20	161.00
	Inst	Ea	Sm	EA	1.43	5.60	91.80	64.20	---	156.00	199.00

Four (4) bulb / tube

4' L	Inst	Ea	Lg	EA	.800	10.00	69.00	35.90	---	104.90	131.00
	Inst	Ea	Sm	EA	1.14	7.00	76.00	51.20	---	127.20	162.00
6' L	Inst	Ea	Lg	EA	1.000	8.00	78.30	44.90	---	123.20	155.00
	Inst	Ea	Sm	EA	1.43	5.60	86.30	64.20	---	150.50	192.00
8' L	Inst	Ea	Lg	EA	1.000	8.00	106.00	44.90	---	150.90	187.00
	Inst	Ea	Sm	EA	1.43	5.60	117.00	64.20	---	181.20	227.00

Circular ceiling fixture, LED capable

Average grade	Inst	Ea	Lg	EA	.667	12.00	73.50	29.90	---	103.40	128.00
	Inst	Ea	Sm	EA	.952	8.40	81.00	42.70	---	123.70	155.00

Incandescent

Ceiling fixture, surface mounted

Standard grade	Inst	Ea	Lg	EA	.800	10.00	17.20	35.90	---	53.10	71.80
	Inst	Ea	Sm	EA	1.143	7.00	18.90	51.30	---	70.20	96.10
Average grade	Inst	Ea	Lg	EA	.800	10.00	30.00	35.90	---	65.90	86.50
	Inst	Ea	Sm	EA	1.143	7.00	33.00	51.30	---	84.30	112.00
High grade	Inst	Ea	Lg	EA	1.000	8.00	50.00	44.90	---	94.90	123.00
	Inst	Ea	Sm	EA	1.429	5.60	55.10	64.10	---	119.20	156.00
Premium grade	Inst	Ea	Lg	EA	1.000	8.00	137.00	44.90	---	181.90	223.00
	Inst	Ea	Sm	EA	1.429	5.60	151.00	64.10	---	215.10	267.00

Wall sconce or light bar

Standard grade	Inst	Ea	Lg	EA	.667	12.00	16.70	29.90	---	46.60	62.60
	Inst	Ea	Sm	EA	.952	8.40	18.40	42.70	---	61.10	83.10
Average grade	Inst	Ea	Lg	EA	.667	12.00	55.20	29.90	---	85.10	107.00
	Inst	Ea	Sm	EA	.952	8.40	60.80	42.70	---	103.50	132.00
High grade	Inst	Ea	Lg	EA	.800	10.00	118.00	35.90	---	153.90	187.00
	Inst	Ea	Sm	EA	1.143	7.00	130.00	51.30	---	181.30	223.00
Premium grade	Inst	Ea	Lg	EA	.800	10.00	270.00	35.90	---	305.90	362.00
	Inst	Ea	Sm	EA	1.143	7.00	297.00	51.30	---	348.30	416.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Track lighting for highlighting effects from a ceiling or wall

Swivel track heads with the ability to slide head along track to a new position

Track fixture (can)

Average grade	Inst	Ea	Lg	EA	.400	20.00	19.40	18.00	---	37.40	48.30
	Inst	Ea	Sm	EA	0.57	14.00	21.30	25.60	---	46.90	61.60
High grade	Inst	Ea	Lg	EA	.444	18.00	35.50	19.90	---	55.40	69.80
	Inst	Ea	Sm	EA	0.63	12.60	39.20	28.30	---	67.50	86.00
Premium grade	Inst	Ea	Lg	EA	.500	16.00	100.00	22.40	---	122.40	147.00
	Inst	Ea	Sm	EA	0.71	11.20	110.00	31.90	---	141.90	173.00
Track, 1-7/16" W x 3/4" D											
Average grade	Inst	LF	Lg	EA	.667	12.00	5.26	29.90	---	35.16	49.50
	Inst	LF	Sm	EA	.952	8.40	5.80	42.70	---	48.50	68.60
High grade	Inst	LF	Lg	EA	.727	11.00	10.00	32.60	---	42.60	58.80
	Inst	LF	Sm	EA	1.039	7.70	11.00	46.60	---	57.60	80.30
Premium grade	Inst	LF	Lg	EA	.800	10.00	14.80	35.90	---	50.70	69.00
	Inst	LF	Sm	EA	1.143	7.00	16.30	51.30	---	67.60	93.10

Outdoor lighting

Ceiling or Wall fixture

Standard grade	Inst	Ea	Lg	EA	.667	12.00	24.30	29.90	---	54.20	71.30
	Inst	Ea	Sm	EA	.952	8.40	26.70	42.70	---	69.40	92.70
Average grade	Inst	Ea	Lg	EA	.667	12.00	41.20	29.90	---	71.10	90.70
	Inst	Ea	Sm	EA	.952	8.40	45.40	42.70	---	88.10	114.00
High grade	Inst	Ea	Lg	EA	.800	10.00	73.50	35.90	---	109.40	137.00
	Inst	Ea	Sm	EA	1.143	7.00	81.00	51.30	---	132.30	168.00
Premium grade	Inst	Ea	Lg	EA	.800	10.00	108.00	35.90	---	143.90	176.00
	Inst	Ea	Sm	EA	1.143	7.00	119.00	51.30	---	170.30	211.00

Spot light fixture

Single	Inst	Ea	Lg	EA	.800	10.00	22.90	35.90	---	58.80	78.40
	Inst	Ea	Sm	EA	1.143	7.00	25.30	51.30	---	76.60	103.00
Double	Inst	Ea	Lg	EA	.800	10.00	29.40	35.90	---	65.30	85.80
	Inst	Ea	Sm	EA	1.143	7.00	32.40	51.30	---	83.70	112.00
Triple	Inst	Ea	Lg	EA	.800	10.00	35.50	35.90	---	71.40	92.90
	Inst	Ea	Sm	EA	1.143	7.00	39.10	51.30	---	90.40	119.00

Post light fixture, LED capable

Excludes bulbs, underground wire / conduit, circuit, concrete base.

Average grade	Inst	Ea	Lg	EA	4.000	2.00	86.90	180.00	---	266.90	360.00
	Inst	Ea	Sm	EA	5.714	1.40	95.80	256.00	---	351.80	482.00
High grade	Inst	Ea	Lg	EA	4.000	2.00	144.00	180.00	---	324.00	426.00
	Inst	Ea	Sm	EA	5.714	1.40	159.00	256.00	---	415.00	554.00
Premium grade	Inst	Ea	Lg	EA	4.000	2.00	246.00	180.00	---	426.00	543.00
	Inst	Ea	Sm	EA	5.714	1.40	271.00	256.00	---	527.00	684.00

Motion sensor for exterior fixture

Average grade	Inst	Ea	Lg	EA	1.000	8.00	19.60	44.90	---	64.50	87.70
	Inst	Ea	Sm	EA	1.429	5.60	21.60	64.10	---	85.70	118.00

Linoleum. See Resilient flooring, page 326

Lumber. See Framing, page 169

Description	Oper	Unit	Vol	Size	Man-	Crew	Unit	Cost	Cost	Cost	Cost	O&P
					hours	Output						
					per	per						
					Unit	Day						

Mantels, fireplace

Ponderosa pine, kiln-dried, unfinished, assembled

Versailles, ornate, French design

59" W x 46" H	Inst	Ea	Lg	CJ	4.00	4.00	1710.00	149.00	---	1859.00	2180.00
	Inst	Ea	Sm	CJ	5.71	2.80	1890.00	212.00	---	2102.00	2470.00

Victorian, ornate, English design

63" W x 52" H	Inst	Ea	Lg	CJ	4.00	4.00	1370.00	149.00	---	1519.00	1790.00
	Inst	Ea	Sm	CJ	5.71	2.80	1510.00	212.00	---	1722.00	2040.00

Chelsea, plain, English design

70" W x 52" H	Inst	Ea	Lg	CJ	4.00	4.00	937.00	149.00	---	1086.00	1290.00
	Inst	Ea	Sm	CJ	5.71	2.80	1030.00	212.00	---	1242.00	1490.00

Jamestown, plain, Early American

68" W x 53" H	Inst	Ea	Lg	CJ	4.00	4.00	499.00	149.00	---	648.00	783.00
	Inst	Ea	Sm	CJ	5.71	2.80	550.00	212.00	---	762.00	930.00

Marlite paneling

Panels, 4' x 8', adhesive set

	Demo	SF	Lg	LB	.009	1850	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.012	1295	---	.40	---	.40	.56

Plastic-coated masonite panels; 4' x 8', 5' x 5'; screw applied; channel molding around perimeter; 1/8" T

Solid colors	Inst	SF	Lg	CJ	.047	340.0	2.53	1.75	---	4.28	5.36
	Inst	SF	Sm	CJ	.067	238.0	2.79	2.49	---	5.28	6.70
Patterned panels	Inst	SF	Lg	CJ	.047	340.0	3.00	1.75	---	4.75	5.90
	Inst	SF	Sm	CJ	.067	238.0	3.31	2.49	---	5.80	7.29

Molding, 1/8" panels; corners, divisions, or edging; nailed to framing or sheathing

Bright anodized	Inst	LF	Lg	CJ	.063	255.0	.16	2.34	---	2.50	3.46
	Inst	LF	Sm	CJ	.090	178.5	.17	3.35	---	3.52	4.88
Gold anodized	Inst	LF	Lg	CJ	.063	255.0	.19	2.34	---	2.53	3.50
	Inst	LF	Sm	CJ	.090	178.5	.20	3.35	---	3.55	4.92
Colors	Inst	LF	Lg	CJ	.063	255.0	.26	2.34	---	2.60	3.58
	Inst	LF	Sm	CJ	.090	178.5	.28	3.35	---	3.63	5.01

Masonry

Brick. All material costs include mortar and waste, 5% on brick and 30% on mortar.

1. Dimensions

- Standard or regular: 8" L x 2¹/₄" H x 3³/₄" W.
- Modular: 7⁵/₈" L x 2¹/₄" H x 3⁵/₈" W.
- Norman: 11⁵/₈" L x 2²/₃" H x 3⁵/₈" W.
- Roman: 11⁵/₈" L x 1⁵/₈" H x 3⁵/₈" W.

2. Installation

- Mortar joints are ³/₈" thick both horizontally and vertically.
- Mortar mix is 1:3, 1 part masonry cement and 3 parts sand.
- Galvanized, corrugated wall ties are used on veneers at 1 tie per SF wall area. The tie is ⁷/₈" x 7" x 16 ga.
- Running bond used on veneers and walls.

3. **Notes on Labor.** Output is based on a crew composed of bricklayers and bricktenders at a 1:1 ratio.

4. **Estimating Technique.** Chimneys and columns figured per vertical linear foot with allowances already made for brick waste and mortar waste. Veneers and walls are computed per square foot of wall area.

Concrete (Masonry) Block. All material costs include 3% block waste and 30% mortar waste.

1. Dimension. All blocks are two core.

- Heavyweight: 8" T blocks weigh approximately 46 lbs/block; 12" T blocks weigh approximately 65 lbs/block.
- Lightweight: Also known as haydite blocks. 8" T blocks weigh approximately 30 lbs/block; 12" T blocks weigh approximately 41 lbs/block.

2. Installation

- Mortar joints are ³/₈" T both horizontally and vertically.
- Mortar mix is 1:3, 1 part masonry cement and 3 parts sand.
- Reinforcing: Lateral metal is regular truss with 9 gauge sides and ties. Vertical steel is #4 (¹/₂" dia.) rods, at 0.668 lbs/LF.

3. **Notes on Labor.** Output is based on a crew composed of bricklayers and bricktenders.

4. **Estimating Technique.** Figure chimneys and columns per vertical linear foot, with allowances already made for block waste and mortar waste. Veneers and walls are computed per square foot of wall area.

Quarry Tile (on Floor). Includes 5% tile waste.

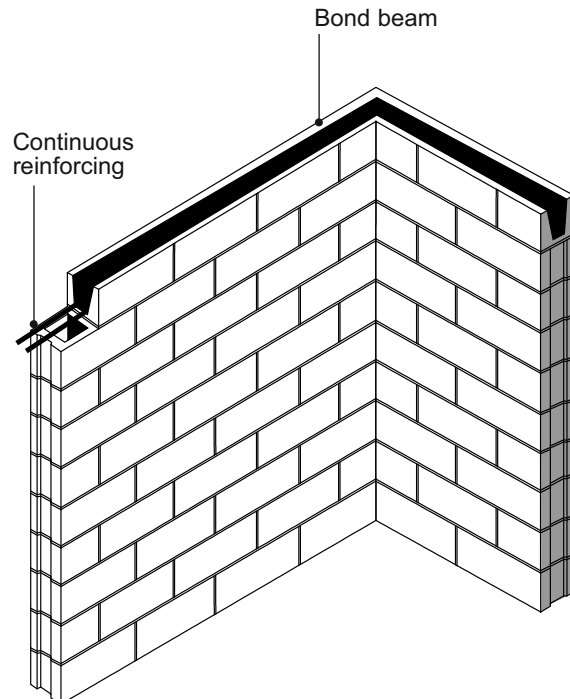
1. **Dimensions:** 6" square tile is ¹/₂" T and 9" square tile is ³/₄" T.

2. Installation

- Conventional mortar set utilizes portland cement, mortar mix, sand, and water. The mortar dry-cures and bonds to tile.
- Dry-set mortar utilizes dry-set portland cement, mortar mix, sand, and water. The mortar dry-cures and bonds to tile.

3. **Notes on Labor.** Output is based on a crew composed of bricklayers and bricktenders.

4. **Estimating Technique.** Compute square feet of floor area.



Typical concrete block wall

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Masonry

Brick, standard

Running bond, 3/8" mortar joints

Chimneys

Flue lining included; no scaffolding included

4" T wall with standard brick

16" x 16" with one 8" x 8" flue

	Demo	VLF	Lg	AB	1.04	15.40	---	42.60	8.55	51.15	68.20
	Demo	VLF	Sm	LB	1.48	10.78	---	49.30	12.20	61.50	81.20
20" x 16" with one 12" x 8" flue											
	Demo	VLF	Lg	AB	1.20	13.30	---	49.20	9.90	59.10	78.70
	Demo	VLF	Sm	LB	1.72	9.31	---	57.30	14.20	71.50	94.40
20" x 20" with one 12" x 12" flue											
	Demo	VLF	Lg	AB	1.31	12.20	---	53.70	10.80	64.50	85.90
	Demo	VLF	Sm	LB	1.87	8.54	---	62.30	15.40	77.70	103.00
28" x 16" with two 8" x 8" flues											
	Demo	VLF	Lg	AB	1.60	10.00	---	65.60	13.20	78.80	105.00
	Demo	VLF	Sm	LB	2.29	7.00	---	76.30	18.80	95.10	126.00
32" x 16" with one 8" x 8" and one 12" x 8" flue											
	Demo	VLF	Lg	AB	1.70	9.40	---	69.70	14.00	83.70	112.00
	Demo	VLF	Sm	LB	2.43	6.58	---	80.90	20.00	100.90	133.00
36" x 16" with two 12" x 8" flues											
	Demo	VLF	Lg	AB	1.82	8.80	---	74.60	15.00	89.60	119.00
	Demo	VLF	Sm	LB	2.60	6.16	---	86.60	21.40	108.00	143.00
36" x 20" with two 12" x 12" flues											
	Demo	VLF	Lg	AB	2.03	7.90	---	83.20	16.70	99.90	133.00
	Demo	VLF	Sm	LB	2.89	5.53	---	96.30	23.80	120.10	159.00
16" x 16" with one 8" x 8" flue											
	Inst	VLF	Lg	BK	1.12	14.30	29.90	40.80	8.00	78.70	100.00
	Inst	VLF	Sm	BK	1.60	10.01	33.00	58.30	11.40	102.70	132.00
20" x 16" with one 12" x 8" flue											
	Inst	VLF	Lg	BK	1.27	12.60	35.90	46.30	9.08	91.28	116.00
	Inst	VLF	Sm	BK	1.81	8.82	39.70	66.00	13.00	118.70	152.00
20" x 20" with one 12" x 12" flue											
	Inst	VLF	Lg	BK	1.42	11.30	42.40	51.80	10.10	104.30	132.00
	Inst	VLF	Sm	BK	2.02	7.91	46.80	73.60	14.50	134.90	173.00
28" x 16" with two 8" x 8" flues											
	Inst	VLF	Lg	BK	1.70	9.40	52.50	62.00	12.20	126.70	160.00
	Inst	VLF	Sm	BK	2.43	6.58	58.00	88.60	17.40	164.00	210.00
32" x 16" with one 8" x 8" and one 12" x 8" flue											
	Inst	VLF	Lg	BK	1.82	8.80	57.70	66.30	13.00	137.00	174.00
	Inst	VLF	Sm	BK	2.60	6.16	63.80	94.80	18.60	177.20	227.00
36" x 16" with two 12" x 8" flues											
	Inst	VLF	Lg	BK	1.95	8.20	63.80	71.10	14.00	148.90	188.00
	Inst	VLF	Sm	BK	2.79	5.74	70.50	102.00	19.90	192.40	245.00
36" x 20" with two 12" x 12" flues											
	Inst	VLF	Lg	BK	2.16	7.40	77.40	78.70	15.50	171.60	216.00
	Inst	VLF	Sm	BK	3.09	5.18	85.50	113.00	22.10	220.60	280.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit	Unit	Unit	Unit	Incl
Cost											
O&P											
8" T wall with standard brick											
24" x 24" with one 8" x 8" flue	Demo	VLF	Lg	AB	2.22	7.20	---	91.00	18.30	109.30	146.00
	Demo	VLF	Sm	LB	3.17	5.04	---	106.00	26.10	132.10	174.00
28" x 24" with one 12" x 8" flue	Demo	VLF	Lg	AB	2.39	6.70	---	97.90	19.70	117.60	157.00
	Demo	VLF	Sm	LB	3.41	4.69	---	114.00	28.10	142.10	187.00
28" x 28" with one 12" x 12" flue	Demo	VLF	Lg	AB	2.62	6.10	---	107.00	21.60	128.60	172.00
	Demo	VLF	Sm	LB	3.75	4.27	---	125.00	30.90	155.90	206.00
36" x 24" with two 8" x 8" flues	Demo	VLF	Lg	AB	2.91	5.50	---	119.00	24.00	143.00	191.00
	Demo	VLF	Sm	LB	4.16	3.85	---	139.00	34.20	173.20	228.00
40" x 24" with one 8" x 8" and one 12" x 8" flue											
	Demo	VLF	Lg	AB	3.20	5.00	---	131.00	26.40	157.40	210.00
	Demo	VLF	Sm	LB	4.57	3.50	---	152.00	37.60	189.60	251.00
44" x 24" with two 12" x 8" flues	Demo	VLF	Lg	AB	3.33	4.80	---	136.00	27.40	163.40	218.00
	Demo	VLF	Sm	LB	4.76	3.36	---	159.00	39.20	198.20	261.00
44" x 28" with two 12" x 12" flues	Demo	VLF	Lg	AB	3.56	4.50	---	146.00	29.30	175.30	233.00
	Demo	VLF	Sm	LB	5.08	3.15	---	169.00	41.80	210.80	279.00
24" x 24" with one 8" x 8" flue	Inst	VLF	Lg	BK	2.50	6.40	67.30	91.10	17.90	176.30	225.00
	Inst	VLF	Sm	BK	3.57	4.48	74.50	130.00	25.50	230.00	296.00
28" x 24" with one 12" x 8" flue	Inst	VLF	Lg	BK	2.76	5.80	76.60	101.00	19.70	197.30	251.00
	Inst	VLF	Sm	BK	3.94	4.06	84.70	144.00	28.20	256.90	329.00
28" x 28" with one 12" x 12" flue	Inst	VLF	Lg	BK	2.96	5.40	87.00	108.00	21.20	216.20	274.00
	Inst	VLF	Sm	BK	4.23	3.78	96.20	154.00	30.30	280.50	360.00
36" x 24" with two 8" x 8" flues	Inst	VLF	Lg	BK	3.33	4.80	100.00	121.00	23.80	244.80	311.00
	Inst	VLF	Sm	BK	4.76	3.36	111.00	174.00	34.10	319.10	408.00
40" x 24" with one 8" x 8" and one 12" x 8" flue											
	Inst	VLF	Lg	BK	3.72	4.30	114.00	136.00	26.60	276.60	350.00
	Inst	VLF	Sm	BK	5.32	3.01	126.00	194.00	38.00	358.00	458.00
44" x 24" with two 12" x 8" flues	Inst	VLF	Lg	BK	3.81	4.20	120.00	139.00	27.20	286.20	362.00
	Inst	VLF	Sm	BK	5.44	2.94	132.00	198.00	38.90	368.90	473.00
44" x 28" with two 12" x 12" flues	Inst	VLF	Lg	BK	4.10	3.90	137.00	149.00	29.30	315.30	399.00
	Inst	VLF	Sm	BK	5.86	2.73	152.00	214.00	41.90	407.90	520.00

Columns

Outside dimension; no shoring; solid centers; no scaffolding included

8" x 8"	Demo	VLF	Lg	AB	.331	48.30	---	13.60	2.73	16.33	21.70
	Demo	VLF	Sm	LB	.473	33.81	---	15.80	3.90	19.70	26.00
12" x 8"	Demo	VLF	Lg	AB	.546	29.30	---	22.40	4.50	26.90	35.80
	Demo	VLF	Sm	LB	.780	20.51	---	26.00	6.42	32.42	42.80
16" x 8"	Demo	VLF	Lg	AB	.711	22.50	---	29.10	5.85	34.95	46.60
	Demo	VLF	Sm	LB	1.02	15.75	---	34.00	8.36	42.36	55.90
20" x 8"	Demo	VLF	Lg	AB	.870	18.40	---	35.60	7.16	42.76	57.10
	Demo	VLF	Sm	LB	1.24	12.88	---	41.30	10.20	51.50	68.10
24" x 8"	Demo	VLF	Lg	AB	1.02	15.70	---	41.80	8.39	50.19	66.90
	Demo	VLF	Sm	LB	1.46	10.99	---	48.60	12.00	60.60	80.10

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Columns (continued)

12" x 12"	Demo	VLF	Lg	AB	.792	20.20	---	32.50	6.52	39.02	51.90
	Demo	VLF	Sm	LB	1.13	14.14	---	37.60	9.32	46.92	62.00
16" x 12"	Demo	VLF	Lg	AB	1.02	15.70	---	41.80	8.39	50.19	66.90
	Demo	VLF	Sm	LB	1.46	10.99	---	48.60	12.00	60.60	80.10
20" x 12"	Demo	VLF	Lg	AB	1.23	13.00	---	50.40	10.10	60.50	80.70
	Demo	VLF	Sm	LB	1.76	9.10	---	58.60	14.50	73.10	96.60
24" x 12"	Demo	VLF	Lg	AB	1.43	11.20	---	58.60	11.80	70.40	93.80
	Demo	VLF	Sm	LB	2.04	7.84	---	68.00	16.80	84.80	112.00
28" x 12"	Demo	VLF	Lg	AB	1.62	9.90	---	66.40	13.30	79.70	106.00
	Demo	VLF	Sm	LB	2.31	6.93	---	77.00	19.00	96.00	127.00
32" x 12"	Demo	VLF	Lg	AB	1.80	8.90	---	73.80	14.80	88.60	118.00
	Demo	VLF	Sm	LB	2.57	6.23	---	85.60	21.10	106.70	141.00
16" x 16"	Demo	VLF	Lg	AB	1.30	12.30	---	53.30	10.70	64.00	85.30
	Demo	VLF	Sm	AB	1.86	8.61	---	76.20	15.30	91.50	122.00
20" x 16"	Demo	VLF	Lg	AB	1.55	10.30	---	63.50	12.80	76.30	102.00
	Demo	VLF	Sm	AB	2.22	7.21	---	91.00	18.30	109.30	146.00
24" x 16"	Demo	VLF	Lg	AB	1.80	8.90	---	73.80	14.80	88.60	118.00
	Demo	VLF	Sm	AB	2.57	6.23	---	105.00	21.10	126.10	169.00
28" x 16"	Demo	VLF	Lg	AB	2.00	8.00	---	81.90	16.50	98.40	131.00
	Demo	VLF	Sm	AB	2.86	5.60	---	117.00	23.50	140.50	188.00
32" x 16"	Demo	VLF	Lg	AB	2.22	7.20	---	91.00	18.30	109.30	146.00
	Demo	VLF	Sm	AB	3.17	5.04	---	130.00	26.10	156.10	208.00
36" x 16"	Demo	VLF	Lg	AB	2.39	6.70	---	97.90	19.70	117.60	157.00
	Demo	VLF	Sm	AB	3.41	4.69	---	140.00	28.10	168.10	224.00
20" x 20"	Demo	VLF	Lg	AB	1.84	8.70	---	75.40	15.10	90.50	121.00
	Demo	VLF	Sm	AB	2.63	6.09	---	108.00	21.60	129.60	172.00
24" x 20"	Demo	VLF	Lg	AB	2.16	7.40	---	88.50	17.80	106.30	142.00
	Demo	VLF	Sm	AB	3.09	5.18	---	127.00	25.40	152.40	203.00
28" x 20"	Demo	VLF	Lg	AB	2.39	6.70	---	97.90	19.70	117.60	157.00
	Demo	VLF	Sm	AB	3.41	4.69	---	140.00	28.10	168.10	224.00
32" x 20"	Demo	VLF	Lg	AB	2.62	6.10	---	107.00	21.60	128.60	172.00
	Demo	VLF	Sm	AB	3.75	4.27	---	154.00	30.90	184.90	246.00
36" x 20"	Demo	VLF	Lg	AB	2.81	5.70	---	115.00	23.10	138.10	184.00
	Demo	VLF	Sm	AB	4.01	3.99	---	164.00	33.00	197.00	263.00
24" x 24"	Demo	VLF	Lg	AB	2.39	6.70	---	97.90	19.70	117.60	157.00
	Demo	VLF	Sm	AB	3.41	4.69	---	140.00	28.10	168.10	224.00
28" x 24"	Demo	VLF	Lg	AB	2.67	6.00	---	109.00	22.00	131.00	175.00
	Demo	VLF	Sm	AB	3.81	4.20	---	156.00	31.40	187.40	250.00
32" x 24"	Demo	VLF	Lg	AB	2.91	5.50	---	119.00	24.00	143.00	191.00
	Demo	VLF	Sm	AB	4.16	3.85	---	170.00	34.20	204.20	273.00
36" x 24"	Demo	VLF	Lg	AB	3.14	5.10	---	129.00	25.80	154.80	206.00
	Demo	VLF	Sm	AB	4.48	3.57	---	184.00	36.90	220.90	294.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					
28" x 28"	Demo	VLF	Lg	AB	2.96	5.40	---	121.00	24.40	145.40	194.00
	Demo	VLF	Sm	AB	4.23	3.78	---	173.00	34.90	207.90	277.00
32" x 28"	Demo	VLF	Lg	AB	3.27	4.90	---	134.00	26.90	160.90	214.00
	Demo	VLF	Sm	AB	4.66	3.43	---	191.00	38.40	229.40	306.00
36" x 28"	Demo	VLF	Lg	AB	3.56	4.50	---	146.00	29.30	175.30	233.00
	Demo	VLF	Sm	AB	5.08	3.15	---	208.00	41.80	249.80	333.00
32" x 32"	Demo	VLF	Lg	AB	3.56	4.50	---	146.00	29.30	175.30	233.00
	Demo	VLF	Sm	AB	5.08	3.15	---	208.00	41.80	249.80	333.00
36" x 32"	Demo	VLF	Lg	AB	3.90	4.10	---	160.00	32.10	192.10	256.00
	Demo	VLF	Sm	AB	5.57	2.87	---	228.00	45.90	273.90	365.00
36" x 36"	Demo	VLF	Lg	AB	4.21	3.80	---	172.00	34.70	206.70	276.00
	Demo	VLF	Sm	AB	6.02	2.66	---	247.00	49.50	296.50	395.00
8" x 8" (9.33 Brick/VLF)	Inst	VLF	Lg	BK	.415	38.60	7.38	15.10	2.96	25.44	32.90
	Inst	VLF	Sm	BK	.592	27.02	8.17	21.60	4.23	34.00	44.30
12" x 8" (14.00 Brick/VLF)	Inst	VLF	Lg	BK	.606	26.40	11.20	22.10	4.33	37.63	48.60
	Inst	VLF	Sm	BK	.866	18.48	12.40	31.60	6.19	50.19	65.30
16" x 8" (18.67 Brick/VLF)	Inst	VLF	Lg	BK	.784	20.40	14.90	28.60	5.61	49.11	63.30
	Inst	VLF	Sm	BK	1.12	14.28	16.50	40.80	8.01	65.31	84.90
20" x 8" (23.33 Brick/VLF)	Inst	VLF	Lg	BK	.958	16.70	18.60	34.90	6.85	60.35	77.80
	Inst	VLF	Sm	BK	1.37	11.69	20.60	49.90	9.79	80.29	104.00
24" x 8" (28.00 Brick/VLF)	Inst	VLF	Lg	BK	1.12	14.30	22.30	40.80	8.00	71.10	91.60
	Inst	VLF	Sm	BK	1.60	10.01	24.70	58.30	11.40	94.40	123.00
12" x 12" (21.00 Brick/VLF)	Inst	VLF	Lg	BK	.874	18.30	16.70	31.90	6.25	54.85	70.70
	Inst	VLF	Sm	BK	1.25	12.81	18.50	45.60	8.93	73.03	94.90
16" x 12" (28.00 Brick/VLF)	Inst	VLF	Lg	BK	1.12	14.30	22.30	40.80	8.00	71.10	91.60
	Inst	VLF	Sm	BK	1.60	10.01	24.70	58.30	11.40	94.40	123.00
20" x 12" (35.00 Brick/VLF)	Inst	VLF	Lg	BK	1.34	11.90	27.90	48.80	9.61	86.31	111.00
	Inst	VLF	Sm	BK	1.92	8.33	30.90	70.00	13.70	114.60	149.00
24" x 12" (42.00 Brick/VLF)	Inst	VLF	Lg	BK	1.57	10.20	33.40	57.20	11.20	101.80	131.00
	Inst	VLF	Sm	BK	2.24	7.14	36.90	81.70	16.00	134.60	174.00
28" x 12" (49.00 Brick/VLF)	Inst	VLF	Lg	BK	1.76	9.10	39.00	64.20	12.60	115.80	148.00
	Inst	VLF	Sm	BK	2.51	6.37	43.10	91.50	18.00	152.60	197.00
32" x 12" (56.00 Brick/VLF)	Inst	VLF	Lg	BK	1.95	8.20	44.60	71.10	14.00	129.70	166.00
	Inst	VLF	Sm	BK	2.79	5.74	49.30	102.00	19.90	171.20	221.00
16" x 16" (37.33 Brick/VLF)	Inst	VLF	Lg	BK	1.42	11.30	29.70	51.80	10.10	91.60	118.00
	Inst	VLF	Sm	BK	2.02	7.91	32.80	73.60	14.50	120.90	157.00
20" x 16" (46.67 Brick/VLF)	Inst	VLF	Lg	BK	1.70	9.40	37.20	62.00	12.20	111.40	143.00
	Inst	VLF	Sm	BK	2.43	6.58	41.20	88.60	17.40	147.20	191.00
24" x 16" (56.00 Brick/VLF)	Inst	VLF	Lg	BK	1.95	8.20	44.60	71.10	14.00	129.70	166.00
	Inst	VLF	Sm	BK	2.79	5.74	49.30	102.00	19.90	171.20	221.00
28" x 16" (65.33 Brick/VLF)	Inst	VLF	Lg	BK	2.16	7.40	52.00	78.70	15.50	146.20	187.00
	Inst	VLF	Sm	BK	3.09	5.18	57.50	113.00	22.10	192.60	248.00
32" x 16" (74.67 Brick/VLF)	Inst	VLF	Lg	BK	2.39	6.70	59.50	87.10	17.10	163.70	209.00
	Inst	VLF	Sm	BK	3.41	4.69	65.80	124.00	24.40	214.20	277.00
36" x 16" (84.00 Brick/VLF)	Inst	VLF	Lg	BK	2.58	6.20	66.90	94.00	18.50	179.40	229.00
	Inst	VLF	Sm	BK	3.69	4.34	74.00	135.00	26.40	235.40	302.00

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
20" x 20" (58.33 Brick/VLF)	Inst	VLF	Lg	BK	2.00	8.00	46.50	72.90	14.30	133.70	171.00
	Inst	VLF	Sm	BK	2.86	5.60	51.40	104.00	20.40	175.80	228.00
24" x 20" (70.00 Brick/VLF)	Inst	VLF	Lg	BK	2.32	6.90	55.70	84.60	16.60	156.90	201.00
	Inst	VLF	Sm	BK	3.31	4.83	61.60	121.00	23.70	206.30	266.00
28" x 20" (81.67 Brick/VLF)	Inst	VLF	Lg	BK	2.58	6.20	65.00	94.00	18.50	177.50	227.00
	Inst	VLF	Sm	BK	3.69	4.34	71.90	135.00	26.40	233.30	300.00
32" x 20" (93.33 Brick/VLF)	Inst	VLF	Lg	BK	2.81	5.70	74.30	102.00	20.10	196.40	251.00
	Inst	VLF	Sm	BK	4.01	3.99	82.20	146.00	28.70	256.90	331.00
36" x 20" (105.00 Brick/VLF)	Inst	VLF	Lg	BK	3.02	5.30	83.60	110.00	21.60	215.20	274.00
	Inst	VLF	Sm	BK	4.31	3.71	92.50	157.00	30.80	280.30	360.00
24" x 24" (84.00 Brick/VLF)	Inst	VLF	Lg	BK	2.58	6.20	66.90	94.00	18.50	179.40	229.00
	Inst	VLF	Sm	BK	3.69	4.34	74.00	135.00	26.40	235.40	302.00
28" x 24" (98.00 Brick/VLF)	Inst	VLF	Lg	BK	2.86	5.60	77.90	104.00	20.40	202.30	258.00
	Inst	VLF	Sm	BK	4.08	3.92	86.20	149.00	29.20	264.40	340.00
32" x 24" (112.00 Brick/VLF)	Inst	VLF	Lg	BK	3.08	5.20	89.20	112.00	22.00	223.20	284.00
	Inst	VLF	Sm	BK	4.40	3.64	98.70	160.00	31.40	290.10	373.00
36" x 24" (126.00 Brick/VLF)	Inst	VLF	Lg	BK	3.33	4.80	100.00	121.00	23.80	244.80	311.00
	Inst	VLF	Sm	BK	4.76	3.36	111.00	174.00	34.10	319.10	408.00
28" x 28" (114.33 Brick/VLF)	Inst	VLF	Lg	BK	3.20	5.00	91.10	117.00	22.90	231.00	293.00
	Inst	VLF	Sm	BK	4.57	3.50	101.00	167.00	32.70	300.70	385.00
32" x 28" (130.67 Brick/VLF)	Inst	VLF	Lg	BK	3.48	4.60	104.00	127.00	24.90	255.90	325.00
	Inst	VLF	Sm	BK	4.97	3.22	115.00	181.00	35.50	331.50	425.00
36" x 28" (147.00 Brick/VLF)	Inst	VLF	Lg	BK	3.90	4.10	117.00	142.00	27.90	286.90	364.00
	Inst	VLF	Sm	BK	5.57	2.87	130.00	203.00	39.90	372.90	477.00
32" x 32" (149.33 Brick/VLF)	Inst	VLF	Lg	BK	4.00	4.00	119.00	146.00	28.60	293.60	372.00
	Inst	VLF	Sm	BK	5.71	2.80	131.00	208.00	40.90	379.90	488.00
36" x 32" (168.00 Brick/VLF)	Inst	VLF	Lg	BK	4.44	3.60	134.00	162.00	31.80	327.80	415.00
	Inst	VLF	Sm	BK	6.35	2.52	148.00	231.00	45.40	424.40	544.00
36" x 36" (189.00 Brick/VLF)	Inst	VLF	Lg	BK	5.00	3.20	150.00	182.00	35.80	367.80	468.00
	Inst	VLF	Sm	BK	7.14	2.24	166.00	260.00	51.10	477.10	612.00

Veneers

4" T, with air tools

	Demo	SF	Lg	AB	.049	325.0	---	2.01	.41	2.42	3.22
	Demo	SF	Sm	AB	.070	227.5	---	2.87	.58	3.45	4.59

4" T, with wall ties; no scaffolding included

Common, 8" x 2-2/3" x 4"	Inst	SF	Lg	BD	.170	235.0	4.13	6.38	.49	11.00	14.30
	Inst	SF	Sm	BO	.195	164.5	4.57	7.11	.70	12.38	16.10
Standard face, 8" x 2-2/3" x 4"	Inst	SF	Lg	BD	.182	220.0	5.41	6.83	.52	12.76	16.40
	Inst	SF	Sm	BO	.208	154.0	5.99	7.58	.74	14.31	18.40
Glazed, 8" x 2-2/3" x 4"	Inst	SF	Lg	BD	.190	210.0	11.20	7.13	.54	18.87	23.60
	Inst	SF	Sm	BO	.218	147.0	12.30	7.95	.78	21.03	26.20

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Other brick types/sizes

8" x 3-1/5" x 4"	Inst	SF	Lg	BD	.151	265.0	5.66	5.67	.43	11.76	15.00
	Inst	SF	Sm	BO	.173	185.5	6.25	6.31	.62	13.18	16.80
8" x 4" x 4"	Inst	SF	Lg	BD	.127	315.0	3.78	4.77	.36	8.91	11.50
	Inst	SF	Sm	BO	.145	220.5	4.21	5.29	.52	10.02	12.90
12" x 4" x 6"	Inst	SF	Lg	BD	.091	440.0	6.23	3.42	.26	9.91	12.30
	Inst	SF	Sm	BO	.104	308.0	6.84	3.79	.37	11.00	13.60
12" x 2-2/3" x 4"	Inst	SF	Lg	BD	.123	325.0	7.20	4.62	.35	12.17	15.20
	Inst	SF	Sm	BO	.141	227.5	7.94	5.14	.50	13.58	16.90
12" x 3-1/5" x 4"	Inst	SF	Lg	BD	.107	375.0	4.08	4.02	.31	8.41	10.70
	Inst	SF	Sm	BO	.122	262.5	4.48	4.45	.44	9.37	11.90
12" x 2" x 4"	Inst	SF	Lg	BD	.160	250.0	7.13	6.00	.46	13.59	17.20
	Inst	SF	Sm	BO	.183	175.0	7.83	6.67	.65	15.15	19.10
12" x 2-2/3" x 6"	Inst	SF	Lg	BD	.127	315.0	5.94	4.77	.36	11.07	14.00
	Inst	SF	Sm	BO	.145	220.5	6.55	5.29	.52	12.36	15.60
12" x 4" x 4"	Inst	SF	Lg	BD	.089	450.0	4.76	3.34	.25	8.35	10.50
	Inst	SF	Sm	BO	.102	315.0	5.22	3.72	.36	9.30	11.60

Walls

With air tools

8" T	Demo	SF	Lg	AB	.086	185.0	---	3.52	.71	4.23	5.64
	Demo	SF	Sm	AB	.124	129.5	---	5.08	1.02	6.10	8.13
12" T	Demo	SF	Lg	AB	.123	130.0	---	5.04	1.01	6.05	8.06
	Demo	SF	Sm	AB	.176	91.00	---	7.21	1.45	8.66	11.50
16" T	Demo	SF	Lg	AB	.160	100.0	---	6.56	1.32	7.88	10.50
	Demo	SF	Sm	AB	.229	70.00	---	9.38	1.88	11.26	15.00
24" T	Demo	SF	Lg	AB	.188	85.00	---	7.70	1.55	9.25	12.30
	Demo	SF	Sm	AB	.269	59.50	---	11.00	2.21	13.21	17.60

With common brick; no scaffolding included

8" T (13.50 Brick/SF)	Inst	SF	Lg	BO	.337	95.00	8.13	12.30	1.20	21.63	28.00
	Inst	SF	Sm	ML	.361	66.50	9.00	13.80	1.72	24.52	31.70
12" T (20.25 Brick/SF)	Inst	SF	Lg	BO	.457	70.00	12.30	16.70	1.63	30.63	39.40
	Inst	SF	Sm	ML	.490	49.00	13.60	18.70	2.33	34.63	44.60
16" T (27.00 Brick/SF)	Inst	SF	Lg	BO	.582	55.00	16.40	21.20	2.08	39.68	51.10
	Inst	SF	Sm	ML	.623	38.50	18.20	23.80	2.97	44.97	57.70
24" T (40.50 Brick/SF)	Inst	SF	Lg	BO	.800	40.00	24.50	29.20	2.86	56.56	72.50
	Inst	SF	Sm	ML	.857	28.00	27.20	32.80	4.09	64.09	81.90

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Brick, adobe*Running bond, 3/8" mortar joints***Walls, with air tools**

4" T	Demo	SF	Lg	AB	.041	390.0	---	1.68	.34	2.02	2.69
	Demo	SF	Sm	AB	.059	273.0	---	2.42	.48	2.90	3.86
6" T	Demo	SF	Lg	AB	.042	380.0	---	1.72	.35	2.07	2.76
	Demo	SF	Sm	AB	.060	266.0	---	2.46	.50	2.96	3.94
8" T	Demo	SF	Lg	AB	.043	370.0	---	1.76	.36	2.12	2.83
	Demo	SF	Sm	AB	.062	259.0	---	2.54	.51	3.05	4.07
12" T	Demo	SF	Lg	AB	.046	350.0	---	1.88	.38	2.26	3.02
	Demo	SF	Sm	AB	.065	245.0	---	2.66	.54	3.20	4.27

Walls, no scaffolding included

4" x 4" x 16"	Inst	SF	Lg	BO	.139	230.0	3.64	5.07	.50	9.21	11.90
	Inst	SF	Sm	ML	.149	161.0	4.01	5.70	.71	10.42	13.40
6" x 4" x 16"	Inst	SF	Lg	BO	.145	220.0	3.27	5.29	.52	9.08	11.80
	Inst	SF	Sm	ML	.156	154.0	4.01	5.97	.74	10.72	13.80
8" x 4" x 16"	Inst	SF	Lg	BO	.152	210.0	3.75	5.54	.54	9.83	12.70
	Inst	SF	Sm	ML	.163	147.0	4.15	6.23	.78	11.16	14.40
12" x 4" x 16"	Inst	SF	Lg	BO	.168	190.0	5.16	6.12	.60	11.88	15.20
	Inst	SF	Sm	ML	.180	133.0	5.70	6.88	.86	13.44	17.20

Concrete block*Lightweight (haydite) or heavyweight blocks; 2 cores/block, solid face; includes allowances for lintels, bond beams***Foundations and retaining walls**

No excavation included

Without reinforcing or with lateral reinforcing only

With air tools

8" W x 8" H x 16" L	Demo	SF	Lg	AB	.048	335.0	---	1.97	.39	2.36	3.14
	Demo	SF	Sm	AB	.068	234.5	---	2.79	.56	3.35	4.46
10" W x 8" H x 16" L	Demo	SF	Lg	AB	.052	310.0	---	2.13	.42	2.55	3.40
	Demo	SF	Sm	AB	.074	217.0	---	3.03	.61	3.64	4.85
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.055	290.0	---	2.25	.45	2.70	3.60
	Demo	SF	Sm	AB	.079	203.0	---	3.24	.65	3.89	5.18

Without air tools

8" W x 8" H x 16" L	Demo	SF	Lg	LB	.059	270.0	---	1.97	---	1.97	2.75
	Demo	SF	Sm	LB	.085	189.0	---	2.83	---	2.83	3.96
10" W x 8" H x 16" L	Demo	SF	Lg	LB	.064	250.0	---	2.13	---	2.13	2.98
	Demo	SF	Sm	LB	.091	175.0	---	3.03	---	3.03	4.24
12" W x 8" H x 16" L	Demo	SF	Lg	LB	.070	230.0	---	2.33	---	2.33	3.26
	Demo	SF	Sm	LB	.099	161.0	---	3.30	---	3.30	4.62

With vertical reinforcing in every other core (2 core blocks) with core concrete filled

With air tools

8" W x 8" H x 16" L	Demo	SF	Lg	AB	.078	205.0	---	3.20	.64	3.84	5.11
	Demo	SF	Sm	AB	.111	143.5	---	4.55	.92	5.47	7.29
10" W x 8" H x 16" L	Demo	SF	Lg	AB	.084	190.0	---	3.44	.69	4.13	5.51
	Demo	SF	Sm	AB	.120	133.0	---	4.92	.99	5.91	7.87
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.091	175.0	---	3.73	.75	4.48	5.97
	Demo	SF	Sm	AB	.131	122.5	---	5.37	1.08	6.45	8.59

National Repair & Remodeling Estimator

					Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
No reinforcing											
Heavyweight blocks											
8" x 8" x 16"	Inst	SF	Lg	BD	.127	315.0	3.50	4.77	.36	8.63	11.20
	Inst	SF	Sm	BO	.145	220.5	3.85	5.29	.52	9.66	12.50
10" x 8" x 16"	Inst	SF	Lg	BD	.138	290.0	4.84	5.18	.39	10.41	13.30
	Inst	SF	Sm	BO	.158	203.0	5.34	5.76	.56	11.66	14.90
12" x 8" x 16"	Inst	SF	Lg	BD	.151	265.0	5.21	5.67	.43	11.31	14.50
	Inst	SF	Sm	BO	.173	185.5	5.75	6.31	.62	12.68	16.20
Lightweight blocks											
8" x 8" x 16"	Inst	SF	Lg	BD	.114	350.0	3.00	4.28	.33	7.61	9.86
	Inst	SF	Sm	BO	.131	245.0	3.31	4.77	.47	8.55	11.10
10" x 8" x 16"	Inst	SF	Lg	BD	.125	320.0	3.67	4.69	.36	8.72	11.20
	Inst	SF	Sm	BO	.143	224.0	4.04	5.21	.51	9.76	12.60
12" x 8" x 16"	Inst	SF	Lg	BD	.136	295.0	4.09	5.10	.39	9.58	12.30
	Inst	SF	Sm	BO	.155	206.5	4.50	5.65	.55	10.70	13.80
Lateral reinforcing every second course											
Heavyweight blocks											
8" x 8" x 16"	Inst	SF	Lg	BD	.133	300.0	3.50	4.99	.38	8.87	11.50
	Inst	SF	Sm	BO	.152	210.0	3.85	5.54	.54	9.93	12.80
10" x 8" x 16"	Inst	SF	Lg	BD	.145	275.0	4.84	5.44	.42	10.70	13.70
	Inst	SF	Sm	BO	.166	192.5	5.34	6.05	.59	11.98	15.30
12" x 8" x 16"	Inst	SF	Lg	BD	.160	250.0	5.21	6.00	.46	11.67	15.00
	Inst	SF	Sm	BO	.183	175.0	5.75	6.67	.65	13.07	16.70
Lightweight blocks											
8" x 8" x 16"	Inst	SF	Lg	BD	.119	335.0	3.00	4.47	.34	7.81	10.10
	Inst	SF	Sm	BO	.136	234.5	3.31	4.96	.49	8.76	11.30
10" x 8" x 16"	Inst	SF	Lg	BD	.131	305.0	3.67	4.92	.38	8.97	11.60
	Inst	SF	Sm	BO	.150	213.5	4.04	5.47	.54	10.05	13.00
12" x 8" x 16"	Inst	SF	Lg	BD	.143	280.0	4.09	5.37	.41	9.87	12.70
	Inst	SF	Sm	BO	.163	196.0	4.50	5.94	.58	11.02	14.20
Vertical reinforcing (No. 4 rod) every second core with core concrete filled											
Heavyweight blocks											
8" x 8" x 16"	Inst	SF	Lg	BD	.182	220.0	4.97	6.83	.52	12.32	15.90
	Inst	SF	Sm	BD	.260	154.0	5.48	9.76	.74	15.98	20.90
10" x 8" x 16"	Inst	SF	Lg	BD	.200	200.0	6.45	7.51	.57	14.53	18.70
	Inst	SF	Sm	BD	.286	140.0	7.11	10.70	.82	18.63	24.20
12" x 8" x 16"	Inst	SF	Lg	BD	.216	185.0	7.07	8.11	.62	15.80	20.30
	Inst	SF	Sm	BD	.309	129.5	7.80	11.60	.88	20.28	26.30
Lightweight blocks											
8" x 8" x 16"	Inst	SF	Lg	BD	.167	240.0	4.47	6.27	.48	11.22	14.50
	Inst	SF	Sm	BD	.238	168.0	4.93	8.93	.68	14.54	19.00
10" x 8" x 16"	Inst	SF	Lg	BD	.182	220.0	5.28	6.83	.52	12.63	16.30
	Inst	SF	Sm	BD	.260	154.0	5.81	9.76	.74	16.31	21.30
12" x 8" x 16"	Inst	SF	Lg	BD	.200	200.0	5.95	7.51	.57	14.03	18.10
	Inst	SF	Sm	BD	.286	140.0	6.56	10.70	.82	18.08	23.60

Masonry, exterior walls (above grade)

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Exterior walls (above grade)

No bracing or shoring included

Without reinforcing or with lateral reinforcing only

With air tools

8" W x 8" H x 16" L	Demo	SF	Lg	AB	.048	335.0	---	1.97	.39	2.36	3.14
	Demo	SF	Sm	AB	.068	234.5	---	2.79	.56	3.35	4.46
10" W x 8" H x 16" L	Demo	SF	Lg	AB	.052	305.0	---	2.13	.43	2.56	3.41
	Demo	SF	Sm	AB	.075	213.5	---	3.07	.62	3.69	4.92
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.058	275.0	---	2.38	.48	2.86	3.81
	Demo	SF	Sm	AB	.083	192.5	---	3.40	.68	4.08	5.44

Without air tools

8" W x 8" H x 16" L	Demo	SF	Lg	LB	.060	265.0	---	2.00	---	2.00	2.80
	Demo	SF	Sm	LB	.086	185.5	---	2.86	---	2.86	4.01
10" W x 8" H x 16" L	Demo	SF	Lg	LB	.067	240.0	---	2.23	---	2.23	3.12
	Demo	SF	Sm	LB	.095	168.0	---	3.16	---	3.16	4.43
12" W x 8" H x 16" L	Demo	SF	Lg	LB	.073	220.0	---	2.43	---	2.43	3.40
	Demo	SF	Sm	LB	.104	154.0	---	3.46	---	3.46	4.85

No reinforcing

Heavyweight blocks

8" x 8" x 16"	Inst	SF	Lg	BD	.136	295.0	3.50	5.10	.39	8.99	11.70
	Inst	SF	Sm	BO	.155	206.5	3.85	5.65	.55	10.05	13.00
10" x 8" x 16"	Inst	SF	Lg	BD	.148	270.0	4.84	5.55	.42	10.81	13.90
	Inst	SF	Sm	BO	.169	189.0	5.34	6.16	.61	12.11	15.50
12" x 8" x 16"	Inst	SF	Lg	BD	.160	250.0	5.21	6.00	.46	11.67	15.00
	Inst	SF	Sm	BO	.183	175.0	5.75	6.67	.65	13.07	16.70

Lightweight blocks

8" x 8" x 16"	Inst	SF	Lg	BD	.121	330.0	3.00	4.54	.35	7.89	10.30
	Inst	SF	Sm	BO	.139	231.0	3.31	5.07	.50	8.88	11.50
10" x 8" x 16"	Inst	SF	Lg	BD	.131	305.0	3.67	4.92	.38	8.97	11.60
	Inst	SF	Sm	BO	.150	213.5	3.69	5.47	.54	9.70	12.60
12" x 8" x 16"	Inst	SF	Lg	BD	.143	280.0	4.09	5.37	.41	9.87	12.70
	Inst	SF	Sm	BO	.163	196.0	4.50	5.94	.58	11.02	14.20

Lateral reinforcing every second course

Heavyweight blocks

8" x 8" x 16"	Inst	SF	Lg	BD	.143	280.0	3.50	5.37	.41	9.28	12.10
	Inst	SF	Sm	BO	.163	196.0	3.85	5.94	.58	10.37	13.40
10" x 8" x 16"	Inst	SF	Lg	BD	.154	260.0	4.84	5.78	.44	11.06	14.20
	Inst	SF	Sm	BO	.176	182.0	5.34	6.42	.63	12.39	15.90
12" x 8" x 16"	Inst	SF	Lg	BD	.167	240.0	5.21	6.27	.48	11.96	15.40
	Inst	SF	Sm	BO	.190	168.0	5.75	6.93	.68	13.36	17.10

Lightweight blocks

8" x 8" x 16"	Inst	SF	Lg	BD	.127	315.0	3.00	4.77	.36	8.13	10.60
	Inst	SF	Sm	BO	.145	220.5	3.31	5.29	.52	9.12	11.80
10" x 8" x 16"	Inst	SF	Lg	BD	.138	290.0	3.94	5.18	.39	9.51	12.30
	Inst	SF	Sm	BO	.158	203.0	3.69	5.76	.56	10.01	13.00
12" x 8" x 16"	Inst	SF	Lg	BD	.151	265.0	4.09	5.67	.43	10.19	13.20
	Inst	SF	Sm	BO	.173	185.5	4.50	6.31	.62	11.43	14.80

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Price Incl O&P

Partitions (above grade)

No bracing or shoring included

Without reinforcing or with lateral reinforcing only

With air tools

4" W x 8" H x 16" L	Demo	SF	Lg	AB	.048	330.0	---	1.97	.40	2.37	3.15
	Demo	SF	Sm	AB	.069	231.0	---	2.83	.57	3.40	4.53
6" W x 8" H x 16" L	Demo	SF	Lg	AB	.052	310.0	---	2.13	.42	2.55	3.40
	Demo	SF	Sm	AB	.074	217.0	---	3.03	.61	3.64	4.85
8" W x 8" H x 16" L	Demo	SF	Lg	AB	.054	295.0	---	2.21	.45	2.66	3.55
	Demo	SF	Sm	AB	.077	206.5	---	3.15	.64	3.79	5.06
10" W x 8" H x 16" L	Demo	SF	Lg	AB	.060	265.0	---	2.46	.50	2.96	3.94
	Demo	SF	Sm	AB	.086	185.5	---	3.52	.71	4.23	5.64
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.068	235.0	---	2.79	.56	3.35	4.46
	Demo	SF	Sm	AB	.097	164.5	---	3.97	.80	4.77	6.36

No reinforcing

Heavyweight blocks

4" W x 8" H x 16" L	Inst	SF	Lg	BD	.129	310.0	2.67	4.84	.37	7.88	10.30
	Inst	SF	Sm	BO	.147	217.0	2.93	5.36	.53	8.82	11.50
6" W x 8" H x 16" L	Inst	SF	Lg	BD	.138	290.0	3.07	5.18	.39	8.64	11.30
	Inst	SF	Sm	BO	.158	203.0	3.38	5.76	.56	9.70	12.60
8" W x 8" H x 16" L	Inst	SF	Lg	BD	.151	265.0	3.50	5.67	.43	9.60	12.50
	Inst	SF	Sm	BO	.173	185.5	3.85	6.31	.62	10.78	14.00
10" W x 8" H x 16" L	Inst	SF	Lg	BD	.163	245.0	4.84	6.12	.47	11.43	14.70
	Inst	SF	Sm	BO	.187	171.5	5.34	6.82	.67	12.83	16.50
12" W x 8" H x 16" L	Inst	SF	Lg	BD	.178	225.0	5.21	6.68	.51	12.40	16.00
	Inst	SF	Sm	BO	.203	157.5	5.75	7.40	.73	13.88	17.90

Lightweight blocks

4" W x 8" H x 16" L	Inst	SF	Lg	BD	.119	335.0	2.39	4.47	.34	7.20	9.43
	Inst	SF	Sm	BO	.136	234.5	2.64	4.96	.49	8.09	10.60
6" W x 8" H x 16" L	Inst	SF	Lg	BD	.127	315.0	2.65	4.77	.36	7.78	10.20
	Inst	SF	Sm	BO	.145	220.5	2.91	5.29	.52	8.72	11.40
8" W x 8" H x 16" L	Inst	SF	Lg	BD	.136	295.0	3.00	5.10	.39	8.49	11.10
	Inst	SF	Sm	BO	.155	206.5	3.31	5.65	.55	9.51	12.40
10" W x 8" H x 16" L	Inst	SF	Lg	BD	.148	270.0	3.67	5.55	.42	9.64	12.50
	Inst	SF	Sm	BO	.169	189.0	3.69	6.16	.61	10.46	13.60
12" W x 8" H x 16" L	Inst	SF	Lg	BD	.160	250.0	4.09	6.00	.46	10.55	13.70
	Inst	SF	Sm	BO	.183	175.0	4.50	6.67	.65	11.82	15.30

Lateral reinforcing every second course

Heavyweight blocks

4" W x 8" H x 16" L	Inst	SF	Lg	BD	.136	295.0	2.67	5.10	.39	8.16	10.70
	Inst	SF	Sm	BO	.155	206.5	2.93	5.65	.55	9.13	11.90
6" W x 8" H x 16" L	Inst	SF	Lg	BD	.145	275.0	3.07	5.44	.42	8.93	11.70
	Inst	SF	Sm	BO	.166	192.5	3.38	6.05	.59	10.02	13.10

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
8" W x 8" H x 16" L	Inst	SF	Lg	BD	.160	250.0	3.50	6.00	.46	9.96	13.00
	Inst	SF	Sm	BO	.183	175.0	3.85	6.67	.65	11.17	14.60
10" W x 8" H x 16" L	Inst	SF	Lg	BD	.174	230.0	4.84	6.53	.50	11.87	15.30
	Inst	SF	Sm	BO	.199	161.0	5.34	7.25	.71	13.30	17.20
12" W x 8" H x 16" L	Inst	SF	Lg	BD	.190	210.0	5.21	7.13	.54	12.88	16.70
	Inst	SF	Sm	BO	.218	147.0	5.75	7.95	.78	14.48	18.70
Lightweight blocks											
4" W x 8" H x 16" L	Inst	SF	Lg	BD	.125	320.0	2.39	4.69	.36	7.44	9.77
	Inst	SF	Sm	BO	.143	224.0	2.64	5.21	.51	8.36	11.00
6" W x 8" H x 16" L	Inst	SF	Lg	BD	.133	300.0	2.65	4.99	.38	8.02	10.50
	Inst	SF	Sm	BO	.152	210.0	2.91	5.54	.54	8.99	11.80
8" W x 8" H x 16" L	Inst	SF	Lg	BD	.143	280.0	3.00	5.37	.41	8.78	11.50
	Inst	SF	Sm	BO	.163	196.0	3.31	5.94	.58	9.83	12.80
10" W x 8" H x 16" L	Inst	SF	Lg	BD	.154	260.0	3.67	5.78	.44	9.89	12.90
	Inst	SF	Sm	BO	.176	182.0	3.69	6.42	.63	10.74	14.00
12" W x 8" H x 16" L	Inst	SF	Lg	BD	.167	240.0	4.09	6.27	.48	10.84	14.10
	Inst	SF	Sm	BO	.190	168.0	4.50	6.93	.68	12.11	15.70

Fences

Without reinforcing or with lateral reinforcing only

With air tools

6" W x 4" H x 16" L	Demo	SF	Lg	AB	.041	390.0	---	1.68	.34	2.02	2.69
	Demo	SF	Sm	AB	.059	273.0	---	2.42	.48	2.90	3.86
6" W x 6" H x 16" L	Demo	SF	Lg	AB	.043	370.0	---	1.76	.36	2.12	2.83
	Demo	SF	Sm	AB	.062	259.0	---	2.54	.51	3.05	4.07
8" W x 8" H x 16" L	Demo	SF	Lg	AB	.046	350.0	---	1.88	.38	2.26	3.02
	Demo	SF	Sm	AB	.065	245.0	---	2.66	.54	3.20	4.27
10" W x 8" H x 16" L	Demo	SF	Lg	AB	.049	325.0	---	2.01	.41	2.42	3.22
	Demo	SF	Sm	AB	.070	227.5	---	2.87	.58	3.45	4.59
12" W x 8" H x 16" L	Demo	SF	Lg	AB	.053	300.0	---	2.17	.44	2.61	3.48
	Demo	SF	Sm	AB	.076	210.0	---	3.11	.63	3.74	4.99

Without air tools

6" W x 4" H x 16" L	Demo	SF	Lg	LB	.052	310.0	---	1.73	---	1.73	2.42
	Demo	SF	Sm	LB	.074	217.0	---	2.46	---	2.46	3.45
6" W x 6" H x 16" L	Demo	SF	Lg	LB	.054	295.0	---	1.80	---	1.80	2.52
	Demo	SF	Sm	LB	.077	206.5	---	2.56	---	2.56	3.59
8" W x 8" H x 16" L	Demo	SF	Lg	LB	.057	280.0	---	1.90	---	1.90	2.66
	Demo	SF	Sm	LB	.082	196.0	---	2.73	---	2.73	3.82
10" W x 8" H x 16" L	Demo	SF	Lg	LB	.073	220.0	---	2.43	---	2.43	3.40
	Demo	SF	Sm	LB	.104	154.0	---	3.46	---	3.46	4.85
12" W x 8" H x 16" L	Demo	SF	Lg	LB	.067	240.0	---	2.23	---	2.23	3.12
	Demo	SF	Sm	LB	.095	168.0	---	3.16	---	3.16	4.43

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

Fences, lightweight blocks*No reinforcing*

4" W x 8" H x 16" L	Inst	SF	Lg	BD	.108	370.0	2.39	4.05	.31	6.75	8.81
	Inst	SF	Sm	BO	.124	259.0	2.64	4.52	.44	7.60	9.89
6" W x 4" H x 16" L	Inst	SF	Lg	BD	.222	180.0	4.14	8.33	.64	13.11	17.20
	Inst	SF	Sm	BO	.254	126.0	4.56	9.26	.91	14.73	19.30
6" W x 6" H x 16" L	Inst	SF	Lg	BD	.154	260.0	3.43	5.78	.44	9.65	12.60
	Inst	SF	Sm	BO	.176	182.0	3.77	6.42	.63	10.82	14.10
6" W x 8" H x 16" L	Inst	SF	Lg	BD	.114	350.0	2.65	4.28	.33	7.26	9.45
	Inst	SF	Sm	BO	.131	245.0	2.91	4.77	.47	8.15	10.60
8" W x 8" H x 16" L	Inst	SF	Lg	BD	.121	330.0	3.00	4.54	.35	7.89	10.30
	Inst	SF	Sm	BO	.139	231.0	3.31	5.07	.50	8.88	11.50
10" W x 8" H x 16" L	Inst	SF	Lg	BD	.131	305.0	3.67	4.92	.38	8.97	11.60
	Inst	SF	Sm	BO	.150	213.5	3.69	5.47	.54	9.70	12.60
12" W x 8" H x 16" L	Inst	SF	Lg	BD	.143	280.0	4.09	5.37	.41	9.87	12.70
	Inst	SF	Sm	BO	.163	196.0	4.50	5.94	.58	11.02	14.20

Lateral reinforcing every third course

4" W x 8" H x 16" L	Inst	SF	Lg	BD	.113	355.0	2.39	4.24	.32	6.95	9.09
	Inst	SF	Sm	BO	.129	248.5	2.64	4.70	.46	7.80	10.20
6" W x 4" H x 16" L	Inst	SF	Lg	BD	.229	175.0	4.14	8.59	.65	13.38	17.60
	Inst	SF	Sm	BO	.261	122.5	4.56	9.51	.93	15.00	19.70
6" W x 6" H x 16" L	Inst	SF	Lg	BD	.163	245.0	3.43	6.12	.47	10.02	13.10
	Inst	SF	Sm	BO	.187	171.5	3.77	6.82	.67	11.26	14.70
6" W x 8" H x 16" L	Inst	SF	Lg	BD	.119	335.0	2.65	4.47	.34	7.46	9.73
	Inst	SF	Sm	BO	.136	234.5	2.91	4.96	.49	8.36	10.90
8" W x 8" H x 16" L	Inst	SF	Lg	BD	.127	315.0	3.00	4.77	.36	8.13	10.60
	Inst	SF	Sm	BO	.145	220.5	3.31	5.29	.52	9.12	11.80
10" W x 8" H x 16" L	Inst	SF	Lg	BD	.138	290.0	3.67	5.18	.39	9.24	12.00
	Inst	SF	Sm	BO	.158	203.0	3.69	5.76	.56	10.01	13.00
12" W x 8" H x 16" L	Inst	SF	Lg	BD	.151	265.0	4.09	5.67	.43	10.19	13.20
	Inst	SF	Sm	BO	.173	185.5	4.50	6.31	.62	11.43	14.80

Concrete slump block*Running bond, 3/8" mortar joints***Walls, with air tools**

4" T	Demo	SF	Lg	AB	.043	370.0	---	1.76	.36	2.12	2.83
	Demo	SF	Sm	AB	.062	259.0	---	2.54	.51	3.05	4.07
6" T	Demo	SF	Lg	AB	.046	350.0	---	1.88	.38	2.26	3.02
	Demo	SF	Sm	AB	.065	245.0	---	2.66	.54	3.20	4.27
8" T	Demo	SF	Lg	AB	.048	335.0	---	1.97	.39	2.36	3.14
	Demo	SF	Sm	AB	.068	234.5	---	2.79	.56	3.35	4.46
12" T	Demo	SF	Lg	AB	.058	275.0	---	2.38	.48	2.86	3.81
	Demo	SF	Sm	AB	.083	192.5	---	3.40	.68	4.08	5.44

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Walls, no scaffolding included

4" x 4" x 16"	Inst	SF	Lg	BO	.128	250.0	3.28	4.67	.46	8.41	10.90
	Inst	SF	Sm	ML	.137	175.0	3.61	5.24	.65	9.50	12.20
6" x 4" x 16"	Inst	SF	Lg	BO	.133	240.0	4.29	4.85	.48	9.62	12.30
	Inst	SF	Sm	ML	.143	168.0	4.73	5.47	.68	10.88	13.90
6" x 6" x 16"	Inst	SF	Lg	BO	.119	270.0	3.28	4.34	.42	8.04	10.40
	Inst	SF	Sm	ML	.127	189.0	3.62	4.86	.61	9.09	11.70
8" x 4" x 16"	Inst	SF	Lg	BO	.139	230.0	5.01	5.07	.50	10.58	13.50
	Inst	SF	Sm	ML	.149	161.0	5.52	5.70	.71	11.93	15.20
8" x 6" x 16"	Inst	SF	Lg	BO	.123	260.0	3.82	4.48	.44	8.74	11.20
	Inst	SF	Sm	ML	.132	182.0	4.21	5.05	.63	9.89	12.60
12" x 4" x 16"	Inst	SF	Lg	BO	.152	210.0	6.14	5.54	.54	12.22	15.50
	Inst	SF	Sm	ML	.163	147.0	6.76	6.23	.78	13.77	17.40
12" x 6" x 16"	Inst	SF	Lg	BO	.133	240.0	4.63	4.85	.48	9.96	12.70
	Inst	SF	Sm	ML	.143	168.0	5.11	5.47	.68	11.26	14.30

Concrete slump brick*Running bond, 3/8" mortar joints***Walls, with air tools**

4" T	Demo	SF	Lg	AB	.043	370.0	---	1.76	.36	2.12	2.83
	Demo	SF	Sm	AB	.062	259.0	---	2.54	.51	3.05	4.07

Walls, no scaffolding included

4" x 4" x 8"	Inst	SF	Lg	BO	.145	220.0	7.65	5.29	.52	13.46	16.80
	Inst	SF	Sm	ML	.156	154.0	8.42	5.97	.74	15.13	18.90
4" x 4" x 12"	Inst	SF	Lg	BO	.133	240.0	4.92	4.85	.48	10.25	13.00
	Inst	SF	Sm	ML	.143	168.0	5.42	5.47	.68	11.57	14.70

Concrete textured screen block*Running bond, 3/8" mortar joints***Walls, with air tools**

4" T	Demo	SF	Lg	AB	.033	480.0	---	1.35	.27	1.62	2.16
	Demo	SF	Sm	AB	.048	336.0	---	1.97	.39	2.36	3.14

Walls, no scaffolding included

4" x 6" x 6"	Inst	SF	Lg	BO	.200	160.0	5.74	7.29	.72	13.75	17.70
	Inst	SF	Sm	ML	.214	112.0	6.35	8.18	1.02	15.55	19.90
4" x 8" x 8"	Inst	SF	Lg	BO	.133	240.0	3.80	4.85	.48	9.13	11.70
	Inst	SF	Sm	ML	.143	168.0	4.19	5.47	.68	10.34	13.30
4" x 12" x 12"	Inst	SF	Lg	BO	.089	360.0	2.14	3.24	.32	5.70	7.39
	Inst	SF	Sm	ML	.095	252.0	2.35	3.63	.45	6.43	8.31

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Glass block*Plain, 4" thick*

6" x 6"	Demo	SF	Lg	LB	.064	250.0	---	2.13	---	2.13	2.98
	Demo	SF	Sm	LB	.091	175.0	---	3.03	---	3.03	4.24
8" x 8"	Demo	SF	Lg	LB	.057	280.0	---	1.90	---	1.90	2.66
	Demo	SF	Sm	LB	.082	196.0	---	2.73	---	2.73	3.82
12" x 12"	Demo	SF	Lg	LB	.052	310.0	---	1.73	---	1.73	2.42
	Demo	SF	Sm	LB	.074	217.0	---	2.46	---	2.46	3.45
6" x 6"	Inst	SF	Lg	ML	.320	75.00	36.70	12.20	---	48.90	59.60
	Inst	SF	Sm	BK	.305	52.50	39.40	11.10	---	50.50	61.10
8" x 8"	Inst	SF	Lg	ML	.218	110.0	23.10	8.34	---	31.44	38.40
	Inst	SF	Sm	BK	.208	77.00	24.70	7.58	---	32.28	39.20
12" x 12"	Inst	SF	Lg	ML	.145	165.0	15.50	5.54	---	21.04	25.70
	Inst	SF	Sm	BK	.139	115.5	16.50	5.07	---	21.57	26.20

Glazed block (structural glazed tile)*6-T Series. Includes normal allowance for special shapes*

All sizes	Demo	SF	Lg	LB	.052	310.0	---	1.73	---	1.73	2.42
Glazed 1 side	Demo	SF	Sm	LB	.074	217.0	---	2.46	---	2.46	3.45
2" x 5-1/3" x 12"	Inst	SF	Lg	ML	.286	84.00	4.42	10.90	---	15.32	20.60
	Inst	SF	Sm	BK	.379	42.22	4.88	13.80	---	18.68	25.20
4" x 5-1/3" x 12"	Inst	SF	Lg	ML	.300	80.00	5.64	11.50	---	17.14	22.80
	Inst	SF	Sm	BK	.398	40.20	6.21	14.50	---	20.71	27.70
6" x 5-1/3" x 12"	Inst	SF	Lg	ML	.316	76.00	6.84	12.10	---	18.94	25.00
	Inst	SF	Sm	BK	.419	38.19	7.54	15.30	---	22.84	30.40
8" x 5-1/3" x 12"	Inst	SF	Lg	ML	.353	68.00	8.07	13.50	---	21.57	28.50
	Inst	SF	Sm	BK	.468	34.19	8.89	17.10	---	25.99	34.50
Glazed 2 sides											
4" x 5-1/3" x 12"	Inst	SF	Lg	ML	.375	64.00	7.78	14.30	---	22.08	29.30
	Inst	SF	Sm	BK	.498	32.13	8.57	18.20	---	26.77	35.60
6" x 5-1/3" x 12"	Inst	SF	Lg	ML	.400	60.00	10.10	15.30	---	25.40	33.30
	Inst	SF	Sm	BK	.531	30.13	11.10	19.40	---	30.50	40.30
8" x 5-1/3" x 12"	Inst	SF	Lg	ML	.462	52.00	11.30	17.70	---	29.00	38.00
	Inst	SF	Sm	BK	.612	26.14	12.40	22.30	---	34.70	46.00

Quarry tile**Floors**

Conventional mortar set	Demo	SF	Lg	LB	.030	535.0	---	1.00	---	1.00	1.40
	Demo	SF	Sm	LB	.043	372.1	---	1.43	---	1.43	2.01
Dry-set mortar	Demo	SF	Lg	LB	.026	620.0	---	.87	---	.87	1.21
	Demo	SF	Sm	LB	.037	432.4	---	1.23	---	1.23	1.73
Conventional mortar set with unmounted tile											
6" x 6" x 1/2" T	Inst	SF	Lg	BO	.123	260.0	2.96	4.48	.35	7.79	10.10
	Inst	SF	Sm	ML	.164	146.3	3.26	6.27	.62	10.15	13.30
9" x 9" x 3/4" T	Inst	SF	Lg	BO	.103	310.0	4.02	3.75	.29	8.06	10.20
	Inst	SF	Sm	ML	.138	173.9	4.43	5.28	.52	10.23	13.10
Dry-set mortar with unmounted tile											
6" x 6" x 1/2" T	Inst	SF	Lg	BO	.102	315.0	7.22	3.72	.29	11.23	13.90
	Inst	SF	Sm	ML	.135	177.8	7.96	5.16	.51	13.63	17.00
9" x 9" x 3/4" T	Inst	SF	Lg	BO	.082	390.0	8.28	2.99	.23	11.50	14.00
	Inst	SF	Sm	ML	.109	220.2	9.13	4.17	.41	13.71	16.80

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Molding and trim Removal

At base (floor)	Demo	LF	Lg	LB	.015	1060.0	---	.50	---	.50	.70
	Demo	LF	Sm	LB	.022	742.0	---	.73	---	.73	1.03
At ceiling	Demo	LF	Lg	LB	.013	1200.0	---	.43	---	.43	.61
	Demo	LF	Sm	LB	.019	840.0	---	.63	---	.63	.89
On wall or cabinets	Demo	LF	Lg	LB	.010	1600.0	---	.33	---	.33	.47
	Demo	LF	Sm	LB	.014	1120.0	---	.47	---	.47	.65

Baseboard

2-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	1.31	1.35	---	2.66	3.40
	Inst	LF	Sm	CA	.048	168.0	1.45	1.97	---	3.42	4.43
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	1.69	1.35	---	3.04	3.84
	Inst	LF	Sm	CA	.048	168.0	1.86	1.97	---	3.83	4.90
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	1.01	1.35	---	2.36	3.06
	Inst	LF	Sm	CA	.048	168.0	1.11	1.97	---	3.08	4.04
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	1.13	1.81	---	2.94	3.83
	Inst	LF	Sm	CA	.063	126.0	1.24	2.59	---	3.83	5.05

3-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	1.79	1.35	---	3.14	3.96
	Inst	LF	Sm	CA	.048	168.0	1.98	1.97	---	3.95	5.04
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	2.16	1.35	---	3.51	4.38
	Inst	LF	Sm	CA	.048	168.0	2.38	1.97	---	4.35	5.50
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	1.45	1.35	---	2.80	3.56
	Inst	LF	Sm	CA	.048	168.0	1.60	1.97	---	3.57	4.60
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	1.52	1.81	---	3.33	4.28
	Inst	LF	Sm	CA	.063	126.0	1.67	2.59	---	4.26	5.54
Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	3.28	1.35	---	4.63	5.67
	Inst	LF	Sm	CA	.048	168.0	3.62	1.97	---	5.59	6.92
Hardwood, detailed profile	Inst	LF	Lg	CA	.044	180.0	4.86	1.81	---	6.67	8.12
	Inst	LF	Sm	CA	.063	126.0	5.36	2.59	---	7.95	9.79
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	5.24	2.18	---	7.42	9.07
	Inst	LF	Sm	CA	.076	105.0	5.78	3.12	---	8.90	11.00

4-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	2.54	1.35	---	3.89	4.82
	Inst	LF	Sm	CA	.048	168.0	2.80	1.97	---	4.77	5.98
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	3.40	1.35	---	4.75	5.81
	Inst	LF	Sm	CA	.048	168.0	3.75	1.97	---	5.72	7.07
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	1.68	1.35	---	3.03	3.83
	Inst	LF	Sm	CA	.048	168.0	1.85	1.97	---	3.82	4.89
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	2.04	1.81	---	3.85	4.88
	Inst	LF	Sm	CA	.063	126.0	2.25	2.59	---	4.84	6.21

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	4.73	1.35	---	6.08	7.34
	Inst	LF	Sm	CA	.048	168.0	5.22	1.97	---	7.19	8.76
Hardwood, detailed profile	Inst	LF	Lg	CA	.033	240.0	7.01	1.35	---	8.36	9.96
	Inst	LF	Sm	CA	.048	168.0	7.72	1.97	---	9.69	11.60
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	7.58	2.18	---	9.76	11.80
	Inst	LF	Sm	CA	.076	105.0	8.35	3.12	---	11.47	14.00
5-1/4" high											
Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	2.85	1.35	---	4.20	5.17
	Inst	LF	Sm	CA	.048	168.0	3.14	1.97	---	5.11	6.37
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	4.14	1.35	---	5.49	6.66
	Inst	LF	Sm	CA	.048	168.0	4.56	1.97	---	6.53	8.00
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	2.06	1.35	---	3.41	4.27
	Inst	LF	Sm	CA	.048	168.0	2.27	1.97	---	4.24	5.37
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	2.51	1.81	---	4.32	5.42
	Inst	LF	Sm	CA	.063	126.0	2.76	2.59	---	5.35	6.80
Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	6.06	1.35	---	7.41	8.87
	Inst	LF	Sm	CA	.048	168.0	6.67	1.97	---	8.64	10.40
Hardwood, detailed profile	Inst	LF	Lg	CA	.033	240.0	8.97	1.35	---	10.32	12.20
	Inst	LF	Sm	CA	.048	168.0	9.88	1.97	---	11.85	14.10
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	9.69	2.18	---	11.87	14.20
	Inst	LF	Sm	CA	.076	105.0	10.70	3.12	---	13.82	16.70
6" high											
Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	3.37	1.35	---	4.72	5.77
	Inst	LF	Sm	CA	.048	168.0	3.72	1.97	---	5.69	7.04
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	4.80	1.35	---	6.15	7.42
	Inst	LF	Sm	CA	.048	168.0	5.29	1.97	---	7.26	8.84
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	2.72	1.35	---	4.07	5.02
	Inst	LF	Sm	CA	.048	168.0	3.00	1.97	---	4.97	6.21
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	2.99	1.81	---	4.80	5.97
	Inst	LF	Sm	CA	.063	126.0	3.29	2.59	---	5.88	7.40
Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	6.54	1.35	---	7.89	9.42
	Inst	LF	Sm	CA	.048	168.0	7.20	1.97	---	9.17	11.00
Hardwood, detailed profile	Inst	LF	Lg	CA	.033	240.0	7.44	1.35	---	8.79	10.50
	Inst	LF	Sm	CA	.048	168.0	8.20	1.97	---	10.17	12.20
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	8.86	2.18	---	11.04	13.20
	Inst	LF	Sm	CA	.076	105.0	9.76	3.12	---	12.88	15.60
7-1/4" high											
Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	3.91	1.35	---	5.26	6.39
	Inst	LF	Sm	CA	.048	168.0	4.31	1.97	---	6.28	7.72
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	5.23	1.35	---	6.58	7.91
	Inst	LF	Sm	CA	.048	168.0	5.77	1.97	---	7.74	9.39
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	2.83	1.35	---	4.18	5.15
	Inst	LF	Sm	CA	.048	168.0	3.12	1.97	---	5.09	6.35
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	3.14	1.81	---	4.95	6.14
	Inst	LF	Sm	CA	.063	126.0	3.46	2.59	---	6.05	7.60

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Baseboard (continued)

Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	6.92	1.35	---	8.27	9.85
	Inst	LF	Sm	CA	.048	168.0	7.62	1.97	---	9.59	11.50
Hardwood, detailed profile	Inst	LF	Lg	CA	.033	240.0	8.01	1.35	---	9.36	11.10
	Inst	LF	Sm	CA	.048	168.0	8.82	1.97	---	10.79	12.90
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	10.50	2.18	---	12.68	15.10
	Inst	LF	Sm	CA	.076	105.0	11.50	3.12	---	14.62	17.60

8" high, 2 piece

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.056	144.0	3.59	2.30	---	5.89	7.35
	Inst	LF	Sm	CA	.079	100.8	3.95	3.24	---	7.19	9.08
Hardwood, simple profile	Inst	LF	Lg	CA	.056	144.0	9.40	2.30	---	11.70	14.00
	Inst	LF	Sm	CA	.079	100.8	10.40	3.24	---	13.64	16.50

Baseboard with shoe**4-1/4" high**

Pine, paint grade	Inst	LF	Lg	CA	.056	144.0	3.27	2.30	---	5.57	6.98
	Inst	LF	Sm	CA	.079	100.8	3.61	3.24	---	6.85	8.69
Pine, stain grade	Inst	LF	Lg	CA	.056	144.0	4.21	2.30	---	6.51	8.06
	Inst	LF	Sm	CA	.079	100.8	4.64	3.24	---	7.88	9.88

5-1/4" high

Pine, paint grade	Inst	LF	Lg	CA	.056	144.0	3.58	2.30	---	5.88	7.34
	Inst	LF	Sm	CA	.079	100.8	3.94	3.24	---	7.18	9.07
Pine, stain grade	Inst	LF	Lg	CA	.056	144.0	4.95	2.30	---	7.25	8.91
	Inst	LF	Sm	CA	.079	100.8	5.45	3.24	---	8.69	10.80

6" high

Pine, paint grade	Inst	LF	Lg	CA	.056	144.0	4.11	2.30	---	6.41	7.95
	Inst	LF	Sm	CA	.079	100.8	4.53	3.24	---	7.77	9.75
Pine, stain grade	Inst	LF	Lg	CA	.056	144.0	5.62	2.30	---	7.92	9.68
	Inst	LF	Sm	CA	.079	100.8	6.19	3.24	---	9.43	11.70

7-1/4" high

Pine, paint grade	Inst	LF	Lg	CA	.056	144.0	4.65	2.30	---	6.95	8.57
	Inst	LF	Sm	CA	.079	100.8	5.12	3.24	---	8.36	10.40
Pine, stain grade	Inst	LF	Lg	CA	.056	144.0	6.05	2.30	---	8.35	10.20
	Inst	LF	Sm	CA	.079	100.8	6.66	3.24	---	9.90	12.20

Base shoe

Pine, paint grade	Inst	LF	Lg	CA	.033	240.0	.74	1.35	---	2.09	2.75
	Inst	LF	Sm	CA	.048	168.0	.82	1.97	---	2.79	3.70
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	.82	1.35	---	2.17	2.84
	Inst	LF	Sm	CA	.048	168.0	.91	1.97	---	2.88	3.81
Hardwood	Inst	LF	Lg	CA	.033	240.0	1.17	1.35	---	2.52	3.24
	Inst	LF	Sm	CA	.048	168.0	1.29	1.97	---	3.26	4.24

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Base cap

Pine, paint grade	Inst	LF	Lg	CA	.033	240.0	.94	1.35	---	2.29	2.98
	Inst	LF	Sm	CA	.048	168.0	1.04	1.97	---	3.01	3.96
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	1.40	1.35	---	2.75	3.51
	Inst	LF	Sm	CA	.048	168.0	1.54	1.97	---	3.51	4.53
Hardwood	Inst	LF	Lg	CA	.033	240.0	1.82	1.35	---	3.17	3.99
	Inst	LF	Sm	CA	.048	168.0	2.01	1.97	---	3.98	5.07

Block

Baseboard, corner, standard, less than 6" high

Pine, paint grade	Inst	Ea	Lg	CA	.200	40.00	3.96	8.21	---	12.17	16.10
	Inst	Ea	Sm	CA	.286	28.00	4.36	11.70	---	16.06	21.50
Pine, stain grade	Inst	Ea	Lg	CA	.200	40.00	4.77	8.21	---	12.98	17.00
	Inst	Ea	Sm	CA	.286	28.00	5.26	11.70	---	16.96	22.50
Hardwood	Inst	Ea	Lg	CA	.200	40.00	5.71	8.21	---	13.92	18.10
	Inst	Ea	Sm	CA	.286	28.00	6.30	11.70	---	18.00	23.70

Baseboard, corner, oversize, 6" high and greater

Pine, paint grade	Inst	Ea	Lg	CA	.200	40.00	4.78	8.21	---	12.99	17.00
	Inst	Ea	Sm	CA	.286	28.00	5.27	11.70	---	16.97	22.50
Pine, stain grade	Inst	Ea	Lg	CA	.200	40.00	7.00	8.21	---	15.21	19.60
	Inst	Ea	Sm	CA	.286	28.00	7.71	11.70	---	19.41	25.30
Hardwood	Inst	Ea	Lg	CA	.200	40.00	8.40	8.21	---	16.61	21.20
	Inst	Ea	Sm	CA	.286	28.00	9.26	11.70	---	20.96	27.10

Corner, rosette, 3/4" x 3 1/2"

Pine, paint grade	Inst	Ea	Lg	CA	.200	40.00	2.96	8.21	---	11.17	14.90
	Inst	Ea	Sm	CA	.286	28.00	3.26	11.70	---	14.96	20.20
MDF, rectangle flat profile	Inst	Ea	Lg	CA	.200	40.00	2.25	8.21	---	10.46	14.10
	Inst	Ea	Sm	CA	.286	28.00	2.48	11.70	---	14.18	19.30
Hardwood	Inst	Ea	Lg	CA	.200	40.00	3.84	8.21	---	12.05	15.90
	Inst	Ea	Sm	CA	.286	28.00	4.23	11.70	---	15.93	21.30

Plinth, 3/4" x 3 1/2" x 6 1/2" high

Pine, paint grade	Inst	Ea	Lg	CA	.200	40.00	3.68	8.21	---	11.89	15.70
	Inst	Ea	Sm	CA	.286	28.00	4.06	11.70	---	15.76	21.10
MDF, rectangle flat profile	Inst	Ea	Lg	CA	.200	40.00	3.00	8.21	---	11.21	15.00
	Inst	Ea	Sm	CA	.286	28.00	3.30	11.70	---	15.00	20.20
Hardwood	Inst	Ea	Lg	CA	.200	40.00	4.96	8.21	---	13.17	17.20
	Inst	Ea	Sm	CA	.286	28.00	5.46	11.70	---	17.16	22.70

Bookcase, built-in onsite, per SF face area

10" deep shelves, plywood back, 1"x4" casing

Pine, stain grade	Inst	Ea	Lg	CA	.190	42.00	8.14	7.80	---	15.94	20.30
	Inst	Ea	Sm	CA	.272	29.40	8.97	11.20	---	20.17	26.00

12" deep shelves, plywood back, 1"x4" casing

Pine, stain grade	Inst	Ea	Lg	CA	.222	36.00	9.10	9.12	---	18.22	23.20
	Inst	Ea	Sm	CA	.317	25.20	10.00	13.00	---	23.00	29.80

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P

Brick mold

Pine, paint grade	Inst	LF	Lg	CA	.039	204.0	2.17	1.60	---	3.77	4.74
	Inst	LF	Sm	CA	.056	142.8	2.39	2.30	---	4.69	5.97
MDF or similar composite	Inst	LF	Lg	CA	.039	204.0	2.65	1.60	---	4.25	5.29
	Inst	LF	Sm	CA	.056	142.8	2.92	2.30	---	5.22	6.58
Hardwood	Inst	LF	Lg	CA	.039	204.0	2.78	1.60	---	4.38	5.44
	Inst	LF	Sm	CA	.056	142.8	3.07	2.30	---	5.37	6.75
Detach and reset	D R	LF	Lg	CA	.033	240.0	2.65	1.35	---	4.00	4.94
	D R	LF	Sm	CA	.048	168.0	2.92	1.97	---	4.89	6.12

Casing

2-1/4" wide

Pine, paint grade	Inst	LF	Lg	CA	.039	204.0	1.41	1.60	---	3.01	3.86
	Inst	LF	Sm	CA	.056	142.8	1.56	2.30	---	3.86	5.01
Pine, stain grade	Inst	LF	Lg	CA	.039	204.0	1.93	1.60	---	3.53	4.46
	Inst	LF	Sm	CA	.056	142.8	2.13	2.30	---	4.43	5.67
MDF, rectangle flat profile	Inst	LF	Lg	CA	.039	204.0	1.05	1.60	---	2.65	3.45
	Inst	LF	Sm	CA	.056	142.8	1.16	2.30	---	3.46	4.55
MDF, machine-cut profile	Inst	LF	Lg	CA	.052	153.0	1.25	2.14	---	3.39	4.43
	Inst	LF	Sm	CA	.075	107.1	1.38	3.08	---	4.46	5.90
Hardwood, simple profile	Inst	LF	Lg	CA	.039	204.0	2.65	1.60	---	4.25	5.29
	Inst	LF	Sm	CA	.056	142.8	2.92	2.30	---	5.22	6.58
Hardwood, detailed profile	Inst	LF	Lg	CA	.052	153.0	2.92	2.14	---	5.06	6.35
	Inst	LF	Sm	CA	.075	107.1	3.22	3.08	---	6.30	8.01
Hardwood, complex profile	Inst	LF	Lg	CA	.063	128.0	3.65	2.59	---	6.24	7.82
	Inst	LF	Sm	CA	.089	89.6	4.02	3.65	---	7.67	9.74

3-1/4" wide

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.039	204.0	2.37	1.60	---	3.97	4.97
	Inst	LF	Sm	CA	.056	142.8	2.61	2.30	---	4.91	6.22
Pine, stain grade	Inst	LF	Lg	CA	.039	204.0	2.79	1.60	---	4.39	5.45
	Inst	LF	Sm	CA	.056	142.8	3.08	2.30	---	5.38	6.76
MDF, rectangle flat profile	Inst	LF	Lg	CA	.039	204.0	1.59	1.60	---	3.19	4.07
	Inst	LF	Sm	CA	.056	142.8	1.75	2.30	---	4.05	5.23
MDF, machine-cut profile	Inst	LF	Lg	CA	.039	204.0	2.05	1.60	---	3.65	4.60
	Inst	LF	Sm	CA	.056	142.8	2.26	2.30	---	4.56	5.82
Hardwood, simple profile	Inst	LF	Lg	CA	.039	204.0	3.01	1.60	---	4.61	5.70
	Inst	LF	Sm	CA	.056	142.8	3.32	2.30	---	5.62	7.04
Hardwood, detailed profile	Inst	LF	Lg	CA	.039	204.0	2.92	1.60	---	4.52	5.60
	Inst	LF	Sm	CA	.056	142.8	3.22	2.30	---	5.52	6.92

4" wide

MDF, rectangle flat profile	Inst	LF	Lg	CA	.039	204.0	1.91	1.60	---	3.51	4.44
	Inst	LF	Sm	CA	.056	142.8	2.11	2.30	---	4.41	5.65
Hardwood	Inst	LF	Lg	CA	.039	204.0	3.74	1.60	---	5.34	6.54
	Inst	LF	Sm	CA	.056	142.8	4.13	2.30	---	6.43	7.97

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
5" wide											
MDF, rectangle flat profile	Inst	LF	Lg	CA	.039	204.0	2.15	1.60	---	3.75	4.71
	Inst	LF	Sm	CA	.056	142.8	2.37	2.30	---	4.67	5.94
Hardwood	Inst	LF	Lg	CA	.039	204.0	5.79	1.60	---	7.39	8.90
	Inst	LF	Sm	CA	.056	142.8	6.38	2.30	---	8.68	10.60
6" wide, 2 piece											
Hardwood	Inst	LF	Lg	CA	.066	122.0	7.20	2.71	---	9.91	12.10
	Inst	LF	Sm	CA	.094	85.4	7.94	3.86	---	11.80	14.50
8" wide, 2 piece											
Hardwood	Inst	LF	Lg	CA	.066	122.0	9.40	2.71	---	12.11	14.60
	Inst	LF	Sm	CA	.094	85.4	10.40	3.86	---	14.26	17.30

Chair rail

1 piece, 2-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	1.72	1.35	---	3.07	3.87
	Inst	LF	Sm	CA	.048	168.0	1.89	1.97	---	3.86	4.93
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	2.29	1.35	---	3.64	4.53
	Inst	LF	Sm	CA	.048	168.0	2.53	1.97	---	4.50	5.67
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	1.04	1.35	---	2.39	3.09
	Inst	LF	Sm	CA	.048	168.0	1.14	1.97	---	3.11	4.07
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	1.51	1.81	---	3.32	4.27
	Inst	LF	Sm	CA	.063	126.0	1.66	2.59	---	4.25	5.53
Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	2.65	1.35	---	4.00	4.94
	Inst	LF	Sm	CA	.048	168.0	2.92	1.97	---	4.89	6.12
Hardwood, detailed profile	Inst	LF	Lg	CA	.044	180.0	3.45	1.81	---	5.26	6.50
	Inst	LF	Sm	CA	.063	126.0	3.80	2.59	---	6.39	7.99
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	5.39	2.18	---	7.57	9.24
	Inst	LF	Sm	CA	.076	105.0	5.94	3.12	---	9.06	11.20

1 piece, 3-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.033	240.0	2.45	1.35	---	3.80	4.71
	Inst	LF	Sm	CA	.048	168.0	2.70	1.97	---	4.67	5.86
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	2.98	1.35	---	4.33	5.32
	Inst	LF	Sm	CA	.048	168.0	3.28	1.97	---	5.25	6.53
Pine, stain grade, detailed profile	Inst	LF	Lg	CA	.044	180.0	3.34	1.81	---	5.15	6.37
	Inst	LF	Sm	CA	.063	126.0	3.68	2.59	---	6.27	7.85
MDF, rectangle flat profile	Inst	LF	Lg	CA	.033	240.0	1.15	1.35	---	2.50	3.22
	Inst	LF	Sm	CA	.048	168.0	1.26	1.97	---	3.23	4.21
MDF, machine-cut profile	Inst	LF	Lg	CA	.044	180.0	1.91	1.81	---	3.72	4.73
	Inst	LF	Sm	CA	.063	126.0	2.11	2.59	---	4.70	6.05
Hardwood, simple profile	Inst	LF	Lg	CA	.033	240.0	4.02	1.35	---	5.37	6.52
	Inst	LF	Sm	CA	.048	168.0	4.43	1.97	---	6.40	7.85
Hardwood, detailed profile	Inst	LF	Lg	CA	.044	180.0	5.29	1.81	---	7.10	8.61
	Inst	LF	Sm	CA	.063	126.0	5.83	2.59	---	8.42	10.30
Hardwood, complex profile	Inst	LF	Lg	CA	.053	150.0	6.51	2.18	---	8.69	10.50
	Inst	LF	Sm	CA	.076	105.0	7.17	3.12	---	10.29	12.60

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg
					hours per Unit	Output per Day					Price Incl O&P

2 piece, chair rail with 1" x 4" trim board

Pine, stain grade	Inst	LF	Lg	CA	.056	144.0	4.03	2.30	---	6.33	7.85
	Inst	LF	Sm	CA	.079	100.8	4.44	3.24	---	7.68	9.65
Hardwood, detailed profile	Inst	LF	Lg	CA	.074	108.0	7.31	3.04	---	10.35	12.70
	Inst	LF	Sm	CA	.106	75.6	8.06	4.35	---	12.41	15.40

2 piece, chair rail with 1" x 6" trim board

Pine, stain grade	Inst	LF	Lg	CA	.056	144.0	5.91	2.30	---	8.21	10.00
	Inst	LF	Sm	CA	.079	100.8	6.51	3.24	---	9.75	12.00
Hardwood, detailed profile	Inst	LF	Lg	CA	.074	108.0	10.50	3.04	---	13.54	16.30
	Inst	LF	Sm	CA	.106	75.6	11.60	4.35	---	15.95	19.40

3 piece, chair rail with 1" x 4" trim board, panel cap

Pine, stain grade	Inst	LF	Lg	CA	.067	120.0	4.03	2.75	---	6.78	8.49
	Inst	LF	Sm	CA	.095	84.0	4.44	3.90	---	8.34	10.60
Hardwood, detailed profile	Inst	LF	Lg	CA	.089	90.0	7.31	3.65	---	10.96	13.50
	Inst	LF	Sm	CA	.127	63.0	8.06	5.21	---	13.27	16.60

3 piece, chair rail with 1" x 6" trim board, panel cap

Pine, stain grade	Inst	LF	Lg	CA	.067	120.0	5.91	2.75	---	8.66	10.70
	Inst	LF	Sm	CA	.095	84.0	6.51	3.90	---	10.41	13.00
Hardwood, detailed profile	Inst	LF	Lg	CA	.089	90.0	10.50	3.65	---	14.15	17.20
	Inst	LF	Sm	CA	.127	63.0	11.60	5.21	---	16.81	20.60

Coffered ceiling, per SF face area**6" x 6" timber beam, 2" x 6" ledger board, and 1" x 6" trim board, 4-1/4" crown, panel cap**

Pine, stain grade	Inst	SF	Lg	2C	.667	24.0	10.90	27.40	---	38.30	50.90
	Inst	SF	Sm	2C	.952	16.8	12.10	39.10	---	51.20	68.60
Hardwood	Inst	SF	Lg	2C	.800	20.0	16.60	32.90	---	49.50	65.10
	Inst	SF	Sm	2C	1.143	14.0	18.30	46.90	---	65.20	86.70

Corner trim

Pine, paint grade	Inst	LF	Lg	CA	.039	204.0	.93	1.60	---	2.53	3.31
	Inst	LF	Sm	CA	.056	142.8	1.03	2.30	---	3.33	4.40
Pine, stain grade	Inst	LF	Lg	CA	.039	204.0	1.31	1.60	---	2.91	3.75
	Inst	LF	Sm	CA	.056	142.8	1.45	2.30	---	3.75	4.89
MDF or similar	Inst	LF	Lg	CA	.039	204.0	.83	1.60	---	2.43	3.20
	Inst	LF	Sm	CA	.056	142.8	.92	2.30	---	3.22	4.28
Hardwood	Inst	LF	Lg	CA	.039	204.0	1.52	1.60	---	3.12	3.99
	Inst	LF	Sm	CA	.056	142.8	1.67	2.30	---	3.97	5.14

Cove, 3/4"

Pine, paint grade	Inst	LF	Lg	CA	.044	180.0	.74	1.81	---	2.55	3.38
	Inst	LF	Sm	CA	.063	126.0	.81	2.59	---	3.40	4.55
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	1.20	1.81	---	3.01	3.91
	Inst	LF	Sm	CA	.063	126.0	1.32	2.59	---	3.91	5.14
Hardwood	Inst	LF	Lg	CA	.044	180.0	1.46	1.81	---	3.27	4.21
	Inst	LF	Sm	CA	.063	126.0	1.61	2.59	---	4.20	5.47

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Crown**1 piece, 2-1/4" high**

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.044	180.0	1.58	1.81	---	3.39	4.35
	Inst	LF	Sm	CA	.063	126.0	1.74	2.59	---	4.33	5.62
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	2.63	1.81	---	4.44	5.55
	Inst	LF	Sm	CA	.063	126.0	2.89	2.59	---	5.48	6.94
Hardwood, simple profile	Inst	LF	Lg	CA	.044	180.0	4.12	1.81	---	5.93	7.27
	Inst	LF	Sm	CA	.063	126.0	4.54	2.59	---	7.13	8.84

1 piece, 3-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.044	180.0	2.07	1.81	---	3.88	4.91
	Inst	LF	Sm	CA	.063	126.0	2.28	2.59	---	4.87	6.24
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	3.55	1.81	---	5.36	6.61
	Inst	LF	Sm	CA	.063	126.0	3.91	2.59	---	6.50	8.12
MDF, rectangle flat profile	Inst	LF	Lg	CA	.044	180.0	1.47	1.81	---	3.28	4.22
	Inst	LF	Sm	CA	.063	126.0	1.62	2.59	---	4.21	5.48
MDF, machine-cut profile	Inst	LF	Lg	CA	.059	135.0	2.30	2.42	---	4.72	6.04
	Inst	LF	Sm	CA	.085	94.5	2.54	3.49	---	6.03	7.81
Hardwood, simple profile	Inst	LF	Lg	CA	.044	180.0	4.24	1.81	---	6.05	7.41
	Inst	LF	Sm	CA	.063	126.0	4.68	2.59	---	7.27	9.00

1 piece, 4-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.044	180.0	2.67	1.81	---	4.48	5.60
	Inst	LF	Sm	CA	.063	126.0	2.94	2.59	---	5.53	7.00
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	4.21	1.81	---	6.02	7.37
	Inst	LF	Sm	CA	.063	126.0	4.64	2.59	---	7.23	8.96
MDF, rectangle flat profile	Inst	LF	Lg	CA	.044	180.0	2.04	1.81	---	3.85	4.88
	Inst	LF	Sm	CA	.063	126.0	2.25	2.59	---	4.84	6.21
MDF, machine-cut profile	Inst	LF	Lg	CA	.059	135.0	3.32	2.42	---	5.74	7.21
	Inst	LF	Sm	CA	.085	94.5	3.66	3.49	---	7.15	9.09
Hardwood, simple profile	Inst	LF	Lg	CA	.044	180.0	5.31	1.81	---	7.12	8.64
	Inst	LF	Sm	CA	.063	126.0	5.85	2.59	---	8.44	10.40

1 piece, 5-1/4" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.044	180.0	3.18	1.81	---	4.99	6.19
	Inst	LF	Sm	CA	.063	126.0	3.50	2.59	---	6.09	7.65
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	4.85	1.81	---	6.66	8.11
	Inst	LF	Sm	CA	.063	126.0	5.35	2.59	---	7.94	9.77
MDF, machine-cut profile	Inst	LF	Lg	CA	.059	135.0	2.59	2.42	---	5.01	6.37
	Inst	LF	Sm	CA	.085	94.5	2.85	3.49	---	6.34	8.16
Hardwood, simple profile	Inst	LF	Lg	CA	.044	180.0	7.02	1.81	---	8.83	10.60
	Inst	LF	Sm	CA	.063	126.0	7.73	2.59	---	10.32	12.50

1 piece, 6" high

Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.044	180.0	4.25	1.81	---	6.06	7.42
	Inst	LF	Sm	CA	.063	126.0	4.69	2.59	---	7.28	9.01
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	6.05	1.81	---	7.86	9.49
	Inst	LF	Sm	CA	.063	126.0	6.66	2.59	---	9.25	11.30
MDF, machine-cut profile	Inst	LF	Lg	CA	.059	135.0	2.79	2.42	---	5.21	6.60
	Inst	LF	Sm	CA	.085	94.5	3.08	3.49	---	6.57	8.43
Hardwood, simple profile	Inst	LF	Lg	CA	.044	180.0	8.42	1.81	---	10.23	12.20
	Inst	LF	Sm	CA	.063	126.0	9.28	2.59	---	11.87	14.30

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
1 piece, 7" high											
Pine, finger jointed, paint grade	Inst	LF	Lg	CA	.044	180.0	5.10	1.81	---	6.91	8.39
	Inst	LF	Sm	CA	.063	126.0	5.62	2.59	---	8.21	10.10
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	7.67	1.81	---	9.48	11.40
	Inst	LF	Sm	CA	.063	126.0	8.46	2.59	---	11.05	13.40
MDF, machine-cut profile	Inst	LF	Lg	CA	.059	135.0	3.41	2.42	---	5.83	7.31
	Inst	LF	Sm	CA	.085	94.5	3.76	3.49	---	7.25	9.21
Hardwood, simple profile	Inst	LF	Lg	CA	.044	180.0	9.17	1.81	---	10.98	13.10
	Inst	LF	Sm	CA	.063	126.0	10.10	2.59	---	12.69	15.30
2 piece, 4-1/4" crown with 3-1/2" baseboard											
Pine, paint grade	Inst	LF	Lg	CA	.074	108.0	4.45	3.04	---	7.49	9.37
	Inst	LF	Sm	CA	.106	75.6	4.90	4.35	---	9.25	11.70
Pine, stain grade	Inst	LF	Lg	CA	.074	108.0	6.36	3.04	---	9.40	11.60
	Inst	LF	Sm	CA	.106	75.6	7.01	4.35	---	11.36	14.20
Hardwood, detailed profile	Inst	LF	Lg	CA	.099	81.0	10.20	4.06	---	14.26	17.40
	Inst	LF	Sm	CA	.141	56.7	11.20	5.79	---	16.99	21.00
3 piece, 4-1/4" crown with 3-1/2" baseboard											
Pine, paint grade	Inst	LF	Lg	CA	.089	90.0	6.23	3.65	---	9.88	12.30
	Inst	LF	Sm	CA	.127	63.0	6.87	5.21	---	12.08	15.20
Pine, stain grade	Inst	LF	Lg	CA	.089	90.0	8.50	3.65	---	12.15	14.90
	Inst	LF	Sm	CA	.127	63.0	9.36	5.21	---	14.57	18.10
MDF, machine-cut profile	Inst	LF	Lg	CA	.119	67.0	5.05	4.89	---	9.94	12.70
	Inst	LF	Sm	CA	.171	46.9	5.56	7.02	---	12.58	16.20
Hardwood, detailed profile	Inst	LF	Lg	CA	.119	67.0	15.00	4.89	---	19.89	24.10
	Inst	LF	Sm	CA	.171	46.9	16.50	7.02	---	23.52	28.80
4 piece, 4-1/4" crown with 3-1/2" baseboard and 1" x 6" trim boards											
Pine, paint grade	Inst	LF	Lg	CA	.111	72.0	9.02	4.56	---	13.58	16.80
	Inst	LF	Sm	CA	.159	50.4	9.94	6.53	---	16.47	20.60
Pine, stain grade	Inst	LF	Lg	CA	.111	72.0	10.60	4.56	---	15.16	18.50
	Inst	LF	Sm	CA	.159	50.4	11.60	6.53	---	18.13	22.50
MDF, machine-cut profile	Inst	LF	Lg	CA	.148	54.0	6.91	6.08	---	12.99	16.50
	Inst	LF	Sm	CA	.212	37.8	7.61	8.70	---	16.31	20.90
Hardwood, detailed profile	Inst	LF	Lg	CA	.148	54.0	19.90	6.08	---	25.98	31.40
	Inst	LF	Sm	CA	.212	37.8	22.00	8.70	---	30.70	37.50
5 piece, 4-1/4" crown with 3-1/2" baseboard and 1" x 6" trim boards											
Pine, paint grade	Inst	LF	Lg	CA	.148	54.0	11.80	6.08	---	17.88	22.10
	Inst	LF	Sm	CA	.212	37.8	13.00	8.70	---	21.70	27.10
Pine, stain grade	Inst	LF	Lg	CA	.148	54.0	14.10	6.08	---	20.18	24.70
	Inst	LF	Sm	CA	.212	37.8	15.50	8.70	---	24.20	30.00
MDF, machine-cut profile	Inst	LF	Lg	CA	.200	40.0	8.76	8.21	---	16.97	21.60
	Inst	LF	Sm	CA	.286	28.0	9.66	11.70	---	21.36	27.60
Hardwood, detailed profile	Inst	LF	Lg	CA	.200	40.0	24.90	8.21	---	33.11	40.10
	Inst	LF	Sm	CA	.286	28.0	27.40	11.70	---	39.10	48.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Crown (continued)**6 piece, 4-1/4" crown with 3-1/2" baseboard and 1" x 6" trim boards**

Pine, paint grade	Inst	LF	Lg	CA	.222	36.0	14.50	9.12	---	23.62	29.50
	Inst	LF	Sm	CA	.317	25.2	16.00	13.00	---	29.00	36.70
Pine, stain grade	Inst	LF	Lg	CA	.222	36.0	16.80	9.12	---	25.92	32.10
	Inst	LF	Sm	CA	.317	25.2	18.50	13.00	---	31.50	39.50
MDF, machine-cut profile	Inst	LF	Lg	CA	.296	27.0	10.50	12.20	---	22.70	29.10
	Inst	LF	Sm	CA	.423	18.9	11.50	17.40	---	28.90	37.60
Hardwood, detailed profile	Inst	LF	Lg	CA	.296	27.0	29.80	12.20	---	42.00	51.20
	Inst	LF	Sm	CA	.423	18.9	32.80	17.40	---	50.20	62.00

7 piece, 4-1/4" crown with 3-1/2" baseboard and 1" x 6" trim boards

Pine, paint grade	Inst	LF	Lg	CA	.296	27.0	17.30	12.20	---	29.50	37.00
	Inst	LF	Sm	CA	.423	18.9	19.10	17.40	---	36.50	46.30
Pine, stain grade	Inst	LF	Lg	CA	.296	27.0	19.60	12.20	---	31.80	39.60
	Inst	LF	Sm	CA	.423	18.9	21.60	17.40	---	39.00	49.20
MDF, machine-cut profile	Inst	LF	Lg	CA	.400	20.0	12.50	16.40	---	28.90	37.30
	Inst	LF	Sm	CA	.571	14.0	13.80	23.50	---	37.30	48.60
Hardwood, detailed profile	Inst	LF	Lg	CA	.400	20.0	34.70	16.40	---	51.10	62.90
	Inst	LF	Sm	CA	.571	14.0	38.30	23.50	---	61.80	76.80

Lattice, per SF face area

1" x 4" trim board	Inst	SF	Lg	CA	.053	150.00	2.25	2.18	---	4.43	5.63
	Inst	SF	Sm	CA	.076	105.00	2.48	3.12	---	5.60	7.22

Panel cap

Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	1.74	1.35	---	3.09	3.90
	Inst	LF	Sm	CA	.048	168.0	1.92	1.97	---	3.89	4.97
Hardwood	Inst	LF	Lg	CA	.033	240.0	2.27	1.35	---	3.62	4.51
	Inst	LF	Sm	CA	.048	168.0	2.51	1.97	---	4.48	5.65

Quarter round, 3/4"

Pine, paint grade	Inst	LF	Lg	CA	.033	240.0	.93	1.35	---	2.28	2.97
	Inst	LF	Sm	CA	.048	168.0	1.03	1.97	---	3.00	3.94
Pine, stain grade	Inst	LF	Lg	CA	.033	240.0	1.29	1.35	---	2.64	3.38
	Inst	LF	Sm	CA	.048	168.0	1.43	1.97	---	3.40	4.40
MDF or similar	Inst	LF	Lg	CA	.033	240.0	1.01	1.35	---	2.36	3.06
	Inst	LF	Sm	CA	.048	168.0	1.11	1.97	---	3.08	4.04
Hardwood	Inst	LF	Lg	CA	.033	240.0	1.55	1.35	---	2.90	3.68
	Inst	LF	Sm	CA	.048	168.0	1.71	1.97	---	3.68	4.73

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Radius, flat, flexible resin

Up to 3"	Inst	LF	Lg	CA	.059	135.0	6.25	2.42	---	8.67	10.60
	Inst	LF	Sm	CA	.085	94.5	6.89	3.49	---	10.38	12.80
3" to 5"	Inst	LF	Lg	CA	.059	135.0	8.76	2.42	---	11.18	13.50
	Inst	LF	Sm	CA	.085	94.5	9.66	3.49	---	13.15	16.00
5" to 7"	Inst	LF	Lg	CA	.059	135.0	11.60	2.42	---	14.02	16.70
	Inst	LF	Sm	CA	.085	94.5	12.80	3.49	---	16.29	19.60

Shelving, wood**12" deep x 3/4" thick, 3/4" T pine cleat**

Particleboard, paint grade	Inst	LF	Lg	CA	.167	48.0	4.75	6.86	---	11.61	15.10
	Inst	LF	Sm	CA	.238	33.6	5.24	9.77	---	15.01	19.70
Pine, stain grade	Inst	LF	Lg	CA	.167	48.0	9.18	6.86	---	16.04	20.20
	Inst	LF	Sm	CA	.238	33.6	10.10	9.77	---	19.87	25.30

16" deep x 3/4" thick, 3/4" T pine cleat

Particleboard, paint grade	Inst	LF	Lg	CA	.182	44.0	6.00	7.47	---	13.47	17.40
	Inst	LF	Sm	CA	.260	30.8	6.61	10.70	---	17.31	22.60
Pine, stain grade	Inst	LF	Lg	CA	.182	44.0	11.70	7.47	---	19.17	23.90
	Inst	LF	Sm	CA	.260	30.8	12.90	10.70	---	23.60	29.80

24" deep x 3/4" thick, 3/4" T pine cleat

Particleboard, paint grade	Inst	LF	Lg	CA	.190	42.0	7.11	7.80	---	14.91	19.10
	Inst	LF	Sm	CA	.272	29.4	7.83	11.20	---	19.03	24.60
Pine, stain grade	Inst	LF	Lg	CA	.190	42.0	16.50	7.80	---	24.30	29.90
	Inst	LF	Sm	CA	.272	29.4	18.20	11.20	---	29.40	36.50

Spindles and stair components, see Stairs, page 407

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Trim board**1/2" x 4"**

Pine	Inst	LF	Lg	CA	.033	240.0	1.47	1.35	---	2.82	3.59
	Inst	LF	Sm	CA	.048	168.0	1.62	1.97	---	3.59	4.62

1/2" x 6"

Pine	Inst	LF	Lg	CA	.033	240.0	2.18	1.35	---	3.53	4.40
	Inst	LF	Sm	CA	.048	168.0	2.40	1.97	---	4.37	5.52

1" x 2"

Pine	Inst	LF	Lg	CA	.033	240.0	1.15	1.35	---	2.50	3.22
	Inst	LF	Sm	CA	.048	168.0	1.26	1.97	---	3.23	4.21
Cedar	Inst	LF	Lg	CA	.033	240.0	1.22	1.35	---	2.57	3.30
	Inst	LF	Sm	CA	.048	168.0	1.34	1.97	---	3.31	4.30
Redwood	Inst	LF	Lg	CA	.033	240.0	2.01	1.35	---	3.36	4.21
	Inst	LF	Sm	CA	.048	168.0	2.21	1.97	---	4.18	5.30
Hardwood	Inst	LF	Lg	CA	.033	240.0	2.37	1.35	---	3.72	4.62
	Inst	LF	Sm	CA	.048	168.0	2.61	1.97	---	4.58	5.76

1" x 4"

Pine	Inst	LF	Lg	CA	.033	240.0	1.83	1.35	---	3.18	4.00
	Inst	LF	Sm	CA	.048	168.0	2.02	1.97	---	3.99	5.08
Cedar	Inst	LF	Lg	CA	.033	240.0	2.33	1.35	---	3.68	4.58
	Inst	LF	Sm	CA	.048	168.0	2.57	1.97	---	4.54	5.71
Redwood	Inst	LF	Lg	CA	.033	240.0	3.82	1.35	---	5.17	6.29
	Inst	LF	Sm	CA	.048	168.0	4.21	1.97	---	6.18	7.60
Hardwood	Inst	LF	Lg	CA	.033	240.0	4.09	1.35	---	5.44	6.60
	Inst	LF	Sm	CA	.048	168.0	4.50	1.97	---	6.47	7.93

1" x 6"

Pine	Inst	LF	Lg	CA	.033	240.0	3.11	1.35	---	4.46	5.47
	Inst	LF	Sm	CA	.048	168.0	3.42	1.97	---	5.39	6.69
Cedar	Inst	LF	Lg	CA	.033	240.0	4.05	1.35	---	5.40	6.55
	Inst	LF	Sm	CA	.048	168.0	4.46	1.97	---	6.43	7.89
Redwood	Inst	LF	Lg	CA	.033	240.0	5.80	1.35	---	7.15	8.57
	Inst	LF	Sm	CA	.048	168.0	6.39	1.97	---	8.36	10.10
Hardwood	Inst	LF	Lg	CA	.033	240.0	5.52	1.35	---	6.87	8.24
	Inst	LF	Sm	CA	.048	168.0	6.08	1.97	---	8.05	9.75

1" x 8"

Pine	Inst	LF	Lg	CA	.033	240.0	4.98	1.35	---	6.33	7.62
	Inst	LF	Sm	CA	.048	168.0	5.49	1.97	---	7.46	9.07
Cedar	Inst	LF	Lg	CA	.033	240.0	6.27	1.35	---	7.62	9.11
	Inst	LF	Sm	CA	.048	168.0	6.91	1.97	---	8.88	10.70
Redwood	Inst	LF	Lg	CA	.033	240.0	9.36	1.35	---	10.71	12.70
	Inst	LF	Sm	CA	.048	168.0	10.30	1.97	---	12.27	14.60
Hardwood	Inst	LF	Lg	CA	.033	240.0	7.98	1.35	---	9.33	11.10
	Inst	LF	Sm	CA	.048	168.0	8.79	1.97	---	10.76	12.90

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

1" x 10"

Pine	Inst	LF	Lg	CA	.033	240.0	5.97	1.35	---	7.32	8.76
	Inst	LF	Sm	CA	.048	168.0	6.58	1.97	---	8.55	10.30
Cedar	Inst	LF	Lg	CA	.033	240.0	8.15	1.35	---	9.50	11.30
	Inst	LF	Sm	CA	.048	168.0	8.99	1.97	---	10.96	13.10
Redwood	Inst	LF	Lg	CA	.033	240.0	12.60	1.35	---	13.95	16.40
	Inst	LF	Sm	CA	.048	168.0	13.90	1.97	---	15.87	18.70
Hardwood	Inst	LF	Lg	CA	.033	240.0	9.13	1.35	---	10.48	12.40
	Inst	LF	Sm	CA	.048	168.0	10.10	1.97	---	12.07	14.30

1" x 12"

Pine	Inst	LF	Lg	CA	.033	240.0	7.65	1.35	---	9.00	10.70
	Inst	LF	Sm	CA	.048	168.0	8.43	1.97	---	10.40	12.50
Cedar	Inst	LF	Lg	CA	.033	240.0	10.30	1.35	---	11.65	13.70
	Inst	LF	Sm	CA	.048	168.0	11.30	1.97	---	13.27	15.80
Redwood	Inst	LF	Lg	CA	.033	240.0	13.90	1.35	---	15.25	17.90
	Inst	LF	Sm	CA	.048	168.0	15.30	1.97	---	17.27	20.30
Hardwood	Inst	LF	Lg	CA	.033	240.0	13.90	1.35	---	15.25	17.80
	Inst	LF	Sm	CA	.048	168.0	15.30	1.97	---	17.27	20.30

Window seat

Up to 24" deep, 3/4" thick, includes piano hinge, no framing included.

MDF, paint grade	Inst	LF	Lg	CA	.333	24.0	11.30	13.70	---	25.00	32.20
	Inst	LF	Sm	CA	.476	16.8	12.50	19.50	---	32.00	41.70
Hardwood	Inst	LF	Lg	CA	.333	24.0	23.40	13.70	---	37.10	46.10
	Inst	LF	Sm	CA	.476	16.8	25.80	19.50	---	45.30	57.10

Window sill**1" x 3"**

Pine, paint grade	Inst	LF	Lg	CA	.044	180.0	.93	1.81	---	2.74	3.60
	Inst	LF	Sm	CA	.063	126.0	1.03	2.59	---	3.62	4.81
Pine, stain grade	Inst	LF	Lg	CA	.044	180.0	1.66	1.81	---	3.47	4.44
	Inst	LF	Sm	CA	.063	126.0	1.83	2.59	---	4.42	5.73
Hardwood	Inst	LF	Lg	CA	.044	180.0	3.67	1.81	---	5.48	6.75
	Inst	LF	Sm	CA	.063	126.0	4.04	2.59	---	6.63	8.27

Window stool and apron**3/4" thick**

Pine, paint grade	Inst	LF	Lg	CA	.099	81.0	4.03	4.06	---	8.09	10.30
	Inst	LF	Sm	CA	.141	56.7	4.44	5.79	---	10.23	13.20
Pine, stain grade	Inst	LF	Lg	CA	.099	81.0	5.78	4.06	---	9.84	12.30
	Inst	LF	Sm	CA	.141	56.7	6.37	5.79	---	12.16	15.40

Window trim set**3-1/4" casing, 5/8" stop**

Pine, paint grade	Inst	LF	Lg	CA	.099	81.0	2.98	4.06	---	7.04	9.12
	Inst	LF	Sm	CA	.141	56.7	3.28	5.79	---	9.07	11.90
Pine, stain grade	Inst	LF	Lg	CA	.099	81.0	3.75	4.06	---	7.81	10.00
	Inst	LF	Sm	CA	.141	56.7	4.14	5.79	---	9.93	12.90
Hardwood	Inst	LF	Lg	CA	.099	81.0	4.11	4.06	---	8.17	10.40
	Inst	LF	Sm	CA	.141	56.7	4.53	5.79	---	10.32	13.30

Painting

Interior and Exterior. There is a paint for almost every type of surface and surface condition. The large variety makes it impractical to consider each paint individually. For this reason, average output and average material cost/unit are based on the paints and prices listed below.

1. **Installation.** Paint can be applied by brush, roller or spray gun. Only application by brush or roller is considered in this section.
2. **Notes on Labor.** Average Manhours per Unit, for both roller and brush, is based on what one painter can do in one day. The output for cleaning is also based on what one painter can do in one day.
3. **Estimating Technique.** Use these techniques to determine quantities for interior and exterior painting before you apply unit costs.

Interior

- a. Floors, walls and ceilings. Figure actual area. No deductions for openings.
- b. Doors and windows. **Only openings to be painted:** Figure 36 SF or 4 SY for each side of each door and 27 SF for each side of each

window. Based on doors 3'-0" x 7'-0" or smaller and windows 3'-0" x 4'-0" or smaller. **Openings to be painted with walls:** Figure wall area plus 27 SF or 3 SY for each side of each door and 18 SF or 2 SY for each side of each window. Based on doors 3'-0" x 7'-0" or smaller and windows 3'-0" x 4'-0" or smaller.

For larger doors and windows, add 1'-0" to height and width and figure area.

- c. Base or picture moldings and chair rails. Less than 1'-0" wide, figure one SF/LF. On 1'-0" or larger, figure actual area.
- d. Stairs (including treads, risers, cove and stringers). Add 2'-0" width (for treads, risers, etc.) times length plus 2'-0".
- e. Balustrades. Add 1'-0" to height, figure two times area to paint two sides.

Exterior

- a. Walls. (No deductions for openings.)
Siding. Figure actual area plus 10%.
Shingles. Figure actual area plus 40%.

Characteristics - Interior			Characteristics - Exterior		
Type	Coverage SF/ Gal.	Surface	Type	Coverage SF/ Gal.	Surface
Latex, flat	450	Plaster/drywall	Oil base*	300	Plain siding & stucco
Latex, enamel	450	Doors, windows, trim	Oil base*	450	Door, windows, trim
Shellac	500	Woodwork	Oil base*	300	Shingle siding
Varnish	500	Woodwork	Stain	200	Shingle siding
Stain	500	Woodwork	Latex, masonry	400	Stucco & masonry

*Certain latex paints may also be used on exterior work.

Brick, stucco, concrete and smooth wood surfaces. Figure actual area.

- b. Doors and windows. See Interior, doors and windows.
- c. Eaves (including soffit or exposed rafter ends and fascia). **Enclosed.** If sidewalls are to be painted the same color, figure 1.5 times actual area. If sidewalls are to be painted a different color, figure 2.0 times actual area. If sidewalls are not to be painted, figure 2.5 times actual area. **Rafter ends exposed:** If sidewalls are to be painted same color, figure 2.5 times actual area. If sidewalls are to be painted a different color, figure 3.0 times actual area.

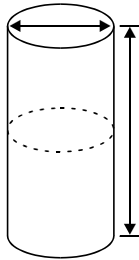
If sidewalls are not to be painted, figure 4.0 times actual area.

- d. Porch rails. See Interior, balustrades (previous page).
- e. Gutters and downspouts. Figure 2.0 SF/LF or $\frac{2}{9}$ SY/LF.
- f. Latticework. Figure 2.0 times actual area for each side.
- g. Fences. **Solid fence:** Figure actual area of each side to be painted. **Basketweave:** Figure 1.5 times actual area for each side to be painted.

Calculating Square Foot Coverage

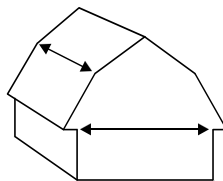
Triangle

To find the number of square feet in any shape triangle or 3 sided surface, multiply the height by the width and divide the total by 2.



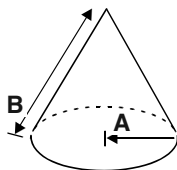
Square

Multiply the base measurement in feet times the height in feet.



Rectangle

Multiply the base measurement in feet times the height in feet.



Arch Roof

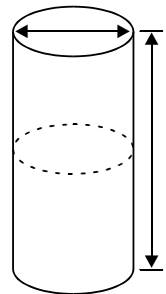
Multiply length (B) by width (A) and add one-half the total.

Circle

To find the number of square feet in a circle multiply the diameter (distance across) by itself and them multiply this total by .7854.

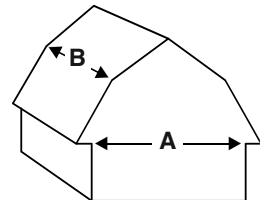
Cylinder

When the circumference (distance around the cylinder) is known, multiply height by circumference. When the diameter (distance across) is known, multiply diameter by 3.1416. This gives circumference. Then multiply by height.



Gambrel Roof

Multiply length (B) by width (A) and add one-third of the total.

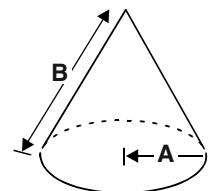


Cone

Determine area of base by multiplying 3.1416 times radius (A) in feet.

Determine the surface area of a cone by multiplying circumference of base (in feet) times one-half of the slant height (B) in feet.

Add the square foot area of the base to the square foot area of the cone for total square foot area.



Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Painting and cleaning

Frequently encountered applications

Interior

Wet clean, walls	Inst	SF	Lg	NA	.005	1680	.02	.21	---	.23	.32
	Inst	SF	Sm	NA	.006	1260	.02	.25	---	.27	.38
Wet clean, floors	Inst	SF	Lg	NA	.004	2240	.01	.17	---	.18	.25
	Inst	SF	Sm	NA	.005	1680	.02	.21	---	.23	.32
Wet clean, millwork and trim	Inst	SF	Lg	NA	.005	1600	.02	.21	---	.23	.32
	Inst	SF	Sm	NA	.007	1200	.02	.30	---	.32	.44
Prime or seal, one coat	Inst	SF	Lg	NA	.004	1840	.25	.17	---	.42	.51
	Inst	SF	Sm	NA	.006	1380	.28	.25	---	.53	.66
Paint, one coat	Inst	SF	Lg	NA	.005	1680	.17	.21	---	.38	.48
	Inst	SF	Sm	NA	.006	1260	.19	.25	---	.44	.56
Paint, two coats	Inst	SF	Lg	NA	.008	1040	.30	.34	---	.64	.80
	Inst	SF	Sm	NA	.010	780.0	.33	.42	---	.75	.95

Exterior

Wet clean, walls	Inst	SF	Lg	NA	.005	1480	.02	.21	---	.23	.32
	Inst	SF	Sm	NA	.007	1110	.02	.30	---	.32	.44
Paint, one coat	Inst	SF	Lg	NA	.007	1200	.38	.30	---	.68	.83
	Inst	SF	Sm	NA	.009	900.0	.42	.38	---	.80	.99
Paint, two coats	Inst	SF	Lg	NA	.012	680.0	.56	.51	---	1.07	1.32
	Inst	SF	Sm	NA	.016	510.0	.62	.67	---	1.29	1.63

Interior

Time calculations include normal materials handling and protection of furniture and other property not to be painted

Preparation

Excluding openings, unless otherwise indicated

Cleaning, wet

Smooth finishes

Plaster and drywall	Inst	SF	Lg	NA	.005	1680	.02	.21	---	.23	.32
	Inst	SF	Sm	NA	.006	1260	.02	.25	---	.27	.38
Paneling	Inst	SF	Lg	NA	.004	1800	.02	.17	---	.19	.26
	Inst	SF	Sm	NA	.006	1350	.02	.25	---	.27	.38
Millwork and trim	Inst	SF	Lg	NA	.005	1600	.02	.21	---	.23	.32
	Inst	SF	Sm	NA	.007	1200	.02	.30	---	.32	.44
Floors	Inst	SF	Lg	NA	.004	2240	.01	.17	---	.18	.25
	Inst	SF	Sm	NA	.005	1680	.02	.21	---	.23	.32

Sand finishes

	Inst	SF	Lg	NA	.007	1160	.01	.30	---	.31	.42
	Inst	SF	Sm	NA	.009	870.0	.02	.38	---	.40	.55

Painting and cleaning, interior, one coat application

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Sheetrock or drywall, repair joints and cracks or pops

Tape, fill, and finish	Inst	SF	Lg	NA	.009	880.0	.04	.38	---	.42	.58
	Inst	SF	Sm	NA	.012	660.0	.05	.51	---	.56	.76

Sheetrock or drywall, repair

Thin coat plaster in lieu of taping

	Inst	SF	Lg	NA	.012	680.0	.12	.51	---	.63	.84
	Inst	SF	Sm	NA	.016	510.0	.14	.67	---	.81	1.10

Light sanding

Before first coat	Inst	SF	Lg	NA	.005	1600	.01	.21	---	.22	.31
	Inst	SF	Sm	NA	.007	1200	.01	.30	---	.31	.42
Before second coat	Inst	SF	Lg	NA	.005	1760	.01	.21	---	.22	.31
	Inst	SF	Sm	NA	.006	1320	.01	.25	---	.26	.37
Before third coat	Inst	SF	Lg	NA	.004	1920	.01	.17	---	.18	.25
	Inst	SF	Sm	NA	.006	1440	.01	.25	---	.26	.37

Liquid removal of paint or varnish

Paneling (170 SF/gal)	Inst	SF	Lg	NA	.025	320.0	.26	1.05	---	1.31	1.76
	Inst	SF	Sm	NA	.033	240.0	.29	1.39	---	1.68	2.27
Millwork & trim (170 SF/gal)	Inst	SF	Lg	NA	.029	280.0	.26	1.22	---	1.48	2.00
	Inst	SF	Sm	NA	.038	210.0	.29	1.60	---	1.89	2.56
Floors (170 SF/gal)	Inst	SF	Lg	NA	.017	480.0	.26	.72	---	.98	1.29
	Inst	SF	Sm	NA	.022	360.0	.29	.93	---	1.22	1.62

Burning off paint

	Inst	SF	Lg	NA	.040	200.0	.05	1.69	---	1.74	2.42
	Inst	SF	Sm	NA	.053	150.0	.05	2.23	---	2.28	3.18

One coat application

Excluding openings unless otherwise indicated

Sizing, on sheetrock or plaster

Smooth finish

Brush (650 SF/gal)	Inst	SF	Lg	NA	.003	2400	.04	.13	---	.17	.22
	Inst	SF	Sm	NA	.004	1800	.05	.17	---	.22	.29
Roller (625 SF/gal)	Inst	SF	Lg	NA	.003	3200	.04	.13	---	.17	.22
	Inst	SF	Sm	NA	.003	2400	.05	.13	---	.18	.23

Sand finish

Brush (550 SF/gal)	Inst	SF	Lg	NA	.005	1720	.05	.21	---	.26	.35
	Inst	SF	Sm	NA	.006	1290	.06	.25	---	.31	.42
Roller (525 SF/gal)	Inst	SF	Lg	NA	.003	2320	.05	.13	---	.18	.23
	Inst	SF	Sm	NA	.005	1740	.06	.21	---	.27	.36

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					

Sealer

Sheetrock or plaster

Smooth finish

Brush (300 SF/gal)	Inst	SF	Lg	NA	.006	1440	.24	.25	---	.49	.62
	Inst	SF	Sm	NA	.007	1080	.27	.30	---	.57	.71
Roller (285 SF/gal)	Inst	SF	Lg	NA	.004	1840	.25	.17	---	.42	.51
	Inst	SF	Sm	NA	.006	1380	.28	.25	---	.53	.66
Spray (250 SF/gal)	Inst	SF	Lg	NC	.003	2600	.29	.13	.03	.45	.53
	Inst	SF	Sm	NC	.004	1950	.32	.17	.03	.52	.63

Sand finish

Brush (250 SF/gal)	Inst	SF	Lg	NA	.008	1040	.29	.34	---	.63	.79
	Inst	SF	Sm	NA	.010	780.00	.32	.42	---	.74	.94
Roller (235 SF/gal)	Inst	SF	Lg	NA	.006	1360	.31	.25	---	.56	.70
	Inst	SF	Sm	NA	.008	1020	.34	.34	---	.68	.85
Spray (210 SF/gal)	Inst	SF	Lg	NC	.003	2600	.34	.13	.03	.50	.59
	Inst	SF	Sm	NC	.004	1950	.38	.17	.03	.58	.69

Acoustical tile or panels

Brush (225 SF/gal)	Inst	SF	Lg	NA	.006	1240	.32	.25	---	.57	.71
	Inst	SF	Sm	NA	.009	930.0	.35	.38	---	.73	.92
Roller (200 SF/gal)	Inst	SF	Lg	NA	.005	1600	.36	.21	---	.57	.69
	Inst	SF	Sm	NA	.007	1200	.40	.30	---	.70	.85
Spray (160 SF/gal)	Inst	SF	Lg	NC	.004	2200	.45	.17	.03	.65	.77
	Inst	SF	Sm	NC	.005	1650	.50	.22	.04	.76	.89

Latex

Drywall or plaster, latex flat

Smooth finish

Brush (300 SF/gal)	Inst	SF	Lg	NA	.006	1320	.16	.25	---	.41	.53
	Inst	SF	Sm	NA	.008	990.0	.18	.34	---	.52	.67
Roller (285 SF/gal)	Inst	SF	Lg	NA	.005	1680	.17	.21	---	.38	.48
	Inst	SF	Sm	NA	.006	1260	.19	.25	---	.44	.56
Spray (260 SF/gal)	Inst	SF	Lg	NC	.003	2400	.18	.13	.03	.34	.41
	Inst	SF	Sm	NC	.004	1800	.20	.17	.04	.41	.50

Sand finish

Brush (250 SF/gal)	Inst	SF	Lg	NA	.008	960.0	.19	.34	---	.53	.68
	Inst	SF	Sm	NA	.011	720.0	.21	.46	---	.67	.88
Roller (235 SF/gal)	Inst	SF	Lg	NA	.007	1200	.20	.30	---	.50	.63
	Inst	SF	Sm	NA	.009	900.0	.23	.38	---	.61	.78
Spray (210 SF/gal)	Inst	SF	Lg	NC	.003	2400	.23	.13	.03	.39	.47
	Inst	SF	Sm	NC	.004	1800	.25	.17	.04	.46	.56

Texture or stipple applied to drywall, one coat

Brush (125 SF/gal)	Inst	SF	Lg	NA	.007	1200	.38	.30	---	.68	.83
	Inst	SF	Sm	NA	.009	900.0	.42	.38	---	.80	.99
Roller (120 SF/gal)	Inst	SF	Lg	NA	.005	1600	.40	.21	---	.61	.74
	Inst	SF	Sm	NA	.007	1200	.44	.30	---	.74	.90

Painting and cleaning, millwork and trim

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg					
					hours	Output	Mat'l	Labor	Equip	Total	Price					
					per Unit	per Day	Unit	Unit	Unit	Unit	Incl					
Cost												Cost	Cost	Cost	Cost	O&P
Paneling, latex enamel																
Brush (300 SF/gal)	Inst	SF	Lg	NA	.006	1320	.16	.25	---	.41	.53					
	Inst	SF	Sm	NA	.008	990.0	.18	.34	---	.52	.67					
Roller (285 SF/gal)	Inst	SF	Lg	NA	.005	1680	.17	.21	---	.38	.48					
	Inst	SF	Sm	NA	.006	1260	.19	.25	---	.44	.56					
Spray (260 SF/gal)	Inst	SF	Lg	NC	.003	2400	.18	.13	.03	.34	.41					
	Inst	SF	Sm	NC	.004	1800	.20	.17	.04	.41	.50					
Acoustical tile or panels, latex flat																
Brush (225 SF/gal)	Inst	SF	Lg	NA	.007	1120	.21	.30	---	.51	.64					
	Inst	SF	Sm	NA	.010	840.0	.24	.42	---	.66	.85					
Roller (210 SF/gal)	Inst	SF	Lg	NA	.006	1440	.23	.25	---	.48	.61					
	Inst	SF	Sm	NA	.007	1080	.25	.30	---	.55	.69					
Spray (185 SF/gal)	Inst	SF	Lg	NC	.004	2000	.26	.17	.03	.46	.56					
	Inst	SF	Sm	NC	.005	1500	.29	.22	.04	.55	.66					
Millwork and trim, latex enamel																
Doors and windows																
Roller and/or brush (360 SF/gal)	Inst	SF	Lg	NA	.013	640.0	.13	.55	---	.68	.91					
	Inst	SF	Sm	NA	.017	480.0	.15	.72	---	.87	1.17					
Spray, doors only (325 SF / gal)	Inst	SF	Lg	NC	.006	1360	.15	.26	.05	.46	.58					
	Inst	SF	Sm	NC	.008	1020	.16	.35	.06	.57	.72					
Cabinets																
Roller and/or brush (360 SF/gal)	Inst	SF	Lg	NA	.013	600.0	.13	.55	---	.68	.91					
	Inst	SF	Sm	NA	.018	450.0	.15	.76	---	.91	1.23					
Spray, doors only (325 SF / gal)	Inst	SF	Lg	NC	.006	1300	.15	.26	.05	.46	.58					
	Inst	SF	Sm	NC	.008	975.0	.16	.35	.07	.58	.73					
Louvers, spray (300 SF/gal)	Inst	SF	Lg	NC	.018	440.0	.16	.78	.15	1.09	1.42					
	Inst	SF	Sm	NC	.024	330.0	.18	1.04	.20	1.42	1.86					
Picture molding, chair rail, base, ceiling mold etc., less than 6" high																
Note: SF equals LF on trim less than 6" high																
Brush (900 SF/gal)	Inst	SF	Lg	NA	.008	960.0	.05	.34	---	.39	.53					
	Inst	SF	Sm	NA	.011	720.0	.06	.46	---	.52	.72					
Floors, wood																
Brush (405 SF/gal)	Inst	SF	Lg	NA	.004	2000	.12	.17	---	.29	.37					
	Inst	SF	Sm	NA	.005	1500	.13	.21	---	.34	.44					
Roller (385 SF/gal)	Inst	SF	Lg	NA	.003	2400	.12	.13	---	.25	.31					
	Inst	SF	Sm	NA	.004	1800	.14	.17	---	.31	.39					
For custom colors, ADD	Inst		Lg	---	---	---	10.0	---	---	---	---					
	Inst		Sm	---	---	---	10.0	---	---	---	---					
Floor seal																
Brush (450 SF/gal)	Inst	SF	Lg	NA	.003	2800	.12	.13	---	.25	.31					
	Inst	SF	Sm	NA	.004	2100	.12	.17	---	.29	.37					
Roller (430 SF/gal)	Inst	SF	Lg	NA	.003	3200	.12	.13	---	.25	.31					
	Inst	SF	Sm	NA	.003	2400	.13	.13	---	.26	.32					
Penetrating stainwax (hardwood floors)																
Brush (450 SF/gal)	Inst	SF	Lg	NA	.004	2000	.12	.17	---	.29	.37					
	Inst	SF	Sm	NA	.005	1500	.13	.21	---	.34	.44					
Roller (425 SF/gal)	Inst	SF	Lg	NA	.003	2400	.12	.13	---	.25	.31					
	Inst	SF	Sm	NA	.004	1800	.14	.17	---	.31	.39					

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Natural finishes											
Paneling, brush work unless otherwise indicated											
Stain, brush on - wipe off (360 SF/gal)											
	Inst	SF	Lg	NA	.014	560.0	.14	.59	---	.73	.98
	Inst	SF	Sm	NA	.019	420.0	.16	.80	---	.96	1.30
Varnish (380 SF/gal)											
	Inst	SF	Lg	NA	.006	1360	.19	.25	---	.44	.56
	Inst	SF	Sm	NA	.008	1020	.21	.34	---	.55	.70
Shellac (630 SF/gal)											
	Inst	SF	Lg	NA	.005	1600	.11	.21	---	.32	.42
	Inst	SF	Sm	NA	.007	1200	.13	.30	---	.43	.56
Lacquer											
Brush (450 SF/gal)	Inst	SF	Lg	NA	.004	1920	.08	.17	---	.25	.32
	Inst	SF	Sm	NA	.006	1440	.09	.25	---	.34	.45
Spray (300 SF/gal)	Inst	SF	Lg	NC	.003	2400	.13	.13	.03	.29	.36
	Inst	SF	Sm	NC	.004	1800	.14	.17	.04	.35	.44
Doors and windows, brush work unless otherwise indicated											
Stain, brush on - wipe off (450 SF/gal)											
	Inst	SF	Lg	NA	.032	250.0	.12	1.35	---	1.47	2.02
	Inst	SF	Sm	NA	.043	187.5	.13	1.81	---	1.94	2.68
Varnish (550 SF/gal)											
	Inst	SF	Lg	NA	.024	340.0	.13	1.01	---	1.14	1.56
	Inst	SF	Sm	NA	.031	255.0	.14	1.31	---	1.45	1.98
Shellac (550 SF/gal)											
	Inst	SF	Lg	NA	.022	365.0	.13	.93	---	1.06	1.44
	Inst	SF	Sm	NA	.029	273.8	.14	1.22	---	1.36	1.87
Lacquer											
Brush (550 SF/gal)	Inst	SF	Lg	NA	.020	405.0	.07	.84	---	.91	1.26
	Inst	SF	Sm	NA	.026	303.8	.08	1.10	---	1.18	1.62
Spray doors (300 SF/gal)	Inst	SF	Lg	NC	.010	800.0	.13	.43	.08	.64	.83
	Inst	SF	Sm	NC	.013	600.0	.14	.56	.11	.81	1.05
Cabinets, brush work unless otherwise indicated											
Stain, brush on - wipe off (450 SF/gal)											
	Inst	SF	Lg	NA	.034	235.0	.12	1.43	---	1.55	2.14
	Inst	SF	Sm	NA	.045	176.3	.13	1.90	---	2.03	2.80
Varnish (550 SF/gal)											
	Inst	SF	Lg	NA	.025	320.0	.13	1.05	---	1.18	1.62
	Inst	SF	Sm	NA	.033	240.0	.14	1.39	---	1.53	2.10
Shellac (550 SF/gal)											
	Inst	SF	Lg	NA	.023	345.0	.13	.97	---	1.10	1.50
	Inst	SF	Sm	NA	.031	258.8	.14	1.31	---	1.45	1.98
Lacquer											
Brush (550 SF/gal)	Inst	SF	Lg	NA	.021	385.0	.07	.89	---	.96	1.32
	Inst	SF	Sm	NA	.028	288.8	.08	1.18	---	1.26	1.74
Spray (300 SF/gal)	Inst	SF	Lg	NC	.011	750.0	.13	.48	.09	.70	.90
	Inst	SF	Sm	NC	.014	562.5	.14	.61	.12	.87	1.12
Louvers, lacquer, spray											
(300 SF/gal)	Inst	SF	Lg	NC	.017	480.0	.13	.74	.14	1.01	1.32
	Inst	SF	Sm	NC	.022	360.0	.14	.96	.18	1.28	1.67

Painting and cleaning, interior, two coat application

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Picture molding, chair rail, base, ceiling mold etc., less than 6" high

Note: SF equals LF on trim less than 6" high

Varnish, brush (900 SF/gal)

	Inst	SF	Lg	NA	.008	1040	.08	.34	---	.42	.56
	Inst	SF	Sm	NA	.010	780.0	.09	.42	---	.51	.69

Shellac, brush (900 SF/gal)

	Inst	SF	Lg	NA	.008	1040	.08	.34	---	.42	.56
	Inst	SF	Sm	NA	.010	780.0	.09	.42	---	.51	.69

Lacquer, spray (700 SF/gal)

	Inst	SF	Lg	NA	.006	1280	.05	.25	.05	.35	.46
	Inst	SF	Sm	NA	.008	960.0	.06	.34	.07	.47	.61

Floors, wood, brush work unless otherwise indicated

Shellac (450 SF/gal)

	Inst	SF	Lg	NA	.004	2000	.16	.17	---	.33	.41
	Inst	SF	Sm	NA	.005	1500	.18	.21	---	.39	.49

Varnish (500 SF/gal)

	Inst	SF	Lg	NA	.004	2000	.14	.17	---	.31	.39
	Inst	SF	Sm	NA	.005	1500	.16	.21	---	.37	.47

Buffing, by machine

	Inst	SF	Lg	NA	.003	2800	.01	.13	---	.14	.19
	Inst	SF	Sm	NA	.004	2100	.01	.17	---	.18	.25

Waxing and polishing, by hand

(1,000 SF/gal)

	Inst	SF	Lg	NA	.005	1520	.03	.21	---	.24	.33
	Inst	SF	Sm	NA	.007	1140	.03	.30	---	.33	.45

Two coat application

Excluding openings, unless otherwise indicated

For sizing or sealer, see One coat application, page 303

Latex

No spray work included, see One coat application, page 304

Drywall or plaster, latex flat

Smooth finish

Brush (170 SF/gal)	Inst	SF	Lg	NA	.009	880.0	.28	.38	---	.66	.84
	Inst	SF	Sm	NA	.012	660.0	.31	.51	---	.82	1.05
Roller (160 SF/gal)	Inst	SF	Lg	NA	.008	1040	.30	.34	---	.64	.80
	Inst	SF	Sm	NA	.010	780.0	.33	.42	---	.75	.95

Sand finish

Brush (170 SF/gal)	Inst	SF	Lg	NA	.013	600.0	.28	.55	---	.83	1.08
	Inst	SF	Sm	NA	.018	450.0	.31	.76	---	1.07	1.40
Roller (160 SF/gal)	Inst	SF	Lg	NA	.011	760.0	.30	.46	---	.76	.98
	Inst	SF	Sm	NA	.014	570.0	.33	.59	---	.92	1.19

Paneling, latex enamel

Brush (170 SF/gal)	Inst	SF	Lg	NA	.009	880.0	.28	.38	---	.66	.84
	Inst	SF	Sm	NA	.012	660.0	.31	.51	---	.82	1.05
Roller (160 SF/gal)	Inst	SF	Lg	NA	.008	1040	.30	.34	---	.64	.80
	Inst	SF	Sm	NA	.010	780.0	.33	.42	---	.75	.95

Acoustical tile or panels, latex flat

Brush (130 SF/gal)	Inst	SF	Lg	NA	.012	680.0	.37	.51	---	.88	1.12
	Inst	SF	Sm	NA	.016	510.0	.41	.67	---	1.08	1.40
Roller (120 SF/gal)	Inst	SF	Lg	NA	.009	880.0	.40	.38	---	.78	.97
	Inst	SF	Sm	NA	.012	660.0	.44	.51	---	.95	1.19

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Millwork and trim, enamel

Doors and windows

Roller and/or brush (200 SF/gal)

	Inst	SF	Lg	NA	.024	335.0	.24	1.01	---	1.25	1.68
	Inst	SF	Sm	NA	.032	251.3	.26	1.35	---	1.61	2.17

Cabinets

Roller and/or brush (200 SF/gal)

	Inst	SF	Lg	NA	.025	315.0	.24	1.05	---	1.29	1.74
	Inst	SF	Sm	NA	.034	236.3	.26	1.43	---	1.69	2.29

Louvers, see One coat application, page 305

Picture molding, chair rail, base, ceiling mold etc., less than 6" high

Note: SF equals LF on trim less than 6" high

Brush (510 SF/gal)	Inst	SF	Lg	NA	.016	500.0	.09	.67	---	.76	1.04
	Inst	SF	Sm	NA	.021	375.0	.10	.89	---	.99	1.35

Floors, wood

Brush (230 SF/gal)	Inst	SF	Lg	NA	.007	1120	.21	.30	---	.51	.64
	Inst	SF	Sm	NA	.010	840.0	.23	.42	---	.65	.84
Roller (220 SF/gal)	Inst	SF	Lg	NA	.006	1280	.22	.25	---	.47	.60
	Inst	SF	Sm	NA	.008	960.0	.24	.34	---	.58	.74

For custom colors, ADD

	Inst		Lg	---	---	---	10.0	---	---	---	---
	Inst		Sm	---	---	---	10.0	---	---	---	---

For wood floor seal, penetrating stainwax, or natural finish, see One coat application, page 305**Exterior***Time calculations include normal materials handling and protection of property not to be painted***Preparation***Excluding openings, unless otherwise indicated***Cleaning, wet**

Plain siding	Inst	SF	Lg	NA	.005	1480	.02	.21	---	.23	.32
	Inst	SF	Sm	NA	.007	1110	.02	.30	---	.32	.44

Exterior doors and trim

Note: SF equals LF on trim less than 6" high

	Inst	SF	Lg	NA	.006	1400	.02	.25	---	.27	.38
	Inst	SF	Sm	NA	.008	1050	.02	.34	---	.36	.49

Windows, wash and clean glass

	Inst	SF	Lg	NA	.006	1280	.01	.25	---	.26	.37
	Inst	SF	Sm	NA	.008	960.0	.02	.34	---	.36	.49
Porch floors and steps	Inst	SF	Lg	NA	.004	2240	.02	.17	---	.19	.26
	Inst	SF	Sm	NA	.005	1680	.02	.21	---	.23	.32

Acid wash

Gutters and downspouts	Inst	SF	Lg	NA	.008	1040	.01	.34	---	.35	.48
	Inst	SF	Sm	NA	.010	780.0	.02	.42	---	.44	.61

Sanding, light

Porch floors and steps	Inst	SF	Lg	NA	.005	1760	.01	.21	---	.22	.31
	Inst	SF	Sm	NA	.006	1320	.02	.25	---	.27	.38

Painting and cleaning, exterior, one coat application

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Sanding and puttying											
Plain siding	Inst	SF	Lg	NA	.006	1440	.01	.25	---	.26	.37
	Inst	SF	Sm	NA	.007	1080	.02	.30	---	.32	.44
Exterior doors and trim											
Note: SF equals LF on trim less than 6" high											
	Inst	SF	Lg	NA	.011	720.0	.01	.46	---	.47	.66
	Inst	SF	Sm	NA	.015	540.0	.02	.63	---	.65	.91
Puttying sash or reglazing -- Windows (30 SF glass/lb glazing compound)											
	Inst	SF	Lg	NA	.033	240.0	.46	1.39	---	1.85	2.45
	Inst	SF	Sm	NA	.044	180.0	.50	1.85	---	2.35	3.15

One coat application

Excluding openings, unless otherwise indicated

Latex, flat (unless otherwise indicated)

Plain siding

Brush (300 SF/gal)	Inst	SF	Lg	NA	.010	800.0	.16	.42	---	.58	.77
	Inst	SF	Sm	NA	.013	600.0	.18	.55	---	.73	.97
Roller (275 SF/gal)	Inst	SF	Lg	NA	.008	1040	.17	.34	---	.51	.66
	Inst	SF	Sm	NA	.010	780.0	.19	.42	---	.61	.80
Spray (325 SF/gal)	Inst	SF	Lg	NC	.005	1750	.15	.22	.04	.41	.51
	Inst	SF	Sm	NC	.006	1313	.16	.26	.05	.47	.59

Shingle siding

Brush (270 SF/gal)	Inst	SF	Lg	NA	.009	880.0	.18	.38	---	.56	.73
	Inst	SF	Sm	NA	.012	660.0	.20	.51	---	.71	.93
Roller (260 SF/gal)	Inst	SF	Lg	NA	.007	1200	.18	.30	---	.48	.61
	Inst	SF	Sm	NA	.009	900.0	.20	.38	---	.58	.75
Spray (300 SF/gal)	Inst	SF	Lg	NC	.005	1600	.16	.22	.04	.42	.52
	Inst	SF	Sm	NC	.007	1200	.18	.30	.05	.53	.67

Stucco

Brush (135 SF/gal)	Inst	SF	Lg	NA	.010	800.0	.36	.42	---	.78	.99
	Inst	SF	Sm	NA	.013	600.0	.39	.55	---	.94	1.20
Roller (125 SF/gal)	Inst	SF	Lg	NA	.007	1200	.38	.30	---	.68	.83
	Inst	SF	Sm	NA	.009	900.0	.42	.38	---	.80	.99
Spray (150 SF/gal)	Inst	SF	Lg	NC	.005	1600	.32	.22	.04	.58	.70
	Inst	SF	Sm	NC	.007	1200	.35	.30	.05	.70	.86

Cement walls, see Cement base paint, page 311

Masonry block, brick, tile; masonry latex

Brush (180 SF/gal)	Inst	SF	Lg	NA	.009	880.0	.27	.38	---	.65	.83
	Inst	SF	Sm	NA	.012	660.0	.29	.51	---	.80	1.03
Roller (125 SF/gal)	Inst	SF	Lg	NA	.006	1440	.38	.25	---	.63	.77
	Inst	SF	Sm	NA	.007	1080	.42	.30	---	.72	.88
Spray (160 SF/gal)	Inst	SF	Lg	NC	.004	1840	.30	.17	.04	.51	.61
	Inst	SF	Sm	NC	.006	1380	.33	.26	.05	.64	.78

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours	Output					
					per Unit	per Day					
Doors, exterior side only											
Brush (375 SF/gal)	Inst	SF	Lg	NA	.013	640.0	.13	.55	---	.68	.91
	Inst	SF	Sm	NA	.017	480.0	.14	.72	---	.86	1.16
Roller (375 SF/gal)	Inst	SF	Lg	NA	.009	865.0	.13	.38	---	.51	.67
	Inst	SF	Sm	NA	.012	648.8	.14	.51	---	.65	.86
Windows, exterior side only, brush work											
(450 SF/gal)	Inst	SF	Lg	NA	.013	640.0	.11	.55	---	.66	.89
	Inst	SF	Sm	NA	.017	480.0	.12	.72	---	.84	1.14
Trim, less than 6" high, brush											
Note: SF equals LF on trim less than 6" high											
High gloss (300 SF/gal)	Inst	SF	Lg	NA	.009	900.0	.16	.38	---	.54	.71
	Inst	SF	Sm	NA	.012	675.0	.18	.51	---	.69	.91
Screens, full; high gloss											
Paint applied to wood only, brush work											
(700 SF/gal)	Inst	SF	Lg	NA	.015	540.0	.07	.63	---	.70	.96
	Inst	SF	Sm	NA	.020	405.0	.08	.84	---	.92	1.27
Paint applied to wood (brush) and wire (spray)											
(475 SF/gal)	Inst	SF	Lg	NC	.018	450.0	.10	.78	.14	1.02	1.34
	Inst	SF	Sm	NC	.024	337.5	.11	1.04	.19	1.34	1.77
Storm windows and doors, 2 lites, brush work											
(340 SF/gal)	Inst	SF	Lg	NA	.024	340.0	.14	1.01	---	1.15	1.57
	Inst	SF	Sm	NA	.031	255.0	.16	1.31	---	1.47	2.01
Blinds or shutters											
Brush (120 SF/gal)	Inst	SF	Lg	NA	.062	130.0	.40	2.61	---	3.01	4.10
	Inst	SF	Sm	NA	.082	97.50	.44	3.46	---	3.90	5.32
Spray (300 SF/gal)	Inst	SF	Lg	NC	.020	400.0	.16	.87	.16	1.19	1.55
	Inst	SF	Sm	NC	.027	300.0	.18	1.17	.22	1.57	2.06
Gutters and downspouts, brush work											
(225 LF/gal), galvanized	Inst	SF	Lg	NA	.013	600.0	.21	.55	---	.76	1.00
	Inst	SF	Sm	NA	.018	450.0	.24	.76	---	1.00	1.33
Porch floors and steps, wood											
Brush (340 SF/gal)	Inst	SF	Lg	NA	.005	1520	.14	.21	---	.35	.45
	Inst	SF	Sm	NA	.007	1140	.16	.30	---	.46	.59
Roller (325 SF/gal)	Inst	SF	Lg	NA	.004	1920	.15	.17	---	.32	.40
	Inst	SF	Sm	NA	.006	1440	.16	.25	---	.41	.53
Shingle roofs											
Brush (135 SF/gal)	Inst	SF	Lg	NA	.008	1040	.36	.34	---	.70	.87
	Inst	SF	Sm	NA	.010	780.0	.39	.42	---	.81	1.02
Roller (125 SF/gal)	Inst	SF	Lg	NA	.006	1360	.38	.25	---	.63	.77
	Inst	SF	Sm	NA	.008	1020	.42	.34	---	.76	.93
Spray (150 SF/gal)	Inst	SF	Lg	NC	.004	2080	.32	.17	.03	.52	.63
	Inst	SF	Sm	NC	.005	1560	.35	.22	.04	.61	.73
For custom colors, ADD	Inst		Lg	---	---	---	10.0	---	---	---	---
	Inst		Sm	---	---	---	10.0	---	---	---	---

Painting and cleaning, exterior, two coat application

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Cement base paint (epoxy concrete enamel)

Cement walls, smooth finish

Brush (120 SF/gal)	Inst	SF	Lg	NA	.006	1320	.75	.25	---	1.00	1.18
	Inst	SF	Sm	NA	.008	990.0	.83	.34	---	1.17	1.39
Roller (110 SF/gal)	Inst	SF	Lg	NA	.004	1920	.82	.17	---	.99	1.14
	Inst	SF	Sm	NA	.006	1440	.91	.25	---	1.16	1.36

Concrete porch floors and steps

Brush (400 SF/gal)	Inst	SF	Lg	NA	.004	2000	.23	.17	---	.40	.49
	Inst	SF	Sm	NA	.005	1500	.25	.21	---	.46	.57
Roller (375 SF/gal)	Inst	SF	Lg	NA	.003	2400	.24	.13	---	.37	.44
	Inst	SF	Sm	NA	.004	1800	.27	.17	---	.44	.53

Stain

Shingle siding

Brush (180 SF/gal)	Inst	SF	Lg	NA	.010	800.0	.29	.42	---	.71	.91
	Inst	SF	Sm	NA	.013	600.0	.32	.55	---	.87	1.12
Roller (170 SF/gal)	Inst	SF	Lg	NA	.007	1120	.31	.30	---	.61	.75
	Inst	SF	Sm	NA	.010	840.0	.34	.42	---	.76	.96
Spray (200 SF/gal)	Inst	SF	Lg	NC	.005	1520	.26	.22	.04	.52	.63
	Inst	SF	Sm	NC	.007	1140	.29	.30	.06	.65	.80

Shingle roofs

Brush (180 SF/gal)	Inst	SF	Lg	NA	.008	960.0	.29	.34	---	.63	.79
	Inst	SF	Sm	NA	.011	720.0	.32	.46	---	.78	1.00
Roller (170 SF/gal)	Inst	SF	Lg	NA	.006	1280	.31	.25	---	.56	.70
	Inst	SF	Sm	NA	.008	960.0	.34	.34	---	.68	.85
Spray (200 SF/gal)	Inst	SF	Lg	NC	.004	1920	.26	.17	.03	.46	.56
	Inst	SF	Sm	NC	.006	1440	.29	.26	.05	.60	.73

Two coat application

Excluding openings, unless otherwise indicated

Latex, flat (unless otherwise indicated)

Plain siding

Brush (170 SF/gal)	Inst	SF	Lg	NA	.018	440.0	.28	.76	---	1.04	1.37
	Inst	SF	Sm	NA	.024	330.0	.31	1.01	---	1.32	1.76
Roller (155 SF/gal)	Inst	SF	Lg	NA	.014	560.0	.31	.59	---	.90	1.17
	Inst	SF	Sm	NA	.019	420.0	.34	.80	---	1.14	1.50
Spray (185 SF/gal)	Inst	SF	Lg	NC	.008	960.0	.26	.35	.07	.68	.84
	Inst	SF	Sm	NC	.011	720.0	.29	.48	.09	.86	1.08

Shingle siding

Brush (150 SF/gal)	Inst	SF	Lg	NA	.017	480.0	.32	.72	---	1.04	1.36
	Inst	SF	Sm	NA	.022	360.0	.35	.93	---	1.28	1.68
Roller (150 SF/gal)	Inst	SF	Lg	NA	.013	640.0	.32	.55	---	.87	1.12
	Inst	SF	Sm	NA	.017	480.0	.35	.72	---	1.07	1.39
Spray (170 SF/gal)	Inst	SF	Lg	NC	.009	880.0	.28	.39	.07	.74	.92
	Inst	SF	Sm	NC	.012	660.0	.31	.52	.10	.93	1.17

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
Stucco											
Brush (90 SF/gal)	Inst	SF	Lg	NA	.017	480.0	.53	.72	---	1.25	1.59
	Inst	SF	Sm	NA	.022	360.0	.59	.93	---	1.52	1.95
Roller (85 SF/gal)	Inst	SF	Lg	NA	.012	680.0	.56	.51	---	1.07	1.32
	Inst	SF	Sm	NA	.016	510.0	.62	.67	---	1.29	1.63
Spray (100 SF/gal)	Inst	SF	Lg	NC	.009	880.0	.48	.39	.07	.94	1.14
	Inst	SF	Sm	NC	.012	660.0	.53	.52	.10	1.15	1.41
Cement wall, see Cement base paint, page 313											
Masonry block, brick, tile; masonry latex											
Brush (120 SF/gal)	Inst	SF	Lg	NA	.015	520.0	.40	.63	---	1.03	1.33
	Inst	SF	Sm	NA	.021	390.0	.44	.89	---	1.33	1.72
Roller (85 SF/gal)	Inst	SF	Lg	NA	.011	760.0	.56	.46	---	1.02	1.27
	Inst	SF	Sm	NA	.014	570.0	.62	.59	---	1.21	1.51
Spray (105 SF/gal)	Inst	SF	Lg	NC	.008	1000	.46	.35	.07	.88	1.06
	Inst	SF	Sm	NC	.011	750.0	.50	.48	.09	1.07	1.31
Doors, exterior side only											
Brush (215 SF/gal)	Inst	SF	Lg	NA	.024	335.0	.22	1.01	---	1.23	1.66
	Inst	SF	Sm	NA	.032	251.3	.25	1.35	---	1.60	2.16
Roller (215 SF/gal)	Inst	SF	Lg	NA	.018	455.0	.22	.76	---	.98	1.30
	Inst	SF	Sm	NA	.023	341.3	.25	.97	---	1.22	1.63
Windows, exterior side only, brush work (255 SF/gal)											
	Inst	SF	Lg	NA	.024	335.0	.19	1.01	---	1.20	1.63
	Inst	SF	Sm	NA	.032	251.3	.21	1.35	---	1.56	2.12
Trim, less than 6" high, brush. High gloss (230 SF/gal)											
Note: SF equals LF on trim less than 6" high											
	Inst	SF	Lg	NA	.017	480.0	.21	.72	---	.93	1.23
	Inst	SF	Sm	NA	.022	360.0	.23	.93	---	1.16	1.55
Screens, full; high gloss											
Paint applied to wood only, brush work (400 SF/gal)											
	Inst	SF	Lg	NA	.028	285.0	.12	1.18	---	1.30	1.78
	Inst	SF	Sm	NA	.037	213.8	.13	1.56	---	1.69	2.33
Paint applied to wood (brush) and wire (spray) (270 SF/gal)											
	Inst	SF	Lg	NC	.033	240.0	.18	1.43	.27	1.88	2.47
	Inst	SF	Sm	NC	.044	180.0	.20	1.91	.36	2.47	3.25
Blinds or shutters											
Brush (65 SF/gal)	Inst	SF	Lg	NA	.114	70.00	.74	4.81	---	5.55	7.54
	Inst	SF	Sm	NA	.152	52.50	.81	6.41	---	7.22	9.86
Spray (170 SF/gal)	Inst	SF	Lg	NC	.038	210.0	.28	1.65	.31	2.24	2.93
	Inst	SF	Sm	NC	.051	157.5	.31	2.21	.41	2.93	3.85
Gutters and downspouts, brush work (130 LF/gal), galvanized											
	Inst	SF	Lg	NA	.025	315.0	.37	1.05	---	1.42	1.88
	Inst	SF	Sm	NA	.034	236.3	.41	1.43	---	1.84	2.46

Painting and cleaning, exterior, two coat application

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Unit	Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output						
					per Unit	per Day						
Porch floors and steps, wood												
Brush (195 SF/gal)	Inst	SF	Lg	NA	.010	800.0		.25	.42	---	.67	.87
	Inst	SF	Sm	NA	.013	600.0		.27	.55	---	.82	1.06
Roller (185 SF/gal)	Inst	SF	Lg	NA	.008	1000		.26	.34	---	.60	.76
	Inst	SF	Sm	NA	.011	750.0		.29	.46	---	.75	.97
Shingle roofs												
Brush (75 SF/gal)	Inst	SF	Lg	NA	.013	640.0		.64	.55	---	1.19	1.47
	Inst	SF	Sm	NA	.017	480.0		.71	.72	---	1.43	1.78
Roller (70 SF/gal)	Inst	SF	Lg	NA	.010	800.0		.69	.42	---	1.11	1.35
	Inst	SF	Sm	NA	.013	600.0		.76	.55	---	1.31	1.60
Spray (85 SF/gal)	Inst	SF	Lg	NC	.008	1000		.56	.35	.07	.98	1.17
	Inst	SF	Sm	NC	.011	750.0		.62	.48	.09	1.19	1.44
For custom colors, ADD	Inst		Lg	---	---	---		10.0	---	---	---	---
	Inst		Sm	---	---	---		10.0	---	---	---	---
Cement base paint (epoxy concrete enamel)												
Cement walls, smooth finish												
Brush (80 SF/gal)	Inst	SF	Lg	NA	.011	720.0		1.13	.46	---	1.59	1.89
	Inst	SF	Sm	NA	.015	540.0		1.25	.63	---	1.88	2.26
Roller (75 SF/gal)	Inst	SF	Lg	NA	.008	1040		1.21	.34	---	1.55	1.80
	Inst	SF	Sm	NA	.010	780.0		1.33	.42	---	1.75	2.05
Concrete porch floors and steps												
Brush (225 SF/gal)	Inst	SF	Lg	NA	.008	1040		.40	.34	---	.74	.91
	Inst	SF	Sm	NA	.010	780.0		.44	.42	---	.86	1.07
Roller (210 SF/gal)	Inst	SF	Lg	NA	.008	1000		.43	.34	---	.77	.95
	Inst	SF	Sm	NA	.011	750.0		.47	.46	---	.93	1.17
Stain												
Shingle siding												
Brush (105 SF/gal)	Inst	SF	Lg	NA	.017	480.0		.50	.72	---	1.22	1.55
	Inst	SF	Sm	NA	.022	360.0		.55	.93	---	1.48	1.90
Roller (100 SF/gal)	Inst	SF	Lg	NA	.013	600.0		.52	.55	---	1.07	1.34
	Inst	SF	Sm	NA	.018	450.0		.57	.76	---	1.33	1.69
Spray (115 SF/gal)	Inst	SF	Lg	NC	.009	880.0		.45	.39	.07	.91	1.11
	Inst	SF	Sm	NC	.012	660.0		.50	.52	.10	1.12	1.38
Shingle roofs												
Brush (105 SF/gal)	Inst	SF	Lg	NA	.014	560.0		.50	.59	---	1.09	1.38
	Inst	SF	Sm	NA	.019	420.0		.55	.80	---	1.35	1.73
Roller (100 SF/gal)	Inst	SF	Lg	NA	.011	760.0		.52	.46	---	.98	1.22
	Inst	SF	Sm	NA	.014	570.0		.57	.59	---	1.16	1.45
Spray (115 SF/gal)	Inst	SF	Lg	NC	.007	1120		.45	.30	.06	.81	.98
	Inst	SF	Sm	NC	.010	840.0		.50	.43	.08	1.01	1.24

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Paneling

Hardboard and plywood

Demolition

Sheets, plywood or hardboard	Demo	SF	Lg	LB	.009	1850	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.012	1295	---	.40	---	.40	.56
Boards, wood	Demo	SF	Lg	LB	.010	1650	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.014	1155	---	.47	---	.47	.65

Installation

Waste, nails, and adhesives not included

Economy hardboard

Presdwood, 4' x 8' sheets

Standard

1/8" T	Inst	SF	Lg	2C	.016	1025	.50	.66	---	1.16	1.49
	Inst	SF	Sm	2C	.022	717.5	.55	.90	---	1.45	1.90
1/4" T	Inst	SF	Lg	2C	.016	1025	.53	.66	---	1.19	1.53
	Inst	SF	Sm	2C	.022	717.5	.59	.90	---	1.49	1.94

Tempered

1/8" T	Inst	SF	Lg	2C	.016	1025	.56	.66	---	1.22	1.56
	Inst	SF	Sm	2C	.022	717.5	.62	.90	---	1.52	1.98
1/4" T	Inst	SF	Lg	2C	.016	1025	.59	.66	---	1.25	1.60
	Inst	SF	Sm	2C	.022	717.5	.65	.90	---	1.55	2.01

Duolux, 4' x 8' sheets

Standard

1/8" T	Inst	SF	Lg	2C	.016	1025	.64	.66	---	1.30	1.66
	Inst	SF	Sm	2C	.022	717.5	.70	.90	---	1.60	2.07
1/4" T	Inst	SF	Lg	2C	.016	1025	.67	.66	---	1.33	1.69
	Inst	SF	Sm	2C	.022	717.5	.73	.90	---	1.63	2.10

Tempered

1/8" T	Inst	SF	Lg	2C	.016	1025	.70	.66	---	1.36	1.72
	Inst	SF	Sm	2C	.022	717.5	.76	.90	---	1.66	2.14
1/4" T	Inst	SF	Lg	2C	.016	1025	.77	.66	---	1.43	1.81
	Inst	SF	Sm	2C	.022	717.5	.85	.90	---	1.75	2.24

Particleboard, 40 lb interior underlayment

Nailed to floors

3/8" T	Inst	SF	Lg	2C	.010	1535	.70	.41	---	1.11	1.38
	Inst	SF	Sm	2C	.015	1075	.76	.62	---	1.38	1.74
1/2" T	Inst	SF	Lg	2C	.010	1535	.88	.41	---	1.29	1.59
	Inst	SF	Sm	2C	.015	1075	.97	.62	---	1.59	1.98
5/8" T	Inst	SF	Lg	2C	.010	1535	1.03	.41	---	1.44	1.76
	Inst	SF	Sm	2C	.015	1075	1.14	.62	---	1.76	2.17
3/4" T	Inst	SF	Lg	2C	.010	1535	1.08	.41	---	1.49	1.82
	Inst	SF	Sm	2C	.015	1075	1.18	.62	---	1.80	2.22

Nailed to walls

3/8" T	Inst	SF	Lg	2C	.011	1440	.70	.45	---	1.15	1.44
	Inst	SF	Sm	2C	.016	1008	.76	.66	---	1.42	1.79
1/2" T	Inst	SF	Lg	2C	.011	1440	.88	.45	---	1.33	1.64
	Inst	SF	Sm	2C	.016	1008	.97	.66	---	1.63	2.04
5/8" T	Inst	SF	Lg	2C	.011	1440	1.03	.45	---	1.48	1.82
	Inst	SF	Sm	2C	.016	1008	1.14	.66	---	1.80	2.23
3/4" T	Inst	SF	Lg	2C	.011	1440	1.08	.45	---	1.53	1.87
	Inst	SF	Sm	2C	.016	1008	1.18	.66	---	1.84	2.28

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Masonite prefinished 4' x 8' panels

1/4" T, oak and maple designs	Inst	SF	Lg	2C	.020	800.0	.63	.82	---	1.45	1.87
	Inst	SF	Sm	2C	.029	560.0	.69	1.19	---	1.88	2.46
1/4" T, nutwood designs	Inst	SF	Lg	2C	.020	800.0	.78	.82	---	1.60	2.05
	Inst	SF	Sm	2C	.029	560.0	.85	1.19	---	2.04	2.64
1/4" T, weathered white	Inst	SF	Lg	2C	.020	800.0	.88	.82	---	1.70	2.16
	Inst	SF	Sm	2C	.029	560.0	.97	1.19	---	2.16	2.78
1/4" T, brick or stone designs	Inst	SF	Lg	2C	.020	800.0	1.77	.82	---	2.59	3.19
	Inst	SF	Sm	2C	.029	560.0	1.96	1.19	---	3.15	3.92

Pegboard, 4' x 8' sheets

Presdwood, tempered

1/8" T	Inst	SF	Lg	2C	.016	1025	.56	.66	---	1.22	1.56
	Inst	SF	Sm	2C	.022	717.5	.62	.90	---	1.52	1.98
1/4" T	Inst	SF	Lg	2C	.016	1025	.62	.66	---	1.28	1.63
	Inst	SF	Sm	2C	.022	717.5	.69	.90	---	1.59	2.06

Duolux, tempered

1/8" T	Inst	SF	Lg	2C	.016	1025	.56	.66	---	1.22	1.56
	Inst	SF	Sm	2C	.022	717.5	.62	.90	---	1.52	1.98
1/4" T	Inst	SF	Lg	2C	.016	1025	.62	.66	---	1.28	1.63
	Inst	SF	Sm	2C	.022	717.5	.69	.90	---	1.59	2.06

Unfinished hardwood plywood, applied with nails (nail heads filled)

Ash, flush face

1/8" x 4' x 7', 8'	Inst	SF	Lg	CS	.027	900.0	1.12	1.04	---	2.16	2.74
	Inst	SF	Sm	CS	.038	630.0	1.23	1.46	---	2.69	3.46
3/16" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.33	1.04	---	2.37	2.98
	Inst	SF	Sm	CS	.038	630.0	1.47	1.46	---	2.93	3.74
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.56	1.04	---	2.60	3.25
	Inst	SF	Sm	CS	.038	630.0	1.72	1.46	---	3.18	4.03
1/4" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.76	1.04	---	2.80	3.48
	Inst	SF	Sm	CS	.038	630.0	1.93	1.46	---	3.39	4.27
1/2" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.99	1.04	---	3.03	3.74
	Inst	SF	Sm	CS	.038	630.0	2.19	1.46	---	3.65	4.57
3/4" x 4' x 8' vertical core	Inst	SF	Lg	CS	.027	900.0	4.25	1.04	---	5.29	6.34
	Inst	SF	Sm	CS	.038	630.0	4.68	1.46	---	6.14	7.43
3/4" x 4' x 8' lumber core	Inst	SF	Lg	CS	.027	900.0	5.94	1.04	---	6.98	8.29
	Inst	SF	Sm	CS	.038	630.0	6.54	1.46	---	8.00	9.57

Ash, V-grooved

3/16" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.21	1.04	---	2.25	2.85
	Inst	SF	Sm	CS	.038	630.0	1.33	1.46	---	2.79	3.58
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.56	1.04	---	2.60	3.25
	Inst	SF	Sm	CS	.038	630.0	1.72	1.46	---	3.18	4.03
1/4" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.72	1.04	---	2.76	3.43
	Inst	SF	Sm	CS	.038	630.0	1.89	1.46	---	3.35	4.22

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Birch, natural, "A" grade face											
Flush face											
1/8" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.85	1.04	---	1.89	2.43
	Inst	SF	Sm	CS	.038	630.0	.93	1.46	---	2.39	3.12
3/16" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.33	1.04	---	2.37	2.98
	Inst	SF	Sm	CS	.038	630.0	1.47	1.46	---	2.93	3.74
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.34	1.04	---	2.38	3.00
	Inst	SF	Sm	CS	.038	630.0	1.48	1.46	---	2.94	3.75
1/4" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.76	1.04	---	2.80	3.48
	Inst	SF	Sm	CS	.038	630.0	1.93	1.46	---	3.39	4.27
3/8" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.94	1.04	---	2.98	3.69
	Inst	SF	Sm	CS	.038	630.0	2.14	1.46	---	3.60	4.51
1/2" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	2.24	1.04	---	3.28	4.03
	Inst	SF	Sm	CS	.038	630.0	2.46	1.46	---	3.92	4.88
3/4" x 4' x 8' lumber core	Inst	SF	Lg	CS	.027	900.0	3.03	1.04	---	4.07	4.94
	Inst	SF	Sm	CS	.038	630.0	3.34	1.46	---	4.80	5.89
V-grooved											
1/4" x 4' x 8', mismatched	Inst	SF	Lg	CS	.027	900.0	1.66	1.04	---	2.70	3.36
	Inst	SF	Sm	CS	.038	630.0	1.83	1.46	---	3.29	4.15
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.69	1.04	---	2.73	3.40
	Inst	SF	Sm	CS	.038	630.0	1.86	1.46	---	3.32	4.19
1/4" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.91	1.04	---	2.95	3.65
	Inst	SF	Sm	CS	.038	630.0	2.11	1.46	---	3.57	4.47
Birch, select red											
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.69	1.04	---	2.73	3.40
	Inst	SF	Sm	CS	.038	630.0	1.86	1.46	---	3.32	4.19
Birch, select white											
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.69	1.04	---	2.73	3.40
	Inst	SF	Sm	CS	.038	630.0	1.86	1.46	---	3.32	4.19
Oak, flush face											
1/8" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.85	1.04	---	1.89	2.43
	Inst	SF	Sm	CS	.038	630.0	.93	1.46	---	2.39	3.12
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.07	1.04	---	2.11	2.68
	Inst	SF	Sm	CS	.038	630.0	1.17	1.46	---	2.63	3.39
1/2" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	2.06	1.04	---	3.10	3.82
	Inst	SF	Sm	CS	.038	630.0	2.28	1.46	---	3.74	4.67

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Philippine mahogany											
Rotary cut											
1/8" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.40	1.04	---	1.44	1.91
	Inst	SF	Sm	CS	.038	630.0	.45	1.46	---	1.91	2.56
3/16" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.61	1.04	---	1.65	2.16
	Inst	SF	Sm	CS	.038	630.0	.68	1.46	---	2.14	2.83
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.61	1.04	---	1.65	2.16
	Inst	SF	Sm	CS	.038	630.0	.68	1.46	---	2.14	2.83
1/4" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.03	1.04	---	2.07	2.64
	Inst	SF	Sm	CS	.038	630.0	1.14	1.46	---	2.60	3.36
1/2" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	1.19	1.04	---	2.23	2.82
	Inst	SF	Sm	CS	.038	630.0	1.31	1.46	---	2.77	3.55
3/4" x 4' x 8' vert. core	Inst	SF	Lg	CS	.027	900.0	1.82	1.04	---	2.86	3.55
	Inst	SF	Sm	CS	.038	630.0	2.00	1.46	---	3.46	4.35
V-grooved											
3/16" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.62	1.04	---	1.66	2.17
	Inst	SF	Sm	CS	.038	630.0	.69	1.46	---	2.15	2.84
1/4" x 4' x 8'	Inst	SF	Lg	CS	.027	900.0	.72	1.04	---	1.76	2.28
	Inst	SF	Sm	CS	.038	630.0	.78	1.46	---	2.24	2.94
1/4" x 4' x 10'	Inst	SF	Lg	CS	.027	900.0	1.10	1.04	---	2.14	2.72
	Inst	SF	Sm	CS	.038	630.0	1.20	1.46	---	2.66	3.43

Plaster & Stucco

1. Dimensions (Lath)

- Gypsum. Plain, perforated and insulating. Normally, each lath is 16" x 48" in $\frac{3}{8}$ " or $\frac{1}{2}$ " thicknesses; a five-piece bundle covers 3 SY.
- Wire. Only diamond and riblash are discussed here. Diamond lath is furnished in 27" x 96"-wide sheets covering 16 SY and 20 SY respectively.
- Wood. Can be fir, pine, redwood, spruce, etc. Bundles may consist of 50 or 100 pieces of $\frac{3}{8}$ " x $1\frac{1}{2}$ " x 48" lath covering 3.4 SY and 6.8 SY respectively. There is usually a $\frac{3}{8}$ " gap between lath.

2. Dimensions (Plaster)

Only two and three coat gypsum cement plaster are discussed here.

3. Installation (Lath)

Laths are nailed. The types and size of nails vary with the type and thickness of lath. Quantity will vary with oc spacing of studs or joists. Only lath applied to wood will be considered here.

- Nails for gypsum lath. Common type is 13 gauge blued $\frac{19}{64}$ " flathead, $1\frac{1}{8}$ " long, spaced approximately 4" oc, and $1\frac{1}{4}$ " long spaced approximately 5" oc for $\frac{3}{8}$ " and $\frac{1}{2}$ " lath respectively.
- Nails for wire lath. For ceiling, common is $1\frac{1}{2}$ " long 11 gauge barbed galvanized with a $\frac{7}{16}$ " head diameter.
- Nails for wood lath. 3d fine common.
- Gypsum lath may be attached by the use of air-driven staples. Wire lath may be tied to support, usually with 18 gauge wire.

4. Installation (Plaster)

Quantities of materials used to plaster vary with the type of lath and thickness of plaster.

- Two coat. Brown and finish coat.

- Three coat. Scratch, brown and finish coat.

For types and quantities of material used, see cost tables under Plaster.

5. Notes on Labor

- Lath. Average Manhour per Unit is based on what one lather can do in one day.
- Plaster. Average Manhour per Unit is based on what two plasterers and one laborer can do in one day.

Stucco

1. Dimensions

- 18 gauge wire
- 1" x 18 gauge galvanized netting
- 15 lb. felt paper
- Mortar of 1:3 mix

2. Installation (Lathing)

- 18 gauge wire stretched taut horizontally across studs at approximately 8" oc.
- 15 lb. felt paper placed over wire.
- 1" x 18 gauge galvanized netting placed over felt.

3. Installation (Mortar)

- The mortar mix used in this section is a 1:3 mix.
- One CY of mortar is comprised of 1 CY sand, 9 CF portland cement and 100 lbs. hydrated lime.
- For mortar requirements for 100 SY of stucco, see table below.

4. Estimating Technique

Determine area and deduct area of window and door openings. No waste has been included in the following figures unless otherwise noted. For waste, add 10% to total area.

Stucco Thickness	Cubic Yards Per CSY	
	On Masonry	On Netting
1/2"	1.50	1.75
5/8"	1.90	2.20
3/4"	2.20	2.60
1"	2.90	3.40

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Plaster and stucco

Remove both plaster or stucco and lath or netting to studs or sheathing

Lath (wood or metal) and plaster, walls and ceilings

2 coats	Demo	SY	Lg	LB	.123	130.00	---	4.10	---	4.10	5.74
	Demo	SY	Sm	LB	.176	91.00	---	5.86	---	5.86	8.21
3 coats	Demo	SY	Lg	LB	.133	120.00	---	4.43	---	4.43	6.20
	Demo	SY	Sm	LB	.190	84.00	---	6.33	---	6.33	8.86

Lath (only), nails included

Gypsum lath, 16" x 48", applied with nails to ceilings or walls, 5% waste included, nails included (.067 lbs per CY)

3/8" thick	Inst	SY	Lg	LR	.100	80.00	4.91	3.97	---	8.88	11.30
	Inst	SY	Sm	LR	.143	56.00	5.30	5.68	---	10.98	14.20
1/2" thick	Inst	SY	Lg	LR	.100	80.00	5.64	3.97	---	9.61	12.10
	Inst	SY	Sm	LR	.143	56.00	6.10	5.68	---	11.78	15.10
5/8" thick	Inst	SY	Lg	LR	.100	80.00	6.66	3.97	---	10.63	13.30
	Inst	SY	Sm	LR	.143	56.00	7.19	5.68	---	12.87	16.30
5/8" thick, insulating, aluminum foil back											
	Inst	SY	Lg	LR	.100	80.00	7.41	3.97	---	11.38	14.20
	Inst	SY	Sm	LR	.143	56.00	8.00	5.68	---	13.68	17.30

For installation with staples,

DEDUCT	Inst	SY	Lg	LR	-.025	-325.0	---	.99	---	.99	---
	Inst	SY	Sm	LR	-.035	-227.5	---	1.39	---	1.39	---

Metal lath, nailed to ceilings or walls, 5% waste and nails (0.067 lbs per SY) included

Diamond lath (junior mesh), 27" x 96" sheets, nailed to wood members @ 16" oc

3.4 lb black painted	Inst	SY	Lg	LR	.067	120.0	4.31	2.66	---	6.97	8.74
	Inst	SY	Sm	LR	.095	84.00	4.66	3.77	---	8.43	10.70
3.4 lb galvanized	Inst	SY	Lg	LR	.067	120.0	4.87	2.66	---	7.53	9.38
	Inst	SY	Sm	LR	.095	84.00	5.25	3.77	---	9.02	11.40

Riblath, 3/8" high rib, 27" x 96" sheets, nailed to wood members @ 24" oc

3.4 lb painted	Inst	SY	Lg	LR	.050	160.00	5.06	1.99	---	7.05	8.64
	Inst	SY	Sm	LR	.071	112.00	5.46	2.82	---	8.28	10.30
3.4 lb galvanized	Inst	SY	Lg	LR	.050	160.00	5.61	1.99	---	7.60	9.27
	Inst	SY	Sm	LR	.071	112.00	6.06	2.82	---	8.88	11.00

Wood lath, nailed to ceilings or walls, 5% waste and nails included, redwood,

"A" grade and better

3/8" x 1-1/2" x 48" @ 3/8" spacing											
	Inst	SY	Lg	LR	.100	80.00	9.27	3.97	---	13.24	16.30
	Inst	SY	Sm	LR	.143	56.00	10.00	5.68	---	15.68	19.60

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Labor adjustments, lath

For gypsum or wood lath above second floor

ADD	Inst	SY	Lg	LR	.007	1140	---	.28	---	.28	.39
	Inst	SY	Sm	LR	.010	798.0	---	.40	---	.40	.56

For metal lath above second floor

ADD	Inst	SY	Lg	LR	.017	475.0	---	.68	---	.68	.96
	Inst	SY	Sm	LR	.024	332.5	---	.95	---	.95	1.35

Plaster (only), applied to ceilings and walls, 10% waste included*Material price includes gypsum plaster, sand, hydrated lime and gauging plaster***Two coats gypsum plaster**

On gypsum lath	Inst	SY	Lg	PD	.209	115.0	6.84	8.00	.78	15.62	20.00
	Inst	SY	Sm	PD	.298	80.50	7.38	11.40	1.12	19.90	25.80
On unit masonry, no lath	Inst	SY	Lg	PD	.214	112.0	7.40	8.19	.80	16.39	20.90
	Inst	SY	Sm	PD	.306	78.40	7.99	11.70	1.15	20.84	27.00

Three coats gypsum plaster

On gypsum lath	Inst	SY	Lg	PD	.289	83.00	7.33	11.10	1.09	19.52	25.20
	Inst	SY	Sm	PD	.413	58.10	7.91	15.80	1.55	25.26	33.10
On unit masonry, no lath	Inst	SY	Lg	PD	.289	83.00	7.97	11.10	1.09	20.16	26.00
	Inst	SY	Sm	PD	.413	58.10	8.59	15.80	1.55	25.94	33.90
On wire lath	Inst	SY	Lg	PD	.300	80.00	11.50	11.50	1.13	24.13	30.70
	Inst	SY	Sm	PD	.429	56.00	12.50	16.40	1.61	30.51	39.20
On wood lath	Inst	SY	Lg	PD	.300	80.00	7.80	11.50	1.13	20.43	26.40
	Inst	SY	Sm	PD	.429	56.00	8.42	16.40	1.61	26.43	34.60

Labor adjustments, plaster

For plaster above second floor

ADD	Inst	SY	Lg	PD	.063	384.0	---	2.41	---	2.41	3.42
	Inst	SY	Sm	PD	.089	268.8	---	3.41	---	3.41	4.84

Thin coat plaster over sheetrock (in lieu of taping)

	Inst	SY	Lg	PD	.192	125.0	2.17	7.35	---	9.52	12.90
	Inst	SY	Sm	PD	.274	87.50	2.34	10.50	---	12.84	17.60

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Stucco, exterior walls

Netting only, galvanized, 1" x 18 ga x 48", with 18 ga wire and 15 lb felt

	Inst	SY	Lg	LR	.133	60.00	5.30	5.28	---	10.58	13.60
	Inst	SY	Sm	LR	.190	42.00	5.72	7.55	---	13.27	17.30

Steel-Tex only, 49" W x 11-1/2' L rolls, with felt backing

	Inst	SY	Lg	LR	.100	80.00	4.72	3.97	---	8.69	11.10
	Inst	SY	Sm	LR	.143	56.00	5.07	5.68	---	10.75	13.90

1 coat work with float finish

Over masonry

	Inst	SY	Lg	PD	.209	115.00	1.26	8.00	.78	10.04	13.60
	Inst	SY	Sm	PD	.298	80.50	1.36	11.40	1.12	13.88	18.90

2 coat work with float finish

Over masonry

	Inst	SY	Lg	PD	.400	60.00	3.61	15.30	1.50	20.41	27.40
	Inst	SY	Sm	PD	.571	42.00	3.90	21.90	2.15	27.95	37.70

With metal netting

	Inst	SY	Lg	PE	.471	85.00	5.06	17.80	1.06	23.92	32.10
	Inst	SY	Sm	PE	.672	59.50	5.46	25.30	1.51	32.27	43.80

3 coat system with float finish

With metal netting

	Inst	SY	Lg	PE	.615	65.00	6.85	23.20	1.39	31.44	42.20
	Inst	SY	Sm	PE	.879	45.50	7.39	33.10	1.98	42.47	57.50

Plumbing. See individual items

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Range hoods

Metal finishes

Labor includes wiring and connection by electrician and installation by carpenter in stud-exposed structure only

Economy model, UL approved; mitered, welded construction; completely assembled and wired; includes fan, motor, washable aluminum filter, and light

24" wide

3-1/4" x 10" duct, 160 CFM	Inst	Ea	Lg	ED	4.00	4.00	83.30	172.00	---	255.30	345.00
	Inst	Ea	Sm	ED	5.71	2.80	91.80	245.00	---	336.80	461.00
Non-ducted, 160 CFM	Inst	Ea	Lg	ED	4.00	4.00	91.60	172.00	---	263.60	355.00
	Inst	Ea	Sm	ED	5.71	2.80	101.00	245.00	---	346.00	472.00

30" wide

7" round duct, 240 CFM	Inst	Ea	Lg	ED	4.00	4.00	95.80	172.00	---	267.80	359.00
	Inst	Ea	Sm	ED	5.71	2.80	106.00	245.00	---	351.00	477.00
3-1/4" x 10" duct, 160 CFM	Inst	Ea	Lg	ED	4.00	4.00	100.00	172.00	---	272.00	364.00
	Inst	Ea	Sm	ED	5.71	2.80	110.00	245.00	---	355.00	482.00
Non-ducted, 160 CFM	Inst	Ea	Lg	ED	4.00	4.00	111.00	172.00	---	283.00	377.00
	Inst	Ea	Sm	ED	5.71	2.80	122.00	245.00	---	367.00	496.00

36" wide

7" round duct, 240 CFM	Inst	Ea	Lg	ED	4.00	4.00	125.00	172.00	---	297.00	393.00
	Inst	Ea	Sm	ED	5.71	2.80	138.00	245.00	---	383.00	514.00
3-1/4" x 10" duct, 160 CFM	Inst	Ea	Lg	ED	4.00	4.00	131.00	172.00	---	303.00	400.00
	Inst	Ea	Sm	ED	5.71	2.80	145.00	245.00	---	390.00	522.00
Non-ducted, 160 CFM	Inst	Ea	Lg	ED	4.00	4.00	150.00	172.00	---	322.00	422.00
	Inst	Ea	Sm	ED	5.71	2.80	165.00	245.00	---	410.00	546.00

Standard model, UL approved; deluxe mitered wrap-around styling; solid state fan control, infinite speed settings; removable filter; built-in damper and dual light assembly

30" wide x 9" deep

3-1/4" x 10" duct	Inst	Ea	Lg	ED	4.00	4.00	127.00	172.00	---	299.00	396.00
	Inst	Ea	Sm	ED	5.71	2.80	140.00	245.00	---	385.00	517.00
Non-ducted	Inst	Ea	Lg	ED	4.00	4.00	146.00	172.00	---	318.00	418.00
	Inst	Ea	Sm	ED	5.71	2.80	161.00	245.00	---	406.00	541.00

36" wide x 9" deep

3-1/4" x 10" duct	Inst	Ea	Lg	ED	4.00	4.00	169.00	172.00	---	341.00	444.00
	Inst	Ea	Sm	ED	5.71	2.80	187.00	245.00	---	432.00	571.00
Non-ducted	Inst	Ea	Lg	ED	4.00	4.00	181.00	172.00	---	353.00	457.00
	Inst	Ea	Sm	ED	5.71	2.80	199.00	245.00	---	444.00	585.00

42" wide x 9" deep

3-1/4" x 10" duct	Inst	Ea	Lg	ED	5.33	3.00	228.00	229.00	---	457.00	594.00
	Inst	Ea	Sm	ED	7.62	2.10	251.00	327.00	---	578.00	764.00
Non-ducted	Inst	Ea	Lg	ED	5.33	3.00	251.00	229.00	---	480.00	621.00
	Inst	Ea	Sm	ED	7.62	2.10	277.00	327.00	---	604.00	793.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

**Decorator/designer model; solid state fan control, infinite speed settings;
easy clean aluminum mesh grease filters; enclosed light assembly and switches**

Single faced hood - fan exhausts horizontally or vertically, 24" D canopy x 21" front to back

30" wide	Inst	Ea	Lg	ED	5.33	3.00	205.00	229.00	---	434.00	568.00
	Inst	Ea	Sm	ED	7.62	2.10	226.00	327.00	---	553.00	735.00
36" wide	Inst	Ea	Lg	ED	5.33	3.00	225.00	229.00	---	454.00	591.00
	Inst	Ea	Sm	ED	7.62	2.10	248.00	327.00	---	575.00	760.00

Single faced, contemporary style, duct horizontally or vertically, 9" D canopy

30" wide

With 330 cfm power unit	Inst	Ea	Lg	ED	5.33	3.00	301.00	229.00	---	530.00	679.00
	Inst	Ea	Sm	ED	7.62	2.10	332.00	327.00	---	659.00	857.00
With 410 cfm power unit	Inst	Ea	Lg	ED	5.33	3.00	322.00	229.00	---	551.00	702.00
	Inst	Ea	Sm	ED	7.62	2.10	355.00	327.00	---	682.00	883.00

36" wide

With 330 cfm power unit	Inst	Ea	Lg	ED	5.33	3.00	315.00	229.00	---	544.00	694.00
	Inst	Ea	Sm	ED	7.62	2.10	347.00	327.00	---	674.00	873.00
With 410 cfm power unit	Inst	Ea	Lg	ED	5.33	3.00	346.00	229.00	---	575.00	730.00
	Inst	Ea	Sm	ED	7.62	2.10	381.00	327.00	---	708.00	913.00

Material adjustments

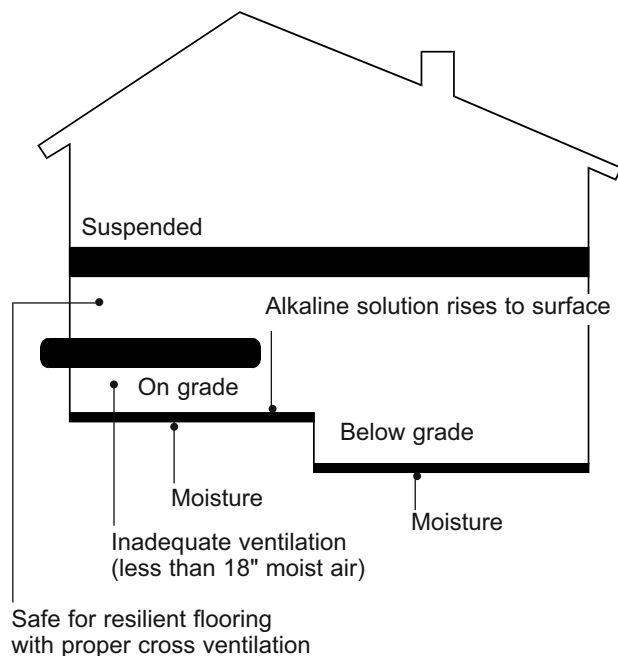
Stainless steel, ADD	Inst		Lg	---	---	---	50.0	---	---	---	---
	Inst		Sm	---	---	---	50.0	---	---	---	---

Reinforcing steel. See Concrete, page 91

Resilient flooring

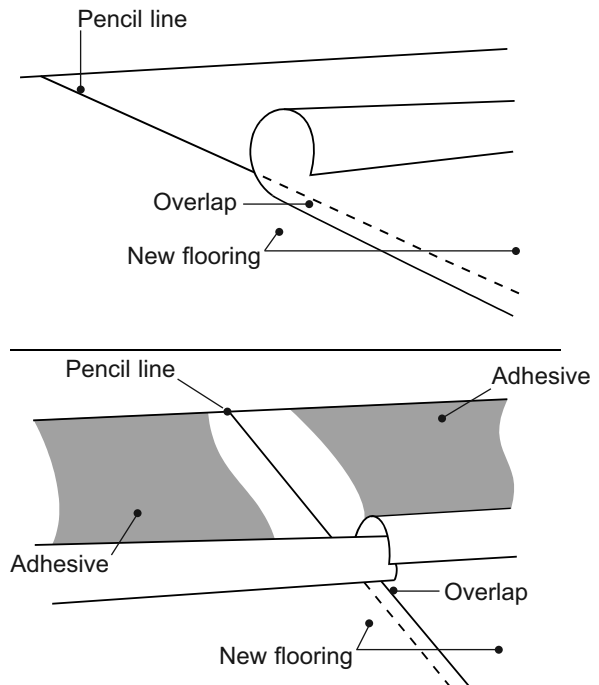
Sheet Products

Linoleum or vinyl sheet are normally installed either over a wood subfloor or a smooth concrete subfloor. When laid over wood, a layer of felt must first be laid in paste. This keeps irregularities in the wood from showing through. The amount of paste required to bond both felt and sheet is approximately 16 gallons (5% waste included) per 100 SY. When laid over smooth concrete subfloor, the sheet products can be bonded directly to the floor. However, the concrete subfloor should not be in direct contact with the ground because of excessive moisture. For bonding to concrete, 8 gallons of paste is required (5% waste included) per 100 SY. After laying the flooring over concrete or wood, wax is applied using 0.5 gallon per 100 SY. Paste, wax, felt (as needed), and 10% sheet waste are included in material costs.



Tile Products

All resilient tile can be bonded the same way as sheet products, either to smooth concrete or to felt over wood subfloor. When bonded to smooth concrete, a concrete primer (0.5 gal/100 SF) is first applied to seal the concrete. The tiles are then bonded to the sealed floor with resilient tile cement (0.6 gal/100 SF). On wood subfloors, felt is first laid in paste (0.9 gal/100 SF) and then the tiles are bonded to the felt with resilient tile emulsion (0.7 gal/100 SF). Bonding materials, felt (as needed), and 10% tile waste are included in material costs.



Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Resilient flooring

Adhesive set tile products

	Demo	SF	Lg	LB	.013	1200.00	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.018	900.00	---	.60	---	.60	.84

Adhesive set sheet products

	Demo	SF	Lg	LB	.011	1440.00	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.015	1080.00	---	.50	---	.50	.70

Additional layer of flooring, ADD

	Demo	SF	Lg	LB	.007	2400.00	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.009	1800.00	---	.30	---	.30	.42

Floor prep for resilient flooring

Average prep	Inst	SF	Lg	FB	.011	1600.00	.10	.41	---	.51	.69
	Inst	SF	Sm	FB	.015	1200.00	.11	.56	---	.67	.91
Heavy prep	Inst	SF	Lg	FB	.014	1300.00	.20	.52	---	.72	.96
	Inst	SF	Sm	FB	.018	975.00	.22	.67	---	.89	1.20

Install over smooth concrete subfloor

Tile

Vinyl tile, 12" x 12"

Standard, 0.045" T	Inst	SF	Lg	FB	.030	600.00	1.22	1.12	---	2.34	2.97
	Inst	SF	Sm	FB	.040	450.00	1.34	1.50	---	2.84	3.64
Average, 0.065" T	Inst	SF	Lg	FB	.030	600.00	2.22	1.12	---	3.34	4.12
	Inst	SF	Sm	FB	.040	450.00	2.45	1.50	---	3.95	4.91
High, 0.080" T	Inst	SF	Lg	FB	.030	600.00	4.44	1.12	---	5.56	6.68
	Inst	SF	Sm	FB	.040	450.00	4.89	1.50	---	6.39	7.72
Premium, 0.094" T	Inst	SF	Lg	FB	.030	600.00	6.30	1.12	---	7.42	8.82
	Inst	SF	Sm	FB	.040	450.00	6.94	1.50	---	8.44	10.10

Vinyl tile, 12" x 12", self-adhesive

Standard, 0.045" T	Inst	SF	Lg	FB	.026	700.00	.78	.97	---	1.75	2.26
	Inst	SF	Sm	FB	.034	525.00	.86	1.27	---	2.13	2.77
Average, 0.065" T	Inst	SF	Lg	FB	.026	700.00	1.06	.97	---	2.03	2.58
	Inst	SF	Sm	FB	.034	525.00	1.17	1.27	---	2.44	3.13
High, 0.080" T	Inst	SF	Lg	FB	.026	700.00	1.88	.97	---	2.85	3.52
	Inst	SF	Sm	FB	.034	525.00	2.07	1.27	---	3.34	4.16
Premium, 0.094" T	Inst	SF	Lg	FB	.026	700.00	3.29	.97	---	4.26	5.14
	Inst	SF	Sm	FB	.034	525.00	3.63	1.27	---	4.90	5.95

Vinyl composition tile (VCT), 12" x 12" x 1/8"

Average	Inst	SF	Lg	FB	.023	800.00	.95	.86	---	1.81	2.30
	Inst	SF	Sm	FB	.030	600.00	1.05	1.12	---	2.17	2.78
High	Inst	SF	Lg	FB	.023	800.00	1.23	.86	---	2.09	2.62
	Inst	SF	Sm	FB	.030	600.00	1.36	1.12	---	2.48	3.13
Premium	Inst	SF	Lg	FB	.023	800.00	1.79	.86	---	2.65	3.26
	Inst	SF	Sm	FB	.030	600.00	1.98	1.12	---	3.10	3.85

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Sheet vinyl, 15% cutting waste included

Economy, approx. 1.3mm T	Inst	SF	Lg	FB	.036	500.00	1.00	1.35	---	2.35	3.03
	Inst	SF	Sm	FB	.048	375.00	1.10	1.79	---	2.89	3.78
Standard, approx. 2.0mm T	Inst	SF	Lg	FB	.036	500.00	1.43	1.35	---	2.78	3.53
	Inst	SF	Sm	FB	.048	375.00	1.58	1.79	---	3.37	4.33
Average, approx 2.0mm T	Inst	SF	Lg	FB	.036	500.00	2.03	1.35	---	3.38	4.22
	Inst	SF	Sm	FB	.048	375.00	2.24	1.79	---	4.03	5.09
High, approx. 2.5mm T	Inst	SF	Lg	FB	.036	500.00	3.59	1.35	---	4.94	6.01
	Inst	SF	Sm	FB	.048	375.00	3.95	1.79	---	5.74	7.06
Premium, approx. 2.5mm T	Inst	SF	Lg	FB	.036	500.00	4.79	1.35	---	6.14	7.39
	Inst	SY	Sm	FB	.048	375.00	5.28	1.79	---	7.07	8.58

Plank, 4"W x 36"L to 48"L, self-adhesive

Standard, approx. 4.0mm T	Inst	SF	Lg	FB	.082	220.00	2.22	3.07	---	5.29	6.85
	Inst	SF	Sm	FB	.109	165.00	2.45	4.08	---	6.53	8.52
Average, approx 4.0mm T	Inst	SF	Lg	FB	.082	220.00	3.52	3.07	---	6.59	8.34
	Inst	SF	Sm	FB	.109	165.00	3.88	4.08	---	7.96	10.20
High, approx. 5.0mm T	Inst	SF	Lg	FB	.082	220.00	4.66	3.07	---	7.73	9.65
	Inst	SF	Sm	FB	.109	165.00	5.14	4.08	---	9.22	11.60
Premium, approx. 5.0mm T	Inst	SF	Lg	FB	.082	220.00	6.53	3.07	---	9.60	11.80
	Inst	SY	Sm	FB	.109	165.00	7.19	4.08	---	11.27	14.00

Install over wood subfloor**Tile****Vinyl tile, 12" x 12"**

Standard, 0.045" T	Inst	SF	Lg	FB	.035	510.00	1.22	1.31	---	2.53	3.24
	Inst	SF	Sm	FB	.047	382.50	1.34	1.76	---	3.10	4.00
Average, 0.065" T	Inst	SF	Lg	FB	.035	510.00	2.22	1.31	---	3.53	4.39
	Inst	SF	Sm	FB	.047	382.50	2.45	1.76	---	4.21	5.28
High, 0.080" T	Inst	SF	Lg	FB	.035	510.00	4.44	1.31	---	5.75	6.94
	Inst	SF	Sm	FB	.047	382.50	4.89	1.76	---	6.65	8.08
Premium, 0.094" T	Inst	SF	Lg	FB	.035	510.00	6.30	1.31	---	7.61	9.08
	Inst	SF	Sm	FB	.047	382.50	6.94	1.76	---	8.70	10.40

Vinyl tile, 12" x 12", self-adhesive

Standard, 0.045" T	Inst	SF	Lg	FB	.030	595.00	.78	1.12	---	1.90	2.47
	Inst	SF	Sm	FB	.040	446.25	.86	1.50	---	2.36	3.08
Average, 0.065" T	Inst	SF	Lg	FB	.030	595.00	1.06	1.12	---	2.18	2.79
	Inst	SF	Sm	FB	.040	446.25	1.17	1.50	---	2.67	3.44
High, 0.080" T	Inst	SF	Lg	FB	.030	595.00	1.88	1.12	---	3.00	3.73
	Inst	SF	Sm	FB	.040	446.25	2.07	1.50	---	3.57	4.47
Premium, 0.094" T	Inst	SF	Lg	FB	.030	595.00	3.29	1.12	---	4.41	5.35
	Inst	SF	Sm	FB	.040	446.25	3.63	1.50	---	5.13	6.27

Vinyl composition tile (VCT), 12" x 12" x 1/8"

Average	Inst	SF	Lg	FB	.026	680.00	.95	.97	---	1.92	2.45
	Inst	SF	Sm	FB	.035	510.00	1.05	1.31	---	2.36	3.04
High	Inst	SF	Lg	FB	.026	680.00	1.23	.97	---	2.20	2.78
	Inst	SF	Sm	FB	.035	510.00	1.36	1.31	---	2.67	3.40
Premium	Inst	SF	Lg	FB	.026	680.00	1.79	.97	---	2.76	3.42
	Inst	SF	Sm	FB	.035	510.00	1.98	1.31	---	3.29	4.11

Description	Oper	Unit	Vol	Crew Size	Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Sheet vinyl, 15% cutting waste included

Economy, aprox. 1.3mm T	Inst	SF	Lg	FB	.042	425.00	1.00	1.57	---	2.57	3.35
	Inst	SF	Sm	FB	.056	318.75	1.10	2.09	---	3.19	4.20
Standard, approx. 2.0mm T	Inst	SF	Lg	FB	.042	425.00	1.43	1.57	---	3.00	3.84
	Inst	SF	Sm	FB	.056	318.75	1.58	2.09	---	3.67	4.75
Average, approx 2.0mm T	Inst	SF	Lg	FB	.042	425.00	2.03	1.57	---	3.60	4.53
	Inst	SF	Sm	FB	.056	318.75	2.24	2.09	---	4.33	5.51
High, approx. 2.5mm T	Inst	SF	Lg	FB	.042	425.00	3.59	1.57	---	5.16	6.33
	Inst	SF	Sm	FB	.056	318.75	3.95	2.09	---	6.04	7.47
Premium, approx. 2.5mm T	Inst	SF	Lg	FB	.042	425.00	4.79	1.57	---	6.36	7.71
	Inst	SY	Sm	FB	.056	318.75	5.28	2.09	---	7.37	9.00

Linoleum cove, 7/16" x 1-1/4"

Softwood	Inst	LF	Lg	FB	.030	600.00	.74	1.12	---	1.86	2.42
	Inst	LF	Sm	FB	.040	450.00	.81	1.50	---	2.31	3.03

Vinyl cove

4" wrap	Inst	LF	Lg	FB	.180	100.00	1.98	6.73	---	8.71	11.70
	Inst	LF	Sm	FB	.240	75.00	2.18	8.97	---	11.15	15.10
6" wrap	Inst	LF	Lg	FB	.189	95.00	2.64	7.07	---	9.71	12.90
	Inst	LF	Sm	FB	.253	71.25	2.91	9.46	---	12.37	16.60
8" wrap	Inst	LF	Lg	FB	.212	85.00	3.29	7.93	---	11.22	14.90
	Inst	LF	Sm	FB	.282	63.75	3.63	10.50	---	14.13	18.90

Plank, 4"W x 36"L to 48"L, self-adhesive

Standard, approx. 4.0mm T	Inst	SF	Lg	FB	.096	187.00	2.22	3.59	---	5.81	7.58
	Inst	SF	Sm	FB	.128	140.25	2.45	4.79	---	7.24	9.52
Average, approx 4.0mm T	Inst	SF	Lg	FB	.096	187.00	3.52	3.59	---	7.11	9.07
	Inst	SF	Sm	FB	.128	140.25	3.88	4.79	---	8.67	11.20
High, approx. 5.0mm T	Inst	SF	Lg	FB	.096	187.00	4.66	3.59	---	8.25	10.40
	Inst	SF	Sm	FB	.128	140.25	5.14	4.79	---	9.93	12.60
Premium, approx. 5.0mm T	Inst	SF	Lg	FB	.096	187.00	6.53	3.59	---	10.12	12.50
	Inst	SY	Sm	FB	.128	140.25	7.19	4.79	---	11.98	15.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Related materials and operations

Underlayment

See also Framing, sheathing, subfloor, underlayment, page 210

Hardboard, 1/4"T	Inst	SF	Lg	FB	.016	1127.00	1.14	.60	---	1.74	2.15
	Inst	SF	Sm	FB	.021	845.25	1.25	.79	---	2.04	2.54
OSB, 1/2"T	Inst	SF	Lg	FB	.016	1127.00	.56	.60	---	1.16	1.48
	Inst	SF	Sm	FB	.021	845.25	.62	.79	---	1.41	1.81
Particleboard											
3/8"T	Inst	SF	Lg	FB	.016	1127.00	.74	.60	---	1.34	1.69
	Inst	SF	Sm	FB	.021	845.25	.81	.79	---	1.60	2.03
1/2"T	Inst	SF	Lg	FB	.016	1127.00	.92	.60	---	1.52	1.90
	Inst	SF	Sm	FB	.021	845.25	1.02	.79	---	1.81	2.27
Plywood											
1/4"T Hardwood	Inst	SF	Lg	FB	.016	1127.00	.70	.60	---	1.30	1.64
	Inst	SF	Sm	FB	.021	845.25	.77	.79	---	1.56	1.98
1/4"T BC	Inst	SF	Lg	FB	.016	1127.00	1.18	.60	---	1.78	2.19
	Inst	SF	Sm	FB	.021	845.25	1.30	.79	---	2.09	2.59
1/4"T 5-ply	Inst	SF	Lg	FB	.016	1127.00	1.65	.60	---	2.25	2.74
	Inst	SF	Sm	FB	.021	845.25	1.81	.79	---	2.60	3.18
3/8"T BC	Inst	SF	Lg	FB	.016	1127.00	1.33	.60	---	1.93	2.37
	Inst	SF	Sm	FB	.021	845.25	1.47	.79	---	2.26	2.79
1/2"T BC	Inst	SF	Lg	FB	.016	1127.00	1.68	.60	---	2.28	2.77
	Inst	SF	Sm	FB	.021	845.25	1.85	.79	---	2.64	3.23

Cove / Top-Set base

2-1/2" H

Colors	Inst	LF	Lg	FB	.023	800.00	1.12	.86	---	1.98	2.49
	Inst	LF	Sm	FB	.030	600.00	1.23	1.12	---	2.35	2.99
Wood grain	Inst	LF	Lg	FB	.023	800.00	1.49	.86	---	2.35	2.92
	Inst	LF	Sm	FB	.030	600.00	1.64	1.12	---	2.76	3.46

4" H

Colors	Inst	LF	Lg	FB	.023	800.00	1.27	.86	---	2.13	2.66
	Inst	LF	Sm	FB	.030	600.00	1.40	1.12	---	2.52	3.18
Wood grain	Inst	LF	Lg	FB	.023	800.00	1.70	.86	---	2.56	3.16
	Inst	LF	Sm	FB	.030	600.00	1.87	1.12	---	2.99	3.72

6" H

Colors	Inst	LF	Lg	FB	.023	800.00	1.99	.86	---	2.85	3.49
	Inst	LF	Sm	FB	.030	600.00	2.19	1.12	---	3.31	4.09
Wood grain	Inst	LF	Lg	FB	.023	800.00	2.65	.86	---	3.51	4.25
	Inst	LF	Sm	FB	.030	600.00	2.92	1.12	---	4.04	4.93

Metal transition strip

	Inst	LF	Lg	FB	.036	500.00	1.46	1.35	---	2.81	3.56
	Inst	LF	Sm	FB	.048	375.00	1.61	1.79	---	3.40	4.36

Retaining walls, see Concrete, page 92, or Masonry, page 279

Roofing

Fiberglass Shingles, 225 lb., three tab strip. Three bundle/square; 20 year

1. **Dimensions.** Each shingle is 12" x 36". With a 5" exposure to the weather, 80 shingles are required to cover one square (100 SF).
2. **Installation**
 - a. Over wood. After scatter-nailing one ply of 15 lb. felt, the shingles are installed. Four nails per shingle is customary.
 - b. Over existing roofing. 15 lb. felt is not required. Shingles are installed the same as over wood, except longer nails are used, i.e., 1 1/4" in lieu of 1".
3. **Estimating Technique.** Determine roof area and add a percentage for starters, ridge, and valleys. The percent to be added varies, but generally:
 - a. For plain gable and hip – add 10%.
 - b. For gable or hip with dormers or intersecting roof(s) – add 15%.
 - c. For gable or hip with dormers and intersecting roof(s) – add 20%.

When ridge or hip shingles are special ordered, reduce the above percentages by approximately 50%. Then apply unit costs to the area calculated (including the allowance above).

Mineral Surfaced Roll Roofing, 90 lb.

1. **Dimensions.** A roll is 36" wide x 36'-0" long, or 108 SF. It covers one square (100 SF), after including 8 SF for head and end laps.
2. **Installation.** Usually, lap cement and 7/8" galvanized nails are furnished with each roll.
 - a. Over wood. Roll roofing is usually applied directly to sheathing with 7/8" galvanized nails. End and head laps are normally 6" and 2" or 3" respectively.
 - b. Over existing roofing. Applied the same as over wood, except nails are not less than 1 1/4" long.
 - c. Roll roofing may be installed by the exposed nail or the concealed nail method. In the exposed nail method, nails are visible at laps, and head laps are usually 2". In the concealed nail method, no nails are visible, the head lap is a minimum of 3", and there is a 9"-wide strip of roll installed along rakes and eaves.
3. **Estimating Technique.** Determine the area and add a percentage for hip and/or ridge. The percentage to be added varies, but generally:
 - a. For plain gable or hip — add 5%.

- b. For cut-up roof – add 10%.

If metal ridge and/or hip are used, reduce the above percentages by approximately 50%. Then apply unit costs to the area calculated (including the allowance above).

Wood Shingles

1. **Dimensions.** Shingles are available in 16", 18", and 24" lengths and in uniform widths of 4", 5", or 6". But they are commonly furnished in random widths averaging 4" wide.
2. **Installation.** The normal exposure to weather for 16", 18" and 24" shingles on roofs with 1/4 or steeper pitch is 5", 5 1/2", and 7 1/2" respectively. Where the slope is less than 1/4, the exposure is usually reduced. Generally, 3d commons are used when shingles are applied to strip sheathing. 5d commons are used when shingles are applied over existing shingles. Two nails per shingle is the general rule, but on some roofs, one nail per shingle is used.
3. **Estimating Technique.** Determine the roof area and add a percentage for waste, starters, ridge, and hip shingles.
 - a. Wood shingles. The amount of exposure determines the percentage of 1 square of shingles required to cover 100 SF of roof. Multiply the material cost per square of shingles by the appropriate percent (from the table on the next page) to determine the cost to cover 100 SF of roof with wood shingles. The table does not include cutting waste. NOTE: Nails and the exposure factors in this table have already been calculated into the Average Unit Material Costs.
 - b. Nails. The weight of nails required per square varies with the size of the nail and with the shingle exposure. Multiply cost per pound of nails by the appropriate pounds per square. In the table on the next page, pounds of nails per square are based on two nails per shingle. For one nail per shingle, deduct 50%.
 - c. The percentage to be added for starters, hip, and ridge shingles varies, but generally:
 - 1) Plain gable and hip — add 10%.
 - 2) Gable or hip with dormers or intersecting roof(s) — add 15%.
 - 3) Gable or hip with dormers and intersecting roof(s) — add 20%.

When ridge and/or hip shingles are special ordered, reduce these percentages by 50%. Then

Shingle Length	Exposure	% of Sq. Required to Cover 100 SF	Lbs of Nails per Square (2 Nails/Shingle)	
			3d	5d
24"	7½"	100	2.3	2.7
24"	7"	107	2.4	2.9
24"	6½"	115	2.6	3.2
24"	6"	125	2.8	3.4
24"	5¾"	130	2.9	3.6
18"	5½"	100	3.1	3.7
18"	5"	110	3.4	4.1
18"	4½"	122	3.8	4.6
16"	5"	100	3.4	4.1
16"	4½"	111	3.8	4.6
16"	4"	125	4.2	5.1
16"	3¾"	133	4.5	5.5

apply unit costs to the area calculated (including the allowance above).

Built-Up Roofing

1. Dimensions

- 15 lb. felt. Rolls are 36" wide x 144'-0" long or 432 SF – 4 squares per roll. 32 SF (or 8 SF/sq) is for laps.
- 30 lb. felt. Rolls are 36" wide x 72'-0" long or 216 SF – 2 squares per roll. 16 SF (or 8 SF/sq) is for laps.
- Asphalt. Available in 100 lb. cartons. Average asphalt usage is:
 - Top coat without gravel – 35 lbs. per square.
 - Top coat with gravel – 60 lbs. per square.
 - Each coat (except top coat) – 25 lbs. per square.
- Tar. Available in 550 lb. kegs. Average tar usage is:
 - Top coat without gravel – 40 lbs. per square.
 - Top coat without gravel – 75 lbs. per square.

3) Each coat (except top coat) – 30 lbs. per square.

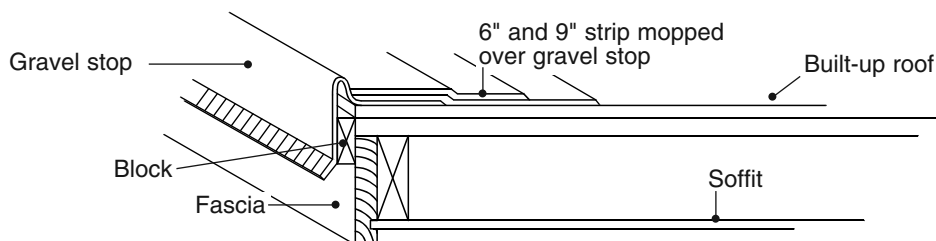
- Gravel or slag. Normally, 400 lbs. of gravel or 275 lbs. of slag are used to cover one square.

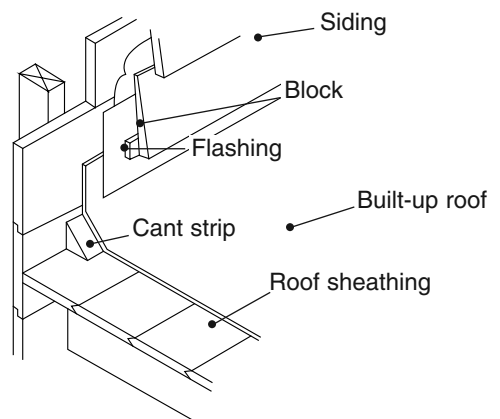
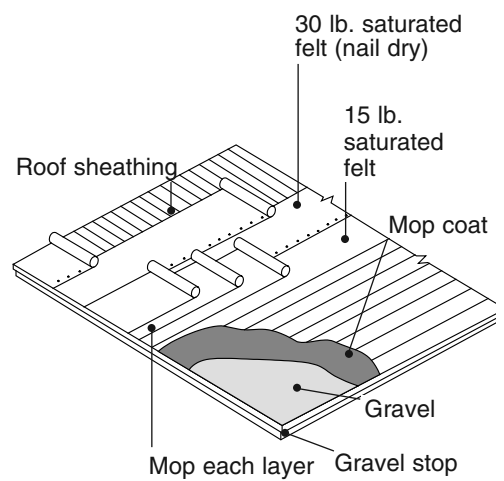
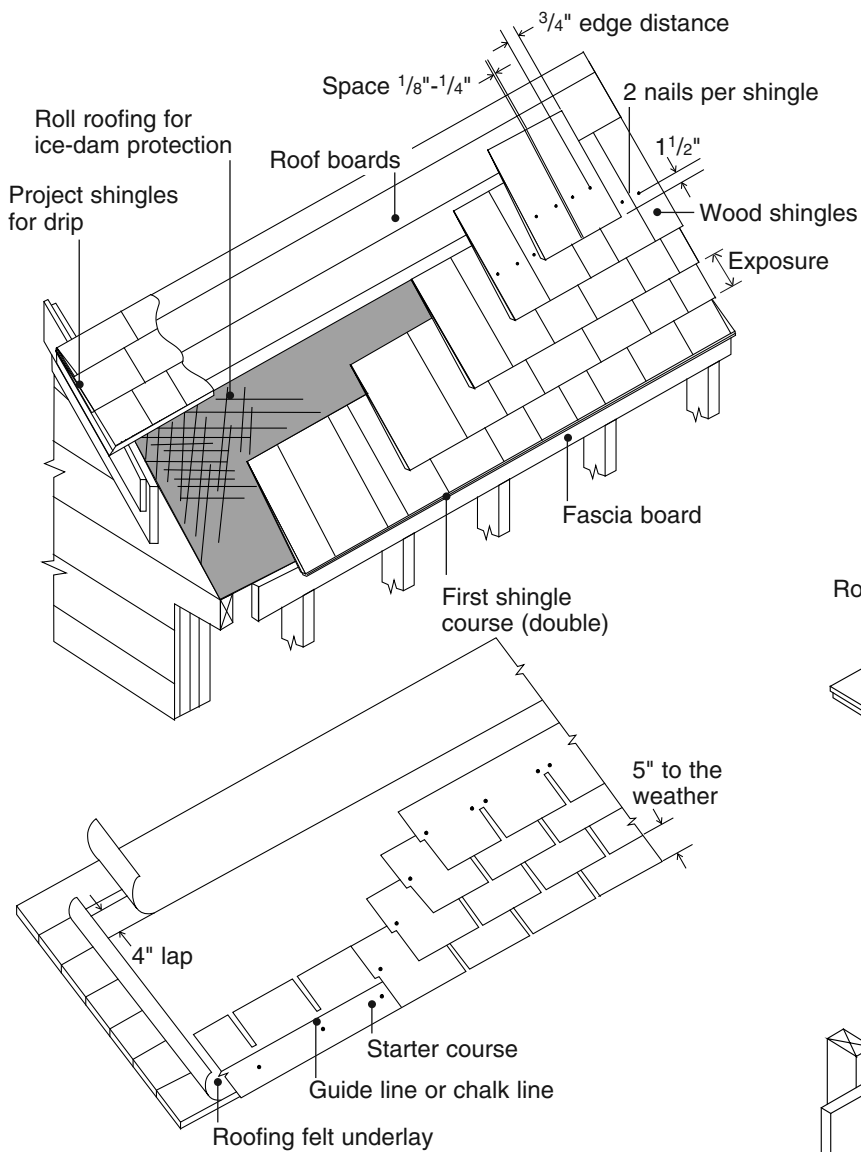
2. Installation

- Over wood. Normally, one or two plies of felt are applied by scatter nailing before hot mopping is commenced. Subsequent plies of felt and gravel or slag are imbedded in hot asphalt or tar.
- Over concrete. Every ply of felt and gravel or slag is imbedded in hot asphalt or tar.

3. Estimating Technique

- For buildings with parapet walls, use the outside dimensions of the building to determine the area. This area is usually sufficient to include the flashing.
- For buildings without parapet walls, determine the area.
- Don't deduct any opening less than 10'-0" x 10'-0" (100 SF). Deduct 50% of the opening for openings larger than 100 SF but smaller than 300 SF, and 100% of the openings exceeding 300 SF.





Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Roofing

Aluminum, nailed to wood

Corrugated (2-1/2"), 26" W, with 3-3/4" side lap and 6" end lap

Demo	Sq	Lg	LB	1.36	11.80	---	45.30	---	45.30	63.40
Demo	Sq	Sm	LB	1.60	10.00	---	53.30	---	53.30	74.60

Corrugated (2-1/2"), 26" W, with 3-3/4" side lap and 6" end lap

0.0175" thick

Natural	Inst	Sq	Lg	UC	1.81	17.70	164.00	72.30	---	236.30	291.00
	Inst	Sq	Sm	UC	2.13	15.00	180.00	85.00	---	265.00	328.00
Painted	Inst	Sq	Lg	UC	1.81	17.70	211.00	72.30	---	283.30	345.00
	Inst	Sq	Sm	UC	2.13	15.00	233.00	85.00	---	318.00	388.00

0.019" thick

Natural	Inst	Sq	Lg	UC	1.81	17.70	164.00	72.30	---	236.30	291.00
	Inst	Sq	Sm	UC	2.13	15.00	180.00	85.00	---	265.00	328.00
Painted	Inst	Sq	Lg	UC	1.81	17.70	211.00	72.30	---	283.30	345.00
	Inst	Sq	Sm	UC	2.13	15.00	233.00	85.00	---	318.00	388.00

Composition shingle roofing, 3 tab strip, 12" x 36", nailed, seal down

Demo Shingle, to deck

5" exposure	Demo	Sq	Lg	LB	0.85	18.88	---	28.30	---	28.30	39.60
	Demo	Sq	Sm	LB	1.00	16.00	---	33.30	---	33.30	46.60

Install 25-year shingles, 240 lb/sq

Over existing roofing

Gable, plain	Inst	Sq	Lg	RL	1.13	17.70	118.00	48.70	---	166.70	207.00
	Inst	Sq	Sm	RL	1.33	15.00	130.00	57.40	---	187.40	234.00
Gable with dormers	Inst	Sq	Lg	RL	1.26	15.93	119.00	54.30	---	173.30	217.00
	Inst	Sq	Sm	RL	1.48	13.50	131.00	63.80	---	194.80	245.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.26	15.93	120.00	54.30	---	174.30	218.00
	Inst	Sq	Sm	RL	1.48	13.50	132.00	63.80	---	195.80	246.00
Gable w/dormers & intersections	Inst	Sq	Lg	RL	1.41	14.16	121.00	60.80	---	181.80	229.00
	Inst	Sq	Sm	RL	1.67	12.00	134.00	72.00	---	206.00	260.00
Hip, plain	Inst	Sq	Lg	RL	1.18	16.91	119.00	50.90	---	169.90	212.00
	Inst	Sq	Sm	RL	1.40	14.33	131.00	60.40	---	191.40	240.00
Hip with dormers	Inst	Sq	Lg	RL	1.32	15.10	120.00	56.90	---	176.90	222.00
	Inst	Sq	Sm	RL	1.56	12.80	132.00	67.30	---	199.30	251.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.32	15.10	121.00	56.90	---	177.90	223.00
	Inst	Sq	Sm	RL	1.56	12.80	134.00	67.30	---	201.30	253.00
Hip with dormers & intersections	Inst	Sq	Lg	RL	1.50	13.33	122.00	64.70	---	186.70	236.00
	Inst	Sq	Sm	RL	1.77	11.30	135.00	76.30	---	211.30	267.00

Roofing, install 30-year laminated shingles

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P

Over wood decks, includes felt

Gable, plain	Inst	Sq	Lg	RL	1.21	16.52	124.00	52.20	---	176.20	219.00
	Inst	Sq	Sm	RL	1.43	14.00	136.00	61.70	---	197.70	248.00
Gable with dormers	Inst	Sq	Lg	RL	1.36	14.75	125.00	58.70	---	183.70	230.00
	Inst	Sq	Sm	RL	1.60	12.50	138.00	69.00	---	207.00	260.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.36	14.75	126.00	58.70	---	184.70	231.00
	Inst	Sq	Sm	RL	1.60	12.50	139.00	69.00	---	208.00	261.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.54	12.98	127.00	66.40	---	193.40	244.00
	Inst	Sq	Sm	RL	1.82	11.00	140.00	78.50	---	218.50	276.00
Hip, plain	Inst	Sq	Lg	RL	1.27	15.73	125.00	54.80	---	179.80	224.00
	Inst	Sq	Sm	RL	1.50	13.33	138.00	64.70	---	202.70	253.00
Hip with dormers	Inst	Sq	Lg	RL	1.44	13.92	126.00	62.10	---	188.10	236.00
	Inst	Sq	Sm	RL	1.69	11.80	139.00	72.90	---	211.90	267.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.44	13.92	127.00	62.10	---	189.10	237.00
	Inst	Sq	Sm	RL	1.69	11.80	140.00	72.90	---	212.90	268.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.65	12.15	128.00	71.20	---	199.20	252.00
	Inst	Sq	Sm	RL	1.94	10.30	141.00	83.70	---	224.70	285.00

Install 30-year laminated shingles

Over existing roofing

Gable, plain	Inst	Sq	Lg	RL	1.13	17.70	126.00	48.70	---	174.70	217.00
	Inst	Sq	Sm	RL	1.33	15.00	139.00	57.40	---	196.40	244.00
Gable with dormers	Inst	Sq	Lg	RL	1.26	15.93	127.00	54.30	---	181.30	226.00
	Inst	Sq	Sm	RL	1.48	13.50	140.00	63.80	---	203.80	255.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.26	15.93	128.00	54.30	---	182.30	228.00
	Inst	Sq	Sm	RL	1.48	13.50	141.00	63.80	---	204.80	257.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.41	14.16	130.00	60.80	---	190.80	238.00
	Inst	Sq	Sm	RL	1.67	12.00	143.00	72.00	---	215.00	270.00
Hip, plain	Inst	Sq	Lg	RL	1.18	16.91	127.00	50.90	---	177.90	221.00
	Inst	Sq	Sm	RL	1.40	14.33	140.00	60.40	---	200.40	250.00
Hip with dormers	Inst	Sq	Lg	RL	1.32	15.10	128.00	56.90	---	184.90	231.00
	Inst	Sq	Sm	RL	1.56	12.80	141.00	67.30	---	208.30	262.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.32	15.10	130.00	56.90	---	186.90	233.00
	Inst	Sq	Sm	RL	1.56	12.80	143.00	67.30	---	210.30	263.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.50	13.33	131.00	64.70	---	195.70	245.00
	Inst	Sq	Sm	RL	1.77	11.30	144.00	76.30	---	220.30	278.00

Over wood decks, includes felt

Gable, plain	Inst	Sq	Lg	RL	1.21	16.52	132.00	52.20	---	184.20	228.00
	Inst	Sq	Sm	RL	1.43	14.00	145.00	61.70	---	206.70	258.00
Gable with dormers	Inst	Sq	Lg	RL	1.36	14.75	133.00	58.70	---	191.70	239.00
	Inst	Sq	Sm	RL	1.60	12.50	147.00	69.00	---	216.00	270.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.36	14.75	134.00	58.70	---	192.70	241.00
	Inst	Sq	Sm	RL	1.60	12.50	148.00	69.00	---	217.00	271.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.54	12.98	135.00	66.40	---	201.40	253.00
	Inst	Sq	Sm	RL	1.82	11.00	149.00	78.50	---	227.50	287.00
Hip, plain	Inst	Sq	Lg	RL	1.27	15.73	133.00	54.80	---	187.80	233.00
	Inst	Sq	Sm	RL	1.50	13.33	147.00	64.70	---	211.70	264.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl O&P
					hours per Unit	Output per Day					
Hip with dormers	Inst	Sq	Lg	RL	1.44	13.92	134.00	62.10	---	196.10	246.00
	Inst	Sq	Sm	RL	1.69	11.80	148.00	72.90	---	220.90	277.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.44	13.92	135.00	62.10	---	197.10	247.00
	Inst	Sq	Sm	RL	1.69	11.80	149.00	72.90	---	221.90	279.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.65	12.15	136.00	71.20	---	207.20	262.00
	Inst	Sq	Sm	RL	1.94	10.30	150.00	83.70	---	233.70	296.00

Install 40-year laminated shingles

Over existing roofing

Gable, plain	Inst	Sq	Lg	RL	1.13	17.70	154.00	48.70	---	202.70	248.00
	Inst	Sq	Sm	RL	1.33	15.00	169.00	57.40	---	226.40	279.00
Gable with dormers	Inst	Sq	Lg	RL	1.26	15.93	155.00	54.30	---	209.30	258.00
	Inst	Sq	Sm	RL	1.48	13.50	171.00	63.80	---	234.80	290.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.26	15.93	157.00	54.30	---	211.30	260.00
	Inst	Sq	Sm	RL	1.48	13.50	173.00	63.80	---	236.80	292.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.41	14.16	158.00	60.80	---	218.80	271.00
	Inst	Sq	Sm	RL	1.67	12.00	174.00	72.00	---	246.00	306.00
Hip, plain	Inst	Sq	Lg	RL	1.18	16.91	155.00	50.90	---	205.90	253.00
	Inst	Sq	Sm	RL	1.40	14.33	171.00	60.40	---	231.40	285.00
Hip with dormers	Inst	Sq	Lg	RL	1.32	15.10	157.00	56.90	---	213.90	264.00
	Inst	Sq	Sm	RL	1.56	12.80	173.00	67.30	---	240.30	297.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.32	15.10	158.00	56.90	---	214.90	265.00
	Inst	Sq	Sm	RL	1.56	12.80	174.00	67.30	---	241.30	299.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.50	13.33	159.00	64.70	---	223.70	278.00
	Inst	Sq	Sm	RL	1.77	11.30	176.00	76.30	---	252.30	314.00

Over wood decks, includes felt

Gable, plain	Inst	Sq	Lg	RL	1.21	16.52	159.00	52.20	---	211.20	260.00
	Inst	Sq	Sm	RL	1.43	14.00	176.00	61.70	---	237.70	293.00
Gable with dormers	Inst	Sq	Lg	RL	1.36	14.75	161.00	58.70	---	219.70	271.00
	Inst	Sq	Sm	RL	1.60	12.50	177.00	69.00	---	246.00	305.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.36	14.75	162.00	58.70	---	220.70	273.00
	Inst	Sq	Sm	RL	1.60	12.50	179.00	69.00	---	248.00	307.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.54	12.98	164.00	66.40	---	230.40	286.00
	Inst	Sq	Sm	RL	1.82	11.00	180.00	78.50	---	258.50	323.00
Hip, plain	Inst	Sq	Lg	RL	1.27	15.73	161.00	54.80	---	215.80	266.00
	Inst	Sq	Sm	RL	1.50	13.33	177.00	64.70	---	241.70	299.00
Hip with dormers	Inst	Sq	Lg	RL	1.44	13.92	162.00	62.10	---	224.10	278.00
	Inst	Sq	Sm	RL	1.69	11.80	179.00	72.90	---	251.90	313.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.44	13.92	164.00	62.10	---	226.10	280.00
	Inst	Sq	Sm	RL	1.69	11.80	180.00	72.90	---	252.90	315.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.65	12.15	165.00	71.20	---	236.20	295.00
	Inst	Sq	Sm	RL	1.94	10.30	182.00	83.70	---	265.70	332.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Install 50-year lifetime laminated shingles

Over existing roofing

Gable, plain	Inst	Sq	Lg	RL	1.13	17.70	182.00	48.70	---	230.70	281.00
	Inst	Sq	Sm	RL	1.33	15.00	201.00	57.40	---	258.40	316.00
Gable with dormers	Inst	Sq	Lg	RL	1.26	15.93	184.00	54.30	---	238.30	292.00
	Inst	Sq	Sm	RL	1.48	13.50	203.00	63.80	---	266.80	327.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.26	15.93	186.00	54.30	---	240.30	294.00
	Inst	Sq	Sm	RL	1.48	13.50	205.00	63.80	---	268.80	329.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.41	14.16	188.00	60.80	---	248.80	305.00
	Inst	Sq	Sm	RL	1.67	12.00	207.00	72.00	---	279.00	344.00
Hip, plain	Inst	Sq	Lg	RL	1.18	16.91	184.00	50.90	---	234.90	287.00
	Inst	Sq	Sm	RL	1.40	14.33	203.00	60.40	---	263.40	322.00
Hip with dormers	Inst	Sq	Lg	RL	1.32	15.10	186.00	56.90	---	242.90	297.00
	Inst	Sq	Sm	RL	1.56	12.80	205.00	67.30	---	272.30	334.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.32	15.10	188.00	56.90	---	244.90	299.00
	Inst	Sq	Sm	RL	1.56	12.80	207.00	67.30	---	274.30	337.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.50	13.33	189.00	64.70	---	253.70	313.00
	Inst	Sq	Sm	RL	1.77	11.30	209.00	76.30	---	285.30	352.00

Over wood decks, includes felt

Gable, plain	Inst	Sq	Lg	RL	1.21	16.52	188.00	52.20	---	240.20	293.00
	Inst	Sq	Sm	RL	1.43	14.00	207.00	61.70	---	268.70	329.00
Gable with dormers	Inst	Sq	Lg	RL	1.36	14.75	190.00	58.70	---	248.70	305.00
	Inst	Sq	Sm	RL	1.60	12.50	209.00	69.00	---	278.00	342.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.36	14.75	192.00	58.70	---	250.70	307.00
	Inst	Sq	Sm	RL	1.60	12.50	211.00	69.00	---	280.00	344.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.54	12.98	193.00	66.40	---	259.40	320.00
	Inst	Sq	Sm	RL	1.82	11.00	213.00	78.50	---	291.50	360.00
Hip, plain	Inst	Sq	Lg	RL	1.27	15.73	190.00	54.80	---	244.80	299.00
	Inst	Sq	Sm	RL	1.50	13.33	209.00	64.70	---	273.70	336.00
Hip with dormers	Inst	Sq	Lg	RL	1.44	13.92	192.00	62.10	---	254.10	312.00
	Inst	Sq	Sm	RL	1.69	11.80	211.00	72.90	---	283.90	350.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.44	13.92	193.00	62.10	---	255.10	314.00
	Inst	Sq	Sm	RL	1.69	11.80	213.00	72.90	---	285.90	352.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.65	12.15	195.00	71.20	---	266.20	329.00
	Inst	Sq	Sm	RL	1.94	10.30	215.00	83.70	---	298.70	370.00

Related materials and operations

Ridge or hip roll

90 lb mineral surfaced	Inst	LF	Lg	2R	.017	944.0	1.00	.78	---	1.78	2.29
	Inst	LF	Sm	2R	.020	800.0	1.11	.91	---	2.02	2.62

Valley roll

90 lb mineral surfaced	Inst	LF	Lg	2R	.017	944.0	1.00	.78	---	1.78	2.29
	Inst	LF	Sm	2R	.020	800.0	1.11	.91	---	2.02	2.62

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Ridge / hip units, 9" x 12" with 5" exp.; 80 pcs / bdle @ 33.3 LF/bdle**Standard**

Over existing roofing	Inst	LF	Lg	2R	.019	826.0	.83	.87	---	1.70	2.23
	Inst	LF	Sm	2R	.023	700.0	.92	1.05	---	1.97	2.60
Over wood decks	Inst	LF	Lg	2R	.021	778.8	.83	.96	---	1.79	2.36
	Inst	LF	Sm	2R	.024	660.0	.92	1.09	---	2.01	2.67

Architectural

Over existing roofing	Inst	LF	Lg	2R	.019	826.0	1.54	.87	---	2.41	3.04
	Inst	LF	Sm	2R	.023	700.0	1.70	1.05	---	2.75	3.50
Over wood decks	Inst	LF	Lg	2R	.021	778.8	1.54	.96	---	2.50	3.18
	Inst	LF	Sm	2R	.024	660.0	1.70	1.09	---	2.79	3.56

Built-up or membrane roofing**Install over existing roofing****One mop coat over smooth surface**

With asphalt	Inst	Sq	Lg	RS	.301	159.3	23.00	12.90	---	35.90	45.40
	Inst	Sq	Sm	RS	.356	135.0	25.20	15.30	---	40.50	51.50
With tar	Inst	Sq	Lg	RS	.301	159.3	39.30	12.90	---	52.20	64.20
	Inst	Sq	Sm	RS	.356	135.0	43.30	15.30	---	58.60	72.30

Remove gravel, mop one coat, redistribute old gravel

With asphalt	Inst	Sq	Lg	RS	.768	62.54	35.70	33.00	---	68.70	89.50
	Inst	Sq	Sm	RS	0.91	53.00	39.20	39.10	---	78.30	103.00
With tar	Inst	Sq	Lg	RS	.768	62.54	60.70	33.00	---	93.70	118.00
	Inst	Sq	Sm	RS	0.91	53.00	66.90	39.10	---	106.00	134.00

Mop in one 30 lb cap sheet, plus smooth top mop coat

With asphalt	Inst	Sq	Lg	RS	.714	67.26	48.60	30.70	---	79.30	101.00
	Inst	Sq	Sm	RS	0.84	57.00	53.40	36.10	---	89.50	114.00
With tar	Inst	Sq	Lg	RS	.714	67.26	74.30	30.70	---	105.00	131.00
	Inst	Sq	Sm	RS	0.84	57.00	81.90	36.10	---	118.00	147.00

Remove gravel, mop in one 30 lb cap sheet, mop in and redistribute old gravel

With asphalt	Inst	Sq	Lg	RS	1.23	38.94	61.40	52.80	---	114.20	148.00
	Inst	Sq	Sm	RS	1.45	33.00	67.40	62.30	---	129.70	169.00
With tar	Inst	Sq	Lg	RS	1.23	38.94	95.70	52.80	---	148.50	188.00
	Inst	Sq	Sm	RS	1.45	33.00	105.00	62.30	---	167.30	213.00

Mop in two 15 lb felt plies, plus smooth top mop coat

With asphalt	Inst	Sq	Lg	RS	1.13	42.48	61.30	48.50	---	109.80	142.00
	Inst	Sq	Sm	RS	1.33	36.00	67.40	57.10	---	124.50	161.00
With tar	Inst	Sq	Lg	RS	1.13	42.48	96.40	48.50	---	144.90	182.00
	Inst	Sq	Sm	RS	1.33	36.00	106.00	57.10	---	163.10	206.00

Remove gravel, mop in two 15 lb felt plies, mop in and redistribute old gravel

With asphalt	Inst	Sq	Lg	RS	1.63	29.50	74.10	70.00	---	144.10	188.00
	Inst	Sq	Sm	RS	1.92	25.00	81.40	82.40	---	163.80	215.00
With tar	Inst	Sq	Lg	RS	1.63	29.50	118.00	70.00	---	188.00	238.00
	Inst	Sq	Sm	RS	1.92	25.00	130.00	82.40	---	212.40	270.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P

Demo over smooth wood or concrete deck**3 ply**

With gravel	Demo	Sq	Lg	LB	1.23	12.98	---	41.00	---	41.00	57.40
	Demo	Sq	Sm	LB	1.45	11.00	---	48.30	---	48.30	67.60
Without gravel	Demo	Sq	Lg	LB	0.97	16.52	---	32.30	---	32.30	45.20
	Demo	Sq	Sm	LB	1.14	14.00	---	38.00	---	38.00	53.20

5 ply

With gravel	Demo	Sq	Lg	LB	1.36	11.80	---	45.30	---	45.30	63.40
	Demo	Sq	Sm	LB	1.60	10.00	---	53.30	---	53.30	74.60
Without gravel	Demo	Sq	Lg	LB	1.04	15.34	---	34.60	---	34.60	48.50
	Demo	Sq	Sm	LB	1.23	13.00	---	41.00	---	41.00	57.40

Install over smooth wood decks**Nail one 15 lb felt ply, plus mop in one 90 lb mineral surfaced ply**

With asphalt	Inst	Sq	Lg	RS	.508	94.40	117.00	21.80	---	138.80	167.00
	Inst	Sq	Sm	RS	.600	80.00	129.00	25.80	---	154.80	187.00
With tar	Inst	Sq	Lg	RS	.508	94.40	128.00	21.80	---	149.80	180.00
	Inst	Sq	Sm	RS	.600	80.00	141.00	25.80	---	166.80	200.00

Nail one and mop in two 15 lb felt plies, plus smooth top mop coat

With asphalt	Inst	Sq	Lg	RS	1.23	38.94	70.40	52.80	---	123.20	159.00
	Inst	Sq	Sm	RS	1.45	33.00	77.40	62.30	---	139.70	181.00
With tar	Inst	Sq	Lg	RS	1.23	38.94	105.00	52.80	---	157.80	199.00
	Inst	Sq	Sm	RS	1.45	33.00	116.00	62.30	---	178.30	225.00

Nail one and mop in two 15 lb felt plies, plus mop in and distribute gravel

With asphalt	Inst	Sq	Lg	RS	1.63	29.50	87.10	70.00	---	157.10	203.00
	Inst	Sq	Sm	RS	1.92	25.00	95.40	82.40	---	177.80	231.00
With tar	Inst	Sq	Lg	RS	1.63	29.50	131.00	70.00	---	201.00	253.00
	Inst	Sq	Sm	RS	1.92	25.00	144.00	82.40	---	226.40	286.00

Nail one and mop in three 15 lb felt plies, plus mop in and distribute gravel

With asphalt	Inst	Sq	Lg	RS	2.03	23.60	106.00	87.20	---	193.20	250.00
	Inst	Sq	Sm	RS	2.40	20.00	116.00	103.00	---	219.00	285.00
With tar	Inst	Sq	Lg	RS	2.03	23.60	159.00	87.20	---	246.20	311.00
	Inst	Sq	Sm	RS	2.40	20.00	175.00	103.00	---	278.00	353.00

Nail one and mop in four 15 lb plies, plus mop in and distribute gravel

With asphalt	Inst	Sq	Lg	RS	2.54	18.88	125.00	109.00	---	234.00	305.00
	Inst	Sq	Sm	RS	3.00	16.00	138.00	129.00	---	267.00	348.00
With tar	Inst	Sq	Lg	RS	2.54	18.88	188.00	109.00	---	297.00	376.00
	Inst	Sq	Sm	RS	3.00	16.00	207.00	129.00	---	336.00	427.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Install over smooth concrete decks

Nail one 15 lb felt ply, plus mop in one 90 lb mineral surfaced ply

With asphalt	Inst	Sq	Lg	RS	.656	73.16	130.00	28.20	---	158.20	191.00
	Inst	Sq	Sm	RS	.774	62.00	143.00	33.20	---	176.20	214.00
With tar	Inst	Sq	Lg	RS	.656	73.16	150.00	28.20	---	178.20	213.00
	Inst	Sq	Sm	RS	.774	62.00	165.00	33.20	---	198.20	238.00

Nail one and mop in two 15 lb felt plies, plus smooth top mop coat

With asphalt	Inst	Sq	Lg	RS	1.51	31.86	80.50	64.80	---	145.30	188.00
	Inst	Sq	Sm	RS	1.78	27.00	88.50	76.40	---	164.90	214.00
With tar	Inst	Sq	Lg	RS	1.51	31.86	125.00	64.80	---	189.80	239.00
	Inst	Sq	Sm	RS	1.78	27.00	138.00	76.40	---	214.40	271.00

Nail one and mop in two 15 lb felt plies, plus mop in and distribute gravel

With asphalt	Inst	Sq	Lg	RS	1.94	24.78	97.20	83.30	---	180.50	234.00
	Inst	Sq	Sm	RS	2.29	21.00	106.00	98.30	---	204.30	267.00
With tar	Inst	Sq	Lg	RS	1.94	24.78	150.00	83.30	---	233.30	295.00
	Inst	Sq	Sm	RS	2.29	21.00	165.00	98.30	---	263.30	334.00

Nail one and mop in three 15 lb felt plies, plus mop in and distribute gravel

With asphalt	Inst	Sq	Lg	RS	2.39	20.06	116.00	103.00	---	219.00	285.00
	Inst	Sq	Sm	RS	2.82	17.00	128.00	121.00	---	249.00	325.00
With tar	Inst	Sq	Lg	RS	2.39	20.06	179.00	103.00	---	282.00	356.00
	Inst	Sq	Sm	RS	2.82	17.00	197.00	121.00	---	318.00	404.00

Nail one and mop in four 15 lb plies, plus mop in and distribute gravel

With asphalt	Inst	Sq	Lg	RS	2.71	17.70	136.00	116.00	---	252.00	327.00
	Inst	Sq	Sm	RS	3.20	15.00	149.00	137.00	---	286.00	373.00
With tar	Inst	Sq	Lg	RS	2.71	17.70	207.00	116.00	---	323.00	409.00
	Inst	Sq	Sm	RS	3.20	15.00	228.00	137.00	---	365.00	464.00

Tile, clay or concrete**Demo tile over wood**

2 piece (interlocking)	Demo	Sq	Lg	LB	1.69	9.44	---	56.30	---	56.30	78.80
	Demo	Sq	Sm	LB	2.00	8.00	---	66.60	---	66.60	93.30
1 piece	Demo	Sq	Lg	LB	1.51	10.62	---	50.30	---	50.30	70.40
	Demo	Sq	Sm	LB	1.78	9.00	---	59.30	---	59.30	83.00

Install tile over wood; includes felt

2 piece (interlocking)

Red	Inst	Sq	Lg	RG	5.08	4.72	776.00	211.00	---	987.00	1200.00
	Inst	Sq	Sm	RG	6.00	4.00	855.00	249.00	---	1104.00	1350.00
Other colors	Inst	Sq	Lg	RG	5.08	4.72	965.00	211.00	---	1176.00	1420.00
	Inst	Sq	Sm	RG	6.00	4.00	1060.00	249.00	---	1309.00	1590.00

Tile shingles

Mission	Inst	Sq	Lg	RG	4.07	5.90	495.00	169.00	---	664.00	817.00
	Inst	Sq	Sm	RG	4.8	5.00	545.00	199.00	---	744.00	920.00
Spanish	Inst	Sq	Lg	RG	4.07	5.90	613.00	169.00	---	782.00	954.00
	Inst	Sq	Sm	RG	4.8	5.00	676.00	199.00	---	875.00	1070.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Mineral surfaced roll

Single coverage 90 lb/sq roll, with 6" end lap and 2" head lap

Demo	Sq	Lg	LB	.424	37.76	---	14.10	---	14.10	19.80
Demo	Sq	Sm	LB	.500	32.00	---	16.70	---	16.70	23.30

Single coverage roll on**Plain gable over**

Existing roofing with

Nails concealed	Inst	Sq	Lg	2R	.590	27.14	110.00	26.90	---	136.90	167.00
	Inst	Sq	Sm	2R	.696	23.00	122.00	31.70	---	153.70	187.00
Nails exposed	Inst	Sq	Lg	2R	.542	29.50	100.00	24.70	---	124.70	152.00
	Inst	Sq	Sm	2R	.640	25.00	111.00	29.20	---	140.20	170.00

Wood deck with

Nails concealed	Inst	Sq	Lg	2R	.616	25.96	114.00	28.10	---	142.10	172.00
	Inst	Sq	Sm	2R	.727	22.00	125.00	33.10	---	158.10	193.00
Nails exposed	Inst	Sq	Lg	2R	.565	28.32	103.00	25.80	---	128.80	157.00
	Inst	Sq	Sm	2R	.667	24.00	114.00	30.40	---	144.40	176.00

Plain hip over

Existing roofing with

Nails concealed	Inst	Sq	Lg	2R	.616	25.96	114.00	28.10	---	142.10	172.00
	Inst	Sq	Sm	2R	.727	22.00	125.00	33.10	---	158.10	193.00
Nails exposed	Inst	Sq	Lg	2R	.565	28.32	103.00	25.80	---	128.80	157.00
	Inst	Sq	Sm	2R	.667	24.00	114.00	30.40	---	144.40	176.00

Wood deck with

Nails concealed	Inst	Sq	Lg	2R	.678	23.60	116.00	30.90	---	146.90	178.00
	Inst	Sq	Sm	2R	.80	20.00	127.00	36.50	---	163.50	200.00
Nails exposed	Inst	Sq	Lg	2R	.590	27.14	105.00	26.90	---	131.90	160.00
	Inst	Sq	Sm	2R	.696	23.00	116.00	31.70	---	147.70	180.00

Double coverage selvage roll, with 19" lap and 17" exposure

Demo	Sq	Lg	LB	.616	25.96	---	20.50	---	20.50	28.70
Demo	Sq	Sm	LB	.727	22.00	---	24.20	---	24.20	33.90

Double coverage selvage roll, with 19" lap and 17" exposure (2 rolls/sq)**Plain gable over**

Wood deck with nails exposed

	Inst	Sq	Lg	2R	0.97	16.52	231.00	44.20	---	275.20	331.00
	Inst	Sq	Sm	2R	1.14	14.00	254.00	52.00	---	306.00	369.00

Related materials and operations

Starter strips (36' L rolls) along eaves and up rakes and gable ends on new roofing over wood decks

9" W	Inst	LF	Lg	---	---	---	.59	---	---	.59	.68
	Inst	LF	Sm	---	---	---	.65	---	---	.65	.75
12" W	Inst	LF	Lg	---	---	---	.74	---	---	.74	.85
	Inst	LF	Sm	---	---	---	.81	---	---	.81	.93
18" W	Inst	LF	Lg	---	---	---	.88	---	---	.88	1.01
	Inst	LF	Sm	---	---	---	.97	---	---	.97	1.12
24" W	Inst	LF	Lg	---	---	---	1.03	---	---	1.03	1.18
	Inst	LF	Sm	---	---	---	1.13	---	---	1.13	1.30

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Wood**Shakes**

24" L with 10" exposure

1/2" to 3/4" T	Demo	Sq	Lg	LB	.542	29.50	---	18.10	---	18.10	25.30
	Demo	Sq	Sm	LB	.640	25.00	---	21.30	---	21.30	29.80
3/4" to 5/4" T	Demo	Sq	Lg	LB	.603	26.55	---	20.10	---	20.10	28.10
	Demo	Sq	Sm	LB	.711	22.50	---	23.70	---	23.70	33.20

Shakes, over wood deck; 2 nails/shake, 24" L with 10" exp., 6" W (avg.), red cedar, sawn one side

Gable

1/2" to 3/4" T	Inst	Sq	Lg	RQ	1.55	14.87	896.00	67.40	---	963.40	1130.00
	Inst	Sq	Sm	RQ	1.83	12.60	987.00	79.50	---	1066.50	1250.00
3/4" to 5/4" T	Inst	Sq	Lg	RQ	1.73	13.33	1230.00	75.20	---	1305.20	1530.00
	Inst	Sq	Sm	RQ	2.04	11.30	1360.00	88.60	---	1448.60	1690.00

Gable with dormers

1/2" to 3/4" T	Inst	Sq	Lg	RQ	1.62	14.16	913.00	70.40	---	983.40	1150.00
	Inst	Sq	Sm	RQ	1.92	12.00	1010.00	83.40	---	1093.40	1280.00
3/4" to 5/4" T	Inst	Sq	Lg	RQ	1.82	12.63	1260.00	79.10	---	1339.10	1560.00
	Inst	Sq	Sm	RQ	2.15	10.70	1380.00	93.40	---	1473.40	1730.00

Gable with valleys

1/2" to 3/4" T	Inst	Sq	Lg	RQ	1.62	14.16	913.00	70.40	---	983.40	1150.00
	Inst	Sq	Sm	RQ	1.92	12.00	1010.00	83.40	---	1093.40	1280.00
3/4" to 5/4" T	Inst	Sq	Lg	RQ	1.82	12.63	1260.00	79.10	---	1339.10	1560.00
	Inst	Sq	Sm	RQ	2.15	10.70	1380.00	93.40	---	1473.40	1730.00

Hip

1/2" to 3/4" T	Inst	Sq	Lg	RQ	1.62	14.16	913.00	70.40	---	983.40	1150.00
	Inst	Sq	Sm	RQ	1.92	12.00	1010.00	83.40	---	1093.40	1280.00
3/4" to 5/4" T	Inst	Sq	Lg	RQ	1.82	12.63	1260.00	79.10	---	1339.10	1560.00
	Inst	Sq	Sm	RQ	2.15	10.70	1380.00	93.40	---	1473.40	1730.00

Hip with valleys

1/2" to 3/4" T	Inst	Sq	Lg	RQ	1.73	13.33	930.00	75.20	---	1005.20	1180.00
	Inst	Sq	Sm	RQ	2.04	11.30	1020.00	88.60	---	1108.60	1310.00
3/4" to 5/4" T	Inst	Sq	Lg	RQ	1.91	12.04	1280.00	83.00	---	1363.00	1590.00
	Inst	Sq	Sm	RQ	2.25	10.20	1410.00	97.80	---	1507.80	1760.00

Related materials and operations

Ridge/hip units, 10" W with 10" exp., 20 pieces / bundle

	Inst	LF	Lg	RJ	.015	1062.0	6.47	.72	---	7.19	8.50
	Inst	LF	Sm	RJ	.018	900.0	7.13	.86	---	7.99	9.47

Roll valley, galvanized, unpainted, 28 gauge, 50' L rolls

14" W	Inst	LF	Lg	UA	.056	141.6	1.03	2.61	---	3.64	4.88
	Inst	LF	Sm	UA	.067	120.00	1.13	3.12	---	4.25	5.73
20" W	Inst	LF	Lg	UA	.056	141.6	1.54	2.61	---	4.15	5.47
	Inst	LF	Sm	UA	.067	120.00	1.70	3.12	---	4.82	6.38

Rosin sized sheathing paper 36" W, 500 SF/roll; nailed

Over open sheathing	Inst	Sq	Lg	RJ	.143	112.10	4.92	6.85	---	11.77	15.70
	Inst	Sq	Sm	RJ	.168	95.00	5.42	8.04	---	13.46	18.10
Over solid sheathing	Inst	Sq	Lg	RJ	.097	165.2	4.92	4.64	---	9.56	12.50
	Inst	Sq	Sm	RJ	.114	140.0	5.42	5.46	---	10.88	14.30

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P

Shingles

16" L with 5" exposure	Demo	Sq	Lg	LB	1.13	14.16	---	37.60	---	37.60	52.70
	Demo	Sq	Sm	LB	1.33	12.00	---	44.30	---	44.30	62.00
18" L with 5-1/2" exposure	Demo	Sq	Lg	LB	1.08	14.87	---	36.00	---	36.00	50.40
	Demo	Sq	Sm	LB	1.27	12.60	---	42.30	---	42.30	59.20
24" L with 7-1/2" exposure	Demo	Sq	Lg	LB	.753	21.24	---	25.10	---	25.10	35.10
	Demo	Sq	Sm	LB	0.89	18.00	---	29.70	---	29.70	41.50

Shingles, red cedar, No. 1 perfect, 4" W (avg.), 2 nails per shingle**Over existing roofing materials on****Gable, plain**

16" L with 5" exposure	Inst	Sq	Lg	RM	3.03	6.61	943.00	136.00	---	1079.00	1280.00
	Inst	Sq	Sm	RM	3.57	5.60	1040.00	161.00	---	1201.00	1430.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.73	7.32	1050.00	123.00	---	1173.00	1390.00
	Inst	Sq	Sm	RM	3.23	6.20	1160.00	145.00	---	1305.00	1550.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	1.97	10.15	981.00	88.60	---	1069.60	1260.00
	Inst	Sq	Sm	RM	2.33	8.60	1080.00	105.00	---	1185.00	1400.00

Gable with dormers

16" L with 5" exposure	Inst	Sq	Lg	RM	3.14	6.37	951.00	141.00	---	1092.00	1300.00
	Inst	Sq	Sm	RM	3.70	5.40	1050.00	166.00	---	1216.00	1450.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.82	7.08	1060.00	127.00	---	1187.00	1410.00
	Inst	Sq	Sm	RM	3.33	6.00	1170.00	150.00	---	1320.00	1560.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.69	7.43	990.00	121.00	---	1111.00	1320.00
	Inst	Sq	Sm	RM	3.17	6.30	1090.00	143.00	---	1233.00	1460.00

Gable with intersecting roofs

16" L with 5" exposure	Inst	Sq	Lg	RM	3.14	6.37	951.00	141.00	---	1092.00	1300.00
	Inst	Sq	Sm	RM	3.70	5.40	1050.00	166.00	---	1216.00	1450.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.82	7.08	1060.00	127.00	---	1187.00	1410.00
	Inst	Sq	Sm	RM	3.33	6.00	1170.00	150.00	---	1320.00	1560.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.69	7.43	990.00	121.00	---	1111.00	1320.00
	Inst	Sq	Sm	RM	3.17	6.30	1090.00	143.00	---	1233.00	1460.00

Gable with dormers & intersecting roofs

16" L with 5" exposure	Inst	Sq	Lg	RM	3.26	6.14	968.00	147.00	---	1115.00	1330.00
	Inst	Sq	Sm	RM	3.85	5.20	1070.00	173.00	---	1243.00	1480.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.92	6.84	1080.00	131.00	---	1211.00	1440.00
	Inst	Sq	Sm	RM	3.45	5.80	1190.00	155.00	---	1345.00	1600.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.09	9.56	1010.00	94.00	---	1104.00	1300.00
	Inst	Sq	Sm	RM	2.47	8.10	1110.00	111.00	---	1221.00	1440.00

Hip, plain

16" L with 5" exposure	Inst	Sq	Lg	RM	3.14	6.37	951.00	141.00	---	1092.00	1300.00
	Inst	Sq	Sm	RM	3.70	5.40	1050.00	166.00	---	1216.00	1450.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.82	7.08	1060.00	127.00	---	1187.00	1410.00
	Inst	Sq	Sm	RM	3.33	6.00	1170.00	150.00	---	1320.00	1560.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.04	9.79	990.00	91.70	---	1081.70	1270.00
	Inst	Sq	Sm	RM	2.41	8.30	1090.00	108.00	---	1198.00	1410.00

National Repair & Remodeling Estimator

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew Size	per	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
Hip with dormers											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.26	6.14	959.00	147.00	---	1106.00	1320.00
	Inst	Sq	Sm	RM	3.85	5.20	1060.00	173.00	---	1233.00	1470.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.97	6.73	1070.00	134.00	---	1204.00	1430.00
	Inst	Sq	Sm	RM	3.51	5.70	1180.00	158.00	---	1338.00	1590.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.15	9.32	998.00	96.70	---	1094.70	1290.00
	Inst	Sq	Sm	RM	2.53	7.90	1100.00	114.00	---	1214.00	1430.00
Hip with intersecting roofs											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.26	6.14	959.00	147.00	---	1106.00	1320.00
	Inst	Sq	Sm	RM	3.85	5.20	1060.00	173.00	---	1233.00	1470.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.97	6.73	1070.00	134.00	---	1204.00	1430.00
	Inst	Sq	Sm	RM	3.51	5.70	1180.00	158.00	---	1338.00	1590.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.15	9.32	998.00	96.70	---	1094.70	1290.00
	Inst	Sq	Sm	RM	2.53	7.90	1100.00	114.00	---	1214.00	1430.00
Hip with dormers & intersecting roofs											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.39	5.90	976.00	152.00	---	1128.00	1350.00
	Inst	Sq	Sm	RM	4.00	5.00	1080.00	180.00	---	1260.00	1500.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	3.08	6.49	1090.00	139.00	---	1229.00	1460.00
	Inst	Sq	Sm	RM	3.64	5.50	1200.00	164.00	---	1364.00	1620.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.20	9.09	1020.00	98.90	---	1118.90	1310.00
	Inst	Sq	Sm	RM	2.60	7.70	1120.00	117.00	---	1237.00	1460.00
Over wood decks on											
Gable, plain											
16" L with 5" exposure	Inst	Sq	Lg	RM	2.82	7.08	934.00	127.00	---	1061.00	1260.00
	Inst	Sq	Sm	RM	3.33	6.00	1030.00	150.00	---	1180.00	1400.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.57	7.79	1040.00	116.00	---	1156.00	1370.00
	Inst	Sq	Sm	RM	3.03	6.60	1150.00	136.00	---	1286.00	1520.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	1.88	10.62	974.00	84.50	---	1058.50	1240.00
	Inst	Sq	Sm	RM	2.22	9.00	1070.00	99.80	---	1169.80	1380.00
Gable with dormers											
16" L with 5" exposure	Inst	Sq	Lg	RM	2.92	6.84	943.00	131.00	---	1074.00	1280.00
	Inst	Sq	Sm	RM	3.45	5.80	1040.00	155.00	---	1195.00	1420.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.65	7.55	1050.00	119.00	---	1169.00	1390.00
	Inst	Sq	Sm	RM	3.13	6.40	1160.00	141.00	---	1301.00	1540.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	1.95	10.27	983.00	87.70	---	1070.70	1260.00
	Inst	Sq	Sm	RM	2.30	8.70	1080.00	103.00	---	1183.00	1400.00
Gable with intersecting roofs											
16" L with 5" exposure	Inst	Sq	Lg	RM	2.92	6.84	943.00	131.00	---	1074.00	1280.00
	Inst	Sq	Sm	RM	3.45	5.80	1040.00	155.00	---	1195.00	1420.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.65	7.55	1050.00	119.00	---	1169.00	1390.00
	Inst	Sq	Sm	RM	3.13	6.40	1160.00	141.00	---	1301.00	1540.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	1.95	10.27	983.00	87.70	---	1070.70	1260.00
	Inst	Sq	Sm	RM	2.30	8.70	1080.00	103.00	---	1183.00	1400.00

Roofing, shingles over wood decks

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P
Gable with dormers & intersecting roofs											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.03	6.61	960.00	136.00	---	1096.00	1300.00
	Inst	Sq	Sm	RM	3.57	5.60	1060.00	161.00	---	1221.00	1450.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.73	7.32	1070.00	123.00	---	1193.00	1410.00
	Inst	Sq	Sm	RM	3.23	6.20	1180.00	145.00	---	1325.00	1570.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	1.99	10.03	1000.00	89.50	---	1089.50	1280.00
	Inst	Sq	Sm	RM	2.35	8.50	1100.00	106.00	---	1206.00	1420.00
Hip, plain											
16" L with 5" exposure	Inst	Sq	Lg	RM	2.92	6.84	943.00	131.00	---	1074.00	1280.00
	Inst	Sq	Sm	RM	3.45	5.80	1040.00	155.00	---	1195.00	1420.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.65	7.55	1050.00	119.00	---	1169.00	1390.00
	Inst	Sq	Sm	RM	3.13	6.40	1160.00	141.00	---	1301.00	1540.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	1.95	10.27	983.00	87.70	---	1070.70	1260.00
	Inst	Sq	Sm	RM	2.30	8.70	1080.00	103.00	---	1183.00	1400.00
Hip with dormers											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.03	6.61	951.00	136.00	---	1087.00	1290.00
	Inst	Sq	Sm	RM	3.57	5.60	1050.00	161.00	---	1211.00	1440.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.78	7.20	1060.00	125.00	---	1185.00	1410.00
	Inst	Sq	Sm	RM	3.28	6.10	1170.00	148.00	---	1318.00	1560.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.04	9.79	992.00	91.70	---	1083.70	1280.00
	Inst	Sq	Sm	RM	2.41	8.30	1090.00	108.00	---	1198.00	1420.00
Hip with intersecting roofs											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.03	6.61	951.00	136.00	---	1087.00	1290.00
	Inst	Sq	Sm	RM	3.57	5.60	1050.00	161.00	---	1211.00	1440.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.78	7.20	1060.00	125.00	---	1185.00	1410.00
	Inst	Sq	Sm	RM	3.28	6.10	1170.00	148.00	---	1318.00	1560.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.04	9.79	992.00	91.70	---	1083.70	1280.00
	Inst	Sq	Sm	RM	2.41	8.30	1090.00	108.00	---	1198.00	1420.00
Hip with dormers & intersecting roofs											
16" L with 5" exposure	Inst	Sq	Lg	RM	3.14	6.37	968.00	141.00	---	1109.00	1320.00
	Inst	Sq	Sm	RM	3.70	5.40	1070.00	166.00	---	1236.00	1470.00
18" L with 5-1/2" exposure	Inst	Sq	Lg	RM	2.87	6.96	1080.00	129.00	---	1209.00	1430.00
	Inst	Sq	Sm	RM	3.39	5.90	1190.00	152.00	---	1342.00	1600.00
24" L with 7-1/2" exposure	Inst	Sq	Lg	RM	2.09	9.56	1010.00	94.00	---	1104.00	1300.00
	Inst	Sq	Sm	RM	2.47	8.10	1110.00	111.00	---	1221.00	1440.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Related materials and operations

Ridge/hip units, 40 pieces / bundle

Over existing roofing

5" exposure	Inst	LF	Lg	RJ	.024	660.8	14.00	1.15	---	15.15	17.70
	Inst	LF	Sm	RJ	.029	560.0	15.40	1.39	---	16.79	19.70
5-1/2" exposure	Inst	LF	Lg	RJ	.023	696.2	14.00	1.10	---	15.10	17.70
	Inst	LF	Sm	RJ	.027	590.0	15.40	1.29	---	16.69	19.60
7-1/2" exposure	Inst	LF	Lg	RJ	.019	826.0	11.60	.91	---	12.51	14.70
	Inst	LF	Sm	RJ	.023	700.0	12.80	1.10	---	13.90	16.40

Over wood decks

5" exposure	Inst	LF	Lg	RJ	.023	708.0	14.00	1.10	---	15.10	17.70
	Inst	LF	Sm	RJ	.027	600.0	15.40	1.29	---	16.69	19.60
5-1/2" exposure	Inst	LF	Lg	RJ	.022	743.4	14.00	1.05	---	15.05	17.60
	Inst	LF	Sm	RJ	.025	630.0	15.40	1.20	---	16.60	19.50
7-1/2" exposure	Inst	LF	Lg	RJ	.018	885.0	11.60	.86	---	12.46	14.70
	Inst	LF	Sm	RJ	.021	750.0	12.80	1.01	---	13.81	16.20

Roll valley, galvanized, 28 gauge 50' L rolls, unpainted

18" W	Inst	LF	Lg	UA	.056	141.6	1.03	2.61	---	3.64	4.88
	Inst	LF	Sm	UA	.067	120.00	1.13	3.12	---	4.25	5.73
24" W	Inst	LF	Lg	UA	.056	141.6	1.54	2.61	---	4.15	5.47
	Inst	LF	Sm	UA	.067	120.00	1.70	3.12	---	4.82	6.38

Rosin sized sheathing paper, 36" W, 500 SF/roll; nailed

Over open sheathing	Inst	Sq	Lg	RJ	.143	112.10	4.92	6.85	---	11.77	15.70
	Inst	Sq	Sm	RJ	.168	95.00	5.42	8.04	---	13.46	18.10
Over solid sheathing	Inst	Sq	Lg	RJ	.097	165.2	4.92	4.64	---	9.56	12.50
	Inst	Sq	Sm	RJ	.114	140.0	5.42	5.46	---	10.88	14.30

For No. 2 (red label) grade

DEDUCT	Inst	Lg	---	---	---	---	-10.0	---	---	---	---
	Inst	Sm	---	---	---	---	-10.0	---	---	---	---

Sheathing. See Framing, page 208

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Sheet metal

Flashing, general; galvanized

Vertical chimney flashing

	Inst	LF	Lg	UA	.059	135.0	.48	2.75	---	3.23	4.45
	Inst	LF	Sm	UA	.079	101.3	.54	3.68	---	4.22	5.84

"Z" bar flashing

Standard	Inst	LF	Lg	UA	.019	420.0	.48	.88	---	1.36	1.81
	Inst	LF	Sm	UA	.025	315.0	.54	1.16	---	1.70	2.27
Old style	Inst	LF	Lg	UA	.019	420.0	.48	.88	---	1.36	1.81
	Inst	LF	Sm	UA	.025	315.0	.54	1.16	---	1.70	2.27
For plywood siding	Inst	LF	Lg	UA	.019	420.0	.36	.88	---	1.24	1.67
	Inst	LF	Sm	UA	.025	315.0	.40	1.16	---	1.56	2.11

Rain diverter, 1" x 3"

4' long	Inst	Ea	Lg	UA	.160	50.0	2.73	7.44	---	10.17	13.70
	Inst	Ea	Sm	UA	.213	37.5	3.08	9.91	---	12.99	17.60
5' long	Inst	Ea	Lg	UA	.160	50.0	3.07	7.44	---	10.51	14.10
	Inst	Ea	Sm	UA	.213	37.5	3.47	9.91	---	13.38	18.10
10' long	Inst	Ea	Lg	UA	.229	35.0	5.16	10.70	---	15.86	21.10
	Inst	Ea	Sm	UA	.305	26.3	5.83	14.20	---	20.03	26.90

Roof flashing

Nosing, roof edging at 90-degree angle or open at 105-degree; galvanized

3/4" x 3/4"	Inst	LF	Lg	UA	.016	500.0	.22	.74	---	.96	1.31
	Inst	LF	Sm	UA	.021	375.0	.25	.98	---	1.23	1.67
1" x 1"	Inst	LF	Lg	UA	.016	500.0	.22	.74	---	.96	1.31
	Inst	LF	Sm	UA	.021	375.0	.25	.98	---	1.23	1.67
1" x 2"	Inst	LF	Lg	UA	.016	500.0	.26	.74	---	1.00	1.36
	Inst	LF	Sm	UA	.021	375.0	.30	.98	---	1.28	1.73
1-1/2" x 1-1/2"	Inst	LF	Lg	UA	.016	500.0	.26	.74	---	1.00	1.36
	Inst	LF	Sm	UA	.021	375.0	.30	.98	---	1.28	1.73
2" x 2"	Inst	LF	Lg	UA	.016	500.0	.33	.74	---	1.07	1.44
	Inst	LF	Sm	UA	.021	375.0	.37	.98	---	1.35	1.81
2" x 3"	Inst	LF	Lg	UA	.016	500.0	.40	.74	---	1.14	1.52
	Inst	LF	Sm	UA	.021	375.0	.46	.98	---	1.44	1.92
2" x 4"	Inst	LF	Lg	UA	.016	500.0	.56	.74	---	1.30	1.70
	Inst	LF	Sm	UA	.021	375.0	.63	.98	---	1.61	2.11
3" x 3"	Inst	LF	Lg	UA	.020	400.0	.56	.93	---	1.49	1.97
	Inst	LF	Sm	UA	.027	300.0	.63	1.26	---	1.89	2.51
3" x 4"	Inst	LF	Lg	UA	.020	400.0	.65	.93	---	1.58	2.07
	Inst	LF	Sm	UA	.027	300.0	.74	1.26	---	2.00	2.63
3" x 5"	Inst	LF	Lg	UA	.027	300.0	.78	1.26	---	2.04	2.68
	Inst	LF	Sm	UA	.036	225.0	.88	1.68	---	2.56	3.39
4" x 4"	Inst	LF	Lg	UA	.027	300.0	.78	1.26	---	2.04	2.68
	Inst	LF	Sm	UA	.036	225.0	.88	1.68	---	2.56	3.39
4" x 6"	Inst	LF	Lg	UA	.027	300.0	.98	1.26	---	2.24	2.91
	Inst	LF	Sm	UA	.036	225.0	1.10	1.68	---	2.78	3.64
5" x 5"	Inst	LF	Lg	UA	.027	300.0	.98	1.26	---	2.24	2.91
	Inst	LF	Sm	UA	.036	225.0	1.10	1.68	---	2.78	3.64
6" x 6"	Inst	LF	Lg	UA	.027	300.0	1.15	1.26	---	2.41	3.11
	Inst	LF	Sm	UA	.036	225.0	1.30	1.68	---	2.98	3.87

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

Roll valley, 50' rolls

Galvanized, 28 gauge, unpainted

8" wide	Inst	LF	Lg	UA	.027	300.0	.64	1.26	---	1.90	2.52
	Inst	LF	Sm	UA	.036	225.0	.72	1.68	---	2.40	3.21
10" wide	Inst	LF	Lg	UA	.027	300.0	1.04	1.26	---	2.30	2.98
	Inst	LF	Sm	UA	.036	225.0	1.17	1.68	---	2.85	3.72
20" wide	Inst	LF	Lg	UA	.027	300.0	1.46	1.26	---	2.72	3.46
	Inst	LF	Sm	UA	.036	225.0	1.65	1.68	---	3.33	4.28

Tin seamless, painted

8" wide	Inst	LF	Lg	UA	.027	300.0	.50	1.26	---	1.76	2.36
	Inst	LF	Sm	UA	.036	225.0	.56	1.68	---	2.24	3.02
10" wide	Inst	LF	Lg	UA	.027	300.0	.78	1.26	---	2.04	2.68
	Inst	LF	Sm	UA	.036	225.0	.88	1.68	---	2.56	3.39
20" wide	Inst	LF	Lg	UA	.027	300.0	1.09	1.26	---	2.35	3.04
	Inst	LF	Sm	UA	.036	225.0	1.23	1.68	---	2.91	3.79

Aluminum seamless, .016 gauge

8" wide	Inst	LF	Lg	UA	.027	300.0	.59	1.26	---	1.85	2.46
	Inst	LF	Sm	UA	.036	225.0	.67	1.68	---	2.35	3.15
10" wide	Inst	LF	Lg	UA	.027	300.0	.99	1.26	---	2.25	2.92
	Inst	LF	Sm	UA	.036	225.0	1.12	1.68	---	2.80	3.67
20" wide	Inst	LF	Lg	UA	.027	300.0	1.41	1.26	---	2.67	3.41
	Inst	LF	Sm	UA	.036	225.0	1.59	1.68	---	3.27	4.21

"W" valley

Galvanized hemmed tin

18" girth	Inst	LF	Lg	UA	.027	300.0	1.53	1.26	---	2.79	3.54
	Inst	LF	Sm	UA	.036	225.0	1.73	1.68	---	3.41	4.37
24" girth	Inst	LF	Lg	UA	.027	300.0	2.03	1.26	---	3.29	4.12
	Inst	LF	Sm	UA	.036	225.0	2.29	1.68	---	3.97	5.01

Gravel stop

4-1/2" galvanized	Inst	LF	Lg	UA	.020	400.0	.36	.93	---	1.29	1.74
	Inst	LF	Sm	UA	.027	300.0	.40	1.26	---	1.66	2.24
6" galvanized	Inst	LF	Lg	UA	.023	350.0	.47	1.07	---	1.54	2.06
	Inst	LF	Sm	UA	.030	262.5	.53	1.40	---	1.93	2.59
7-1/4" galvanized	Inst	LF	Lg	UA	.027	300.0	.51	1.26	---	1.77	2.37
	Inst	LF	Sm	UA	.036	225.0	.58	1.68	---	2.26	3.05
4-1/2" bonderized	Inst	LF	Lg	UA	.020	400.0	.45	.93	---	1.38	1.84
	Inst	LF	Sm	UA	.027	300.0	.51	1.26	---	1.77	2.37
6" bonderized	Inst	LF	Lg	UA	.023	350.0	.60	1.07	---	1.67	2.21
	Inst	LF	Sm	UA	.030	262.5	.68	1.40	---	2.08	2.76
7-1/4" bonderized	Inst	LF	Lg	UA	.027	300.0	.67	1.26	---	1.93	2.55
	Inst	LF	Sm	UA	.036	225.0	.75	1.68	---	2.43	3.24

Gutters and downspouts. See page 248

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours per Unit	Output per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P

Roof edging (drip edge) with 1/4" kickout, galvanized

1" x 1-1/2"	Inst	LF	Lg	UA	.016	500.0	.28	.74	---	1.02	1.38
	Inst	LF	Sm	UA	.021	375.0	.32	.98	---	1.30	1.76
1-1/2" x 1-1/2"	Inst	LF	Lg	UA	.016	500.0	.28	.74	---	1.02	1.38
	Inst	LF	Sm	UA	.021	375.0	.32	.98	---	1.30	1.76
2" x 2"	Inst	LF	Lg	UA	.016	500.0	.34	.74	---	1.08	1.45
	Inst	LF	Sm	UA	.021	375.0	.39	.98	---	1.37	1.84

Vents

Clothes dryer vent set, aluminum, hood, duct, inside plate

3" diameter	Inst	Set	Lg	UA	.500	16.00	3.80	23.30	---	27.10	37.40
	Inst	Set	Sm	UA	.667	12.00	4.29	31.00	---	35.29	49.00
4" diameter	Inst	Set	Lg	UA	.500	16.00	4.19	23.30	---	27.49	37.90
	Inst	Set	Sm	UA	.667	12.00	4.73	31.00	---	35.73	49.50

Dormer louvers, half round, 1/8" or 1/4" mesh

18" x 9"

Galvanized, 5-12 pitch	Inst	Ea	Lg	UA	.667	12.00	23.60	31.00	---	54.60	71.30
	Inst	Ea	Sm	UA	0.89	9.00	26.70	41.40	---	68.10	89.50
Painted, 3-12 pitch	Inst	Ea	Lg	UA	.667	12.00	27.90	31.00	---	58.90	76.20
	Inst	Ea	Sm	UA	0.89	9.00	31.50	41.40	---	72.90	95.00

24" x 12"

Galvanized, 5-12 pitch	Inst	Ea	Lg	UA	.667	12.00	29.70	31.00	---	60.70	78.20
	Inst	Ea	Sm	UA	0.89	9.00	33.50	41.40	---	74.90	97.30
Painted, 3-12 pitch	Inst	Ea	Lg	UA	.667	12.00	33.60	31.00	---	64.60	82.70
	Inst	Ea	Sm	UA	0.89	9.00	38.00	41.40	---	79.40	102.00

Foundation vents, galvanized, 1/4" mesh

6" x 14", stucco	Inst	Ea	Lg	UA	.333	24.00	1.81	15.50	---	17.31	24.10
	Inst	Ea	Sm	UA	.444	18.00	2.05	20.70	---	22.75	31.70
8" x 14", stucco	Inst	Ea	Lg	UA	.333	24.00	2.17	15.50	---	17.67	24.50
	Inst	Ea	Sm	UA	.444	18.00	2.45	20.70	---	23.15	32.20
6" x 14", two-way	Inst	Ea	Lg	UA	.333	24.00	2.17	15.50	---	17.67	24.50
	Inst	Ea	Sm	UA	.444	18.00	2.45	20.70	---	23.15	32.20
6" x 14", for siding (flat type)	Inst	Ea	Lg	UA	.333	24.00	1.81	15.50	---	17.31	24.10
	Inst	Ea	Sm	UA	.444	18.00	2.05	20.70	---	22.75	31.70
6" x 14", louver type	Inst	Ea	Lg	UA	.333	24.00	2.09	15.50	---	17.59	24.40
	Inst	Ea	Sm	UA	.444	18.00	2.36	20.70	---	23.06	32.10
6" x 14", foundation insert	Inst	Ea	Lg	UA	.333	24.00	1.81	15.50	---	17.31	24.10
	Inst	Ea	Sm	UA	.444	18.00	2.05	20.70	---	22.75	31.70

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Louver vents, round, 1/8" or 1/4" mesh, galvanized

12" diameter	Inst	Ea	Lg	UA	.500	16.00	24.20	23.30	---	47.50	60.80
	Inst	Ea	Sm	UA	.667	12.00	27.30	31.00	---	58.30	75.50
14" diameter	Inst	Ea	Lg	UA	.500	16.00	25.70	23.30	---	49.00	62.60
	Inst	Ea	Sm	UA	.667	12.00	29.00	31.00	---	60.00	77.40
16" diameter	Inst	Ea	Lg	UA	.500	16.00	27.80	23.30	---	51.10	65.10
	Inst	Ea	Sm	UA	.667	12.00	31.40	31.00	---	62.40	80.20
18" diameter	Inst	Ea	Lg	UA	.500	16.00	32.00	23.30	---	55.30	69.80
	Inst	Ea	Sm	UA	.667	12.00	36.10	31.00	---	67.10	85.60
24" diameter	Inst	Ea	Lg	UA	.500	16.00	54.30	23.30	---	77.60	95.40
	Inst	Ea	Sm	UA	.667	12.00	61.30	31.00	---	92.30	115.00

Access doors

Multi-purpose, galvanized

24" x 18", nail-on type	Inst	Ea	Lg	UA	.500	16.00	15.40	23.30	---	38.70	50.70
	Inst	Ea	Sm	UA	.667	12.00	17.30	31.00	---	48.30	64.00
24" x 24", nail-on type	Inst	Ea	Lg	UA	.500	16.00	17.30	23.30	---	40.60	52.90
	Inst	Ea	Sm	UA	.667	12.00	19.50	31.00	---	50.50	66.50
24" x 18" x 6" deep box type	Inst	Ea	Lg	UA	.500	16.00	20.90	23.30	---	44.20	57.10
	Inst	Ea	Sm	UA	.667	12.00	23.60	31.00	---	54.60	71.20

Attic access doors, galvanized

22" x 22"	Inst	Ea	Lg	UA	.667	12.00	21.70	31.00	---	52.70	69.00
	Inst	Ea	Sm	UA	0.89	9.00	24.50	41.40	---	65.90	87.00
22" x 30"	Inst	Ea	Lg	UA	.667	12.00	25.10	31.00	---	56.10	73.00
	Inst	Ea	Sm	UA	0.89	9.00	28.40	41.40	---	69.80	91.40
30" x 30"	Inst	Ea	Lg	UA	.667	12.00	26.50	31.00	---	57.50	74.60
	Inst	Ea	Sm	UA	0.89	9.00	29.90	41.40	---	71.30	93.20

Tub access doors, galvanized

14" x 12"	Inst	Ea	Lg	UA	.500	16.00	10.80	23.30	---	34.10	45.40
	Inst	Ea	Sm	UA	.667	12.00	12.20	31.00	---	43.20	58.10
14" x 15"	Inst	Ea	Lg	UA	.500	16.00	11.20	23.30	---	34.50	45.90
	Inst	Ea	Sm	UA	.667	12.00	12.60	31.00	---	43.60	58.60

Utility louvers, aluminum or galvanized

4" x 6"	Inst	Ea	Lg	UA	.200	40.00	1.29	9.31	---	10.60	14.70
	Inst	Ea	Sm	UA	.267	30.00	1.45	12.40	---	13.85	19.30
8" x 6"	Inst	Ea	Lg	UA	.200	40.00	1.81	9.31	---	11.12	15.30
	Inst	Ea	Sm	UA	.267	30.00	2.05	12.40	---	14.45	20.00
8" x 8"	Inst	Ea	Lg	UA	.200	40.00	2.09	9.31	---	11.40	15.60
	Inst	Ea	Sm	UA	.267	30.00	2.36	12.40	---	14.76	20.40
8" x 12"	Inst	Ea	Lg	UA	.200	40.00	2.45	9.31	---	11.76	16.00
	Inst	Ea	Sm	UA	.267	30.00	2.77	12.40	---	15.17	20.80
8" x 18"	Inst	Ea	Lg	UA	.200	40.00	2.93	9.31	---	12.24	16.60
	Inst	Ea	Sm	UA	.267	30.00	3.31	12.40	---	15.71	21.50
12" x 12"	Inst	Ea	Lg	UA	.200	40.00	2.93	9.31	---	12.24	16.60
	Inst	Ea	Sm	UA	.267	30.00	3.31	12.40	---	15.71	21.50
14" x 14"	Inst	Ea	Lg	UA	.200	40.00	3.70	9.31	---	13.01	17.50
	Inst	Ea	Sm	UA	.267	30.00	4.18	12.40	---	16.58	22.50

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Shower and tub doors

Shower doors

Hinged shower doors, anodized aluminum frame, tempered hammered glass,
hardware included

67" H door, adjustable

29-3/4" to 31-1/2"

Obscure glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	384.00	54.60	---	438.60	518.00
	Inst	Ea	Sm	CA	1.78	4.50	439.00	73.10	---	512.10	607.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	431.00	54.60	---	485.60	572.00
	Inst	Ea	Sm	CA	1.78	4.50	492.00	73.10	---	565.10	668.00
White	Inst	Ea	Lg	CA	1.33	6.00	549.00	54.60	---	603.60	708.00
	Inst	Ea	Sm	CA	1.78	4.50	628.00	73.10	---	701.10	824.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	549.00	54.60	---	603.60	708.00
	Inst	Ea	Sm	CA	1.78	4.50	628.00	73.10	---	701.10	824.00

Clear glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	440.00	54.60	---	494.60	582.00
	Inst	Ea	Sm	CA	1.78	4.50	503.00	73.10	---	576.10	681.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	481.00	54.60	---	535.60	629.00
	Inst	Ea	Sm	CA	1.78	4.50	550.00	73.10	---	623.10	734.00
White	Inst	Ea	Lg	CA	1.33	6.00	599.00	54.60	---	653.60	765.00
	Inst	Ea	Sm	CA	1.78	4.50	684.00	73.10	---	757.10	889.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	599.00	54.60	---	653.60	765.00
	Inst	Ea	Sm	CA	1.78	4.50	684.00	73.10	---	757.10	889.00

Etched glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	470.00	54.60	---	524.60	617.00
	Inst	Ea	Sm	CA	1.78	4.50	538.00	73.10	---	611.10	721.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	515.00	54.60	---	569.60	668.00
	Inst	Ea	Sm	CA	1.78	4.50	588.00	73.10	---	661.10	779.00
White	Inst	Ea	Lg	CA	1.33	6.00	634.00	54.60	---	688.60	806.00
	Inst	Ea	Sm	CA	1.78	4.50	725.00	73.10	---	798.10	936.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	634.00	54.60	---	688.60	806.00
	Inst	Ea	Sm	CA	1.78	4.50	725.00	73.10	---	798.10	936.00

Fluted

Chrome	Inst	Ea	Lg	CA	1.33	6.00	602.00	54.60	---	656.60	768.00
	Inst	Ea	Sm	CA	1.78	4.50	688.00	73.10	---	761.10	893.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	649.00	54.60	---	703.60	823.00
	Inst	Ea	Sm	CA	1.78	4.50	742.00	73.10	---	815.10	955.00
White	Inst	Ea	Lg	CA	1.33	6.00	765.00	54.60	---	819.60	957.00
	Inst	Ea	Sm	CA	1.78	4.50	875.00	73.10	---	948.10	1110.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	765.00	54.60	---	819.60	957.00
	Inst	Ea	Sm	CA	1.78	4.50	875.00	73.10	---	948.10	1110.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

33-1/8" to 34-7/8"

Obscure glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	384.00	54.60	---	438.60	518.00
	Inst	Ea	Sm	CA	1.78	4.50	439.00	73.10	---	512.10	607.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	431.00	54.60	---	485.60	572.00
	Inst	Ea	Sm	CA	1.78	4.50	492.00	73.10	---	565.10	668.00
White	Inst	Ea	Lg	CA	1.33	6.00	549.00	54.60	---	603.60	708.00
	Inst	Ea	Sm	CA	1.78	4.50	628.00	73.10	---	701.10	824.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	599.00	54.60	---	653.60	765.00
	Inst	Ea	Sm	CA	1.78	4.50	684.00	73.10	---	757.10	889.00

Clear glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	440.00	54.60	---	494.60	582.00
	Inst	Ea	Sm	CA	1.78	4.50	503.00	73.10	---	576.10	681.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	490.00	54.60	---	544.60	640.00
	Inst	Ea	Sm	CA	1.78	4.50	560.00	73.10	---	633.10	747.00
White	Inst	Ea	Lg	CA	1.33	6.00	599.00	54.60	---	653.60	765.00
	Inst	Ea	Sm	CA	1.78	4.50	684.00	73.10	---	757.10	889.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	599.00	54.60	---	653.60	765.00
	Inst	Ea	Sm	CA	1.78	4.50	684.00	73.10	---	757.10	889.00

Etched glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	470.00	54.60	---	524.60	617.00
	Inst	Ea	Sm	CA	1.78	4.50	538.00	73.10	---	611.10	721.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	515.00	54.60	---	569.60	668.00
	Inst	Ea	Sm	CA	1.78	4.50	588.00	73.10	---	661.10	779.00
White	Inst	Ea	Lg	CA	1.33	6.00	634.00	54.60	---	688.60	806.00
	Inst	Ea	Sm	CA	1.78	4.50	725.00	73.10	---	798.10	936.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	634.00	54.60	---	688.60	806.00
	Inst	Ea	Sm	CA	1.78	4.50	725.00	73.10	---	798.10	936.00

Fluted

Chrome	Inst	Ea	Lg	CA	1.33	6.00	602.00	54.60	---	656.60	768.00
	Inst	Ea	Sm	CA	1.78	4.50	688.00	73.10	---	761.10	893.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	649.00	54.60	---	703.60	823.00
	Inst	Ea	Sm	CA	1.78	4.50	742.00	73.10	---	815.10	955.00
White	Inst	Ea	Lg	CA	1.33	6.00	765.00	54.60	---	819.60	957.00
	Inst	Ea	Sm	CA	1.78	4.50	875.00	73.10	---	948.10	1110.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	765.00	54.60	---	819.60	957.00
	Inst	Ea	Sm	CA	1.78	4.50	875.00	73.10	---	948.10	1110.00

23" x 24-1/2" x 23 x 72" Neo Angle

Obscure glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	797.00	54.60	---	851.60	993.00
	Inst	Ea	Sm	CA	1.78	4.50	911.00	73.10	---	984.10	1150.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	977.00	54.60	---	1031.60	1200.00
	Inst	Ea	Sm	CA	1.78	4.50	1120.00	73.10	---	1193.10	1390.00
White	Inst	Ea	Lg	CA	1.33	6.00	1210.00	54.60	---	1264.60	1470.00
	Inst	Ea	Sm	CA	1.78	4.50	1380.00	73.10	---	1453.10	1690.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	1210.00	54.60	---	1264.60	1470.00
	Inst	Ea	Sm	CA	1.78	4.50	1380.00	73.10	---	1453.10	1690.00

Shower and tub doors, sliding glass

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
								Cost	Cost	Cost	Incl
											O&P

Clear glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	883.00	54.60	---	937.60	1090.00
	Inst	Ea	Sm	CA	1.78	4.50	1010.00	73.10	---	1083.10	1260.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	1060.00	54.60	---	1114.60	1300.00
	Inst	Ea	Sm	CA	1.78	4.50	1220.00	73.10	---	1293.10	1500.00
White	Inst	Ea	Lg	CA	1.33	6.00	1270.00	54.60	---	1324.60	1540.00
	Inst	Ea	Sm	CA	1.78	4.50	1460.00	73.10	---	1533.10	1780.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	1270.00	54.60	---	1324.60	1540.00
	Inst	Ea	Sm	CA	1.78	4.50	1460.00	73.10	---	1533.10	1780.00

Etched glass

Chrome	Inst	Ea	Lg	CA	1.33	6.00	900.00	54.60	---	954.60	1110.00
	Inst	Ea	Sm	CA	1.78	4.50	1030.00	73.10	---	1103.10	1280.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	1080.00	54.60	---	1134.60	1320.00
	Inst	Ea	Sm	CA	1.78	4.50	1230.00	73.10	---	1303.10	1520.00
White	Inst	Ea	Lg	CA	1.33	6.00	1310.00	54.60	---	1364.60	1580.00
	Inst	Ea	Sm	CA	1.78	4.50	1500.00	73.10	---	1573.10	1820.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	1310.00	54.60	---	1364.60	1580.00
	Inst	Ea	Sm	CA	1.78	4.50	1500.00	73.10	---	1573.10	1820.00

Fluted

Chrome	Inst	Ea	Lg	CA	1.33	6.00	1320.00	54.60	---	1374.60	1600.00
	Inst	Ea	Sm	CA	1.78	4.50	1510.00	73.10	---	1583.10	1840.00
Polished brass	Inst	Ea	Lg	CA	1.33	6.00	1500.00	54.60	---	1554.60	1800.00
	Inst	Ea	Sm	CA	1.78	4.50	1710.00	73.10	---	1783.10	2070.00
White	Inst	Ea	Lg	CA	1.33	6.00	1730.00	54.60	---	1784.60	2070.00
	Inst	Ea	Sm	CA	1.78	4.50	1980.00	73.10	---	2053.10	2380.00
Bone	Inst	Ea	Lg	CA	1.33	6.00	1730.00	54.60	---	1784.60	2070.00
	Inst	Ea	Sm	CA	1.78	4.50	1980.00	73.10	---	2053.10	2380.00

Sliding shower doors, 2 bypassing panels, anodized aluminum frame, tempered hammered glass, hardware included

71-1/2" H doors

40" to 42" wide opening

Obscure glass

Chrome	Inst	Ea	Lg	CA	1.45	5.50	450.00	59.50	---	509.50	601.00
	Inst	Ea	Sm	CA	1.94	4.13	515.00	79.70	---	594.70	704.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	507.00	59.50	---	566.50	667.00
	Inst	Ea	Sm	CA	1.94	4.13	580.00	79.70	---	659.70	778.00
White	Inst	Ea	Lg	CA	1.45	5.50	680.00	59.50	---	739.50	866.00
	Inst	Ea	Sm	CA	1.94	4.13	778.00	79.70	---	857.70	1010.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	680.00	59.50	---	739.50	866.00
	Inst	Ea	Sm	CA	1.94	4.13	778.00	79.70	---	857.70	1010.00

Clear glass

Chrome	Inst	Ea	Lg	CA	1.45	5.50	521.00	59.50	---	580.50	682.00
	Inst	Ea	Sm	CA	1.94	4.13	595.00	79.70	---	674.70	796.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	581.00	59.50	---	640.50	751.00
	Inst	Ea	Sm	CA	1.94	4.13	664.00	79.70	---	743.70	875.00
White	Inst	Ea	Lg	CA	1.45	5.50	752.00	59.50	---	811.50	948.00
	Inst	Ea	Sm	CA	1.94	4.13	859.00	79.70	---	938.70	1100.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	752.00	59.50	---	811.50	948.00
	Inst	Ea	Sm	CA	1.94	4.13	859.00	79.70	---	938.70	1100.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Etched glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	545.00	59.50	---	604.50	710.00
	Inst	Ea	Sm	CA	1.94	4.13	623.00	79.70	---	702.70	828.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	600.00	59.50	---	659.50	773.00
	Inst	Ea	Sm	CA	1.94	4.13	685.00	79.70	---	764.70	899.00
White	Inst	Ea	Lg	CA	1.45	5.50	780.00	59.50	---	839.50	981.00
	Inst	Ea	Sm	CA	1.94	4.13	892.00	79.70	---	971.70	1140.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	780.00	59.50	---	839.50	981.00
	Inst	Ea	Sm	CA	1.94	4.13	892.00	79.70	---	971.70	1140.00
Fluted											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	800.00	59.50	---	859.50	1000.00
	Inst	Ea	Sm	CA	1.94	4.13	914.00	79.70	---	993.70	1160.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	856.00	59.50	---	915.50	1070.00
	Inst	Ea	Sm	CA	1.94	4.13	978.00	79.70	---	1057.70	1240.00
White	Inst	Ea	Lg	CA	1.45	5.50	1040.00	59.50	---	1099.50	1280.00
	Inst	Ea	Sm	CA	1.94	4.13	1180.00	79.70	---	1259.70	1470.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	1040.00	59.50	---	1099.50	1280.00
	Inst	Ea	Sm	CA	1.94	4.13	1180.00	79.70	---	1259.70	1470.00
44" to 48" wide opening											
Obscure glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	450.00	59.50	---	509.50	601.00
	Inst	Ea	Sm	CA	1.94	4.13	515.00	79.70	---	594.70	704.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	507.00	59.50	---	566.50	667.00
	Inst	Ea	Sm	CA	1.94	4.13	580.00	79.70	---	659.70	778.00
White	Inst	Ea	Lg	CA	1.45	5.50	680.00	59.50	---	739.50	866.00
	Inst	Ea	Sm	CA	1.94	4.13	778.00	79.70	---	857.70	1010.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	680.00	59.50	---	739.50	866.00
	Inst	Ea	Sm	CA	1.94	4.13	778.00	79.70	---	857.70	1010.00
Clear glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	521.00	59.50	---	580.50	682.00
	Inst	Ea	Sm	CA	1.94	4.13	595.00	79.70	---	674.70	796.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	581.00	59.50	---	640.50	751.00
	Inst	Ea	Sm	CA	1.94	4.13	664.00	79.70	---	743.70	875.00
White	Inst	Ea	Lg	CA	1.45	5.50	752.00	59.50	---	811.50	948.00
	Inst	Ea	Sm	CA	1.94	4.13	859.00	79.70	---	938.70	1100.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	752.00	59.50	---	811.50	948.00
	Inst	Ea	Sm	CA	1.94	4.13	859.00	79.70	---	938.70	1100.00
Etched glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	545.00	59.50	---	604.50	710.00
	Inst	Ea	Sm	CA	1.94	4.13	623.00	79.70	---	702.70	828.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	600.00	59.50	---	659.50	773.00
	Inst	Ea	Sm	CA	1.94	4.13	685.00	79.70	---	764.70	899.00
White	Inst	Ea	Lg	CA	1.45	5.50	780.00	59.50	---	839.50	981.00
	Inst	Ea	Sm	CA	1.94	4.13	892.00	79.70	---	971.70	1140.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	780.00	59.50	---	839.50	981.00
	Inst	Ea	Sm	CA	1.94	4.13	892.00	79.70	---	971.70	1140.00

Shower and tub doors, sliding glass

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P
Fluted											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	800.00	59.50	---	859.50	1000.00
	Inst	Ea	Sm	CA	1.94	4.13	914.00	79.70	---	993.70	1160.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	856.00	59.50	---	915.50	1070.00
	Inst	Ea	Sm	CA	1.94	4.13	978.00	79.70	---	1057.70	1240.00
White	Inst	Ea	Lg	CA	1.45	5.50	1040.00	59.50	---	1099.50	1280.00
	Inst	Ea	Sm	CA	1.94	4.13	1180.00	79.70	---	1259.70	1470.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	1040.00	59.50	---	1099.50	1280.00
	Inst	Ea	Sm	CA	1.94	4.13	1180.00	79.70	---	1259.70	1470.00
56" to 60" wide opening											
Obscure glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	527.00	59.50	---	586.50	690.00
	Inst	Ea	Sm	CA	1.94	4.13	602.00	79.70	---	681.70	804.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	582.00	59.50	---	641.50	752.00
	Inst	Ea	Sm	CA	1.94	4.13	665.00	79.70	---	744.70	876.00
White	Inst	Ea	Lg	CA	1.45	5.50	708.00	59.50	---	767.50	897.00
	Inst	Ea	Sm	CA	1.94	4.13	809.00	79.70	---	888.70	1040.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	708.00	59.50	---	767.50	897.00
	Inst	Ea	Sm	CA	1.94	4.13	809.00	79.70	---	888.70	1040.00
Clear glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	600.00	59.50	---	659.50	773.00
	Inst	Ea	Sm	CA	1.94	4.13	685.00	79.70	---	764.70	899.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	655.00	59.50	---	714.50	837.00
	Inst	Ea	Sm	CA	1.94	4.13	749.00	79.70	---	828.70	973.00
White	Inst	Ea	Lg	CA	1.45	5.50	824.00	59.50	---	883.50	1030.00
	Inst	Ea	Sm	CA	1.94	4.13	942.00	79.70	---	1021.70	1190.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	824.00	59.50	---	883.50	1030.00
	Inst	Ea	Sm	CA	1.94	4.13	942.00	79.70	---	1021.70	1190.00
Etched glass											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	620.00	59.50	---	679.50	796.00
	Inst	Ea	Sm	CA	1.94	4.13	708.00	79.70	---	787.70	926.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	674.00	59.50	---	733.50	859.00
	Inst	Ea	Sm	CA	1.94	4.13	770.00	79.70	---	849.70	997.00
White	Inst	Ea	Lg	CA	1.45	5.50	857.00	59.50	---	916.50	1070.00
	Inst	Ea	Sm	CA	1.94	4.13	979.00	79.70	---	1058.70	1240.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	857.00	59.50	---	916.50	1070.00
	Inst	Ea	Sm	CA	1.94	4.13	979.00	79.70	---	1058.70	1240.00
Fluted											
Chrome	Inst	Ea	Lg	CA	1.45	5.50	854.00	59.50	---	913.50	1070.00
	Inst	Ea	Sm	CA	1.94	4.13	976.00	79.70	---	1055.70	1230.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	959.00	59.50	---	1018.50	1190.00
	Inst	Ea	Sm	CA	1.94	4.13	1100.00	79.70	---	1179.70	1370.00
White	Inst	Ea	Lg	CA	1.45	5.50	1110.00	59.50	---	1169.50	1360.00
	Inst	Ea	Sm	CA	1.94	4.13	1270.00	79.70	---	1349.70	1570.00
Bone	Inst	Ea	Lg	CA	1.45	5.50	1110.00	59.50	---	1169.50	1360.00
	Inst	Ea	Sm	CA	1.94	4.13	1270.00	79.70	---	1349.70	1570.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Tub doors

Sliding tub doors, 2 bypassing panels

60" W x 58-1/4" H

Obscure glass

Chrome	Inst	Ea	Lg	CA	1.45	5.50	425.00	59.50	---	484.50	572.00
	Inst	Ea	Sm	CA	1.94	4.13	486.00	79.70	---	565.70	670.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	470.00	59.50	---	529.50	624.00
	Inst	Ea	Sm	CA	1.94	4.13	538.00	79.70	---	617.70	730.00

Clear glass

Chrome	Inst	Ea	Lg	CA	1.45	5.50	485.00	59.50	---	544.50	641.00
	Inst	Ea	Sm	CA	1.94	4.13	554.00	79.70	---	633.70	749.00
Polished brass	Inst	Ea	Lg	CA	1.45	5.50	530.00	59.50	---	589.50	693.00
	Inst	Ea	Sm	CA	1.94	4.13	606.00	79.70	---	685.70	808.00

Shower bases or receptors

American Standard Products, acrylic, includes drain strainer

Detach & reset operations

Any size	Reset	Ea	Lg	SB	2.67	6.00	44.10	109.00	---	153.10	208.00
	Reset	Ea	Sm	SB	3.56	4.50	48.60	145.00	---	193.60	266.00

Remove operations

Any size	Demo	Ea	Lg	SB	1.60	10.00	---	65.10	---	65.10	94.30
	Demo	Ea	Sm	SB	2.13	7.50	---	86.60	---	86.60	126.00

Install rough-in

Shower base

Any size	Inst	Ea	Lg	SB	13.3	1.20	98.00	541.00	---	639.00	897.00
	Inst	Ea	Sm	SB	17.8	0.90	108.00	724.00	---	832.00	1170.00

Replace operations

32" x 32" x 6-5/8" H, single threshold

White	Inst	Ea	Lg	SB	4.00	4.00	588.00	163.00	---	751.00	912.00
	Inst	Ea	Sm	SB	5.33	3.00	648.00	217.00	---	865.00	1060.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	609.00	163.00	---	772.00	936.00
	Inst	Ea	Sm	SB	5.33	3.00	671.00	217.00	---	888.00	1090.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	635.00	163.00	---	798.00	966.00
	Inst	Ea	Sm	SB	5.33	3.00	700.00	217.00	---	917.00	1120.00

36" x 36-3/16" x 6-5/8" H, single threshold

White	Inst	Ea	Lg	SB	4.00	4.00	648.00	163.00	---	811.00	981.00
	Inst	Ea	Sm	SB	5.33	3.00	714.00	217.00	---	931.00	1140.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	670.00	163.00	---	833.00	1010.00
	Inst	Ea	Sm	SB	5.33	3.00	739.00	217.00	---	956.00	1160.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	700.00	163.00	---	863.00	1040.00
	Inst	Ea	Sm	SB	5.33	3.00	771.00	217.00	---	988.00	1200.00

Shower bases or receptacles

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
42-1/8" x 42-1/8" x 6-5/8" H, single threshold											
White	Inst	Ea	Lg	SB	4.00	4.00	723.00	163.00	---	886.00	1070.00
	Inst	Ea	Sm	SB	5.33	3.00	797.00	217.00	---	1014.00	1230.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	748.00	163.00	---	911.00	1100.00
	Inst	Ea	Sm	SB	5.33	3.00	824.00	217.00	---	1041.00	1260.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	783.00	163.00	---	946.00	1140.00
	Inst	Ea	Sm	SB	5.33	3.00	863.00	217.00	---	1080.00	1310.00
48-1/8" x 34-1/4" x 6-5/8" H, single threshold											
White	Inst	Ea	Lg	SB	4.00	4.00	799.00	163.00	---	962.00	1150.00
	Inst	Ea	Sm	SB	5.33	3.00	880.00	217.00	---	1097.00	1330.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	825.00	163.00	---	988.00	1180.00
	Inst	Ea	Sm	SB	5.33	3.00	909.00	217.00	---	1126.00	1360.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	864.00	163.00	---	1027.00	1230.00
	Inst	Ea	Sm	SB	5.33	3.00	953.00	217.00	---	1170.00	1410.00
60-1/8" x 34-1/8" x 6-5/8" H, single threshold											
White	Inst	Ea	Lg	SB	4.00	4.00	1000.00	163.00	---	1163.00	1390.00
	Inst	Ea	Sm	SB	5.33	3.00	1110.00	217.00	---	1327.00	1590.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	1020.00	163.00	---	1183.00	1410.00
	Inst	Ea	Sm	SB	5.33	3.00	1130.00	217.00	---	1347.00	1610.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	1070.00	163.00	---	1233.00	1470.00
	Inst	Ea	Sm	SB	5.33	3.00	1180.00	217.00	---	1397.00	1670.00
36-1/4" x 36-1/8" x 6-5/8" H, neo angle											
White	Inst	Ea	Lg	SB	4.00	4.00	607.00	163.00	---	770.00	933.00
	Inst	Ea	Sm	SB	5.33	3.00	669.00	217.00	---	886.00	1080.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	621.00	163.00	---	784.00	950.00
	Inst	Ea	Sm	SB	5.33	3.00	685.00	217.00	---	902.00	1100.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	635.00	163.00	---	798.00	966.00
	Inst	Ea	Sm	SB	5.33	3.00	700.00	217.00	---	917.00	1120.00
38-1/8" x 38-1/16" x 6-5/8" H, neo angle											
White	Inst	Ea	Lg	SB	4.00	4.00	677.00	163.00	---	840.00	1010.00
	Inst	Ea	Sm	SB	5.33	3.00	746.00	217.00	---	963.00	1170.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	687.00	163.00	---	850.00	1030.00
	Inst	Ea	Sm	SB	5.33	3.00	757.00	217.00	---	974.00	1180.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	696.00	163.00	---	859.00	1040.00
	Inst	Ea	Sm	SB	5.33	3.00	767.00	217.00	---	984.00	1200.00
42-1/4" x 42-1/8" x 6-5/8" H, neo angle											
White	Inst	Ea	Lg	SB	4.00	4.00	837.00	163.00	---	1000.00	1200.00
	Inst	Ea	Sm	SB	5.33	3.00	922.00	217.00	---	1139.00	1370.00
Colors	Inst	Ea	Lg	SB	4.00	4.00	857.00	163.00	---	1020.00	1220.00
	Inst	Ea	Sm	SB	5.33	3.00	944.00	217.00	---	1161.00	1400.00
Premium colors	Inst	Ea	Lg	SB	4.00	4.00	876.00	163.00	---	1039.00	1240.00
	Inst	Ea	Sm	SB	5.33	3.00	966.00	217.00	---	1183.00	1420.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Shower stalls

Shower stall units with slip-resistant fiberglass floors, and reinforced plastic integral wall surrounds (Aqua Glass), available in white or color, with good quality fittings, single control faucets, and shower head sprayer

Detach & reset operations

Single integral piece	Reset	Ea	Lg	SB	5.33	3.00	78.80	217.00	---	295.80	405.00
	Reset	Ea	Sm	SB	7.11	2.25	82.50	289.00	---	371.50	514.00
Multi-piece, non-integral	Reset	Ea	Lg	SB	4.00	4.00	78.80	163.00	---	241.80	326.00
	Reset	Ea	Sm	SB	5.33	3.00	82.50	217.00	---	299.50	409.00

Remove operations

Single integral piece	Demo	Ea	Lg	SB	2.67	6.00	52.50	109.00	---	161.50	218.00
	Demo	Ea	Sm	SB	3.56	4.50	55.00	145.00	---	200.00	273.00
Multi-piece, non-integral	Demo	Ea	Lg	SB	2.00	8.00	52.50	81.30	---	133.80	178.00
	Demo	Ea	Sm	SB	2.67	6.00	55.00	109.00	---	164.00	221.00

Install rough-in

Shower stall, any size	Inst	Ea	Lg	SB	10.0	1.60	105.00	407.00	---	512.00	710.00
	Inst	Ea	Sm	SB	13.3	1.20	110.00	541.00	---	651.00	911.00

Replace operations

Three-wall stall, one integral piece, no door, with plastic drain

Lasco Compact, Paloma-I

32" x 32" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	801.00	325.00	---	1126.00	1390.00
	Inst	Ea	Sm	SB	10.7	1.50	839.00	435.00	---	1274.00	1600.00

Lasco Compact, Paloma-II

34" x 34" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	895.00	325.00	---	1220.00	1500.00
	Inst	Ea	Sm	SB	10.7	1.50	937.00	435.00	---	1372.00	1710.00

Lasco Compact, Paloma-III

36" x 36" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	862.00	325.00	---	1187.00	1460.00
	Inst	Ea	Sm	SB	10.7	1.50	903.00	435.00	---	1338.00	1670.00

Lasco Compact, Paloma-IV

42" x 34" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	910.00	325.00	---	1235.00	1520.00
	Inst	Ea	Sm	SB	10.7	1.50	954.00	435.00	---	1389.00	1730.00

Lasco Deluxe, Larissa, 1 seat

47-3/4" x 33-1/2" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	988.00	325.00	---	1313.00	1610.00
	Inst	Ea	Sm	SB	10.7	1.50	1040.00	435.00	---	1475.00	1820.00

Shower stalls, two-wall, one-piece

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

**Lasco Deluxe, Camila-I, 2 seat
48" x 35" x 72" H**

Stock color	Inst	Ea	Lg	SB	8.00	2.00	950.00	325.00	---	1275.00	1560.00
	Inst	Ea	Sm	SB	10.7	1.50	996.00	435.00	---	1431.00	1780.00

**Lasco Deluxe, Camila-II, 2 seat
54" x 35" x 72" H**

Stock color	Inst	Ea	Lg	SB	8.89	1.80	978.00	361.00	---	1339.00	1650.00
	Inst	Ea	Sm	SB	11.9	1.35	1020.00	484.00	---	1504.00	1880.00

**Lasco Deluxe, Camila-III, 2 seat
60" x 35" x 72" H**

Stock color	Inst	Ea	Lg	SB	8.89	1.80	988.00	361.00	---	1349.00	1660.00
	Inst	Ea	Sm	SB	11.9	1.35	1040.00	484.00	---	1524.00	1890.00

Two-wall stall, one integral piece, no door, with plastic drain

**Lasco Varina, space saver
36" x 36" x 72" H**

Stock color	Inst	Ea	Lg	SB	8.00	2.00	903.00	325.00	---	1228.00	1510.00
	Inst	Ea	Sm	SB	10.7	1.50	946.00	435.00	---	1381.00	1720.00

**Lasco Galina-I, space saver, neo angle
38" x 38" x 72" H**

Stock color	Inst	Ea	Lg	SB	8.00	2.00	851.00	325.00	---	1176.00	1450.00
	Inst	Ea	Sm	SB	10.7	1.50	891.00	435.00	---	1326.00	1660.00

**Lasco Galina-II, space saver, neo angle
38" x 38" x 80" H**

Stock color	Inst	Ea	Lg	SB	8.00	2.00	916.00	325.00	---	1241.00	1520.00
	Inst	Ea	Sm	SB	10.7	1.50	959.00	435.00	---	1394.00	1730.00

**Lasco Galina-III, space saver, neo angle
36" x 36" x 77" H**

Stock color	Inst	Ea	Lg	SB	8.00	2.00	1230.00	325.00	---	1555.00	1880.00
	Inst	Ea	Sm	SB	10.7	1.50	1280.00	435.00	---	1715.00	2110.00

**Lasco Neopolitan-I, space saver, neo angle
38" x 38" x 72" H**

Stock color	Inst	Ea	Lg	SB	8.00	2.00	969.00	325.00	---	1294.00	1590.00
	Inst	Ea	Sm	SB	10.7	1.50	1020.00	435.00	---	1455.00	1800.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Multi-piece, nonintegral, nonassembled units with drain

Lasco Caledon-I, 2-piece

32" x 32" x 72-3/4" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	839.00	325.00	---	1164.00	1440.00
	Inst	Ea	Sm	SB	10.7	1.50	879.00	435.00	---	1314.00	1640.00

Lasco Caledon-II, 3-piece

36" x 36" x 72-3/4" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	950.00	325.00	---	1275.00	1560.00
	Inst	Ea	Sm	SB	10.7	1.50	996.00	435.00	---	1431.00	1780.00

Lasco Caledon-III, 2-piece

48" x 34" x 72" H

Stock color	Inst	Ea	Lg	SB	8.89	1.80	984.00	361.00	---	1345.00	1660.00
	Inst	Ea	Sm	SB	11.9	1.35	1030.00	484.00	---	1514.00	1890.00

Lasco Caledon-III, 3-piece

48" x 34" x 72-3/4" H

Stock color	Inst	Ea	Lg	SB	8.89	1.80	922.00	361.00	---	1283.00	1580.00
	Inst	Ea	Sm	SB	11.9	1.35	966.00	484.00	---	1450.00	1810.00

Lasco Talia-II, 2-piece

36" x 36" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	928.00	325.00	---	1253.00	1540.00
	Inst	Ea	Sm	SB	10.7	1.50	972.00	435.00	---	1407.00	1750.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Shower tub units

Shower tub three-wall stall combinations are fiberglass reinforced plastic with integral bath/shower and wall surrounds; includes good quality fittings, single control faucets, and shower head sprayer

Detach & reset operations

Single integral piece	Reset	Ea	Lg	SB	5.33	3.00	78.80	217.00	---	295.80	405.00
	Reset	Ea	Sm	SB	7.11	2.25	90.00	289.00	---	379.00	523.00
Multi-piece, non-integral	Reset	Ea	Lg	SB	4.00	4.00	78.80	163.00	---	241.80	326.00
	Reset	Ea	Sm	SB	5.33	3.00	90.00	217.00	---	307.00	418.00

Remove operations

Single integral piece	Demo	Ea	Lg	SB	2.67	6.00	52.50	109.00	---	161.50	218.00
	Demo	Ea	Sm	SB	3.56	4.50	60.00	145.00	---	205.00	279.00
Multi-piece, non-integral	Demo	Ea	Lg	SB	2.00	8.00	52.50	81.30	---	133.80	178.00
	Demo	Ea	Sm	SB	2.67	6.00	60.00	109.00	---	169.00	226.00

Install rough-in

Shower tub	Inst	Ea	Lg	SB	11.4	1.40	105.00	464.00	---	569.00	793.00
	Inst	Ea	Sm	SB	15.2	1.05	120.00	618.00	---	738.00	1030.00

Replace operations

One-piece combination (unitized), no door

Lasco Kassia, with grab bar
54-1/2" x 29" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	842.00	325.00	---	1167.00	1440.00
	Inst	Ea	Sm	SB	10.7	1.50	962.00	435.00	---	1397.00	1740.00

Lasco Capriel-I, with grab bar
60" x 30" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	969.00	325.00	---	1294.00	1590.00
	Inst	Ea	Sm	SB	10.7	1.50	1110.00	435.00	---	1545.00	1900.00

Lasco Capriel-II, with grab bar
60" x 32" x 74" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	989.00	325.00	---	1314.00	1610.00
	Inst	Ea	Sm	SB	10.7	1.50	1130.00	435.00	---	1565.00	1930.00

Lasco Capriel-III, with grab bar
60" x 32" x 78" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	1080.00	325.00	---	1405.00	1710.00
	Inst	Ea	Sm	SB	10.7	1.50	1230.00	435.00	---	1665.00	2050.00

Multi-piece combination, no door

Lasco Mali, 3-piece
60" x 30" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	991.00	325.00	---	1316.00	1610.00
	Inst	Ea	Sm	SB	10.7	1.50	1130.00	435.00	---	1565.00	1930.00

Lasco Oriana, 2-piece
60" x 30" x 72" H

Stock color	Inst	Ea	Lg	SB	8.00	2.00	927.00	325.00	---	1252.00	1540.00
	Inst	Ea	Sm	SB	10.7	1.50	1060.00	435.00	---	1495.00	1850.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Shutters

Aluminum, louvered, 14" W

3'-0" long	Inst	Pair	Lg	CA	1.00	8.00	186.00	41.10	---	227.10	271.00
	Inst	Pair	Sm	CA	1.33	6.00	205.00	54.60	---	259.60	312.00
6'-8" long	Inst	Pair	Lg	CA	1.00	8.00	343.00	41.10	---	384.10	452.00
	Inst	Pair	Sm	CA	1.33	6.00	378.00	54.60	---	432.60	511.00

Pine or fir, provincial raised panel, primed, in stock, 1-1/16" T

12" W

2'-1" long	Inst	Pair	Lg	CA	1.00	8.00	106.00	41.10	---	147.10	180.00
	Inst	Pair	Sm	CA	1.33	6.00	117.00	54.60	---	171.60	211.00
3'-1" long	Inst	Pair	Lg	CA	1.00	8.00	117.00	41.10	---	158.10	192.00
	Inst	Pair	Sm	CA	1.33	6.00	129.00	54.60	---	183.60	225.00
4'-1" long	Inst	Pair	Lg	CA	1.00	8.00	152.00	41.10	---	193.10	232.00
	Inst	Pair	Sm	CA	1.33	6.00	167.00	54.60	---	221.60	269.00
5'-1" long	Inst	Pair	Lg	CA	1.00	8.00	205.00	41.10	---	246.10	294.00
	Inst	Pair	Sm	CA	1.33	6.00	226.00	54.60	---	280.60	337.00
6'-1" long	Inst	Pair	Lg	CA	1.00	8.00	246.00	41.10	---	287.10	341.00
	Inst	Pair	Sm	CA	1.33	6.00	272.00	54.60	---	326.60	389.00

18" W

2'-1" long	Inst	Pair	Lg	CA	1.00	8.00	133.00	41.10	---	174.10	210.00
	Inst	Pair	Sm	CA	1.33	6.00	147.00	54.60	---	201.60	245.00
3'-1" long	Inst	Pair	Lg	CA	1.00	8.00	146.00	41.10	---	187.10	226.00
	Inst	Pair	Sm	CA	1.33	6.00	161.00	54.60	---	215.60	262.00
4'-1" long	Inst	Pair	Lg	CA	1.00	8.00	190.00	41.10	---	231.10	276.00
	Inst	Pair	Sm	CA	1.33	6.00	209.00	54.60	---	263.60	317.00
5'-1" long	Inst	Pair	Lg	CA	1.00	8.00	257.00	41.10	---	298.10	353.00
	Inst	Pair	Sm	CA	1.33	6.00	283.00	54.60	---	337.60	402.00
6'-1" long	Inst	Pair	Lg	CA	1.00	8.00	308.00	41.10	---	349.10	412.00
	Inst	Pair	Sm	CA	1.33	6.00	340.00	54.60	---	394.60	467.00

Door blinds, 6'-9" long

1'-3" wide	Inst	Pair	Lg	CA	1.00	8.00	320.00	41.10	---	361.10	426.00
	Inst	Pair	Sm	CA	1.33	6.00	353.00	54.60	---	407.60	483.00
1'-6" wide	Inst	Pair	Lg	CA	1.00	8.00	401.00	41.10	---	442.10	518.00
	Inst	Pair	Sm	CA	1.33	6.00	441.00	54.60	---	495.60	584.00

Shutters, Western Hemlock, Colonial style

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P

Birch, special order stationary slat blinds, 1-1/16" T

12" W

2'-1" long	Inst	Pair	Lg	CA	1.00	8.00	160.00	41.10	---	201.10	241.00
	Inst	Pair	Sm	CA	1.33	6.00	176.00	54.60	---	230.60	279.00
3'-1" long	Inst	Pair	Lg	CA	1.00	8.00	176.00	41.10	---	217.10	259.00
	Inst	Pair	Sm	CA	1.33	6.00	193.00	54.60	---	247.60	299.00
4'-1" long	Inst	Pair	Lg	CA	1.00	8.00	228.00	41.10	---	269.10	319.00
	Inst	Pair	Sm	CA	1.33	6.00	251.00	54.60	---	305.60	365.00
5'-1" long	Inst	Pair	Lg	CA	1.00	8.00	308.00	41.10	---	349.10	412.00
	Inst	Pair	Sm	CA	1.33	6.00	340.00	54.60	---	394.60	467.00
6'-1" long	Inst	Pair	Lg	CA	1.00	8.00	370.00	41.10	---	411.10	483.00
	Inst	Pair	Sm	CA	1.33	6.00	407.00	54.60	---	461.60	545.00

18" W

2'-1" long	Inst	Pair	Lg	CA	1.00	8.00	199.00	41.10	---	240.10	287.00
	Inst	Pair	Sm	CA	1.33	6.00	220.00	54.60	---	274.60	329.00
3'-1" long	Inst	Pair	Lg	CA	1.00	8.00	219.00	41.10	---	260.10	310.00
	Inst	Pair	Sm	CA	1.33	6.00	242.00	54.60	---	296.60	355.00
4'-1" long	Inst	Pair	Lg	CA	1.00	8.00	284.00	41.10	---	325.10	385.00
	Inst	Pair	Sm	CA	1.33	6.00	313.00	54.60	---	367.60	437.00
5'-1" long	Inst	Pair	Lg	CA	1.00	8.00	385.00	41.10	---	426.10	500.00
	Inst	Pair	Sm	CA	1.33	6.00	424.00	54.60	---	478.60	565.00
6'-1" long	Inst	Pair	Lg	CA	1.00	8.00	462.00	41.10	---	503.10	589.00
	Inst	Pair	Sm	CA	1.33	6.00	509.00	54.60	---	563.60	662.00

Western hemlock, colonial style, primed, 1-1/8" T

14" wide

5'-7" long	Inst	Pair	Lg	CA	1.00	8.00	271.00	41.10	---	312.10	369.00
	Inst	Pair	Sm	CA	1.33	6.00	299.00	54.60	---	353.60	420.00

16" wide

3'-0" long	Inst	Pair	Lg	CA	1.00	8.00	207.00	41.10	---	248.10	296.00
	Inst	Pair	Sm	CA	1.33	6.00	229.00	54.60	---	283.60	339.00
4'-3" long	Inst	Pair	Lg	CA	1.00	8.00	273.00	41.10	---	314.10	371.00
	Inst	Pair	Sm	CA	1.33	6.00	301.00	54.60	---	355.60	422.00
5'-0" long	Inst	Pair	Lg	CA	1.00	8.00	339.00	41.10	---	380.10	447.00
	Inst	Pair	Sm	CA	1.33	6.00	373.00	54.60	---	427.60	506.00
6'-0" long	Inst	Pair	Lg	CA	1.00	8.00	407.00	41.10	---	448.10	525.00
	Inst	Pair	Sm	CA	1.33	6.00	448.00	54.60	---	502.60	592.00

Door blinds, 6'-9" long

1'-3" wide	Inst	Pair	Lg	CA	1.00	8.00	481.00	41.10	---	522.10	610.00
	Inst	Pair	Sm	CA	1.33	6.00	530.00	54.60	---	584.60	686.00
1'-6" wide	Inst	Pair	Lg	CA	1.00	8.00	601.00	41.10	---	642.10	748.00
	Inst	Pair	Sm	CA	1.33	6.00	662.00	54.60	---	716.60	838.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Cellwood shutters, molded structural foam polystyrene

Prefinished louver, 16" wide

3'-3" long	Inst	Pair	Lg	CA	1.00	8.00	34.80	41.10	---	75.90	97.50
	Inst	Pair	Sm	CA	1.33	6.00	38.30	54.60	---	92.90	121.00
4'-7" long	Inst	Pair	Lg	CA	1.00	8.00	53.10	41.10	---	94.20	119.00
	Inst	Pair	Sm	CA	1.33	6.00	58.60	54.60	---	113.20	144.00
5'-3" long	Inst	Pair	Lg	CA	1.00	8.00	61.50	41.10	---	102.60	128.00
	Inst	Pair	Sm	CA	1.33	6.00	67.80	54.60	---	122.40	154.00
6'-3" long	Inst	Pair	Lg	CA	1.00	8.00	73.80	41.10	---	114.90	142.00
	Inst	Pair	Sm	CA	1.33	6.00	81.40	54.60	---	136.00	170.00

Door blinds

16" wide x 6'-9" long	Inst	Pair	Lg	CA	1.00	8.00	86.20	41.10	---	127.30	157.00
	Inst	Pair	Sm	CA	1.33	6.00	94.90	54.60	---	149.50	186.00

Prefinished panel, 16" wide

3'-3" long	Inst	Pair	Lg	CA	1.00	8.00	38.30	41.10	---	79.40	101.00
	Inst	Pair	Sm	CA	1.33	6.00	42.20	54.60	---	96.80	125.00
4'-7" long	Inst	Pair	Lg	CA	1.00	8.00	58.40	41.10	---	99.50	125.00
	Inst	Pair	Sm	CA	1.33	6.00	64.40	54.60	---	119.00	151.00
5'-3" long	Inst	Pair	Lg	CA	1.00	8.00	67.70	41.10	---	108.80	135.00
	Inst	Pair	Sm	CA	1.33	6.00	74.60	54.60	---	129.20	162.00
6'-3" long	Inst	Pair	Lg	CA	1.00	8.00	81.20	41.10	---	122.30	151.00
	Inst	Pair	Sm	CA	1.33	6.00	89.50	54.60	---	144.10	179.00

Door blinds

16" wide x 6'-9" long	Inst	Pair	Lg	CA	1.00	8.00	94.80	41.10	---	135.90	166.00
	Inst	Pair	Sm	CA	1.33	6.00	104.00	54.60	---	158.60	197.00

Siding

Aluminum Siding

1. **Dimensions and Descriptions.** The types of aluminum siding discussed are: (1) painted (2) available in various colors, (3) either 0.024" gauge or 0.019" gauge. The types of aluminum siding discussed in this section are:
 - a. Clapboard: 12'-6" long; 8" exposure; $\frac{5}{8}$ " butt; 0.024" gauge.
 - b. Board and batten: 10'-0" long; 10" exposure; $\frac{1}{2}$ " butt; 0.024" gauge.
 - c. "Double-five-inch" clapboard: 12'-0" long; 10" exposure; $\frac{1}{2}$ " butt; 0.024" gauge.
 - d. Sculpture clapboard: 12'-6" long; 8" exposure; $\frac{1}{2}$ " butt; 0.024" gauge.
 - e. Shingle siding: 24" long; 12" exposure; $1\frac{1}{8}$ " butt; 0.019" gauge.

Most types of aluminum siding may be available in a smooth or rough texture.

2. **Installation.** Applied horizontally with nails. See chart below.
3. **Estimating Technique.** Determine area and deduct area of window and door openings then add for cutting and fitting waste. In the figures on aluminum siding, no waste has been included.

Type	Exposure	Butt	Normal Range of Cut & Fit Waste*
Clapboard	8"	$\frac{5}{8}$ "	6% - 10%
Board & Batten	10"	$\frac{1}{2}$ "	4% - 8%
Double-Five-Inch	10"	$\frac{1}{2}$ "	6% - 10%
Sculptured	8"	$\frac{1}{2}$ "	6% - 10%
Shingle Siding	12"	$1\frac{1}{8}$ "	4% - 6%

*The amount of waste will vary with the methods of installing siding and can be affected by dimension of the area to be covered.

Wood Siding

The types of wood exterior finishes covered in this section are:

- a. Bevel siding
- b. Drop siding
- c. Vertical siding
- d. Batten siding
- e. Plywood siding with battens
- f. Wood shingle siding

Bevel Siding

1. **Dimension.** Boards are 4", 6", 8", or 12" wide with a thickness of the top edge of $\frac{3}{16}$ ". The thickness of the bottom edge is $\frac{9}{16}$ " for 4" and 6" widths and $\frac{11}{16}$ " for 8", 10", 12" widths.
2. **Installation.** Applied horizontally with 6d or 8d common nails. See exposure and waste table below.
3. **Estimating Technique.** Determine area and deduct area of window and door openings, then add for lap, exposure, and cutting and fitting waste. In the figures on bevel siding, waste has been included, unless otherwise noted.

Board Size	Actual Width	Lap	Exposure	Milling & Lap Waste	Normal Range of Cut & Fit Waste*
$\frac{1}{2}$ " x 4"	$3\frac{1}{4}$ "	$\frac{1}{2}$ "	$2\frac{3}{4}$ "	31.25%	19% - 23%
$\frac{1}{2}$ " x 6"	$5\frac{1}{4}$ "	$\frac{1}{2}$ "	$4\frac{3}{4}$ "	21.00%	10% - 13%
$\frac{1}{2}$ " x 8"	$7\frac{1}{4}$ "	$\frac{1}{2}$ "	$6\frac{3}{4}$ "	15.75%	7% - 10%
$\frac{5}{8}$ " x 4"	$3\frac{1}{4}$ "	$\frac{1}{2}$ "	$2\frac{3}{4}$ "	31.25%	19% - 23%
$\frac{5}{8}$ " x 6"	$5\frac{1}{4}$ "	$\frac{1}{2}$ "	$4\frac{3}{4}$ "	21.00%	10% - 13%
$\frac{5}{8}$ " x 8"	$7\frac{1}{4}$ "	$\frac{1}{2}$ "	$6\frac{3}{4}$ "	15.75%	7% - 10%
$\frac{5}{8}$ " x 10"	$9\frac{1}{4}$ "	$\frac{1}{2}$ "	$8\frac{3}{4}$ "	12.50%	6% - 10%
$\frac{3}{4}$ " x 6"	$5\frac{1}{4}$ "	$\frac{1}{2}$ "	$4\frac{3}{4}$ "	21.00%	10% - 13%
$\frac{3}{4}$ " x 8"	$7\frac{1}{4}$ "	$\frac{1}{2}$ "	$6\frac{3}{4}$ "	15.75%	7% - 10%
$\frac{3}{4}$ " x 10"	$9\frac{1}{4}$ "	$\frac{1}{2}$ "	$8\frac{3}{4}$ "	12.50%	6% - 10%
$\frac{3}{4}$ " x 12"	$11\frac{1}{4}$ "	$\frac{1}{2}$ "	$10\frac{3}{4}$ "	10.50%	6% - 10%

*The amount of waste will vary with the methods of installing siding and can be affected by dimension of the area to be covered.

Drop Siding, Tongue-and-Groove

1. **Dimension.** The boards are 4", 6", 8", 10", or 12" wide, and all boards are $\frac{3}{4}$ " thick at both edges.
2. **Installation.** Applied horizontally, usually with 8d common nails. See exposure and waste table below:

Board Size	Actual Width	Lap +1/16"	Exposure	Milling & Lap Waste	Normal Range of Cut & Waste*
1" x 4"	3 $\frac{1}{4}$ "	$\frac{3}{16}$ "	3 $\frac{1}{16}$ "	23.50%	7% - 10%
1" x 6"	5 $\frac{1}{4}$ "	$\frac{3}{16}$ "	5 $\frac{1}{16}$ "	15.75%	6% - 8%
1" x 8"	7 $\frac{1}{4}$ "	$\frac{3}{16}$ "	7 $\frac{1}{16}$ "	11.75%	5% - 6%
1" x 10"	9 $\frac{1}{4}$ "	$\frac{3}{16}$ "	9 $\frac{1}{16}$ "	9.50%	4% - 5%
1" x 12"	11 $\frac{1}{4}$ "	$\frac{3}{16}$ "	11 $\frac{1}{16}$ "	8.00%	4% - 5%

*The amount of waste will vary with the methods of installing siding and can be affected by dimensions of the area to be covered.

3. **Estimating Technique.** Determine area and deduct area of window and door openings; then add for lap, exposure, butting and fitting waste. In the figures on drop siding, waste has been included, unless otherwise noted.

Vertical Siding, Tongue-and-Groove

1. **Dimensions.** Boards are 8", 10", or 12" wide, and all boards are $\frac{3}{4}$ " thick at both top and bottom edges.
2. **Installation.** Applied vertically over horizontal furring strips usually with 8d common nails. See exposure and waste table below:

Board Size	Actual Width	Lap $\frac{1}{16}$ "	Exposure	Milling & Lap Waste	Normal Range of Cut & Fit Waste
1" x 8"	7 $\frac{1}{4}$ "	$\frac{3}{16}$ "	7 $\frac{1}{16}$ "	11.75%	5% - 7%
1" x 10"	9 $\frac{1}{4}$ "	$\frac{3}{16}$ "	9 $\frac{1}{16}$ "	9.50%	4% - 5%
1" x 12"	11 $\frac{1}{4}$ "	$\frac{3}{16}$ "	11 $\frac{1}{16}$ "	8.00%	4% - 5%

3. **Estimating Technique.** Determine area and deduct area of window and door openings; then add for lap, exposure, cutting and fitting waste. In the figures on vertical siding, waste has been included, unless otherwise noted.

Batten Siding

1. **Dimension.** The boards are 8", 10", or 12" wide. If the boards are rough, they are 1" thick; if the boards are dressed, then they are $\frac{25}{32}$ " thick. The battens are 1" thick and 2" wide.
2. **Installation.** The 8", 10", or 12"-wide boards are installed vertically over 1" x 3" or 1" x 4" horizontal furring strips. The battens are then installed over the seams of the vertical boards. See exposure and waste table below:

Board Size & Type	Actual Width & Exposure	Milling Waste	Normal Range of Cut & Fit Waste*
1" x 8" rough sawn	8"	—	3% - 5%
dressed	7 $\frac{1}{2}$ "	6.25%	3% - 5%
1" x 10" rough sawn	10"	—	3% - 5%
dressed	9 $\frac{1}{2}$ "	5.00%	3% - 5%
1" x 12" rough sawn	12"	—	3% - 5%
dressed	11 $\frac{1}{2}$ "	4.25%	3% - 5%

*The amount of waste will vary with the methods of installing siding and can be affected by dimension of the area to be covered.

3. **Estimating Technique.** Determine area and deduct area of window and door openings; then add for exposure, cutting and fitting waste. In the figures on batten siding, waste has been included, unless otherwise noted.

Quantity of Battens - No Cut and Fit Waste Included	
Board Size and Type	LF per SF or BF
1" x 6" rough sawn	2.00
dressed	2.25
1" x 8" rough sawn	1.55
dressed	1.60
1" x 10" rough sawn	1.20
dressed	1.30
1" x 12" rough sawn	1.00
dressed	1.05

Plywood Siding with Battens

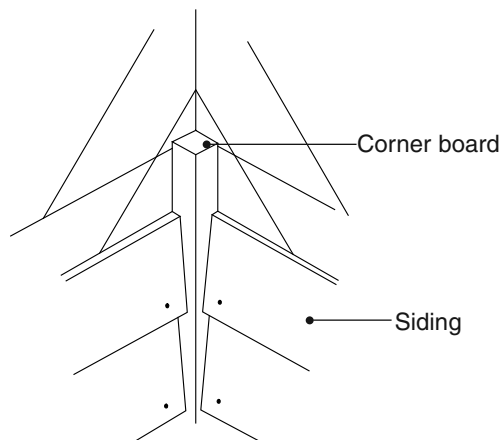
1. **Dimensions.** The plywood panels are 4' wide and 8', 9', or 10' long. The panels are $\frac{3}{8}$ ", $\frac{1}{2}$ " or $\frac{5}{8}$ " thick. The battens are 1" thick and 2" wide.
2. **Installation.** The panels are applied directly to the studs with the 4'-0" width parallel to the plate. Nails used are 6d commons. The waste will normally range from 3% to 5%.

Quantity of Battens - No Cut and Fit Waste Included	
Spacing	LF per SF or BF
16" oc	.75
24" oc	.50

3. **Estimating Technique.** Determine area and deduct area of window and door openings; then add for cutting and fitting waste. In the figures on plywood siding with battens, waste has been included, unless otherwise noted.

Wood Shingle Siding

1. **Dimension.** The wood shingles have an average width of 4" and length of 16", 18" or 24". The thickness may vary in all cases.

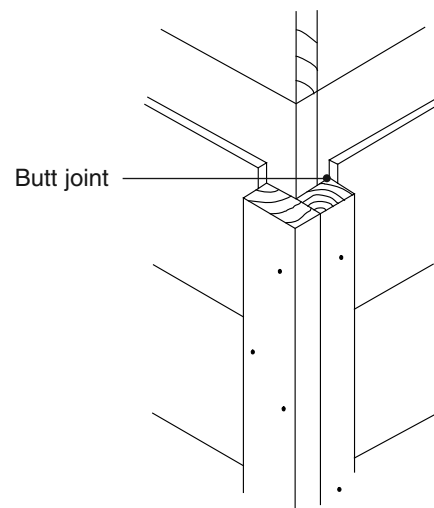


Corner board for application of horizontal siding at interior corner

2. **Installation.** On roofs with wood shingles, there should be three thicknesses of wood shingle at every point on the roof. But on exterior walls with wood shingles, only two thicknesses of wood siding shingles are needed. Nail to 1" x 3" or 1" x 4" furring strips using 3d rust-resistant nails. Use 5d rust-resistant nails when applying new shingles over old shingles. See table below:

Shingle Length	Exposure	Shingles per Square, No Waste Included	Lbs. of Nails at Two Nails per Shingle	
			3d	5d
16"	7 $\frac{1}{2}$ "	480	2.3	2.7
18"	8 $\frac{1}{2}$ "	424	2.0	2.4
24"	11 $\frac{1}{2}$ "	313	1.5	1.8

3. **Estimating Technique.** Determine the area and deduct the area of window and door openings. Then add approximately 10% for waste. In the figures on wood shingle siding, waste has been included, unless otherwise noted. In the above table, pounds of nails per square are based on two nails per shingle. For one nail per shingle, deduct 50%.



Corner boards for application of horizontal siding at exterior corner

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours per Unit	Output per Day					
							Cost	Cost	Cost	Cost	O&P

Siding

Aluminum, nailed to wood

Clapboard (i.e. lap, drop)

8" exposure	Demo	SF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.022	717.5	---	.73	---	.73	1.03
10" exposure	Demo	SF	Lg	LB	.013	1280	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.018	896.0	---	.60	---	.60	.84

Clapboard, horizontal, 1/2" butt

Straight wall

8" exposure	Inst	SF	Lg	2C	.026	620.0	2.09	1.07	---	3.16	3.90
	Inst	SF	Sm	2C	.037	434.0	2.35	1.52	---	3.87	4.83
10" exposure	Inst	SF	Lg	2C	.021	770.0	1.74	.86	---	2.60	3.21
	Inst	SF	Sm	2C	.030	539.0	1.96	1.23	---	3.19	3.98

Cut-up wall

8" exposure	Inst	SF	Lg	2C	.031	520.0	2.75	1.27	---	4.02	4.94
	Inst	SF	Sm	2C	.044	364.0	3.09	1.81	---	4.90	6.08
10" exposure	Inst	SF	Lg	2C	.025	640.0	2.39	1.03	---	3.42	4.19
	Inst	SF	Sm	2C	.036	448.0	2.69	1.48	---	4.17	5.16

Corrugated (2-1/2"), 26" W, 2-1/2" side lap, 4" end lap

	Demo	SF	Lg	LB	.013	1200	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.019	840.0	---	.63	---	.63	.89

0.0175" thick

Natural	Inst	SF	Lg	UC	.019	1660	2.42	.76	---	3.18	3.86
	Inst	SF	Sm	UC	.028	1162	2.70	1.12	---	3.82	4.69
Painted	Inst	SF	Lg	UC	.019	1660	2.61	.76	---	3.37	4.08
	Inst	SF	Sm	UC	.028	1162	2.93	1.12	---	4.05	4.96

0.019" thick

Natural	Inst	SF	Lg	UC	.019	1660	2.46	.76	---	3.22	3.91
	Inst	SF	Sm	UC	.028	1162	2.75	1.12	---	3.87	4.75
Painted	Inst	SF	Lg	UC	.019	1660	2.67	.76	---	3.43	4.15
	Inst	SF	Sm	UC	.028	1162	2.99	1.12	---	4.11	5.03

Panels, 4' x 8' board and batten (12" oc)

	Demo	SF	Lg	LB	.007	2400	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1680	---	.33	---	.33	.47

Straight wall

Smooth	Inst	SF	Lg	2C	.013	1220	2.16	.53	---	2.69	3.23
	Inst	SF	Sm	2C	.019	854.0	2.42	.78	---	3.20	3.88
Rough sawn	Inst	SF	Lg	2C	.013	1220	2.37	.53	---	2.90	3.47
	Inst	SF	Sm	2C	.019	854.0	2.65	.78	---	3.43	4.14

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Cut-up wall

Smooth	Inst	SF	Lg	2C	.016	1025	2.82	.66	---	3.48	4.16
	Inst	SF	Sm	2C	.022	717.5	3.17	.90	---	4.07	4.91
Rough sawn	Inst	SF	Lg	2C	.016	1025	3.04	.66	---	3.70	4.42
	Inst	SF	Sm	2C	.022	717.5	3.40	.90	---	4.30	5.17

Shingle, 24" L with 12" exposure

	Demo	SF	Lg	LB	.011	1450	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.016	1015	---	.53	---	.53	.75
Straight wall	Inst	SF	Lg	2C	.018	890.0	.05	.74	---	.79	1.09
	Inst	SF	Sm	2C	.026	623.0	.05	1.07	---	1.12	1.55
Cut-up wall	Inst	SF	Lg	2C	.023	710.0	.05	.94	---	.99	1.38
	Inst	SF	Sm	2C	.032	497.0	.05	1.31	---	1.36	1.90

Hardboard siding, Masonite

Lap, 1/2" T x 12" W x 16' L, with 11" exposure

	Demo	SF	Lg	LB	.012	1345	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.017	941.5	---	.57	---	.57	.79
Straight wall											
Smooth finish	Inst	SF	Lg	2C	.023	700.0	1.37	.94	---	2.31	2.90
	Inst	SF	Sm	2C	.033	490.0	1.53	1.35	---	2.88	3.66
Textured finish	Inst	SF	Lg	2C	.023	700.0	1.61	.94	---	2.55	3.17
	Inst	SF	Sm	2C	.033	490.0	1.82	1.35	---	3.17	3.99
Wood-like finish	Inst	SF	Lg	2C	.023	700.0	1.73	.94	---	2.67	3.31
	Inst	SF	Sm	2C	.033	490.0	1.93	1.35	---	3.28	4.12
Cut-up wall											
Smooth finish	Inst	SF	Lg	2C	.027	585.0	1.41	1.11	---	2.52	3.17
	Inst	SF	Sm	2C	.039	409.5	1.57	1.60	---	3.17	4.05
Textured finish	Inst	SF	Lg	2C	.027	585.0	1.66	1.11	---	2.77	3.46
	Inst	SF	Sm	2C	.039	409.5	1.87	1.60	---	3.47	4.39
Wood-like finish	Inst	SF	Lg	2C	.027	585.0	1.77	1.11	---	2.88	3.59
	Inst	SF	Sm	2C	.039	409.5	1.98	1.60	---	3.58	4.52

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours per Unit	Output per Day					
							Cost	Cost	Cost	Cost	O&P

Panels, 7/16" T x 4' W x 8' H

	Demo	SF	Lg	LB	.006	2520	---	.20	---	.20	.28
	Demo	SF	Sm	LB	.009	1764	---	.30	---	.30	.42

Grooved/planked panels, textured or wood-like finish

Primecote	Inst	SF	Lg	2C	.013	1215	1.30	.53	---	1.83	2.24
	Inst	SF	Sm	2C	.019	850.5	1.45	.78	---	2.23	2.76
Unprimed	Inst	SF	Lg	2C	.013	1215	1.39	.53	---	1.92	2.35
	Inst	SF	Sm	2C	.019	850.5	1.57	.78	---	2.35	2.90

Panel with batten preattached

Unprimed	Inst	SF	Lg	2C	.013	1215	1.47	.53	---	2.00	2.44
	Inst	SF	Sm	2C	.019	850.5	1.65	.78	---	2.43	2.99

Stucco textured panel

Primecote	Inst	SF	Lg	2C	.013	1215	1.50	.53	---	2.03	2.47
	Inst	SF	Sm	2C	.019	850.5	1.69	.78	---	2.47	3.04

Vinyl**Solid vinyl panels .024 gauge, woodgrained or colors**

10" or double 5" panels	Demo	SF	Lg	LB	.012	1345	---	.40	---	.40	.56
	Demo	SF	Sm	LB	.017	941.5	---	.57	---	.57	.79
10" or double 5" panels, standard	Inst	SF	Lg	2C	.032	500.0	1.56	1.31	---	2.87	3.63
	Inst	SF	Sm	2C	.046	350.0	1.75	1.89	---	3.64	4.66
10" or double 5" panels, insulated	Inst	SF	Lg	2C	.032	500.0	1.94	1.31	---	3.25	4.07
	Inst	SF	Sm	2C	.046	350.0	2.17	1.89	---	4.06	5.14
Starter strip	Inst	LF	Lg	2C	.040	400.0	.32	1.64	---	1.96	2.67
	Inst	LF	Sm	2C	.057	280.0	.36	2.34	---	2.70	3.69
J channel for corners	Inst	LF	Lg	2C	.036	450.0	.76	1.48	---	2.24	2.94
	Inst	LF	Sm	2C	.051	315.0	.85	2.09	---	2.94	3.91
Outside corner and corner post	Inst	LF	Lg	2C	.040	400.0	1.12	1.64	---	2.76	3.59
	Inst	LF	Sm	2C	.057	280.0	1.26	2.34	---	3.60	4.73
Casing and trim	Inst	LF	Lg	2C	.046	350.0	.58	1.89	---	2.47	3.31
	Inst	LF	Sm	2C	.065	245.0	.66	2.67	---	3.33	4.50
Soffit and fascia	Inst	LF	Lg	2C	.040	400.0	.83	1.64	---	2.47	3.25
	Inst	LF	Sm	2C	.057	280.0	.93	2.34	---	3.27	4.35

Wood**Bevel**

1/2" x 8" with 6-3/4" exp.	Demo	SF	Lg	LB	.018	910.0	---	.60	---	.60	.84
	Demo	SF	Sm	LB	.025	637.0	---	.83	---	.83	1.17
5/8" x 10" with 8-3/4" exp.	Demo	SF	Lg	LB	.014	1180	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.019	826.0	---	.63	---	.63	.89
3/4" x 12" with 10-3/4" exp.	Demo	SF	Lg	LB	.011	1450	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.016	1015	---	.53	---	.53	.75

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Bevel (horizontal), 1/2" lap, 10' L**Redwood, kiln-dried, clear VG, pattern**

1/2" x 8", with 6-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.037	435.0	2.56	1.52	---	4.08	5.07
	Inst	SF	Sm	2C	.053	304.5	2.86	2.18	---	5.04	6.34
Fitted ends	Inst	SF	Lg	2C	.048	335.0	2.62	1.97	---	4.59	5.77
	Inst	SF	Sm	2C	.068	234.5	2.93	2.79	---	5.72	7.28
Mitered ends	Inst	SF	Lg	2C	.056	285.0	2.68	2.30	---	4.98	6.30
	Inst	SF	Sm	2C	.080	199.5	3.00	3.28	---	6.28	8.05

5/8" x 10", with 8-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.029	560.0	2.49	1.19	---	3.68	4.53
	Inst	SF	Sm	2C	.041	392.0	2.80	1.68	---	4.48	5.58
Fitted ends	Inst	SF	Lg	2C	.037	430.0	2.55	1.52	---	4.07	5.06
	Inst	SF	Sm	2C	.053	301.0	2.87	2.18	---	5.05	6.35
Mitered ends	Inst	SF	Lg	2C	.043	370.0	2.61	1.77	---	4.38	5.47
	Inst	SF	Sm	2C	.062	259.0	2.94	2.55	---	5.49	6.94

3/4" x 12", with 10-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.023	690.0	4.32	.94	---	5.26	6.29
	Inst	SF	Sm	2C	.033	483.0	4.84	1.35	---	6.19	7.46
Fitted ends	Inst	SF	Lg	2C	.030	530.0	4.43	1.23	---	5.66	6.82
	Inst	SF	Sm	2C	.043	371.0	4.97	1.77	---	6.74	8.19
Mitered ends	Inst	SF	Lg	2C	.035	455.0	4.54	1.44	---	5.98	7.23
	Inst	SF	Sm	2C	.050	318.5	5.09	2.05	---	7.14	8.73

Red cedar, clear, kiln-dried

1/2" x 8", with 6-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.037	435.0	2.26	1.52	---	3.78	4.73
	Inst	SF	Sm	2C	.053	304.5	2.53	2.18	---	4.71	5.96
Fitted ends	Inst	SF	Lg	2C	.048	335.0	2.32	1.97	---	4.29	5.43
	Inst	SF	Sm	2C	.068	234.5	2.59	2.79	---	5.38	6.89
Mitered ends	Inst	SF	Lg	2C	.056	285.0	2.37	2.30	---	4.67	5.94
	Inst	SF	Sm	2C	.080	199.5	2.65	3.28	---	5.93	7.65

5/8" x 10", with 8-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.029	560.0	2.37	1.19	---	3.56	4.39
	Inst	SF	Sm	2C	.041	392.0	2.65	1.68	---	4.33	5.40
Fitted ends	Inst	SF	Lg	2C	.037	430.0	2.43	1.52	---	3.95	4.92
	Inst	SF	Sm	2C	.053	301.0	2.72	2.18	---	4.90	6.17
Mitered ends	Inst	SF	Lg	2C	.043	370.0	2.49	1.77	---	4.26	5.34
	Inst	SF	Sm	2C	.062	259.0	2.78	2.55	---	5.33	6.76

3/4" x 12", with 10-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.023	690.0	3.91	.94	---	4.85	5.82
	Inst	SF	Sm	2C	.033	483.0	4.38	1.35	---	5.73	6.93
Fitted ends	Inst	SF	Lg	2C	.030	530.0	4.01	1.23	---	5.24	6.34
	Inst	SF	Sm	2C	.043	371.0	4.50	1.77	---	6.27	7.65
Mitered ends	Inst	SF	Lg	2C	.035	455.0	4.11	1.44	---	5.55	6.74
	Inst	SF	Sm	2C	.050	318.5	4.61	2.05	---	6.66	8.18

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Drop (horizontal) T&G, 1/4" lap

1" x 8" with 7" exp.	Demo	SF	Lg	LB	.017	945.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.024	661.5	---	.80	---	.80	1.12
1" x 10" with 9" exp.	Demo	SF	Lg	LB	.013	1215	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.019	850.5	---	.63	---	.63	.89

Drop (horizontal) T&G, 1/4" lap, 10' L (avg.)**Redwood, kiln-dried, clear VG, patterns**

1" x 8", with 7" exp.

Rough ends	Inst	SF	Lg	2C	.034	465.0	4.19	1.40	---	5.59	6.77
	Inst	SF	Sm	2C	.049	325.5	4.70	2.01	---	6.71	8.22
Fitted ends	Inst	SF	Lg	2C	.044	360.0	4.29	1.81	---	6.10	7.46
	Inst	SF	Sm	2C	.063	252.0	4.81	2.59	---	7.40	9.15
Mitered ends	Inst	SF	Lg	2C	.051	315.0	4.39	2.09	---	6.48	7.98
	Inst	SF	Sm	2C	.073	220.5	4.92	3.00	---	7.92	9.85

1" x 10", with 9" exp.

Rough ends	Inst	SF	Lg	2C	.027	600.0	4.39	1.11	---	5.50	6.60
	Inst	SF	Sm	2C	.038	420.0	4.92	1.56	---	6.48	7.84
Fitted ends	Inst	SF	Lg	2C	.034	465.0	4.50	1.40	---	5.90	7.13
	Inst	SF	Sm	2C	.049	325.5	5.05	2.01	---	7.06	8.62
Mitered ends	Inst	SF	Lg	2C	.040	405.0	4.61	1.64	---	6.25	7.60
	Inst	SF	Sm	2C	.056	283.5	5.17	2.30	---	7.47	9.16

1" x 8", with 7-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.031	515.0	3.80	1.27	---	5.07	6.15
	Inst	SF	Sm	2C	.044	360.5	4.27	1.81	---	6.08	7.44
Fitted ends	Inst	SF	Lg	2C	.040	400.0	3.90	1.64	---	5.54	6.78
	Inst	SF	Sm	2C	.057	280.0	4.38	2.34	---	6.72	8.31
Mitered ends	Inst	SF	Lg	2C	.046	350.0	4.00	1.89	---	5.89	7.24
	Inst	SF	Sm	2C	.065	245.0	4.49	2.67	---	7.16	8.90

1" x 10", with 9-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.025	650.0	4.08	1.03	---	5.11	6.13
	Inst	SF	Sm	2C	.035	455.0	4.57	1.44	---	6.01	7.27
Fitted ends	Inst	SF	Lg	2C	.032	505.0	4.19	1.31	---	5.50	6.66
	Inst	SF	Sm	2C	.045	353.5	4.70	1.85	---	6.55	7.99
Mitered ends	Inst	SF	Lg	2C	.036	440.0	4.30	1.48	---	5.78	7.01
	Inst	SF	Sm	2C	.052	308.0	4.82	2.14	---	6.96	8.53

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Red cedar, clear, kiln-dried

1" x 8", with 7" exp.

Rough ends	Inst	SF	Lg	2C	.034	465.0	3.82	1.40	---	5.22	6.35
	Inst	SF	Sm	2C	.049	325.5	4.28	2.01	---	6.29	7.74
Fitted ends	Inst	SF	Lg	2C	.044	360.0	3.91	1.81	---	5.72	7.03
	Inst	SF	Sm	2C	.063	252.0	4.38	2.59	---	6.97	8.66
Mitered ends	Inst	SF	Lg	2C	.051	315.0	4.00	2.09	---	6.09	7.53
	Inst	SF	Sm	2C	.073	220.5	4.49	3.00	---	7.49	9.36

1" x 10", with 9" exp.

Rough ends	Inst	SF	Lg	2C	.027	600.0	3.95	1.11	---	5.06	6.09
	Inst	SF	Sm	2C	.038	420.0	4.43	1.56	---	5.99	7.28
Fitted ends	Inst	SF	Lg	2C	.034	465.0	4.05	1.40	---	5.45	6.61
	Inst	SF	Sm	2C	.049	325.5	4.55	2.01	---	6.56	8.05
Mitered ends	Inst	SF	Lg	2C	.040	405.0	4.15	1.64	---	5.79	7.07
	Inst	SF	Sm	2C	.056	283.5	4.66	2.30	---	6.96	8.58

Pine, kiln-dried, select**(Rough sawn)**

1" x 8", with 7-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.031	515.0	2.67	1.27	---	3.94	4.85
	Inst	SF	Sm	2C	.044	360.5	2.99	1.81	---	4.80	5.97
Fitted ends	Inst	SF	Lg	2C	.040	400.0	2.74	1.64	---	4.38	5.45
	Inst	SF	Sm	2C	.057	280.0	3.07	2.34	---	5.41	6.81
Mitered ends	Inst	SF	Lg	2C	.046	350.0	2.81	1.89	---	4.70	5.88
	Inst	SF	Sm	2C	.065	245.0	3.15	2.67	---	5.82	7.36

1" x 10", with 9-3/4" exp.

Rough ends	Inst	SF	Lg	2C	.025	650.0	3.37	1.03	---	4.40	5.31
	Inst	SF	Sm	2C	.035	455.0	3.78	1.44	---	5.22	6.36
Fitted ends	Inst	SF	Lg	2C	.032	505.0	3.46	1.31	---	4.77	5.82
	Inst	SF	Sm	2C	.045	353.5	3.88	1.85	---	5.73	7.05
Mitered ends	Inst	SF	Lg	2C	.036	440.0	3.55	1.48	---	5.03	6.15
	Inst	SF	Sm	2C	.052	308.0	3.98	2.14	---	6.12	7.57

(Dressed/milled)

1" x 8", with 7" exp.

Rough ends	Inst	SF	Lg	2C	.034	465.0	3.19	1.40	---	4.59	5.62
	Inst	SF	Sm	2C	.049	325.5	3.58	2.01	---	5.59	6.93
Fitted ends	Inst	SF	Lg	2C	.044	360.0	3.27	1.81	---	5.08	6.29
	Inst	SF	Sm	2C	.063	252.0	3.67	2.59	---	6.26	7.84
Mitered ends	Inst	SF	Lg	2C	.051	315.0	3.34	2.09	---	5.43	6.77
	Inst	SF	Sm	2C	.073	220.5	3.75	3.00	---	6.75	8.51

1" x 10", with 9" exp.

Rough ends	Inst	SF	Lg	2C	.027	600.0	3.98	1.11	---	5.09	6.13
	Inst	SF	Sm	2C	.038	420.0	4.46	1.56	---	6.02	7.31
Fitted ends	Inst	SF	Lg	2C	.034	465.0	4.08	1.40	---	5.48	6.65
	Inst	SF	Sm	2C	.049	325.5	4.57	2.01	---	6.58	8.07
Mitered ends	Inst	SF	Lg	2C	.040	405.0	4.17	1.64	---	5.81	7.09
	Inst	SF	Sm	2C	.056	283.5	4.68	2.30	---	6.98	8.60

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Board (1" x 12") and batten (1" x 2", 12" oc)

Horizontal

	Demo	SF	Lg	LB	.013	1280	---	.43	---	.43	.61
	Demo	SF	Sm	LB	.018	896.0	---	.60	---	.60	.84

Vertical

Standard	Demo	SF	Lg	LB	.016	1025	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.022	717.5	---	.73	---	.73	1.03
Reverse	Demo	SF	Lg	LB	.015	1065	---	.50	---	.50	.70
	Demo	SF	Sm	LB	.021	745.5	---	.70	---	.70	.98

Board (1" x 12") and batten (1" x 2", 12" oc); rough sawn, common, standard and better, green

Horizontal application, @ 10' L

Redwood	Inst	SF	Lg	2C	.029	560.0	1.97	1.19	---	3.16	3.93
	Inst	SF	Sm	2C	.041	392.0	2.20	1.68	---	3.88	4.89
Red cedar	Inst	SF	Lg	2C	.029	560.0	1.42	1.19	---	2.61	3.30
	Inst	SF	Sm	2C	.041	392.0	1.72	1.68	---	3.40	4.33
Pine	Inst	SF	Lg	2C	.029	560.0	1.95	1.19	---	3.14	3.91
	Inst	SF	Sm	2C	.041	392.0	2.18	1.68	---	3.86	4.86

Vertical, std. (batten on board), @ 8' L

Redwood	Inst	SF	Lg	2C	.036	450.0	1.97	1.48	---	3.45	4.33
	Inst	SF	Sm	2C	.051	315.0	2.20	2.09	---	4.29	5.46
Red cedar	Inst	SF	Lg	2C	.036	450.0	1.42	1.48	---	2.90	3.70
	Inst	SF	Sm	2C	.051	315.0	1.72	2.09	---	3.81	4.91
Pine	Inst	SF	Lg	2C	.036	450.0	1.95	1.48	---	3.43	4.31
	Inst	SF	Sm	2C	.051	315.0	2.18	2.09	---	4.27	5.44

Vertical, reverse (board on batten), @ 8' L

Redwood	Inst	SF	Lg	2C	.036	440.0	1.97	1.48	---	3.45	4.33
	Inst	SF	Sm	2C	.052	308.0	2.20	2.14	---	4.34	5.52
Red cedar	Inst	SF	Lg	2C	.036	440.0	1.42	1.48	---	2.90	3.70
	Inst	SF	Sm	2C	.052	308.0	1.72	2.14	---	3.86	4.97
Pine	Inst	SF	Lg	2C	.036	440.0	1.95	1.48	---	3.43	4.31
	Inst	SF	Sm	2C	.052	308.0	2.18	2.14	---	4.32	5.50

Board on board (1" x 12" with 1-1/2" overlap), vertical

	Demo	SF	Lg	LB	.017	950.0	---	.57	---	.57	.79
	Demo	SF	Sm	LB	.024	665.0	---	.80	---	.80	1.12

Board on board (1" x 12" with 1-1/2" overlap) rough sawn common, standard & better green, 8' L; vertical

Redwood	Inst	SF	Lg	2C	.027	590.0	1.89	1.11	---	3.00	3.73
	Inst	SF	Sm	2C	.039	413.0	2.11	1.60	---	3.71	4.67
Red cedar	Inst	SF	Lg	2C	.027	590.0	1.39	1.11	---	2.50	3.15
	Inst	SF	Sm	2C	.039	413.0	1.69	1.60	---	3.29	4.19
Pine	Inst	SF	Lg	2C	.027	590.0	1.99	1.11	---	3.10	3.84
	Inst	SF	Sm	2C	.039	413.0	2.22	1.60	---	3.82	4.79

Siding, shakes only, over sheathing

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Plywood (1/2" T) with battens (1" x 2")

16" oc battens	Demo	SF	Lg	LB	.007	2255	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1579	---	.33	---	.33	.47
24" oc battens	Demo	SF	Lg	LB	.007	2365	---	.23	---	.23	.33
	Demo	SF	Sm	LB	.010	1656	---	.33	---	.33	.47

Plywood (1/2" T) sanded exterior, AB grade with battens (1" x 2") S4S, common, standard & better green

16" oc

Fir	Inst	SF	Lg	2C	.022	735.0	1.41	.90	---	2.31	2.89
	Inst	SF	Sm	2C	.031	514.5	1.58	1.27	---	2.85	3.60
Pine	Inst	SF	Lg	2C	.022	735.0	1.45	.90	---	2.35	2.93
	Inst	SF	Sm	2C	.031	514.5	1.62	1.27	---	2.89	3.64

24" oc

Fir	Inst	SF	Lg	2C	.018	865.0	1.37	.74	---	2.11	2.61
	Inst	SF	Sm	2C	.026	605.5	1.53	1.07	---	2.60	3.25
Pine	Inst	SF	Lg	2C	.018	865.0	1.39	.74	---	2.13	2.63
	Inst	SF	Sm	2C	.026	605.5	1.56	1.07	---	2.63	3.29

Shakes only, no sheathing included

24" L with 11-1/2" exposure

1/2" to 3/4" T	Demo	SF	Lg	LB	.010	1600	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.014	1120	---	.47	---	.47	.65
3/4" to 5/4" T	Demo	SF	Lg	LB	.011	1440	---	.37	---	.37	.51
	Demo	SF	Sm	LB	.016	1008	---	.53	---	.53	.75

Shakes only, over sheathing, 2 nails/shake

24" L with 11-1/2" exp., @ 6" W, red cedar, sawn one side

Straight wall

1/2" to 3/4" T	Inst	SF	Lg	CN	.021	940.0	2.15	.83	---	2.98	3.63
	Inst	SF	Sm	CN	.030	658.0	2.42	1.19	---	3.61	4.44
3/4" to 5/4" T	Inst	SF	Lg	CN	.024	850.0	2.87	.95	---	3.82	4.63
	Inst	SF	Sm	CN	.034	595.0	3.22	1.34	---	4.56	5.58

Cut-up wall

1/2" to 3/4" T	Inst	SF	Lg	CN	.027	750.0	2.19	1.07	---	3.26	4.01
	Inst	SF	Sm	CN	.038	525.0	2.46	1.50	---	3.96	4.93
3/4" to 5/4" T	Inst	SF	Lg	CN	.029	680.0	2.92	1.15	---	4.07	4.96
	Inst	SF	Sm	CN	.042	476.0	3.27	1.66	---	4.93	6.08

Related materials and operations

Rosin sized sheathing paper, 36" W 500 SF/roll; nailed

Over solid sheathing	Inst	SF	Lg	2C	.001	12500	.22	.04	---	.26	.31
	Inst	SF	Sm	2C	.002	8750	.25	.08	---	.33	.40

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Price
					Unit	Day	Cost	Cost	Cost	Cost	Incl
											O&P

Shingles only, no sheathing included

16" L with 7-1/2" exposure	Demo	SF	Lg	LB	.016	1000	---	.53	---	.53	.75
	Demo	SF	Sm	LB	.023	700.0	---	.77	---	.77	1.07
18" L with 8-1/2" exposure	Demo	SF	Lg	LB	.014	1130	---	.47	---	.47	.65
	Demo	SF	Sm	LB	.020	791.0	---	.67	---	.67	.93
24" L with 11-1/2" exposure	Demo	SF	Lg	LB	.010	1530	---	.33	---	.33	.47
	Demo	SF	Sm	LB	.015	1071	---	.50	---	.50	.70

Shingles only, red cedar, No 1. perfect, @ 4" W, 2 nails/shake, over sheathing

Straight wall

16" L with 7-1/2" exposure	Inst	SF	Lg	2C	.027	585.0	2.76	1.11	---	3.87	4.73
	Inst	SF	Sm	2C	.039	409.5	3.09	1.60	---	4.69	5.80
18" L with 8-1/2" exposure	Inst	SF	Lg	2C	.024	660.0	2.21	.99	---	3.20	3.92
	Inst	SF	Sm	2C	.035	462.0	2.48	1.44	---	3.92	4.86
24" L with 11-1/2" exposure	Inst	SF	Lg	2C	.018	895.0	2.57	.74	---	3.31	3.99
	Inst	SF	Sm	2C	.026	626.5	2.89	1.07	---	3.96	4.82

Cut-up wall

16" L with 7-1/2" exposure	Inst	SF	Lg	2C	.034	470.0	2.81	1.40	---	4.21	5.19
	Inst	SF	Sm	2C	.049	329.0	3.15	2.01	---	5.16	6.44
18" L with 8-1/2" exposure	Inst	SF	Lg	2C	.030	530.0	2.25	1.23	---	3.48	4.31
	Inst	SF	Sm	2C	.043	371.0	2.52	1.77	---	4.29	5.37
24" L with 11-1/2" exposure	Inst	SF	Lg	2C	.022	715.0	2.62	.90	---	3.52	4.28
	Inst	SF	Sm	2C	.032	500.5	2.94	1.31	---	4.25	5.22

Related materials and operations

Rosin sized sheathing paper, 36" W 500 SF/roll; nailed

Over solid sheathing	Inst	SF	Lg	2C	.001	12500	.22	.04	---	.26	.31
	Inst	SF	Sm	2C	.002	8750	.25	.08	---	.33	.40

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Sinks

Frequently encountered applications

Bathroom Sinks or Lavatories

To only remove and reset lavatory

Reset	Ea	Lg	SA	2.00	4.00	26.30	96.00	---	122.30	169.00
Reset	Ea	Sm	SA	2.67	3.00	30.00	128.00	---	158.00	220.00

To install lavatory rough-in

Inst	Ea	Lg	SA	6.67	1.20	194.00	320.00	---	514.00	688.00
Inst	Ea	Sm	SA	8.89	0.90	222.00	427.00	---	649.00	874.00

To install lavatory (material + labor), see Sections below

Kitchen / Bar / Utility Sinks

To only remove and reset sink

Single bowl	Reset	Ea	Lg	SA	2.00	4.00	26.30	96.00	---	122.30	169.00
	Reset	Ea	Sm	SA	2.67	3.00	30.00	128.00	---	158.00	220.00
Double bowl	Reset	Ea	Lg	SA	2.11	3.80	31.50	101.00	---	132.50	183.00
	Reset	Ea	Sm	SA	2.81	2.85	36.00	135.00	---	171.00	237.00
Triple bowl	Reset	Ea	Lg	SA	2.29	3.50	36.80	110.00	---	146.80	202.00
	Reset	Ea	Sm	SA	3.04	2.63	42.00	146.00	---	188.00	260.00

To install sink rough-in

Inst	Ea	Lg	SA	6.67	1.20	194.00	320.00	---	514.00	688.00
Inst	Ea	Sm	SA	8.89	0.90	222.00	427.00	---	649.00	874.00

To install sink (material + labor), see Sections below

For 18 gauge steel, ADD	Inst	%	Lg	---	---	---	50.0	---	---	---	---
	Inst	%	Sm	---	---	---	50.0	---	---	---	---

Bathroom

Lavatories (bathroom sinks), with good quality fittings and faucets, concealed overflow

Vitreous china

Countertop units, with self rim (American Standard Products)

Antiquity

24-1/2" x 18" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	398.00	128.00	---	526.00	643.00
	Inst	Ea	Sm	SA	3.56	2.25	455.00	171.00	---	626.00	771.00
Color	Inst	Ea	Lg	SA	2.67	3.00	446.00	128.00	---	574.00	699.00
	Inst	Ea	Sm	SA	3.56	2.25	510.00	171.00	---	681.00	834.00

Aqualyn

20" x 17" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	303.00	128.00	---	431.00	535.00
	Inst	Ea	Sm	SA	3.56	2.25	347.00	171.00	---	518.00	647.00
Color	Inst	Ea	Lg	SA	2.67	3.00	329.00	128.00	---	457.00	564.00
	Inst	Ea	Sm	SA	3.56	2.25	376.00	171.00	---	547.00	680.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	342.00	128.00	---	470.00	579.00
	Inst	Ea	Sm	SA	3.56	2.25	391.00	171.00	---	562.00	698.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Cadet

17" diameter with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	326.00	128.00	---	454.00	560.00
	Inst	Ea	Sm	SA	3.56	2.25	372.00	171.00	---	543.00	676.00
Color	Inst	Ea	Lg	SA	2.67	3.00	356.00	128.00	---	484.00	595.00
	Inst	Ea	Sm	SA	3.56	2.25	407.00	171.00	---	578.00	716.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	373.00	128.00	---	501.00	614.00
	Inst	Ea	Sm	SA	3.56	2.25	426.00	171.00	---	597.00	738.00

Ellisse Petite

24" x 19" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	419.00	128.00	---	547.00	667.00
	Inst	Ea	Sm	SA	3.56	2.25	479.00	171.00	---	650.00	798.00
Color	Inst	Ea	Lg	SA	2.67	3.00	463.00	128.00	---	591.00	718.00
	Inst	Ea	Sm	SA	3.56	2.25	529.00	171.00	---	700.00	856.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	501.00	128.00	---	629.00	762.00
	Inst	Ea	Sm	SA	3.56	2.25	573.00	171.00	---	744.00	907.00

Enfield

16-5/8" diameter

White	Inst	Ea	Lg	SA	2.67	3.00	396.00	128.00	---	524.00	641.00
	Inst	Ea	Sm	SA	3.56	2.25	452.00	171.00	---	623.00	768.00
Color	Inst	Ea	Lg	SA	2.67	3.00	443.00	128.00	---	571.00	695.00
	Inst	Ea	Sm	SA	3.56	2.25	506.00	171.00	---	677.00	830.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	471.00	128.00	---	599.00	728.00
	Inst	Ea	Sm	SA	3.56	2.25	539.00	171.00	---	710.00	867.00

Heritage

26" x 20" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	569.00	128.00	---	697.00	840.00
	Inst	Ea	Sm	SA	3.56	2.25	650.00	171.00	---	821.00	996.00
Color	Inst	Ea	Lg	SA	2.67	3.00	759.00	128.00	---	887.00	1060.00
	Inst	Ea	Sm	SA	3.56	2.25	868.00	171.00	---	1039.00	1250.00

Hexalyn

22" x 19" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	394.00	128.00	---	522.00	639.00
	Inst	Ea	Sm	SA	3.56	2.25	450.00	171.00	---	621.00	765.00
Color	Inst	Ea	Lg	SA	2.67	3.00	441.00	128.00	---	569.00	693.00
	Inst	Ea	Sm	SA	3.56	2.25	504.00	171.00	---	675.00	827.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	468.00	128.00	---	596.00	724.00
	Inst	Ea	Sm	SA	3.56	2.25	535.00	171.00	---	706.00	863.00

Mezzo, space-saving design

23-1/2" x 22" with 8" or 4" cc w/ sealant

White	Inst	Ea	Lg	SA	2.67	3.00	412.00	128.00	---	540.00	659.00
	Inst	Ea	Sm	SA	3.56	2.25	470.00	171.00	---	641.00	789.00
Color	Inst	Ea	Lg	SA	2.67	3.00	461.00	128.00	---	589.00	716.00
	Inst	Ea	Sm	SA	3.56	2.25	527.00	171.00	---	698.00	854.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	491.00	128.00	---	619.00	751.00
	Inst	Ea	Sm	SA	3.56	2.25	562.00	171.00	---	733.00	894.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Reminiscence

22-1/4" x 18" with 8" or 4" cc w/ sealant

White	Inst	Ea	Lg	SA	2.67	3.00	478.00	128.00	---	606.00	735.00
	Inst	Ea	Sm	SA	3.56	2.25	546.00	171.00	---	717.00	876.00
Color	Inst	Ea	Lg	SA	2.67	3.00	545.00	128.00	---	673.00	813.00
	Inst	Ea	Sm	SA	3.56	2.25	623.00	171.00	---	794.00	964.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	586.00	128.00	---	714.00	860.00
	Inst	Ea	Sm	SA	3.56	2.25	670.00	171.00	---	841.00	1020.00

Rondalyn

19" diameter with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	303.00	128.00	---	431.00	535.00
	Inst	Ea	Sm	SA	3.56	2.25	347.00	171.00	---	518.00	647.00
Color	Inst	Ea	Lg	SA	2.67	3.00	329.00	128.00	---	457.00	564.00
	Inst	Ea	Sm	SA	3.56	2.25	376.00	171.00	---	547.00	680.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	342.00	128.00	---	470.00	579.00
	Inst	Ea	Sm	SA	3.56	2.25	391.00	171.00	---	562.00	698.00

Savona

22" x 17" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	456.00	128.00	---	584.00	710.00
	Inst	Ea	Sm	SA	3.56	2.25	521.00	171.00	---	692.00	847.00
Color	Inst	Ea	Lg	SA	2.67	3.00	519.00	128.00	---	647.00	782.00
	Inst	Ea	Sm	SA	3.56	2.25	593.00	171.00	---	764.00	930.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	555.00	128.00	---	683.00	825.00
	Inst	Ea	Sm	SA	3.56	2.25	635.00	171.00	---	806.00	978.00

Town Square

23" x 18-1/2" with 8" or 4" cc w/ sealant

White	Inst	Ea	Lg	SA	2.67	3.00	423.00	128.00	---	551.00	672.00
	Inst	Ea	Sm	SA	3.56	2.25	484.00	171.00	---	655.00	804.00
Color	Inst	Ea	Lg	SA	2.67	3.00	476.00	128.00	---	604.00	733.00
	Inst	Ea	Sm	SA	3.56	2.25	544.00	171.00	---	715.00	873.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	507.00	128.00	---	635.00	769.00
	Inst	Ea	Sm	SA	3.56	2.25	580.00	171.00	---	751.00	914.00

Counter and undercounter units (Kohler Products, Artists Edition)

Ankara, 17" x 14"

Self-Rimming	Inst	Ea	Lg	SA	2.67	3.00	1800.00	128.00	---	1928.00	2250.00
	Inst	Ea	Sm	SA	3.56	2.25	2050.00	171.00	---	2221.00	2610.00
Undercounter	Inst	Ea	Lg	SA	2.67	3.00	1550.00	128.00	---	1678.00	1970.00
	Inst	Ea	Sm	SA	3.56	2.25	1770.00	171.00	---	1941.00	2290.00

Briar Rose, 17" x 14"

Self-Rimming	Inst	Ea	Lg	SA	2.67	3.00	1710.00	128.00	---	1838.00	2150.00
	Inst	Ea	Sm	SA	3.56	2.25	1950.00	171.00	---	2121.00	2490.00
Undercounter	Inst	Ea	Lg	SA	2.67	3.00	1550.00	128.00	---	1678.00	1970.00
	Inst	Ea	Sm	SA	3.56	2.25	1770.00	171.00	---	1941.00	2280.00

Crimson Topaz, 17" x 14"

Self-Rimming	Inst	Ea	Lg	SA	2.67	3.00	1510.00	128.00	---	1638.00	1920.00
	Inst	Ea	Sm	SA	3.56	2.25	1720.00	171.00	---	1891.00	2230.00
Undercounter	Inst	Ea	Lg	SA	2.67	3.00	1510.00	128.00	---	1638.00	1920.00
	Inst	Ea	Sm	SA	3.56	2.25	1720.00	171.00	---	1891.00	2230.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P
English Trellis, 17" x 14"											
Self-Rimming	Inst	Ea	Lg	SA	2.67	3.00	1710.00	128.00	---	1838.00	2150.00
	Inst	Ea	Sm	SA	3.56	2.25	1950.00	171.00	---	2121.00	2490.00
Undercounter	Inst	Ea	Lg	SA	2.67	3.00	1550.00	128.00	---	1678.00	1970.00
	Inst	Ea	Sm	SA	3.56	2.25	1770.00	171.00	---	1941.00	2290.00
Peonies and Ivy, 17" x 14"											
Self-Rimming	Inst	Ea	Lg	SA	2.67	3.00	1800.00	128.00	---	1928.00	2250.00
	Inst	Ea	Sm	SA	3.56	2.25	2050.00	171.00	---	2221.00	2610.00
Undercounter	Inst	Ea	Lg	SA	2.67	3.00	1550.00	128.00	---	1678.00	1970.00
	Inst	Ea	Sm	SA	3.56	2.25	1770.00	171.00	---	1941.00	2290.00
Provincial, 17" x 14"											
Self-Rimming	Inst	Ea	Lg	SA	2.67	3.00	2270.00	128.00	---	2398.00	2800.00
	Inst	Ea	Sm	SA	3.56	2.25	2600.00	171.00	---	2771.00	3230.00
Undercounter	Inst	Ea	Lg	SA	2.67	3.00	1550.00	128.00	---	1678.00	1970.00
	Inst	Ea	Sm	SA	3.56	2.25	1770.00	171.00	---	1941.00	2290.00
Pedestal sinks (American Standard Products)											
Adjustments											
For two 15" L towel bars, ADD											
	Inst	Pr	Lg	---	---	---	63.00	---	---	63.00	72.50
	Inst	Pr	Sm	---	---	---	72.00	---	---	72.00	82.80
Antiquity w/ pedestal											
24-1/2" x 19" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	342.00	128.00	---	470.00	579.00
	Inst	Ea	Sm	SA	3.56	2.25	391.00	171.00	---	562.00	698.00
Color	Inst	Ea	Lg	SA	2.67	3.00	638.00	128.00	---	766.00	920.00
	Inst	Ea	Sm	SA	3.56	2.25	730.00	171.00	---	901.00	1090.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	206.00	76.80	---	282.80	348.00
	Inst	Ea	Sm	SA	2.13	3.75	235.00	102.00	---	337.00	419.00
Color	Inst	Ea	Lg	SA	1.60	5.00	256.00	76.80	---	332.80	406.00
	Inst	Ea	Sm	SA	2.13	3.75	293.00	102.00	---	395.00	485.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	137.00	76.80	---	213.80	268.00
	Inst	Ea	Sm	SA	2.13	3.75	156.00	102.00	---	258.00	328.00
Color	Inst	Ea	Lg	SA	1.60	5.00	172.00	76.80	---	248.80	309.00
	Inst	Ea	Sm	SA	2.13	3.75	197.00	102.00	---	299.00	375.00
Cadet w/ pedestal											
24" x 20" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	441.00	128.00	---	569.00	693.00
	Inst	Ea	Sm	SA	3.56	2.25	504.00	171.00	---	675.00	827.00
Color	Inst	Ea	Lg	SA	2.67	3.00	499.00	128.00	---	627.00	759.00
	Inst	Ea	Sm	SA	3.56	2.25	570.00	171.00	---	741.00	903.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	533.00	128.00	---	661.00	799.00
	Inst	Ea	Sm	SA	3.56	2.25	610.00	171.00	---	781.00	949.00

Sinks, pedestal (American Standard)

					Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	169.00	76.80	---	245.80	306.00
	Inst	Ea	Sm	SA	2.13	3.75	193.00	102.00	---	295.00	370.00
Color	Inst	Ea	Lg	SA	1.60	5.00	216.00	76.80	---	292.80	360.00
	Inst	Ea	Sm	SA	2.13	3.75	247.00	102.00	---	349.00	433.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	236.00	76.80	---	312.80	383.00
	Inst	Ea	Sm	SA	2.13	3.75	270.00	102.00	---	372.00	459.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	62.00	76.80	---	138.80	183.00
	Inst	Ea	Sm	SA	2.13	3.75	70.80	102.00	---	172.80	230.00
Color	Inst	Ea	Lg	SA	1.60	5.00	72.50	76.80	---	149.30	195.00
	Inst	Ea	Sm	SA	2.13	3.75	82.80	102.00	---	184.80	243.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	87.20	76.80	---	164.00	212.00
	Inst	Ea	Sm	SA	2.13	3.75	99.60	102.00	---	201.60	263.00
Heritage w/ pedestal 30" x 20" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	761.00	128.00	---	889.00	1060.00
	Inst	Ea	Sm	SA	3.56	2.25	870.00	171.00	---	1041.00	1250.00
Color	Inst	Ea	Lg	SA	2.67	3.00	903.00	128.00	---	1031.00	1220.00
	Inst	Ea	Sm	SA	3.56	2.25	1030.00	171.00	---	1201.00	1430.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	385.00	76.80	---	461.80	555.00
	Inst	Ea	Sm	SA	2.13	3.75	440.00	102.00	---	542.00	655.00
Color	Inst	Ea	Lg	SA	1.60	5.00	485.00	76.80	---	561.80	669.00
	Inst	Ea	Sm	SA	2.13	3.75	554.00	102.00	---	656.00	786.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	166.00	76.80	---	242.80	302.00
	Inst	Ea	Sm	SA	2.13	3.75	190.00	102.00	---	292.00	366.00
Color	Inst	Ea	Lg	SA	1.60	5.00	208.00	76.80	---	284.80	350.00
	Inst	Ea	Sm	SA	2.13	3.75	238.00	102.00	---	340.00	421.00
Lexington w/ pedestal 24" x 18" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	719.00	128.00	---	847.00	1010.00
	Inst	Ea	Sm	SA	3.56	2.25	822.00	171.00	---	993.00	1190.00
Color	Inst	Ea	Lg	SA	2.67	3.00	846.00	128.00	---	974.00	1160.00
	Inst	Ea	Sm	SA	3.56	2.25	967.00	171.00	---	1138.00	1360.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	923.00	128.00	---	1051.00	1250.00
	Inst	Ea	Sm	SA	3.56	2.25	1050.00	171.00	---	1221.00	1460.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	353.00	76.80	---	429.80	517.00
	Inst	Ea	Sm	SA	2.13	3.75	403.00	102.00	---	505.00	612.00
Color	Inst	Ea	Lg	SA	1.60	5.00	400.00	76.80	---	476.80	571.00
	Inst	Ea	Sm	SA	2.13	3.75	457.00	102.00	---	559.00	674.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	495.00	76.80	---	571.80	680.00
	Inst	Ea	Sm	SA	2.13	3.75	565.00	102.00	---	667.00	798.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Pedestal only

White	Inst	Ea	Lg	SA	1.60	5.00	156.00	76.80	---	232.80	291.00
	Inst	Ea	Sm	SA	2.13	3.75	179.00	102.00	---	281.00	354.00
Color	Inst	Ea	Lg	SA	1.60	5.00	195.00	76.80	---	271.80	336.00
	Inst	Ea	Sm	SA	2.13	3.75	223.00	102.00	---	325.00	405.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	218.00	76.80	---	294.80	363.00
	Inst	Ea	Sm	SA	2.13	3.75	250.00	102.00	---	352.00	435.00

Repertoire w/ pedestal

23" x 18-1/4" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	608.00	128.00	---	736.00	885.00
	Inst	Ea	Sm	SA	3.56	2.25	695.00	171.00	---	866.00	1050.00
Color	Inst	Ea	Lg	SA	2.67	3.00	708.00	128.00	---	836.00	1000.00
	Inst	Ea	Sm	SA	3.56	2.25	809.00	171.00	---	980.00	1180.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	767.00	128.00	---	895.00	1070.00
	Inst	Ea	Sm	SA	3.56	2.25	876.00	171.00	---	1047.00	1260.00

Lavatory slab only

White	Inst	Ea	Lg	SA	1.60	5.00	289.00	76.80	---	365.80	443.00
	Inst	Ea	Sm	SA	2.13	3.75	330.00	102.00	---	432.00	528.00
Color	Inst	Ea	Lg	SA	1.60	5.00	361.00	76.80	---	437.80	527.00
	Inst	Ea	Sm	SA	2.13	3.75	413.00	102.00	---	515.00	623.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	404.00	76.80	---	480.80	576.00
	Inst	Ea	Sm	SA	2.13	3.75	462.00	102.00	---	564.00	680.00

Pedestal only

White	Inst	Ea	Lg	SA	1.60	5.00	109.00	76.80	---	185.80	237.00
	Inst	Ea	Sm	SA	2.13	3.75	125.00	102.00	---	227.00	292.00
Color	Inst	Ea	Lg	SA	1.60	5.00	137.00	76.80	---	213.80	268.00
	Inst	Ea	Sm	SA	2.13	3.75	156.00	102.00	---	258.00	328.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	152.00	76.80	---	228.80	286.00
	Inst	Ea	Sm	SA	2.13	3.75	174.00	102.00	---	276.00	348.00

Pedestal sinks (Kohler Products)

Adjustments

For two 15" L towel bars, ADD

Inst	Pr	Lg	---	---	---	63.00	---	---	63.00	72.50
Inst	Pr	Sm	---	---	---	72.00	---	---	72.00	82.80

Anatole

22" x 18" x 32" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	1080.00	128.00	---	1208.00	1430.00
	Inst	Ea	Sm	SA	3.56	2.25	1230.00	171.00	---	1401.00	1670.00
Color	Inst	Ea	Lg	SA	2.67	3.00	1340.00	128.00	---	1468.00	1730.00
	Inst	Ea	Sm	SA	3.56	2.25	1530.00	171.00	---	1701.00	2010.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1510.00	128.00	---	1638.00	1920.00
	Inst	Ea	Sm	SA	3.56	2.25	1730.00	171.00	---	1901.00	2230.00

Sinks, pedestal (Kohler)

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew Size	per Unit	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	565.00	76.80	---	641.80	762.00
	Inst	Ea	Sm	SA	2.13	3.75	646.00	102.00	---	748.00	891.00
Color	Inst	Ea	Lg	SA	1.60	5.00	735.00	76.80	---	811.80	957.00
	Inst	Ea	Sm	SA	2.13	3.75	840.00	102.00	---	942.00	1110.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	845.00	76.80	---	921.80	1080.00
	Inst	Ea	Sm	SA	2.13	3.75	966.00	102.00	---	1068.00	1260.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	305.00	76.80	---	381.80	462.00
	Inst	Ea	Sm	SA	2.13	3.75	349.00	102.00	---	451.00	549.00
Color	Inst	Ea	Lg	SA	1.60	5.00	396.00	76.80	---	472.80	567.00
	Inst	Ea	Sm	SA	2.13	3.75	453.00	102.00	---	555.00	669.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	456.00	76.80	---	532.80	635.00
	Inst	Ea	Sm	SA	2.13	3.75	521.00	102.00	---	623.00	747.00
Cabernet											
22" x 18" x 33" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	681.00	128.00	---	809.00	969.00
	Inst	Ea	Sm	SA	3.56	2.25	778.00	171.00	---	949.00	1140.00
Color	Inst	Ea	Lg	SA	2.67	3.00	822.00	128.00	---	950.00	1130.00
	Inst	Ea	Sm	SA	3.56	2.25	939.00	171.00	---	1110.00	1330.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	914.00	128.00	---	1042.00	1240.00
	Inst	Ea	Sm	SA	3.56	2.25	1040.00	171.00	---	1211.00	1450.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	306.00	76.80	---	382.80	463.00
	Inst	Ea	Sm	SA	2.13	3.75	350.00	102.00	---	452.00	550.00
Color	Inst	Ea	Lg	SA	1.60	5.00	398.00	76.80	---	474.80	569.00
	Inst	Ea	Sm	SA	2.13	3.75	454.00	102.00	---	556.00	671.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	457.00	76.80	---	533.80	637.00
	Inst	Ea	Sm	SA	2.13	3.75	523.00	102.00	---	625.00	749.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	165.00	76.80	---	241.80	301.00
	Inst	Ea	Sm	SA	2.13	3.75	189.00	102.00	---	291.00	365.00
Color	Inst	Ea	Lg	SA	1.60	5.00	214.00	76.80	---	290.80	358.00
	Inst	Ea	Sm	SA	2.13	3.75	245.00	102.00	---	347.00	430.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	246.00	76.80	---	322.80	395.00
	Inst	Ea	Sm	SA	2.13	3.75	282.00	102.00	---	384.00	472.00
Chablis											
24" x 19" x 32" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	651.00	128.00	---	779.00	935.00
	Inst	Ea	Sm	SA	3.56	2.25	744.00	171.00	---	915.00	1100.00
Color	Inst	Ea	Lg	SA	2.67	3.00	784.00	128.00	---	912.00	1090.00
	Inst	Ea	Sm	SA	3.56	2.25	895.00	171.00	---	1066.00	1280.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	869.00	128.00	---	997.00	1190.00
	Inst	Ea	Sm	SA	3.56	2.25	993.00	171.00	---	1164.00	1390.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	287.00	76.80	---	363.80	441.00
	Inst	Ea	Sm	SA	2.13	3.75	328.00	102.00	---	430.00	525.00
Color	Inst	Ea	Lg	SA	1.60	5.00	372.00	76.80	---	448.80	540.00
	Inst	Ea	Sm	SA	2.13	3.75	426.00	102.00	---	528.00	638.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	428.00	76.80	---	504.80	604.00
	Inst	Ea	Sm	SA	2.13	3.75	489.00	102.00	---	591.00	711.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	155.00	76.80	---	231.80	289.00
	Inst	Ea	Sm	SA	2.13	3.75	177.00	102.00	---	279.00	352.00
Color	Inst	Ea	Lg	SA	1.60	5.00	201.00	76.80	---	277.80	343.00
	Inst	Ea	Sm	SA	2.13	3.75	230.00	102.00	---	332.00	412.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	231.00	76.80	---	307.80	377.00
	Inst	Ea	Sm	SA	2.13	3.75	264.00	102.00	---	366.00	452.00
Devonshire											
27-1/2" x 20" x 33-1/2" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	721.00	128.00	---	849.00	1020.00
	Inst	Ea	Sm	SA	3.56	2.25	824.00	171.00	---	995.00	1200.00
Color	Inst	Ea	Lg	SA	2.67	3.00	874.00	128.00	---	1002.00	1190.00
	Inst	Ea	Sm	SA	3.56	2.25	999.00	171.00	---	1170.00	1400.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	974.00	128.00	---	1102.00	1310.00
	Inst	Ea	Sm	SA	3.56	2.25	1110.00	171.00	---	1281.00	1530.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	375.00	76.80	---	451.80	542.00
	Inst	Ea	Sm	SA	2.13	3.75	428.00	102.00	---	530.00	641.00
Color	Inst	Ea	Lg	SA	1.60	5.00	487.00	76.80	---	563.80	671.00
	Inst	Ea	Sm	SA	2.13	3.75	557.00	102.00	---	659.00	788.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	560.00	76.80	---	636.80	756.00
	Inst	Ea	Sm	SA	2.13	3.75	640.00	102.00	---	742.00	884.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	136.00	76.80	---	212.80	268.00
	Inst	Ea	Sm	SA	2.13	3.75	156.00	102.00	---	258.00	328.00
Color	Inst	Ea	Lg	SA	1.60	5.00	177.00	76.80	---	253.80	315.00
	Inst	Ea	Sm	SA	2.13	3.75	203.00	102.00	---	305.00	381.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	204.00	76.80	---	280.80	346.00
	Inst	Ea	Sm	SA	2.13	3.75	233.00	102.00	---	335.00	416.00
Parigi											
20" x 14" x 33" with 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	885.00	128.00	---	1013.00	1200.00
	Inst	Ea	Sm	SA	3.56	2.25	1010.00	171.00	---	1181.00	1410.00
Color	Inst	Ea	Lg	SA	2.67	3.00	1090.00	128.00	---	1218.00	1440.00
	Inst	Ea	Sm	SA	3.56	2.25	1240.00	171.00	---	1411.00	1680.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1220.00	128.00	---	1348.00	1590.00
	Inst	Ea	Sm	SA	3.56	2.25	1390.00	171.00	---	1561.00	1850.00

Sinks, pedestal (Kohler)

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	473.00	76.80	---	549.80	655.00
	Inst	Ea	Sm	SA	2.13	3.75	540.00	102.00	---	642.00	769.00
Color	Inst	Ea	Lg	SA	1.60	5.00	614.00	76.80	---	690.80	818.00
	Inst	Ea	Sm	SA	2.13	3.75	702.00	102.00	---	804.00	956.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	707.00	76.80	---	783.80	924.00
	Inst	Ea	Sm	SA	2.13	3.75	808.00	102.00	---	910.00	1080.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	203.00	76.80	---	279.80	345.00
	Inst	Ea	Sm	SA	2.13	3.75	232.00	102.00	---	334.00	415.00
Color	Inst	Ea	Lg	SA	1.60	5.00	264.00	76.80	---	340.80	415.00
	Inst	Ea	Sm	SA	2.13	3.75	301.00	102.00	---	403.00	495.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	303.00	76.80	---	379.80	460.00
	Inst	Ea	Sm	SA	2.13	3.75	346.00	102.00	---	448.00	547.00
Pinoir											
22" x 18" x 33" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	521.00	128.00	---	649.00	785.00
	Inst	Ea	Sm	SA	3.56	2.25	595.00	171.00	---	766.00	933.00
Color	Inst	Ea	Lg	SA	2.67	3.00	614.00	128.00	---	742.00	892.00
	Inst	Ea	Sm	SA	3.56	2.25	702.00	171.00	---	873.00	1060.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	675.00	128.00	---	803.00	962.00
	Inst	Ea	Sm	SA	3.56	2.25	771.00	171.00	---	942.00	1130.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	208.00	76.80	---	284.80	351.00
	Inst	Ea	Sm	SA	2.13	3.75	238.00	102.00	---	340.00	422.00
Color	Inst	Ea	Lg	SA	1.60	5.00	271.00	76.80	---	347.80	423.00
	Inst	Ea	Sm	SA	2.13	3.75	309.00	102.00	---	411.00	504.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	312.00	76.80	---	388.80	470.00
	Inst	Ea	Sm	SA	2.13	3.75	356.00	102.00	---	458.00	558.00
Pedestal only											
White	Inst	Ea	Lg	SA	1.60	5.00	103.00	76.80	---	179.80	230.00
	Inst	Ea	Sm	SA	2.13	3.75	118.00	102.00	---	220.00	284.00
Color	Inst	Ea	Lg	SA	1.60	5.00	134.00	76.80	---	210.80	265.00
	Inst	Ea	Sm	SA	2.13	3.75	153.00	102.00	---	255.00	324.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	153.00	76.80	---	229.80	288.00
	Inst	Ea	Sm	SA	2.13	3.75	175.00	102.00	---	277.00	350.00
Portrait											
27" x 19" x 34" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	830.00	128.00	---	958.00	1140.00
	Inst	Ea	Sm	SA	3.56	2.25	949.00	171.00	---	1120.00	1340.00
Color	Inst	Ea	Lg	SA	2.67	3.00	1020.00	128.00	---	1148.00	1350.00
	Inst	Ea	Sm	SA	3.56	2.25	1160.00	171.00	---	1331.00	1580.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1140.00	128.00	---	1268.00	1490.00
	Inst	Ea	Sm	SA	3.56	2.25	1300.00	171.00	---	1471.00	1740.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Lavatory slab only

White	Inst	Ea	Lg	SA	1.60	5.00	426.00	76.80	---	502.80	601.00
	Inst	Ea	Sm	SA	2.13	3.75	487.00	102.00	---	589.00	708.00
Color	Inst	Ea	Lg	SA	1.60	5.00	554.00	76.80	---	630.80	748.00
	Inst	Ea	Sm	SA	2.13	3.75	633.00	102.00	---	735.00	876.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	637.00	76.80	---	713.80	843.00
	Inst	Ea	Sm	SA	2.13	3.75	728.00	102.00	---	830.00	985.00

Pedestal only

White	Inst	Ea	Lg	SA	1.60	5.00	194.00	76.80	---	270.80	335.00
	Inst	Ea	Sm	SA	2.13	3.75	222.00	102.00	---	324.00	403.00
Color	Inst	Ea	Lg	SA	1.60	5.00	252.00	76.80	---	328.80	402.00
	Inst	Ea	Sm	SA	2.13	3.75	288.00	102.00	---	390.00	480.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	290.00	76.80	---	366.80	445.00
	Inst	Ea	Sm	SA	2.13	3.75	332.00	102.00	---	434.00	530.00

Revival

24" x 18" x 34" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	1040.00	128.00	---	1168.00	1380.00
	Inst	Ea	Sm	SA	3.56	2.25	1190.00	171.00	---	1361.00	1610.00
Color	Inst	Ea	Lg	SA	2.67	3.00	1290.00	128.00	---	1418.00	1670.00
	Inst	Ea	Sm	SA	3.56	2.25	1470.00	171.00	---	1641.00	1940.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1450.00	128.00	---	1578.00	1850.00
	Inst	Ea	Sm	SA	3.56	2.25	1660.00	171.00	---	1831.00	2150.00

Lavatory slab only

White	Inst	Ea	Lg	SA	1.60	5.00	558.00	76.80	---	634.80	753.00
	Inst	Ea	Sm	SA	2.13	3.75	638.00	102.00	---	740.00	882.00
Color	Inst	Ea	Lg	SA	1.60	5.00	726.00	76.80	---	802.80	947.00
	Inst	Ea	Sm	SA	2.13	3.75	830.00	102.00	---	932.00	1100.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	835.00	76.80	---	911.80	1070.00
	Inst	Ea	Sm	SA	2.13	3.75	954.00	102.00	---	1056.00	1250.00

Pedestal only

White	Inst	Ea	Lg	SA	1.60	5.00	271.00	76.80	---	347.80	423.00
	Inst	Ea	Sm	SA	2.13	3.75	309.00	102.00	---	411.00	504.00
Color	Inst	Ea	Lg	SA	1.60	5.00	352.00	76.80	---	428.80	516.00
	Inst	Ea	Sm	SA	2.13	3.75	402.00	102.00	---	504.00	610.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	404.00	76.80	---	480.80	576.00
	Inst	Ea	Sm	SA	2.13	3.75	462.00	102.00	---	564.00	680.00

Wall-hung units (American Standard Products)

Adjustments

For two 15" L towel bars, ADD

Inst	Pr	Lg	---	---	---	63.00	---	---	63.00	72.50
Inst	Pr	Sm	---	---	---	72.00	---	---	72.00	82.80

Comrade

20" x 18" with 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	336.00	128.00	---	464.00	572.00
	Inst	Ea	Sm	SA	3.56	2.25	384.00	171.00	---	555.00	689.00
Color	Inst	Ea	Lg	SA	2.67	3.00	368.00	128.00	---	496.00	608.00
	Inst	Ea	Sm	SA	3.56	2.25	420.00	171.00	---	591.00	731.00

Sinks, wall-hung units (Kohler)

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Corner Minette

11" x 16" with 4" cc

White	Inst	Ea	Lg	SA	2.00	4.00	496.00	96.00	---	592.00	709.00
	Inst	Ea	Sm	SA	2.67	3.00	566.00	128.00	---	694.00	837.00
Color	Inst	Ea	Lg	SA	2.00	4.00	563.00	96.00	---	659.00	786.00
	Inst	Ea	Sm	SA	2.67	3.00	643.00	128.00	---	771.00	926.00

Declyn

19" x 17" with 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	326.00	128.00	---	454.00	560.00
	Inst	Ea	Sm	SA	3.56	2.25	372.00	171.00	---	543.00	676.00
Color	Inst	Ea	Lg	SA	2.67	3.00	360.00	128.00	---	488.00	600.00
	Inst	Ea	Sm	SA	3.56	2.25	412.00	171.00	---	583.00	721.00

Lucerne

20" x 18" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	356.00	128.00	---	484.00	595.00
	Inst	Ea	Sm	SA	3.56	2.25	407.00	171.00	---	578.00	716.00
Color	Inst	Ea	Lg	SA	2.67	3.00	392.00	128.00	---	520.00	636.00
	Inst	Ea	Sm	SA	3.56	2.25	448.00	171.00	---	619.00	763.00

Penlyn

18" x 16" with 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	418.00	128.00	---	546.00	666.00
	Inst	Ea	Sm	SA	3.56	2.25	478.00	171.00	---	649.00	797.00

Roxalyn

20" x 18" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	415.00	128.00	---	543.00	663.00
	Inst	Ea	Sm	SA	3.56	2.25	474.00	171.00	---	645.00	793.00
Color	Inst	Ea	Lg	SA	2.67	3.00	466.00	128.00	---	594.00	722.00
	Inst	Ea	Sm	SA	3.56	2.25	533.00	171.00	---	704.00	861.00

Wheelchair, meets ADA requirements

20" x 27" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	586.00	128.00	---	714.00	860.00
	Inst	Ea	Sm	SA	3.56	2.25	670.00	171.00	---	841.00	1020.00
Color	Inst	Ea	Lg	SA	2.67	3.00	679.00	128.00	---	807.00	967.00
	Inst	Ea	Sm	SA	3.56	2.25	776.00	171.00	---	947.00	1140.00

Wall-hung units (Kohler Products)

Adjustments

For two 15" L towel bars, ADD

	Inst	Pr	Lg	---	---	---	63.00	---	---	63.00	72.50
	Inst	Pr	Sm	---	---	---	72.00	---	---	72.00	82.80

Chablis, with shroud

24" x 19" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	680.00	128.00	---	808.00	968.00
	Inst	Ea	Sm	SA	3.56	2.25	777.00	171.00	---	948.00	1140.00
Color	Inst	Ea	Lg	SA	2.67	3.00	821.00	128.00	---	949.00	1130.00
	Inst	Ea	Sm	SA	3.56	2.25	938.00	171.00	---	1109.00	1330.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	912.00	128.00	---	1040.00	1230.00
	Inst	Ea	Sm	SA	3.56	2.25	1040.00	171.00	---	1211.00	1450.00

National Repair & Remodeling Estimator

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per Unit	per Day	Mat'l Unit Cost	Labor Unit Cost	Equip Unit Cost	Total Unit Cost	Price Incl O&P
Description	Oper	Unit	Vol	Crew Size	Unit	Day	Cost	Cost	Cost	Cost	Cost
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	287.00	76.80	---	363.80	441.00
	Inst	Ea	Sm	SA	2.13	3.75	328.00	102.00	---	430.00	525.00
Color	Inst	Ea	Lg	SA	1.60	5.00	372.00	76.80	---	448.80	540.00
	Inst	Ea	Sm	SA	2.13	3.75	426.00	102.00	---	528.00	638.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	428.00	76.80	---	504.80	604.00
	Inst	Ea	Sm	SA	2.13	3.75	489.00	102.00	---	591.00	711.00
Shroud only											
White	Inst	Ea	Lg	SA	1.60	5.00	184.00	76.80	---	260.80	322.00
	Inst	Ea	Sm	SA	2.13	3.75	210.00	102.00	---	312.00	390.00
Color	Inst	Ea	Lg	SA	1.60	5.00	238.00	76.80	---	314.80	386.00
	Inst	Ea	Sm	SA	2.13	3.75	273.00	102.00	---	375.00	462.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	274.00	76.80	---	350.80	427.00
	Inst	Ea	Sm	SA	2.13	3.75	313.00	102.00	---	415.00	509.00
Chesapeake											
19" x 17" with 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	338.00	128.00	---	466.00	575.00
	Inst	Ea	Sm	SA	3.56	2.25	386.00	171.00	---	557.00	692.00
Color	Inst	Ea	Lg	SA	2.67	3.00	308.00	128.00	---	436.00	541.00
	Inst	Ea	Sm	SA	3.56	2.25	353.00	171.00	---	524.00	653.00
20" x 18" with 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	338.00	128.00	---	466.00	575.00
	Inst	Ea	Sm	SA	3.56	2.25	386.00	171.00	---	557.00	692.00
Color	Inst	Ea	Lg	SA	2.67	3.00	308.00	128.00	---	436.00	541.00
	Inst	Ea	Sm	SA	3.56	2.25	353.00	171.00	---	524.00	653.00
Fleur, with shroud											
19-7/8" x 14-3/8" with single hole											
White	Inst	Ea	Lg	SA	2.67	3.00	855.00	128.00	---	983.00	1170.00
	Inst	Ea	Sm	SA	3.56	2.25	978.00	171.00	---	1149.00	1370.00
Color	Inst	Ea	Lg	SA	2.67	3.00	1050.00	128.00	---	1178.00	1390.00
	Inst	Ea	Sm	SA	3.56	2.25	1200.00	171.00	---	1371.00	1630.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	419.00	76.80	---	495.80	594.00
	Inst	Ea	Sm	SA	2.13	3.75	479.00	102.00	---	581.00	699.00
Color	Inst	Ea	Lg	SA	1.60	5.00	545.00	76.80	---	621.80	738.00
	Inst	Ea	Sm	SA	2.13	3.75	623.00	102.00	---	725.00	865.00
Shroud only											
White	Inst	Ea	Lg	SA	1.60	5.00	226.00	76.80	---	302.80	371.00
	Inst	Ea	Sm	SA	2.13	3.75	258.00	102.00	---	360.00	445.00
Color	Inst	Ea	Lg	SA	1.60	5.00	294.00	76.80	---	370.80	449.00
	Inst	Ea	Sm	SA	2.13	3.75	336.00	102.00	---	438.00	535.00

Sinks, wall-hung units (Kohler)

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Pinoir, with shroud											
22" x 18" with 8" or 4" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	514.00	128.00	---	642.00	777.00
	Inst	Ea	Sm	SA	3.56	2.25	587.00	171.00	---	758.00	923.00
Color	Inst	Ea	Lg	SA	2.67	3.00	605.00	128.00	---	733.00	882.00
	Inst	Ea	Sm	SA	3.56	2.25	691.00	171.00	---	862.00	1040.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	664.00	128.00	---	792.00	950.00
	Inst	Ea	Sm	SA	3.56	2.25	759.00	171.00	---	930.00	1120.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	208.00	76.80	---	284.80	351.00
	Inst	Ea	Sm	SA	2.13	3.75	238.00	102.00	---	340.00	422.00
Color	Inst	Ea	Lg	SA	1.60	5.00	271.00	76.80	---	347.80	423.00
	Inst	Ea	Sm	SA	2.13	3.75	309.00	102.00	---	411.00	504.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	312.00	76.80	---	388.80	470.00
	Inst	Ea	Sm	SA	2.13	3.75	356.00	102.00	---	458.00	558.00
Shroud only											
White	Inst	Ea	Lg	SA	1.60	5.00	95.90	76.80	---	172.70	222.00
	Inst	Ea	Sm	SA	2.13	3.75	110.00	102.00	---	212.00	274.00
Color	Inst	Ea	Lg	SA	1.60	5.00	124.00	76.80	---	200.80	254.00
	Inst	Ea	Sm	SA	2.13	3.75	142.00	102.00	---	244.00	312.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	143.00	76.80	---	219.80	276.00
	Inst	Ea	Sm	SA	2.13	3.75	163.00	102.00	---	265.00	336.00
Portrait, with shroud											
20" x 15" (shroud not available in this size)											
White	Inst	Ea	Lg	SA	2.67	3.00	751.00	128.00	---	879.00	1050.00
	Inst	Ea	Sm	SA	3.56	2.25	859.00	171.00	---	1030.00	1240.00
Color	Inst	Ea	Lg	SA	2.67	3.00	914.00	128.00	---	1042.00	1240.00
	Inst	Ea	Sm	SA	3.56	2.25	1040.00	171.00	---	1211.00	1450.00
27" x 19-3/8" with 8" cc											
White	Inst	Ea	Lg	SA	2.67	3.00	836.00	128.00	---	964.00	1150.00
	Inst	Ea	Sm	SA	3.56	2.25	956.00	171.00	---	1127.00	1350.00
Color	Inst	Ea	Lg	SA	2.67	3.00	1020.00	128.00	---	1148.00	1360.00
	Inst	Ea	Sm	SA	3.56	2.25	1170.00	171.00	---	1341.00	1590.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1150.00	128.00	---	1278.00	1510.00
	Inst	Ea	Sm	SA	3.56	2.25	1320.00	171.00	---	1491.00	1760.00
Lavatory slab only											
White	Inst	Ea	Lg	SA	1.60	5.00	426.00	76.80	---	502.80	601.00
	Inst	Ea	Sm	SA	2.13	3.75	487.00	102.00	---	589.00	708.00
Color	Inst	Ea	Lg	SA	1.60	5.00	554.00	76.80	---	630.80	748.00
	Inst	Ea	Sm	SA	2.13	3.75	633.00	102.00	---	735.00	876.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	637.00	76.80	---	713.80	843.00
	Inst	Ea	Sm	SA	2.13	3.75	728.00	102.00	---	830.00	985.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Shroud only

White	Inst	Ea	Lg	SA	1.60	5.00	200.00	76.80	---	276.80	342.00
	Inst	Ea	Sm	SA	2.13	3.75	229.00	102.00	---	331.00	412.00
Color	Inst	Ea	Lg	SA	1.60	5.00	260.00	76.80	---	336.80	411.00
	Inst	Ea	Sm	SA	2.13	3.75	297.00	102.00	---	399.00	490.00
Premium Color	Inst	Ea	Lg	SA	1.60	5.00	299.00	76.80	---	375.80	456.00
	Inst	Ea	Sm	SA	2.13	3.75	342.00	102.00	---	444.00	542.00

Wheelchair, meets ADA requirements

20" x 27" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	576.00	128.00	---	704.00	849.00
	Inst	Ea	Sm	SA	3.56	2.25	659.00	171.00	---	830.00	1010.00
Color	Inst	Ea	Lg	SA	2.67	3.00	686.00	128.00	---	814.00	975.00
	Inst	Ea	Sm	SA	3.56	2.25	784.00	171.00	---	955.00	1150.00

Enameled cast iron

Countertop units (Kohler Products)

Farmington

19" x 16" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	351.00	128.00	---	479.00	589.00
	Inst	Ea	Sm	SA	3.56	2.25	401.00	171.00	---	572.00	709.00
Color	Inst	Ea	Lg	SA	2.67	3.00	393.00	128.00	---	521.00	637.00
	Inst	Ea	Sm	SA	3.56	2.25	449.00	171.00	---	620.00	764.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	420.00	128.00	---	548.00	669.00
	Inst	Ea	Sm	SA	3.56	2.25	480.00	171.00	---	651.00	800.00

Radiant

19" diameter with 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	356.00	128.00	---	484.00	596.00
	Inst	Ea	Sm	SA	3.56	2.25	407.00	171.00	---	578.00	716.00
Color	Inst	Ea	Lg	SA	2.67	3.00	400.00	128.00	---	528.00	646.00
	Inst	Ea	Sm	SA	3.56	2.25	457.00	171.00	---	628.00	774.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	429.00	128.00	---	557.00	679.00
	Inst	Ea	Sm	SA	3.56	2.25	490.00	171.00	---	661.00	811.00

Tahoe

21" x 19" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	513.00	128.00	---	641.00	776.00
	Inst	Ea	Sm	SA	3.56	2.25	587.00	171.00	---	758.00	922.00
Color	Inst	Ea	Lg	SA	2.67	3.00	604.00	128.00	---	732.00	880.00
	Inst	Ea	Sm	SA	3.56	2.25	690.00	171.00	---	861.00	1040.00

Sinks, countertop units, with self rim (Kohler)

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Countertop units, with self rim (Kohler Products)

Ellington

19-1/4" x 16-1/4" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	379.00	128.00	---	507.00	621.00
	Inst	Ea	Sm	SA	3.56	2.25	433.00	171.00	---	604.00	745.00
Color	Inst	Ea	Lg	SA	2.67	3.00	429.00	128.00	---	557.00	679.00
	Inst	Ea	Sm	SA	3.56	2.25	490.00	171.00	---	661.00	812.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	462.00	128.00	---	590.00	717.00
	Inst	Ea	Sm	SA	3.56	2.25	528.00	171.00	---	699.00	855.00

Ellipse

33" x 19" with 8" cc

White	Inst	Ea	Lg	SA	2.67	3.00	748.00	128.00	---	876.00	1050.00
	Inst	Ea	Sm	SA	3.56	2.25	855.00	171.00	---	1026.00	1230.00
Color	Inst	Ea	Lg	SA	2.67	3.00	909.00	128.00	---	1037.00	1230.00
	Inst	Ea	Sm	SA	3.56	2.25	1040.00	171.00	---	1211.00	1440.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1010.00	128.00	---	1138.00	1350.00
	Inst	Ea	Sm	SA	3.56	2.25	1160.00	171.00	---	1331.00	1580.00

Farmington

19-1/4" x 16-1/4" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	351.00	128.00	---	479.00	589.00
	Inst	Ea	Sm	SA	3.56	2.25	401.00	171.00	---	572.00	709.00
Color	Inst	Ea	Lg	SA	2.67	3.00	393.00	128.00	---	521.00	637.00
	Inst	Ea	Sm	SA	3.56	2.25	449.00	171.00	---	620.00	764.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	420.00	128.00	---	548.00	669.00
	Inst	Ea	Sm	SA	3.56	2.25	480.00	171.00	---	651.00	800.00

Larkspur (scalloped oval)

28" x 19" with 8" cc

White	Inst	Ea	Lg	SA	2.67	3.00	594.00	128.00	---	722.00	868.00
	Inst	Ea	Sm	SA	3.56	2.25	678.00	171.00	---	849.00	1030.00
Color	Inst	Ea	Lg	SA	2.67	3.00	709.00	128.00	---	837.00	1000.00
	Inst	Ea	Sm	SA	3.56	2.25	810.00	171.00	---	981.00	1180.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	783.00	128.00	---	911.00	1090.00
	Inst	Ea	Sm	SA	3.56	2.25	895.00	171.00	---	1066.00	1280.00

Man's

28" x 19" with 8" cc

White	Inst	Ea	Lg	SA	2.67	3.00	779.00	128.00	---	907.00	1080.00
	Inst	Ea	Sm	SA	3.56	2.25	891.00	171.00	---	1062.00	1270.00
Color	Inst	Ea	Lg	SA	2.67	3.00	950.00	128.00	---	1078.00	1280.00
	Inst	Ea	Sm	SA	3.56	2.25	1090.00	171.00	---	1261.00	1500.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	1060.00	128.00	---	1188.00	1410.00
	Inst	Ea	Sm	SA	3.56	2.25	1210.00	171.00	---	1381.00	1640.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Providence

22" x 19" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	500.00	128.00	---	628.00	761.00
	Inst	Ea	Sm	SA	3.56	2.25	572.00	171.00	---	743.00	906.00
Color	Inst	Ea	Lg	SA	2.67	3.00	587.00	128.00	---	715.00	861.00
	Inst	Ea	Sm	SA	3.56	2.25	671.00	171.00	---	842.00	1020.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	644.00	128.00	---	772.00	926.00
	Inst	Ea	Sm	SA	3.56	2.25	736.00	171.00	---	907.00	1090.00

Revival

28" x 19" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	571.00	128.00	---	699.00	842.00
	Inst	Ea	Sm	SA	3.56	2.25	652.00	171.00	---	823.00	998.00
Color	Inst	Ea	Lg	SA	2.67	3.00	679.00	128.00	---	807.00	967.00
	Inst	Ea	Sm	SA	3.56	2.25	776.00	171.00	---	947.00	1140.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	749.00	128.00	---	877.00	1050.00
	Inst	Ea	Sm	SA	3.56	2.25	856.00	171.00	---	1027.00	1230.00

Thoreau

24" x 18" oval

White	Inst	Ea	Lg	SA	2.67	3.00	534.00	128.00	---	662.00	799.00
	Inst	Ea	Sm	SA	3.56	2.25	610.00	171.00	---	781.00	949.00
Color	Inst	Ea	Lg	SA	2.67	3.00	630.00	128.00	---	758.00	911.00
	Inst	Ea	Sm	SA	3.56	2.25	720.00	171.00	---	891.00	1080.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	693.00	128.00	---	821.00	983.00
	Inst	Ea	Sm	SA	3.56	2.25	792.00	171.00	---	963.00	1160.00

Wall-hung units, with shelf back (Kohler Products)

Adjustments

For two 15" L towel bars, ADD

	Inst	Pr	Lg	---	---	---	63.00	---	---	63.00	72.50
	Inst	Pr	Sm	---	---	---	72.00	---	---	72.00	82.80

Hampton

19" x 17"

White	Inst	Ea	Lg	SA	2.67	3.00	591.00	128.00	---	719.00	866.00
	Inst	Ea	Sm	SA	3.56	2.25	676.00	171.00	---	847.00	1020.00
Color	Inst	Ea	Lg	SA	2.67	3.00	706.00	128.00	---	834.00	997.00
	Inst	Ea	Sm	SA	3.56	2.25	806.00	171.00	---	977.00	1180.00

22" x 19"

White	Inst	Ea	Lg	SA	2.67	3.00	660.00	128.00	---	788.00	945.00
	Inst	Ea	Sm	SA	3.56	2.25	754.00	171.00	---	925.00	1120.00
Color	Inst	Ea	Lg	SA	2.67	3.00	793.00	128.00	---	921.00	1100.00
	Inst	Ea	Sm	SA	3.56	2.25	906.00	171.00	---	1077.00	1290.00

Marston, corner unit

16" x 16"

White	Inst	Ea	Lg	SA	2.67	3.00	744.00	128.00	---	872.00	1040.00
	Inst	Ea	Sm	SA	3.56	2.25	850.00	171.00	---	1021.00	1230.00
Color	Inst	Ea	Lg	SA	2.67	3.00	904.00	128.00	---	1032.00	1220.00
	Inst	Ea	Sm	SA	3.56	2.25	1030.00	171.00	---	1201.00	1440.00

Sinks, kitchen, (Americast)

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

**Taunton
16" x 14"**

White	Inst	Ea	Lg	SA	2.67	3.00	699.00	128.00	---	827.00	990.00
	Inst	Ea	Sm	SA	3.56	2.25	799.00	171.00	---	970.00	1170.00

**Trailer
13" x 13"**

White	Inst	Ea	Lg	SA	2.00	4.00	706.00	96.00	---	802.00	951.00
	Inst	Ea	Sm	SA	2.67	3.00	806.00	128.00	---	934.00	1110.00

Americast - Porcelain enameled finish over steel composite material

Countertop units, with self rim (American Standard Products)

Acclivity

19" diameter with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	314.00	128.00	---	442.00	547.00
	Inst	Ea	Sm	SA	3.56	2.25	359.00	171.00	---	530.00	660.00
Color	Inst	Ea	Lg	SA	2.67	3.00	351.00	128.00	---	479.00	589.00
	Inst	Ea	Sm	SA	3.56	2.25	401.00	171.00	---	572.00	709.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	461.00	128.00	---	589.00	716.00
	Inst	Ea	Sm	SA	3.56	2.25	527.00	171.00	---	698.00	854.00

Affinity

20" x 17" with 8" or 4" cc

White	Inst	Ea	Lg	SA	2.67	3.00	335.00	128.00	---	463.00	571.00
	Inst	Ea	Sm	SA	3.56	2.25	383.00	171.00	---	554.00	688.00
Color	Inst	Ea	Lg	SA	2.67	3.00	381.00	128.00	---	509.00	624.00
	Inst	Ea	Sm	SA	3.56	2.25	436.00	171.00	---	607.00	749.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	494.00	128.00	---	622.00	753.00
	Inst	Ea	Sm	SA	3.56	2.25	564.00	171.00	---	735.00	896.00

Kitchen

Kitchen and utility, with good quality fittings, faucets, and sprayer

Americast - Porcelain enameled finish over steel composite material (American Standard)

Silhouette, triple bowl (2 large ends / 1 small center) with self rim

41-1/2" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.71	1.40	841.00	274.00	---	1115.00	1360.00
	Inst	Ea	Sm	SA	7.62	1.05	961.00	366.00	---	1327.00	1640.00
Color	Inst	Ea	Lg	SA	5.71	1.40	1000.00	274.00	---	1274.00	1550.00
	Inst	Ea	Sm	SA	7.62	1.05	1140.00	366.00	---	1506.00	1850.00
Premium Color	Inst	Ea	Lg	SA	5.71	1.40	1110.00	274.00	---	1384.00	1670.00
	Inst	Ea	Sm	SA	7.62	1.05	1260.00	366.00	---	1626.00	1980.00

Silhouette, double bowl with self rim

33" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	549.00	240.00	---	789.00	980.00
	Inst	Ea	Sm	SA	6.67	1.20	628.00	320.00	---	948.00	1190.00
Color	Inst	Ea	Lg	SA	5.00	1.60	637.00	240.00	---	877.00	1080.00
	Inst	Ea	Sm	SA	6.67	1.20	728.00	320.00	---	1048.00	1300.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	701.00	240.00	---	941.00	1150.00
	Inst	Ea	Sm	SA	6.67	1.20	802.00	320.00	---	1122.00	1390.00

National Repair & Remodeling Estimator

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Unit	Day	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P

Silhouette, double bowl with tile edge
33" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	569.00	240.00	---	809.00	1000.00
	Inst	Ea	Sm	SA	6.67	1.20	650.00	320.00	---	970.00	1210.00
Color	Inst	Ea	Lg	SA	5.00	1.60	666.00	240.00	---	906.00	1110.00
	Inst	Ea	Sm	SA	6.67	1.20	761.00	320.00	---	1081.00	1340.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	730.00	240.00	---	970.00	1190.00
	Inst	Ea	Sm	SA	6.67	1.20	834.00	320.00	---	1154.00	1420.00

Silhouette, dual level double bowl with self rim
33" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	565.00	240.00	---	805.00	998.00
	Inst	Ea	Sm	SA	6.67	1.20	646.00	320.00	---	966.00	1210.00
Color	Inst	Ea	Lg	SA	5.00	1.60	671.00	240.00	---	911.00	1120.00
	Inst	Ea	Sm	SA	6.67	1.20	767.00	320.00	---	1087.00	1350.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	734.00	240.00	---	974.00	1190.00
	Inst	Ea	Sm	SA	6.67	1.20	839.00	320.00	---	1159.00	1430.00

Silhouette, dual level double bowl with tile edge
33" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	595.00	240.00	---	835.00	1030.00
	Inst	Ea	Sm	SA	6.67	1.20	680.00	320.00	---	1000.00	1250.00
Color	Inst	Ea	Lg	SA	5.00	1.60	696.00	240.00	---	936.00	1150.00
	Inst	Ea	Sm	SA	6.67	1.20	796.00	320.00	---	1116.00	1380.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	764.00	240.00	---	1004.00	1230.00
	Inst	Ea	Sm	SA	6.67	1.20	874.00	320.00	---	1194.00	1470.00

Silhouette, dual level double bowl with self rim
38" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	702.00	240.00	---	942.00	1160.00
	Inst	Ea	Sm	SA	6.67	1.20	803.00	320.00	---	1123.00	1390.00
Color	Inst	Ea	Lg	SA	5.00	1.60	830.00	240.00	---	1070.00	1300.00
	Inst	Ea	Sm	SA	6.67	1.20	948.00	320.00	---	1268.00	1550.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	914.00	240.00	---	1154.00	1400.00
	Inst	Ea	Sm	SA	6.67	1.20	1040.00	320.00	---	1360.00	1660.00

Silhouette, dual level double bowl with tile edge
38" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	722.00	240.00	---	962.00	1180.00
	Inst	Ea	Sm	SA	6.67	1.20	826.00	320.00	---	1146.00	1410.00
Color	Inst	Ea	Lg	SA	5.00	1.60	854.00	240.00	---	1094.00	1330.00
	Inst	Ea	Sm	SA	6.67	1.20	976.00	320.00	---	1296.00	1590.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	943.00	240.00	---	1183.00	1430.00
	Inst	Ea	Sm	SA	6.67	1.20	1080.00	320.00	---	1400.00	1700.00

Silhouette, single bowl with self rim
25" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	4.00	2.00	431.00	192.00	---	623.00	773.00
	Inst	Ea	Sm	SA	5.33	1.50	492.00	256.00	---	748.00	937.00
Color	Inst	Ea	Lg	SA	4.00	2.00	494.00	192.00	---	686.00	846.00
	Inst	Ea	Sm	SA	5.33	1.50	564.00	256.00	---	820.00	1020.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	536.00	192.00	---	728.00	894.00
	Inst	Ea	Sm	SA	5.33	1.50	612.00	256.00	---	868.00	1070.00

Sinks, kitchen, enameled cast iron (Kohler)

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Silhouette, single bowl with tile edge

25" x 22" x 9-1/2"

White	Inst	Ea	Lg	SA	4.00	2.00	452.00	192.00	---	644.00	798.00
	Inst	Ea	Sm	SA	5.33	1.50	516.00	256.00	---	772.00	964.00
Color	Inst	Ea	Lg	SA	4.00	2.00	521.00	192.00	---	713.00	877.00
	Inst	Ea	Sm	SA	5.33	1.50	595.00	256.00	---	851.00	1060.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	565.00	192.00	---	757.00	928.00
	Inst	Ea	Sm	SA	5.33	1.50	646.00	256.00	---	902.00	1110.00

Silhouette, single bowl (island) with self rim

18" x 18" x 8-1/2"

White	Inst	Ea	Lg	SA	2.67	3.00	391.00	128.00	---	519.00	635.00
	Inst	Ea	Sm	SA	3.56	2.25	446.00	171.00	---	617.00	761.00
Color	Inst	Ea	Lg	SA	2.67	3.00	444.00	128.00	---	572.00	697.00
	Inst	Ea	Sm	SA	3.56	2.25	508.00	171.00	---	679.00	832.00
Premium Color	Inst	Ea	Lg	SA	2.67	3.00	479.00	128.00	---	607.00	736.00
	Inst	Ea	Sm	SA	3.56	2.25	547.00	171.00	---	718.00	877.00

Silhouette, shallow, double bowl with self rim

33" x 22" x 6-1/2"

White	Inst	Ea	Lg	SA	5.00	1.60	536.00	240.00	---	776.00	964.00
	Inst	Ea	Sm	SA	6.67	1.20	612.00	320.00	---	932.00	1170.00
Color	Inst	Ea	Lg	SA	5.00	1.60	624.00	240.00	---	864.00	1070.00
	Inst	Ea	Sm	SA	6.67	1.20	713.00	320.00	---	1033.00	1280.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	681.00	240.00	---	921.00	1130.00
	Inst	Ea	Sm	SA	6.67	1.20	779.00	320.00	---	1099.00	1360.00

Enameled cast iron (Kohler Products)

Bakersfield, single bowl with self rim

31" x 22"

White	Inst	Ea	Lg	SA	4.00	2.00	619.00	192.00	---	811.00	990.00
	Inst	Ea	Sm	SA	5.33	1.50	707.00	256.00	---	963.00	1180.00
Color	Inst	Ea	Lg	SA	4.00	2.00	735.00	192.00	---	927.00	1120.00
	Inst	Ea	Sm	SA	5.33	1.50	840.00	256.00	---	1096.00	1340.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	822.00	192.00	---	1014.00	1220.00
	Inst	Ea	Sm	SA	5.33	1.50	940.00	256.00	---	1196.00	1450.00

Bon Vivant, triple bowl (2 large / 1 small) with tile edge or self rim

48" x 22"

White	Inst	Ea	Lg	SA	5.71	1.40	1070.00	274.00	---	1344.00	1630.00
	Inst	Ea	Sm	SA	7.62	1.05	1230.00	366.00	---	1596.00	1940.00
Color	Inst	Ea	Lg	SA	5.71	1.40	1300.00	274.00	---	1574.00	1900.00
	Inst	Ea	Sm	SA	7.62	1.05	1490.00	366.00	---	1856.00	2250.00
Premium Color	Inst	Ea	Lg	SA	5.71	1.40	1480.00	274.00	---	1754.00	2100.00
	Inst	Ea	Sm	SA	7.62	1.05	1690.00	366.00	---	2056.00	2470.00

Brookfield, double bowl with tile edge or self rim

33" x 22"

White	Inst	Ea	Lg	SA	5.00	1.60	552.00	240.00	---	792.00	982.00
	Inst	Ea	Sm	SA	6.67	1.20	630.00	320.00	---	950.00	1190.00
Color	Inst	Ea	Lg	SA	5.00	1.60	651.00	240.00	---	891.00	1100.00
	Inst	Ea	Sm	SA	6.67	1.20	744.00	320.00	---	1064.00	1320.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	726.00	240.00	---	966.00	1180.00
	Inst	Ea	Sm	SA	6.67	1.20	830.00	320.00	---	1150.00	1420.00

National Repair & Remodeling Estimator

					Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					Crew per Unit	per Day	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P

**Cilantro, double bowl with tile edge or self rim
36" x 22"**

White	Inst	Ea	Lg	SA	5.00	1.60	727.00	240.00	---	967.00	1180.00
	Inst	Ea	Sm	SA	6.67	1.20	830.00	320.00	---	1150.00	1420.00
Color	Inst	Ea	Lg	SA	5.00	1.60	870.00	240.00	---	1110.00	1350.00
	Inst	Ea	Sm	SA	6.67	1.20	994.00	320.00	---	1314.00	1610.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	978.00	240.00	---	1218.00	1470.00
	Inst	Ea	Sm	SA	6.67	1.20	1120.00	320.00	---	1440.00	1750.00

**Entrée, single bowl, undercounter
33" x 22"**

White	Inst	Ea	Lg	SA	4.00	2.00	910.00	192.00	---	1102.00	1330.00
	Inst	Ea	Sm	SA	5.33	1.50	1040.00	256.00	---	1296.00	1570.00
Color	Inst	Ea	Lg	SA	4.00	2.00	1100.00	192.00	---	1292.00	1540.00
	Inst	Ea	Sm	SA	5.33	1.50	1260.00	256.00	---	1516.00	1820.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	1240.00	192.00	---	1432.00	1710.00
	Inst	Ea	Sm	SA	5.33	1.50	1420.00	256.00	---	1676.00	2000.00

**Executive Chef, double bowl (1 large / 1 medium), undercounter
33" x 22"**

White	Inst	Ea	Lg	SA	5.00	1.60	813.00	240.00	---	1053.00	1280.00
	Inst	Ea	Sm	SA	6.67	1.20	929.00	320.00	---	1249.00	1530.00
Color	Inst	Ea	Lg	SA	5.00	1.60	978.00	240.00	---	1218.00	1470.00
	Inst	Ea	Sm	SA	6.67	1.20	1120.00	320.00	---	1440.00	1750.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	1100.00	240.00	---	1340.00	1620.00
	Inst	Ea	Sm	SA	6.67	1.20	1260.00	320.00	---	1580.00	1910.00

**Lakefield High / Low, double bowl (1 large / 1 small), undercounter
33" x 22"**

White	Inst	Ea	Lg	SA	5.00	1.60	689.00	240.00	---	929.00	1140.00
	Inst	Ea	Sm	SA	6.67	1.20	788.00	320.00	---	1108.00	1370.00
Color	Inst	Ea	Lg	SA	5.00	1.60	823.00	240.00	---	1063.00	1290.00
	Inst	Ea	Sm	SA	6.67	1.20	941.00	320.00	---	1261.00	1550.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	924.00	240.00	---	1164.00	1410.00
	Inst	Ea	Sm	SA	6.67	1.20	1060.00	320.00	---	1380.00	1680.00

**Marsala, double bowl (1 large / 1 medium) with tile edge or self rim
33" x 22"**

White	Inst	Ea	Lg	SA	5.00	1.60	845.00	240.00	---	1085.00	1320.00
	Inst	Ea	Sm	SA	6.67	1.20	966.00	320.00	---	1286.00	1570.00
Color	Inst	Ea	Lg	SA	5.00	1.60	981.00	240.00	---	1221.00	1480.00
	Inst	Ea	Sm	SA	6.67	1.20	1120.00	320.00	---	1440.00	1750.00
Premium Color	Inst	Ea	Lg	SA	5.00	1.60	1100.00	240.00	---	1340.00	1620.00
	Inst	Ea	Sm	SA	6.67	1.20	1260.00	320.00	---	1580.00	1920.00

**Mayfield, single bowl with self rim
25" x 22"**

White	Inst	Ea	Lg	SA	4.00	2.00	437.00	192.00	---	629.00	781.00
	Inst	Ea	Sm	SA	5.33	1.50	499.00	256.00	---	755.00	945.00
Color	Inst	Ea	Lg	SA	4.00	2.00	508.00	192.00	---	700.00	862.00
	Inst	Ea	Sm	SA	5.33	1.50	580.00	256.00	---	836.00	1040.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	561.00	192.00	---	753.00	924.00
	Inst	Ea	Sm	SA	5.33	1.50	641.00	256.00	---	897.00	1110.00

Sinks, kitchen, stainless steel (Kohler)

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Porcelain on steel (American Standard)

Double bowl, with self rim

33" x 22"

White	Inst	Ea	Lg	SA	5.00	1.60	318.00	240.00	---	558.00	714.00
	Inst	Ea	Sm	SA	6.67	1.20	364.00	320.00	---	684.00	882.00
Color	Inst	Ea	Lg	SA	5.00	1.60	334.00	240.00	---	574.00	732.00
	Inst	Ea	Sm	SA	6.67	1.20	382.00	320.00	---	702.00	903.00

Double bowl, dual level with self rim

33" x 22"

White	Inst	Ea	Lg	SA	5.00	1.60	321.00	240.00	---	561.00	718.00
	Inst	Ea	Sm	SA	6.67	1.20	367.00	320.00	---	687.00	887.00
Color	Inst	Ea	Lg	SA	5.00	1.60	336.00	240.00	---	576.00	734.00
	Inst	Ea	Sm	SA	6.67	1.20	384.00	320.00	---	704.00	906.00

Single bowl

25" x 22"

White	Inst	Ea	Lg	SA	4.00	2.00	291.00	192.00	---	483.00	613.00
	Inst	Ea	Sm	SA	5.33	1.50	332.00	256.00	---	588.00	753.00
Color	Inst	Ea	Lg	SA	4.00	2.00	307.00	192.00	---	499.00	631.00
	Inst	Ea	Sm	SA	5.33	1.50	350.00	256.00	---	606.00	774.00

Stainless steel (Kohler)

Triple bowl, flat rim, undercounter

43" x 22"

43" x 22"	Inst	Ea	Lg	SA	5.71	1.40	1800.00	274.00	---	2074.00	2460.00
	Inst	Ea	Sm	SA	7.62	1.05	2050.00	366.00	---	2416.00	2890.00

Double bowl, flat rim, undercounter

29" x 16" (equal)

29" x 16" (equal)	Inst	Ea	Lg	SA	5.00	1.60	1190.00	240.00	---	1430.00	1720.00
	Inst	Ea	Sm	SA	6.67	1.20	1360.00	320.00	---	1680.00	2030.00

29" x 16" (high / low)

29" x 16" (high / low)	Inst	Ea	Lg	SA	5.00	1.60	1190.00	240.00	---	1430.00	1720.00
	Inst	Ea	Sm	SA	6.67	1.20	1360.00	320.00	---	1680.00	2030.00

29" x 19" (large / medium)

29" x 19" (large / medium)	Inst	Ea	Lg	SA	5.00	1.60	1210.00	240.00	---	1450.00	1740.00
	Inst	Ea	Sm	SA	6.67	1.20	1390.00	320.00	---	1710.00	2060.00

37" x 19" (xtra lge / med)

37" x 19" (xtra lge / med)	Inst	Ea	Lg	SA	5.00	1.60	1400.00	240.00	---	1640.00	1960.00
	Inst	Ea	Sm	SA	6.67	1.20	1600.00	320.00	---	1920.00	2310.00

Single bowl, flat rim, undercounter

14" x 16" x 9-1/2"

14" x 16" x 9-1/2"	Inst	Ea	Lg	SA	4.00	2.00	730.00	192.00	---	922.00	1120.00
	Inst	Ea	Sm	SA	5.33	1.50	834.00	256.00	---	1090.00	1330.00

16" x 16" x 9-1/2"

16" x 16" x 9-1/2"	Inst	Ea	Lg	SA	4.00	2.00	823.00	192.00	---	1015.00	1220.00
	Inst	Ea	Sm	SA	5.33	1.50	940.00	256.00	---	1196.00	1450.00

18" x 18" x 9-1/2"

18" x 18" x 9-1/2"	Inst	Ea	Lg	SA	4.00	2.00	880.00	192.00	---	1072.00	1290.00
	Inst	Ea	Sm	SA	5.33	1.50	1010.00	256.00	---	1266.00	1530.00

35" x 16" x 9-1/2"

35" x 16" x 9-1/2"	Inst	Ea	Lg	SA	4.00	2.00	1240.00	192.00	---	1432.00	1710.00
	Inst	Ea	Sm	SA	5.33	1.50	1420.00	256.00	---	1676.00	2010.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	Price
											Incl
											O&P

Bar**Enameled cast iron (Kohler)**

Addison

13" x 13"

White	Inst	Ea	Lg	SA	4.00	2.00	394.00	192.00	---	586.00	731.00
	Inst	Ea	Sm	SA	5.33	1.50	450.00	256.00	---	706.00	888.00
Color	Inst	Ea	Lg	SA	4.00	2.00	454.00	192.00	---	646.00	801.00
	Inst	Ea	Sm	SA	5.33	1.50	519.00	256.00	---	775.00	968.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	499.00	192.00	---	691.00	852.00
	Inst	Ea	Sm	SA	5.33	1.50	570.00	256.00	---	826.00	1030.00

Apertif with tile edge or self rim

16" x 19"

White	Inst	Ea	Lg	SA	4.00	2.00	489.00	192.00	---	681.00	841.00
	Inst	Ea	Sm	SA	5.33	1.50	559.00	256.00	---	815.00	1010.00
Color	Inst	Ea	Lg	SA	4.00	2.00	573.00	192.00	---	765.00	937.00
	Inst	Ea	Sm	SA	5.33	1.50	655.00	256.00	---	911.00	1120.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	637.00	192.00	---	829.00	1010.00
	Inst	Ea	Sm	SA	5.33	1.50	727.00	256.00	---	983.00	1210.00

Entertainer, semicircular with self rim or undercounter self rim

22" x 18"

White	Inst	Ea	Lg	SA	4.00	2.00	525.00	192.00	---	717.00	882.00
	Inst	Ea	Sm	SA	5.33	1.50	600.00	256.00	---	856.00	1060.00
Color	Inst	Ea	Lg	SA	4.00	2.00	619.00	192.00	---	811.00	990.00
	Inst	Ea	Sm	SA	5.33	1.50	707.00	256.00	---	963.00	1180.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	688.00	192.00	---	880.00	1070.00
	Inst	Ea	Sm	SA	5.33	1.50	787.00	256.00	---	1043.00	1280.00

Sorbet with tile edge or self rim

15" x 15"

White	Inst	Ea	Lg	SA	4.00	2.00	446.00	192.00	---	638.00	792.00
	Inst	Ea	Sm	SA	5.33	1.50	510.00	256.00	---	766.00	958.00
Color	Inst	Ea	Lg	SA	4.00	2.00	520.00	192.00	---	712.00	876.00
	Inst	Ea	Sm	SA	5.33	1.50	594.00	256.00	---	850.00	1050.00
Premium Color	Inst	Ea	Lg	SA	4.00	2.00	575.00	192.00	---	767.00	939.00
	Inst	Ea	Sm	SA	5.33	1.50	657.00	256.00	---	913.00	1130.00

Stainless steel (Kohler)

Lyric, single bowl with self rim

15" x 15"

15" x 15"	Inst	Ea	Lg	SA	4.00	2.00	397.00	192.00	---	589.00	735.00
	Inst	Ea	Sm	SA	5.33	1.50	453.00	256.00	---	709.00	892.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Utility/service**Enameled cast iron (Kohler)**

Sutton high back

24" x 18", 8" high back	Inst	Ea	Lg	SA	4.00	2.00	934.00	192.00	---	1126.00	1350.00
	Inst	Ea	Sm	SA	5.33	1.50	1070.00	256.00	---	1326.00	1600.00

Tech

24" x 18", bubbler mound	Inst	Ea	Lg	SA	4.00	2.00	567.00	192.00	---	759.00	931.00
	Inst	Ea	Sm	SA	5.33	1.50	648.00	256.00	---	904.00	1120.00

Whitby

28" x 28" corner	Inst	Ea	Lg	SA	4.00	2.00	1170.00	192.00	---	1362.00	1630.00
	Inst	Ea	Sm	SA	5.33	1.50	1340.00	256.00	---	1596.00	1910.00

Glen Falls, laundry sink

25" x 22"

White	Inst	Ea	Lg	SA	4.00	2.00	653.00	192.00	---	845.00	1030.00
	Inst	Ea	Sm	SA	5.33	1.50	746.00	256.00	---	1002.00	1230.00
Color	Inst	Ea	Lg	SA	4.00	2.00	783.00	192.00	---	975.00	1180.00
	Inst	Ea	Sm	SA	5.33	1.50	895.00	256.00	---	1151.00	1400.00

River Falls, laundry sink

25" x 22"

White	Inst	Ea	Lg	SA	4.00	2.00	715.00	192.00	---	907.00	1100.00
	Inst	Ea	Sm	SA	5.33	1.50	818.00	256.00	---	1074.00	1310.00
Color	Inst	Ea	Lg	SA	4.00	2.00	861.00	192.00	---	1053.00	1270.00
	Inst	Ea	Sm	SA	5.33	1.50	984.00	256.00	---	1240.00	1500.00

Westover, double deep, laundry sink

42" x 21"

White	Inst	Ea	Lg	SA	5.00	1.60	1150.00	240.00	---	1390.00	1670.00
	Inst	Ea	Sm	SA	6.67	1.20	1310.00	320.00	---	1630.00	1970.00
Color	Inst	Ea	Lg	SA	5.00	1.60	1400.00	240.00	---	1640.00	1960.00
	Inst	Ea	Sm	SA	6.67	1.20	1600.00	320.00	---	1920.00	2310.00

Stainless steel (Kohler)

Ballad, single bowl with self rim

19" x 19" x 9-1/2"	Inst	Ea	Lg	SA	4.00	2.00	1050.00	192.00	---	1242.00	1480.00
	Inst	Ea	Sm	SA	5.33	1.50	1200.00	256.00	---	1456.00	1750.00
25" x 22" x 10"	Inst	Ea	Lg	SA	4.00	2.00	1190.00	192.00	---	1382.00	1650.00
	Inst	Ea	Sm	SA	5.33	1.50	1360.00	256.00	---	1616.00	1940.00
25" x 22" x 12"	Inst	Ea	Lg	SA	4.00	2.00	1270.00	192.00	---	1462.00	1740.00
	Inst	Ea	Sm	SA	5.33	1.50	1450.00	256.00	---	1706.00	2040.00

Vitreous china (Kohler)

Hollister

28" x 22"	Inst	Ea	Lg	SA	4.00	2.00	1250.00	192.00	---	1442.00	1710.00
	Inst	Ea	Sm	SA	5.33	1.50	1420.00	256.00	---	1676.00	2010.00

Sudbury

22" x 20"	Inst	Ea	Lg	SA	4.00	2.00	719.00	192.00	---	911.00	1110.00
	Inst	Ea	Sm	SA	5.33	1.50	822.00	256.00	---	1078.00	1320.00

Tyrrell

21" x 27" w/ siphon jet	Inst	Ea	Lg	SA	5.00	1.60	1330.00	240.00	---	1570.00	1880.00
	Inst	Ea	Sm	SA	6.67	1.20	1520.00	320.00	---	1840.00	2210.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Skylights, skywindows, roof windows

Labor costs are for installation of skylight, flashing and roller shade only; no carpentry or roofing work included

Polycarbonate dome, clear transparent or tinted, roof opening sizes, curb or flush mount, self-flashing

Fixed, single dome

22" x 22"	Inst	Ea	Lg	CA	1.90	4.20	211.00	78.00	---	289.00	352.00
	Inst	Ea	Sm	CA	2.93	2.73	254.00	120.00	---	374.00	461.00
22" x 46"	Inst	Ea	Lg	CA	2.58	3.10	240.00	106.00	---	346.00	424.00
	Inst	Ea	Sm	CA	3.96	2.02	289.00	163.00	---	452.00	560.00
30" x 30"	Inst	Ea	Lg	CA	2.58	3.10	284.00	106.00	---	390.00	475.00
	Inst	Ea	Sm	CA	3.96	2.02	342.00	163.00	---	505.00	621.00
30" x 46"	Inst	Ea	Lg	CA	2.96	2.70	444.00	122.00	---	566.00	680.00
	Inst	Ea	Sm	CA	4.55	1.76	534.00	187.00	---	721.00	876.00
46" x 46"	Inst	Ea	Lg	CA	3.48	2.30	499.00	143.00	---	642.00	774.00
	Inst	Ea	Sm	CA	5.33	1.50	601.00	219.00	---	820.00	998.00

Fixed, double dome

22" x 22"	Inst	Ea	Lg	CA	1.90	4.20	248.00	78.00	---	326.00	394.00
	Inst	Ea	Sm	CA	2.93	2.73	298.00	120.00	---	418.00	511.00
22" x 46"	Inst	Ea	Lg	CA	2.58	3.10	281.00	106.00	---	387.00	472.00
	Inst	Ea	Sm	CA	3.96	2.02	339.00	163.00	---	502.00	617.00
30" x 30"	Inst	Ea	Lg	CA	2.58	3.10	439.00	106.00	---	545.00	653.00
	Inst	Ea	Sm	CA	3.96	2.02	529.00	163.00	---	692.00	836.00
30" x 46"	Inst	Ea	Lg	CA	2.96	2.70	489.00	122.00	---	611.00	732.00
	Inst	Ea	Sm	CA	4.55	1.76	588.00	187.00	---	775.00	938.00
46" x 46"	Inst	Ea	Lg	CA	3.48	2.30	567.00	143.00	---	710.00	852.00
	Inst	Ea	Sm	CA	5.33	1.50	682.00	219.00	---	901.00	1090.00

Fixed, triple dome

22" x 22"	Inst	Ea	Lg	CA	1.90	4.20	334.00	78.00	---	412.00	494.00
	Inst	Ea	Sm	CA	2.93	2.73	402.00	120.00	---	522.00	631.00
22" x 46"	Inst	Ea	Lg	CA	2.58	3.10	380.00	106.00	---	486.00	585.00
	Inst	Ea	Sm	CA	3.96	2.02	457.00	163.00	---	620.00	754.00
30" x 30"	Inst	Ea	Lg	CA	2.58	3.10	593.00	106.00	---	699.00	830.00
	Inst	Ea	Sm	CA	3.96	2.02	714.00	163.00	---	877.00	1050.00
30" x 46"	Inst	Ea	Lg	CA	2.96	2.70	660.00	122.00	---	782.00	929.00
	Inst	Ea	Sm	CA	4.55	1.76	794.00	187.00	---	981.00	1180.00
46" x 46"	Inst	Ea	Lg	CA	3.48	2.30	765.00	143.00	---	908.00	1080.00
	Inst	Ea	Sm	CA	5.33	1.50	921.00	219.00	---	1140.00	1370.00

Skylights, skywindows, roof windows, operable

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Operable, single dome											
22" x 22"	Inst	Ea	Lg	CA	2.00	4.00	471.00	82.10	---	553.10	657.00
	Inst	Ea	Sm	CA	3.08	2.60	568.00	126.00	---	694.00	830.00
22" x 46"	Inst	Ea	Lg	CA	2.76	2.90	536.00	113.00	---	649.00	775.00
	Inst	Ea	Sm	CA	4.23	1.89	645.00	174.00	---	819.00	985.00
30" x 30"	Inst	Ea	Lg	CA	2.76	2.90	585.00	113.00	---	698.00	831.00
	Inst	Ea	Sm	CA	4.23	1.89	704.00	174.00	---	878.00	1050.00
30" x 46"	Inst	Ea	Lg	CA	3.20	2.50	635.00	131.00	---	766.00	914.00
	Inst	Ea	Sm	CA	4.91	1.63	765.00	202.00	---	967.00	1160.00
46" x 46"	Inst	Ea	Lg	CA	3.81	2.10	760.00	156.00	---	916.00	1090.00
	Inst	Ea	Sm	CA	5.84	1.37	916.00	240.00	---	1156.00	1390.00
Operable, double dome											
22" x 22"	Inst	Ea	Lg	CA	2.00	4.00	536.00	82.10	---	618.10	731.00
	Inst	Ea	Sm	CA	3.08	2.60	645.00	126.00	---	771.00	919.00
22" x 46"	Inst	Ea	Lg	CA	2.76	2.90	609.00	113.00	---	722.00	859.00
	Inst	Ea	Sm	CA	4.23	1.89	733.00	174.00	---	907.00	1090.00
30" x 30"	Inst	Ea	Lg	CA	2.76	2.90	668.00	113.00	---	781.00	927.00
	Inst	Ea	Sm	CA	4.23	1.89	805.00	174.00	---	979.00	1170.00
30" x 46"	Inst	Ea	Lg	CA	3.20	2.50	729.00	131.00	---	860.00	1020.00
	Inst	Ea	Sm	CA	4.91	1.63	878.00	202.00	---	1080.00	1290.00
46" x 46"	Inst	Ea	Lg	CA	3.81	2.10	851.00	156.00	---	1007.00	1200.00
	Inst	Ea	Sm	CA	5.84	1.37	1020.00	240.00	---	1260.00	1510.00
Operable, triple dome											
22" x 22"	Inst	Ea	Lg	CA	2.00	4.00	723.00	82.10	---	805.10	946.00
	Inst	Ea	Sm	CA	3.08	2.60	871.00	126.00	---	997.00	1180.00
22" x 46"	Inst	Ea	Lg	CA	2.76	2.90	822.00	113.00	---	935.00	1100.00
	Inst	Ea	Sm	CA	4.23	1.89	989.00	174.00	---	1163.00	1380.00
30" x 30"	Inst	Ea	Lg	CA	2.76	2.90	902.00	113.00	---	1015.00	1200.00
	Inst	Ea	Sm	CA	4.23	1.89	1090.00	174.00	---	1264.00	1490.00
30" x 46"	Inst	Ea	Lg	CA	3.20	2.50	984.00	131.00	---	1115.00	1320.00
	Inst	Ea	Sm	CA	4.91	1.63	1190.00	202.00	---	1392.00	1650.00
46" x 46"	Inst	Ea	Lg	CA	3.81	2.10	1150.00	156.00	---	1306.00	1540.00
	Inst	Ea	Sm	CA	5.84	1.37	1380.00	240.00	---	1620.00	1930.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Low profile, acrylic double domes with molded edge

Preassembled units include plywood curb-liner, 16 oz. copper flashing for pitched or flat roof, screen, and all hardware

Ventarama

Ventilating type

22" x 30"	Inst	Ea	Lg	CA	2.07	3.87	324.00	85.00	---	409.00	492.00
	Inst	Ea	Sm	CA	3.17	2.52	390.00	130.00	---	520.00	631.00
22" x 45-1/2"	Inst	Ea	Lg	CA	2.07	3.87	390.00	85.00	---	475.00	568.00
	Inst	Ea	Sm	CA	3.17	2.52	470.00	130.00	---	600.00	723.00
30" x 22"	Inst	Ea	Lg	CA	2.07	3.87	324.00	85.00	---	409.00	492.00
	Inst	Ea	Sm	CA	3.17	2.52	390.00	130.00	---	520.00	631.00
30" x 30"	Inst	Ea	Lg	CA	2.07	3.87	357.00	85.00	---	442.00	530.00
	Inst	Ea	Sm	CA	3.17	2.52	430.00	130.00	---	560.00	677.00
30" x 45-1/2"	Inst	Ea	Lg	CA	2.58	3.10	437.00	106.00	---	543.00	650.00
	Inst	Ea	Sm	CA	3.96	2.02	526.00	163.00	---	689.00	832.00
30" x 72"	Inst	Ea	Lg	CA	2.58	3.10	589.00	106.00	---	695.00	825.00
	Inst	Ea	Sm	CA	3.96	2.02	709.00	163.00	---	872.00	1040.00
45-1/2" x 30"	Inst	Ea	Lg	CA	2.58	3.10	437.00	106.00	---	543.00	650.00
	Inst	Ea	Sm	CA	3.96	2.02	526.00	163.00	---	689.00	832.00
45-1/2" x 45-1/2"	Inst	Ea	Lg	CA	2.58	3.10	529.00	106.00	---	635.00	757.00
	Inst	Ea	Sm	CA	3.96	2.02	637.00	163.00	---	800.00	960.00
Add for insulated glass											
	Inst		Lg	---	---	---	30.0	---	---	---	---
	Inst		Sm	---	---	---	30.0	---	---	---	---
Add for bronze tinted outer dome											
	Inst	Ea	Lg	---	---	---	46.30	---	---	---	53.30
	Inst	Ea	Sm	---	---	---	55.80	---	---	---	64.10
Add for white inner dome											
	Inst	Ea	Lg	---	---	---	22.50	---	---	---	25.90
	Inst	Ea	Sm	---	---	---	27.10	---	---	---	31.10
Add for roll shade											
22" width	Inst	Ea	Lg	---	---	---	132.00	---	---	---	152.00
	Inst	Ea	Sm	---	---	---	159.00	---	---	---	183.00
30" width	Inst	Ea	Lg	---	---	---	143.00	---	---	---	164.00
	Inst	Ea	Sm	---	---	---	172.00	---	---	---	198.00
45-1/2" width	Inst	Ea	Lg	---	---	---	152.00	---	---	---	175.00
	Inst	Ea	Sm	---	---	---	183.00	---	---	---	211.00

Skylights, fixed type

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Add for storm panel with weatherstripping											
30" x 30"	Inst	Ea	Lg	---	---	---	66.20	---	---	---	76.10
	Inst	Ea	Sm	---	---	---	79.70	---	---	---	91.60
45-1/2" x 45-1/2"	Inst	Ea	Lg	---	---	---	91.30	---	---	---	105.00
	Inst	Ea	Sm	---	---	---	110.00	---	---	---	126.00
Add for motorization											
	Inst	Ea	Lg	CA	3.23	2.48	265.00	133.00	---	398.00	490.00
	Inst	Ea	Sm	CA	4.97	1.61	319.00	204.00	---	523.00	652.00
Fixed type											
22" x 30"	Inst	Ea	Lg	CA	2.07	3.87	251.00	85.00	---	336.00	408.00
	Inst	Ea	Sm	CA	3.17	2.52	303.00	130.00	---	433.00	530.00
22" x 45-1/2"	Inst	Ea	Lg	CA	2.07	3.87	318.00	85.00	---	403.00	484.00
	Inst	Ea	Sm	CA	3.17	2.52	382.00	130.00	---	512.00	622.00
30" x 22"	Inst	Ea	Lg	CA	2.07	3.87	251.00	85.00	---	336.00	408.00
	Inst	Ea	Sm	CA	3.17	2.52	303.00	130.00	---	433.00	530.00
30" x 30"	Inst	Ea	Lg	CA	2.07	3.87	284.00	85.00	---	369.00	446.00
	Inst	Ea	Sm	CA	3.17	2.52	343.00	130.00	---	473.00	576.00
30" x 45-1/2"	Inst	Ea	Lg	CA	2.58	3.10	351.00	106.00	---	457.00	551.00
	Inst	Ea	Sm	CA	3.96	2.02	422.00	163.00	---	585.00	713.00
30" x 72"	Inst	Ea	Lg	CA	2.58	3.10	463.00	106.00	---	569.00	681.00
	Inst	Ea	Sm	CA	3.96	2.02	558.00	163.00	---	721.00	869.00
45-1/2" x 30"	Inst	Ea	Lg	CA	2.58	3.10	351.00	106.00	---	457.00	551.00
	Inst	Ea	Sm	CA	3.96	2.02	422.00	163.00	---	585.00	713.00
45-1/2" x 45-1/2"	Inst	Ea	Lg	CA	2.58	3.10	397.00	106.00	---	503.00	605.00
	Inst	Ea	Sm	CA	3.96	2.02	478.00	163.00	---	641.00	777.00
Add for insulated laminated glass											
	Inst		Lg	---	---	---	30.0	---	---	---	---
	Inst		Sm	---	---	---	30.0	---	---	---	---

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Skywindows

Labor costs are for installation of skywindows only, no carpentry or roofing work included

Ultraseal self-flashing units. Clear insulated glass, flexible flange, no mastic or step flashing required. Other glazings available

Skywindow E-Class

22-1/2" x 22-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	286.00	32.90	---	318.90	375.00
	Inst	Ea	Sm	CA	1.23	6.50	344.00	50.50	---	394.50	466.00
22-1/2" x 38-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	328.00	32.90	---	360.90	423.00
	Inst	Ea	Sm	CA	1.23	6.50	395.00	50.50	---	445.50	525.00
22-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	386.00	32.90	---	418.90	490.00
	Inst	Ea	Sm	CA	1.23	6.50	465.00	50.50	---	515.50	606.00
22-1/2" x 70-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	423.00	32.90	---	455.90	533.00
	Inst	Ea	Sm	CA	1.23	6.50	510.00	50.50	---	560.50	657.00
30-1/2" x 30-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	386.00	32.90	---	418.90	490.00
	Inst	Ea	Sm	CA	1.23	6.50	465.00	50.50	---	515.50	606.00
30-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	471.00	32.90	---	503.90	588.00
	Inst	Ea	Sm	CA	1.23	6.50	567.00	50.50	---	617.50	723.00
46-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	.800	10.00	529.00	32.90	---	561.90	655.00
	Inst	Ea	Sm	CA	1.23	6.50	637.00	50.50	---	687.50	803.00
22-1/2" x 22-1/2" venting	Inst	Ea	Lg	CA	.800	10.00	541.00	32.90	---	573.90	668.00
	Inst	Ea	Sm	CA	1.23	6.50	652.00	50.50	---	702.50	820.00
22-1/2" x 30-1/2" venting	Inst	Ea	Lg	CA	.800	10.00	586.00	32.90	---	618.90	720.00
	Inst	Ea	Sm	CA	1.23	6.50	706.00	50.50	---	756.50	882.00
22-1/2" x 46-1/2" venting	Inst	Ea	Lg	CA	.800	10.00	663.00	32.90	---	695.90	808.00
	Inst	Ea	Sm	CA	1.23	6.50	798.00	50.50	---	848.50	989.00
30-1/2" x 30-1/2" venting	Inst	Ea	Lg	CA	.800	10.00	627.00	32.90	---	659.90	767.00
	Inst	Ea	Sm	CA	1.23	6.50	755.00	50.50	---	805.50	939.00
30-1/2" x 46-1/2" venting	Inst	Ea	Lg	CA	.800	10.00	720.00	32.90	---	752.90	874.00
	Inst	Ea	Sm	CA	1.23	6.50	867.00	50.50	---	917.50	1070.00

Step flash-pan flashed units. Insulated clear tempered glass. Deck-mounted step flash unit.

Other glazings available

Skywindow Excel-10

22-1/2" x 22-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	265.00	106.00	---	371.00	453.00
	Inst	Ea	Sm	CA	3.96	2.02	319.00	163.00	---	482.00	594.00
22-1/2" x 38-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	278.00	106.00	---	384.00	468.00
	Inst	Ea	Sm	CA	3.96	2.02	335.00	163.00	---	498.00	612.00
22-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	292.00	106.00	---	398.00	485.00
	Inst	Ea	Sm	CA	3.96	2.02	352.00	163.00	---	515.00	632.00
22-1/2" x 70-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	339.00	106.00	---	445.00	538.00
	Inst	Ea	Sm	CA	3.96	2.02	408.00	163.00	---	571.00	697.00
30-1/2" x 30-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	314.00	106.00	---	420.00	509.00
	Inst	Ea	Sm	CA	3.96	2.02	378.00	163.00	---	541.00	662.00

Skywindows, low-profile, deck mount

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
30-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	378.00	106.00	---	484.00	583.00
	Inst	Ea	Sm	CA	3.96	2.02	456.00	163.00	---	619.00	752.00
22-1/2" x 22-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	443.00	106.00	---	549.00	658.00
	Inst	Ea	Sm	CA	3.96	2.02	534.00	163.00	---	697.00	841.00
22-1/2" x 30-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	478.00	106.00	---	584.00	698.00
	Inst	Ea	Sm	CA	3.96	2.02	575.00	163.00	---	738.00	889.00
22-1/2" x 46-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	570.00	106.00	---	676.00	804.00
	Inst	Ea	Sm	CA	3.96	2.02	687.00	163.00	---	850.00	1020.00
30-1/2" x 30-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	549.00	106.00	---	655.00	780.00
	Inst	Ea	Sm	CA	3.96	2.02	661.00	163.00	---	824.00	988.00
30-1/2" x 46-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	613.00	106.00	---	719.00	853.00
	Inst	Ea	Sm	CA	3.96	2.02	738.00	163.00	---	901.00	1080.00
Add for flashing kit	Inst	Ea	Lg	---	---	---	60.00	---	---	---	60.00
	Inst	Ea	Sm	---	---	---	60.00	---	---	---	60.00

Low-profile insulated glass skywindow. Deck mount, clear tempered glass, self-flashing models. Other glazings available

Skywindow Genra-1

22-1/2" x 22-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	235.00	106.00	---	341.00	419.00
	Inst	Ea	Sm	CA	3.96	2.02	284.00	163.00	---	447.00	554.00
22-1/2" x 30-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	278.00	106.00	---	384.00	468.00
	Inst	Ea	Sm	CA	3.96	2.02	335.00	163.00	---	498.00	612.00
22-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	341.00	106.00	---	447.00	541.00
	Inst	Ea	Sm	CA	3.96	2.02	411.00	163.00	---	574.00	700.00
22-1/2" x 70-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	450.00	106.00	---	556.00	666.00
	Inst	Ea	Sm	CA	3.96	2.02	542.00	163.00	---	705.00	850.00
30-1/2" x 30-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	321.00	106.00	---	427.00	518.00
	Inst	Ea	Sm	CA	3.96	2.02	387.00	163.00	---	550.00	673.00
30-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	392.00	106.00	---	498.00	599.00
	Inst	Ea	Sm	CA	3.96	2.02	472.00	163.00	---	635.00	770.00
46-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	2.58	3.10	500.00	106.00	---	606.00	723.00
	Inst	Ea	Sm	CA	3.96	2.02	602.00	163.00	---	765.00	920.00
22-1/2" x 22-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	462.00	106.00	---	568.00	679.00
	Inst	Ea	Sm	CA	3.96	2.02	556.00	163.00	---	719.00	867.00
22-1/2" x 30-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	490.00	106.00	---	596.00	711.00
	Inst	Ea	Sm	CA	3.96	2.02	589.00	163.00	---	752.00	905.00
22-1/2" x 46-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	582.00	106.00	---	688.00	818.00
	Inst	Ea	Sm	CA	3.96	2.02	701.00	163.00	---	864.00	1030.00
30-1/2" x 30-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	542.00	106.00	---	648.00	772.00
	Inst	Ea	Sm	CA	3.96	2.02	653.00	163.00	---	816.00	979.00
30-1/2" x 46-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	635.00	106.00	---	741.00	879.00
	Inst	Ea	Sm	CA	3.96	2.02	765.00	163.00	---	928.00	1110.00
46-1/2" x 46-1/2" vented	Inst	Ea	Lg	CA	2.58	3.10	781.00	106.00	---	887.00	1050.00
	Inst	Ea	Sm	CA	3.96	2.02	940.00	163.00	---	1103.00	1310.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Roof windows

Includes prefabricated flashing, exterior awning, interior rollerblind and insect screen. Sash rotates 180 degrees. Labor costs are for installation on roofs with 10- to 85-degree slope and include installation of roof window, flashing and sun screen accessories. Labor costs do not include carpentry or roofing work other than curb. Add for interior trim. Listed by actual dimensions, top hung

Aluminum-clad wood frame, double-insulated tempered glass

30-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	3.56	2.25	781.00	146.00	---	927.00	1100.00
	Inst	Ea	Sm	CA	5.48	1.46	940.00	225.00	---	1165.00	1400.00
46-1/2" x 46-1/2" fixed	Inst	Ea	Lg	CA	3.56	2.25	873.00	146.00	---	1019.00	1210.00
	Inst	Ea	Sm	CA	5.48	1.46	1050.00	225.00	---	1275.00	1520.00

Spas

Spas, with good quality fittings and faucets

Also see Bathtubs (includes Whirlpools), page 48

Detach & reset operations

Whirlpool spa	Reset	Ea	Lg	SB	5.33	3.00	75.00	217.00	---	292.00	400.00
	Reset	Ea	Sm	SB	7.11	2.25	82.50	289.00	---	371.50	514.00

Remove operations

Whirlpool spa	Demo	Ea	Lg	SB	2.67	6.00	50.00	109.00	---	159.00	215.00
	Demo	Ea	Sm	SB	3.56	4.50	55.00	145.00	---	200.00	273.00

Install rough-in

Whirlpool spa	Inst	Ea	Lg	SB	10.0	1.60	100.00	407.00	---	507.00	705.00
	Inst	Ea	Sm	SB	13.3	1.20	110.00	541.00	---	651.00	911.00

Replace operations

Whirlpools and Baths with color matched trim on jets and suction

Builder Series

Nova model, oval tub, with ledge

60" x 42" x 18-1/2" H

White / stock color	Inst	Ea	Lg	SB	8.00	2.00	2600.00	325.00	---	2925.00	3470.00
	Inst	Ea	Sm	SB	10.7	1.50	2860.00	435.00	---	3295.00	3920.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	2830.00	325.00	---	3155.00	3730.00
	Inst	Ea	Sm	SB	10.7	1.50	3110.00	435.00	---	3545.00	4210.00

72" x 42" x 20-1/2" H

White / stock color	Inst	Ea	Lg	SB	8.00	2.00	3250.00	325.00	---	3575.00	4210.00
	Inst	Ea	Sm	SB	10.7	1.50	3570.00	435.00	---	4005.00	4740.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	3300.00	325.00	---	3625.00	4270.00
	Inst	Ea	Sm	SB	10.7	1.50	3630.00	435.00	---	4065.00	4810.00

Spas, whirlpools and baths, Designer Collection

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
Riva model, oval tub											
62" x 43" x 18-1/2" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	2080.00	325.00	---	2405.00	2870.00
	Inst	Ea	Sm	SB	10.7	1.50	2290.00	435.00	---	2725.00	3270.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	2250.00	325.00	---	2575.00	3060.00
	Inst	Ea	Sm	SB	10.7	1.50	2470.00	435.00	---	2905.00	3480.00
72" x 42" x 20-1/2" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	3250.00	325.00	---	3575.00	4210.00
	Inst	Ea	Sm	SB	10.7	1.50	3570.00	435.00	---	4005.00	4740.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	3310.00	325.00	---	3635.00	4280.00
	Inst	Ea	Sm	SB	10.7	1.50	3650.00	435.00	---	4085.00	4820.00
Tara model, corner unit, angled tub											
60" x 60" x 20-3/4" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	2080.00	325.00	---	2405.00	2870.00
	Inst	Ea	Sm	SB	10.7	1.50	2290.00	435.00	---	2725.00	3270.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	2250.00	325.00	---	2575.00	3060.00
	Inst	Ea	Sm	SB	10.7	1.50	2470.00	435.00	---	2905.00	3480.00
Torino model, rectangle tub											
66" x 42" x 20-1/2" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	2080.00	325.00	---	2405.00	2870.00
	Inst	Ea	Sm	SB	10.7	1.50	2290.00	435.00	---	2725.00	3270.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	2250.00	325.00	---	2575.00	3060.00
	Inst	Ea	Sm	SB	10.7	1.50	2470.00	435.00	---	2905.00	3480.00
Designer Collection											
Allusion model, rectangle tub											
66" x 36" x 26" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	5380.00	325.00	---	5705.00	6660.00
	Inst	Ea	Sm	SB	10.7	1.50	5920.00	435.00	---	6355.00	7440.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	5450.00	325.00	---	5775.00	6740.00
	Inst	Ea	Sm	SB	10.7	1.50	5990.00	435.00	---	6425.00	7520.00
72" x 36" x 26" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	5680.00	325.00	---	6005.00	7000.00
	Inst	Ea	Sm	SB	10.7	1.50	6250.00	435.00	---	6685.00	7810.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	5740.00	325.00	---	6065.00	7080.00
	Inst	Ea	Sm	SB	10.7	1.50	6320.00	435.00	---	6755.00	7900.00
72" x 42" x 26" H											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	5970.00	325.00	---	6295.00	7330.00
	Inst	Ea	Sm	SB	10.7	1.50	6560.00	435.00	---	6995.00	8180.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	6030.00	325.00	---	6355.00	7410.00
	Inst	Ea	Sm	SB	10.7	1.50	6630.00	435.00	---	7065.00	8260.00
Aura model											
72" x 60" x 20-1/2"											
White / stock color	Inst	Ea	Lg	SB	8.00	2.00	10400.00	325.00	---	10725.00	12500.00
	Inst	Ea	Sm	SB	10.7	1.50	11500.00	435.00	---	11935.00	13800.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	10500.00	325.00	---	10825.00	12500.00
	Inst	Ea	Sm	SB	10.7	1.50	11500.00	435.00	---	11935.00	13900.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Ciprea model, with removable skirt

72" x 48" x 20-1/2"

White / stock color	Inst	Ea	Lg	SB	8.00	2.00	9270.00	325.00	---	9595.00	11100.00
	Inst	Ea	Sm	SB	10.7	1.50	10200.00	435.00	---	10635.00	12400.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	9560.00	325.00	---	9885.00	11500.00
	Inst	Ea	Sm	SB	10.7	1.50	10500.00	435.00	---	10935.00	12700.00

Fiore model, with removable skirt

66" x 66" x 27-1/4"

White / stock color	Inst	Ea	Lg	SB	8.00	2.00	12100.00	325.00	---	12425.00	14300.00
	Inst	Ea	Sm	SB	10.7	1.50	13300.00	435.00	---	13735.00	15900.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	12300.00	325.00	---	12625.00	14600.00
	Inst	Ea	Sm	SB	10.7	1.50	13600.00	435.00	---	14035.00	16200.00

Fontana model

72" x 54" x 28" H, angled back, with RapidHeat

White / stock color	Inst	Ea	Lg	SB	8.00	2.00	11000.00	325.00	---	11325.00	13100.00
	Inst	Ea	Sm	SB	10.7	1.50	12100.00	435.00	---	12535.00	14500.00
Premium color	Inst	Ea	Lg	SB	8.00	2.00	11000.00	325.00	---	11325.00	13200.00
	Inst	Ea	Sm	SB	10.7	1.50	12100.00	435.00	---	12535.00	14600.00

Options for whirlpool baths and spas

Timer kit, 30 min, wall mount

Polished chrome	Inst	Ea	Lg	---	---	---	120.00	---	---	120.00	138.00
	Inst	Ea	Sm	---	---	---	132.00	---	---	132.00	152.00
Gold	Inst	Ea	Lg	---	---	---	140.00	---	---	140.00	161.00
	Inst	Ea	Sm	---	---	---	154.00	---	---	154.00	177.00

Trim kit

Polished chrome	Inst	Ea	Lg	---	---	---	210.00	---	---	210.00	241.00
	Inst	Ea	Sm	---	---	---	231.00	---	---	231.00	266.00
Bright brass	Inst	Ea	Lg	---	---	---	276.00	---	---	276.00	317.00
	Inst	Ea	Sm	---	---	---	303.00	---	---	303.00	349.00

Trip lever drain with vent

Polished chrome	Inst	Ea	Lg	---	---	---	178.00	---	---	178.00	205.00
	Inst	Ea	Sm	---	---	---	196.00	---	---	196.00	225.00
Bright brass	Inst	Ea	Lg	---	---	---	240.00	---	---	240.00	276.00
	Inst	Ea	Sm	---	---	---	264.00	---	---	264.00	304.00
Gold	Inst	Ea	Lg	---	---	---	264.00	---	---	264.00	304.00
	Inst	Ea	Sm	---	---	---	290.00	---	---	290.00	334.00

Turn drain with vent

Polished chrome	Inst	Ea	Lg	---	---	---	246.00	---	---	246.00	282.00
	Inst	Ea	Sm	---	---	---	270.00	---	---	270.00	311.00
Bright brass	Inst	Ea	Lg	---	---	---	312.00	---	---	312.00	358.00
	Inst	Ea	Sm	---	---	---	343.00	---	---	343.00	394.00
Gold	Inst	Ea	Lg	---	---	---	285.00	---	---	285.00	328.00
	Inst	Ea	Sm	---	---	---	314.00	---	---	314.00	361.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Stairs

Stair parts

Balusters, stock pine

1 -1/16" x 1-1/16"	Inst	LF	Lg	CA	.040	200.0	2.96	1.64	---	4.60	5.70
	Inst	LF	Sm	CA	.062	130.0	3.15	2.55	---	5.70	7.19
1-5/8" x 1-5/8"	Inst	LF	Lg	CA	.050	160.0	2.73	2.05	---	4.78	6.01
	Inst	LF	Sm	CA	.077	104.0	2.91	3.16	---	6.07	7.77

Balusters, turned

30" high

Pine	Inst	Ea	Lg	CA	.333	24.00	11.10	13.70	---	24.80	31.90
	Inst	Ea	Sm	CA	.513	15.60	11.80	21.10	---	32.90	43.10
Birch	Inst	Ea	Lg	CA	.333	24.00	13.00	13.70	---	26.70	34.10
	Inst	Ea	Sm	CA	.513	15.60	13.80	21.10	---	34.90	45.40

42" high

Pine	Inst	Ea	Lg	CA	.400	20.00	13.00	16.40	---	29.40	37.90
	Inst	Ea	Sm	CA	.615	13.00	13.80	25.30	---	39.10	51.30
Birch	Inst	Ea	Lg	CA	.400	20.00	16.70	16.40	---	33.10	42.20
	Inst	Ea	Sm	CA	.615	13.00	17.80	25.30	---	43.10	55.90

Newels, 3-1/4" wide

Starting	Inst	Ea	Lg	CA	1.33	6.00	180.00	54.60	---	234.60	283.00
	Inst	Ea	Sm	CA	2.05	3.90	192.00	84.20	---	276.20	339.00
Landing	Inst	Ea	Lg	CA	2.00	4.00	255.00	82.10	---	337.10	408.00
	Inst	Ea	Sm	CA	3.08	2.60	272.00	126.00	---	398.00	490.00

Railings, built-up

Oak	Inst	LF	Lg	CA	.160	50.00	18.00	6.57	---	24.57	29.90
	Inst	LF	Sm	CA	.246	32.50	19.20	10.10	---	29.30	36.20

Railings, subrail

Oak	Inst	LF	Lg	CA	.080	100.0	24.00	3.28	---	27.28	32.20
	Inst	LF	Sm	CA	.123	65.00	25.60	5.05	---	30.65	36.50

Risers, 3/4" x 7-1/2" high

Beech	Inst	LF	Lg	CA	.133	60.00	7.80	5.46	---	13.26	16.60
	Inst	LF	Sm	CA	.205	39.00	8.32	8.42	---	16.74	21.40
Fir	Inst	LF	Lg	CA	.133	60.00	2.25	5.46	---	7.71	10.20
	Inst	LF	Sm	CA	.205	39.00	2.40	8.42	---	10.82	14.50
Oak	Inst	LF	Lg	CA	.133	60.00	7.13	5.46	---	12.59	15.80
	Inst	LF	Sm	CA	.205	39.00	7.60	8.42	---	16.02	20.50
Pine	Inst	LF	Lg	CA	.133	60.00	2.25	5.46	---	7.71	10.20
	Inst	LF	Sm	CA	.205	39.00	2.40	8.42	---	10.82	14.50

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Skirt board, pine

1" x 10"	Inst	LF	Lg	CA	.160	50.00	2.48	6.57	---	9.05	12.10
	Inst	LF	Sm	CA	.246	32.50	2.64	10.10	---	12.74	17.20
1" x 12"	Inst	LF	Lg	CA	.178	45.00	3.00	7.31	---	10.31	13.70
	Inst	LF	Sm	CA	.274	29.25	3.20	11.30	---	14.50	19.40

Treads, oak

1-16" x 9-1/2" wide

3' long	Inst	Ea	Lg	CA	.500	16.00	33.00	20.50	---	53.50	66.70
	Inst	Ea	Sm	CA	.769	10.40	35.20	31.60	---	66.80	84.70
4' long	Inst	Ea	Lg	CA	.533	15.00	43.50	21.90	---	65.40	80.70
	Inst	Ea	Sm	CA	.821	9.75	46.40	33.70	---	80.10	101.00

1-1/16" x 11-1/2" wide

3' long	Inst	Ea	Lg	CA	.500	16.00	35.30	20.50	---	55.80	69.30
	Inst	Ea	Sm	CA	.769	10.40	37.60	31.60	---	69.20	87.40
6' long	Inst	Ea	Lg	CA	.667	12.00	84.00	27.40	---	111.40	135.00
	Inst	Ea	Sm	CA	1.03	7.80	89.60	42.30	---	131.90	162.00

For beech treads, ADD

	Inst		Lg	---	---	---	40.0	---	---	---	---
	Inst		Sm	---	---	---	40.0	---	---	---	---

For mitered return nosings, ADD

	Inst	LF	Lg	CA	.133	60.00	12.60	5.46	---	18.06	22.10
	Inst	LF	Sm	CA	.205	39.00	13.40	8.42	---	21.82	27.20

Stairs, pre-manufactured, folding / disappearing, attic access, ladder type

Average grade	Inst	Flt	Lg	2C	2.29	7.00	218.00	94.00	---	312.00	382.00
	Inst	Flt	Sm	2C	3.52	4.55	232.00	145.00	---	377.00	469.00
High grade	Inst	Flt	Lg	2C	2.29	7.00	278.00	94.00	---	372.00	451.00
	Inst	Flt	Sm	2C	3.52	4.55	296.00	145.00	---	441.00	543.00

Stairs, shop fabricated, per flight**Basement stairs, soft wood, open risers**

3' wide, 8' high	Inst	Flt	Lg	2C	4.00	4.00	563.00	164.00	---	727.00	877.00
	Inst	Flt	Sm	2C	6.15	2.60	600.00	253.00	---	853.00	1040.00

Box stairs, no handrails, 3'-wide

Oak treads

2' high	Inst	Flt	Lg	2C	3.20	5.00	224.00	131.00	---	355.00	441.00
	Inst	Flt	Sm	2C	4.92	3.25	238.00	202.00	---	440.00	557.00
4' high	Inst	Flt	Lg	2C	4.00	4.00	480.00	164.00	---	644.00	782.00
	Inst	Flt	Sm	2C	6.15	2.60	512.00	253.00	---	765.00	942.00
6' high	Inst	Flt	Lg	2C	4.57	3.50	780.00	188.00	---	968.00	1160.00
	Inst	Flt	Sm	2C	7.02	2.28	832.00	288.00	---	1120.00	1360.00
8' high	Inst	Flt	Lg	2C	5.33	3.00	975.00	219.00	---	1194.00	1430.00
	Inst	Flt	Sm	2C	8.21	1.95	1040.00	337.00	---	1377.00	1670.00

Stairs, shop fabricated, per flight

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Pine treads for carpet

2' high	Inst	Flt	Lg	2C	3.20	5.00	177.00	131.00	---	308.00	387.00
	Inst	Flt	Sm	2C	4.92	3.25	189.00	202.00	---	391.00	500.00
4' high	Inst	Flt	Lg	2C	4.00	4.00	302.00	164.00	---	466.00	577.00
	Inst	Flt	Sm	2C	6.15	2.60	322.00	253.00	---	575.00	723.00
6' high	Inst	Flt	Lg	2C	4.57	3.50	458.00	188.00	---	646.00	789.00
	Inst	Flt	Sm	2C	7.02	2.28	488.00	288.00	---	776.00	965.00
8' high	Inst	Flt	Lg	2C	5.33	3.00	570.00	219.00	---	789.00	962.00
	Inst	Flt	Sm	2C	8.21	1.95	608.00	337.00	---	945.00	1170.00

Stair rail with balusters, 5 risers

	Inst	Ea	Lg	2C	1.07	15.00	263.00	43.90	---	306.90	363.00
	Inst	Ea	Sm	2C	1.64	9.75	280.00	67.30	---	347.30	416.00

For 4' wide stairs, ADD

	Inst		Lg	2C	---	---	25.0	5.0	---	---	---
	Inst		Sm	2C	---	---	25.0	5.0	---	---	---

Open stairs, prefinished, metal stringers, 3'-6"-wide treads, no railings

3' high	Inst	Flt	Lg	2C	3.20	5.00	653.00	131.00	---	784.00	934.00
	Inst	Flt	Sm	2C	4.92	3.25	696.00	202.00	---	898.00	1080.00
4' high	Inst	Flt	Lg	2C	4.00	4.00	818.00	164.00	---	982.00	1170.00
	Inst	Flt	Sm	2C	6.15	2.60	872.00	253.00	---	1125.00	1360.00
6' high	Inst	Flt	Lg	2C	4.57	3.50	1430.00	188.00	---	1618.00	1900.00
	Inst	Flt	Sm	2C	7.02	2.28	1520.00	288.00	---	1808.00	2150.00
8' high	Inst	Flt	Lg	2C	5.33	3.00	2290.00	219.00	---	2509.00	2940.00
	Inst	Flt	Sm	2C	8.21	1.95	2440.00	337.00	---	2777.00	3280.00

Adjustments

For 3-piece wood railings and balusters, ADD

3' high	Inst	Ea	Lg	2C	1.07	15.00	224.00	43.90	---	267.90	319.00
	Inst	Ea	Sm	2C	1.64	9.75	238.00	67.30	---	305.30	368.00
4' high	Inst	Ea	Lg	2C	1.14	14.00	287.00	46.80	---	333.80	395.00
	Inst	Ea	Sm	2C	1.76	9.10	306.00	72.30	---	378.30	453.00
6' high	Inst	Ea	Lg	2C	1.23	13.00	441.00	50.50	---	491.50	578.00
	Inst	Ea	Sm	2C	1.89	8.45	470.00	77.60	---	547.60	650.00
8' high	Inst	Ea	Lg	2C	1.33	12.00	548.00	54.60	---	602.60	706.00
	Inst	Ea	Sm	2C	2.05	7.80	584.00	84.20	---	668.20	789.00

For 3'-6" x 3'-6" platform, ADD

	Inst	Ea	Lg	2C	4.00	4.00	255.00	164.00	---	419.00	523.00
	Inst	Ea	Sm	2C	6.15	2.60	272.00	253.00	---	525.00	666.00

					Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P

Curved stairways, oak, unfinished, curved balustrade

Open one side

9' high	Inst	Flt	Lg	2C	22.9	.700	9560.00	940.00	---	10500.00	12300.00
	Inst	Flt	Sm	2C	34.8	.460	10200.00	1430.00	---	11630.00	13700.00
10' high	Inst	Flt	Lg	2C	22.9	.700	10800.00	940.00	---	11740.00	13700.00
	Inst	Flt	Sm	2C	34.8	.460	11500.00	1430.00	---	12930.00	15200.00

Open both sides

9' high	Inst	Flt	Lg	2C	32.0	.500	15000.00	1310.00	---	16310.00	19100.00
	Inst	Flt	Sm	2C	48.5	.330	16000.00	1990.00	---	17990.00	21200.00
10' high	Inst	Flt	Lg	2C	32.0	.500	16200.00	1310.00	---	17510.00	20500.00
	Inst	Flt	Sm	2C	48.5	.330	17300.00	1990.00	---	19290.00	22700.00

Steel, reinforcing. See Concrete, page 91**Stucco. See Plaster, page 319****Studs. See Framing, page 196****Subflooring. See Framing, page 210**

Suspended Ceilings

Suspended ceilings consist of a grid of small metal hangers which are hung from the ceiling framing with wire or strap, and drop-in panels sized to fit the grid system. The main advantage to this type of ceiling finish is that it can be adjusted to any height desired. It can cover a lot of flaws and obstructions (uneven plaster, pipes, wiring, and ductwork). With a high ceiling, the suspended ceiling reduces the sound transfer from the floor above and increases the ceiling's insulating value. One great advantage of suspended ceilings is that the area directly above the tiles is readily accessible for repair and maintenance work; the tiles merely have to be lifted out from the grid. This system also eliminates the need for any other ceiling finish.

1. Installation Procedure

- a. Decide on ceiling height. It must clear the lowest obstacles but remain above windows and doors. Snap a chalk line around walls at the new height. Check it with a carpenter's level.
- b. Install wall molding/angle at the marked line; this supports the tiles around the room's perimeter. Check with a level. Use nails (6d) or screws to fasten molding to studs (16" or 24" oc); on masonry, use concrete nails 24" oc. The molding should be flush along the chalk line with the bottom leg of the L-angle facing into the room.
- c. Fit wall molding at inside corners by straight cutting (90 degrees) and overlapping; for outside corners, miter cut corner (45 degrees) and butt together. Cut the molding to required lengths with tin snips or a hacksaw.
- d. Mark center line of room above the wall molding. Decide where the first main runner should be to get the desired border width. Position main runners by running taut string lines across room. Repeat for the first row of cross tees closest to one wall. Then attach hanger wires with screw eyes to the joists at 4' intervals.
- e. Trim main runners at wall to line up the slot with cross tee string. Rest trimmed end on wall molding; insert wire through holes; recheck with level; twist wire several times.
- f. Insert cross tee and tabs into main runner's slots; push down to lock. Check with level. Repeat.
- g. Drop 2' x 4' panels into place.

2. Estimating Materials

- a. Measure the ceiling and plot it on graph paper. Mark the direction of ceiling joists. On the ceiling itself, snap chalk lines along the joist lines.
- b. Draw ceiling layout for grid system onto graph paper. Plan the ceiling layout, figuring full panels across the main ceiling and evenly trimmed partial panels at the edges. To calculate the width of border panels in each direction, determine the width of the gap left after full panels are placed all across the dimension; then divide by 2.
- c. For purposes of ordering material, determine the room size in even number of feet. If the room length or width is not divisible by 2 feet, increase the dimension to the next larger unit divisible by 2. For example, a room that measured 11'-6" x 14'-4" would be considered a 12' x 16' room. This allows for waste and/or breakage. In this example, you would order 192 SF of material.
- d. Main runners and tees must run perpendicular to ceiling joists. For a 2' x 2' grid, cross and main tees are 2' apart. For a 2' x 4' grid, main tees are 4' apart and 4' cross tees connect the main tees; then 2' cross tees can be used to connect the 4' cross tees. The long panels of the grid are set parallel to the ceiling joists, so the T-shaped main runner is attached perpendicular to joists at 4' oc.
- e. Wall molding/angle is manufactured in 10' lengths. Main runners and tees are manufactured in 12' lengths. Cross tees are either 2' long or 4' long. Hanger wire is 12 gauge, and attached to joists with either screw eyes or hook-and-nail. Drop-in panels are either 8 SF (2' x 4') or 4 SF (2' x 2').
- f. To find the number of drop-in panels required, divide the nominal room size in square feet (e.g., 192 SF in above example) by square feet of panel to be used.
- g. The quantity of 12 gauge wire depends on the "drop" distance of the ceiling. Figure one suspension wire and screw eye for each 4' of main runner; if any main run is longer than 12' then splice plates are needed, with a wire and screw eye on each side of the splice. The length of each wire should be at least 2" longer than the "drop" distance, to allow for a twist after passing through runner or tee.

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Suspended ceilings

Suspended ceiling panels and grid system

	Demo	SF	Lg	LB	.009	1780	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.013	1246	---	.43	---	.43	.61

Complete 2' x 4' slide lock grid system (baked enamel)

Labor includes installing grid and laying in panels

Luminous panels

Average grade	Inst	SF	Lg	CA	.021	380.0	1.39	.86	---	2.25	2.81
	Inst	SF	Sm	CA	.030	266.0	1.53	1.23	---	2.76	3.48
High grade	Inst	SF	Lg	CA	.021	380.0	1.58	.86	---	2.44	3.02
	Inst	SF	Sm	CA	.030	266.0	1.75	1.23	---	2.98	3.74
Premium grade	Inst	SF	Lg	CA	.021	380.0	1.94	.86	---	2.80	3.44
	Inst	SF	Sm	CA	.030	266.0	2.14	1.23	---	3.37	4.19

Acoustical rated panels

Average grade	Inst	SF	Lg	CA	.020	405.0	1.88	.82	---	2.70	3.31
	Inst	SF	Sm	CA	.028	283.5	2.07	1.15	---	3.22	3.99
High grade	Inst	SF	Lg	CA	.020	405.0	2.85	.82	---	3.67	4.43
	Inst	SF	Sm	CA	.028	283.5	3.14	1.15	---	4.29	5.22
Premium grade	Inst	SF	Lg	CA	.020	405.0	4.30	.82	---	5.12	6.09
	Inst	SF	Sm	CA	.028	283.5	4.74	1.15	---	5.89	7.06

Non-acoustical rated panels

Standard grade	Inst	SF	Lg	CA	.020	405.0	1.19	.82	---	2.01	2.52
	Inst	SF	Sm	CA	.028	283.5	1.31	1.15	---	2.46	3.12
Average grade	Inst	SF	Lg	CA	.020	405.0	1.62	.82	---	2.44	3.01
	Inst	SF	Sm	CA	.028	283.5	1.79	1.15	---	2.94	3.67
High grade	Inst	SF	Lg	CA	.020	405.0	2.44	.82	---	3.26	3.96
	Inst	SF	Sm	CA	.028	283.5	2.69	1.15	---	3.84	4.70
Premium grade	Inst	SF	Lg	CA	.020	405.0	3.64	.82	---	4.46	5.34
	Inst	SF	Sm	CA	.028	283.5	4.01	1.15	---	5.16	6.22

For wood grained grid

ADD	Inst	Lg	---	---	---	---	7.0	---	---	---	---
	Inst	Sm	---	---	---	---	7.0	---	---	---	---

Suspended ceilings, panels only

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit	Avg Labor Unit	Avg Equip Unit	Avg Total Unit	Avg Price Incl
					hours per Unit	Output per Day					
							Cost	Cost	Cost	Cost	O&P

Panels only (labor to lay panels in pre-existing grid system)

Luminous panels

Average grade	Inst	SF	Lg	CA	.008	1020	1.03	.33	---	1.36	1.64
	Inst	SF	Sm	CA	.011	714.0	1.13	.45	---	1.58	1.93
High grade	Inst	SF	Lg	CA	.008	1020	1.23	.33	---	1.56	1.87
	Inst	SF	Sm	CA	.011	714.0	1.35	.45	---	1.80	2.18
Premium grade	Inst	SF	Lg	CA	.008	1020	1.58	.33	---	1.91	2.28
	Inst	SF	Sm	CA	.011	714.0	1.74	.45	---	2.19	2.63

Acoustical rated panels

Average grade	Inst	SF	Lg	CA	.007	1220	1.52	.29	---	1.81	2.15
	Inst	SF	Sm	CA	.009	854.0	1.67	.37	---	2.04	2.44
High grade	Inst	SF	Lg	CA	.007	1220	2.49	.29	---	2.78	3.27
	Inst	SF	Sm	CA	.009	854.0	2.74	.37	---	3.11	3.67
Premium grade	Inst	SF	Lg	CA	.007	1220	3.94	.29	---	4.23	4.93
	Inst	SF	Sm	CA	.009	854.0	4.34	.37	---	4.71	5.51

Non-acoustical rated panels

Standard grade	Inst	SF	Lg	CA	.007	1220	.83	.29	---	1.12	1.36
	Inst	SF	Sm	CA	.009	854.0	.92	.37	---	1.29	1.58
Average grade	Inst	SF	Lg	CA	.007	1220	1.26	.29	---	1.55	1.85
	Inst	SF	Sm	CA	.009	854.0	1.39	.37	---	1.76	2.12
High grade	Inst	SF	Lg	CA	.007	1220	2.08	.29	---	2.37	2.79
	Inst	SF	Sm	CA	.009	854.0	2.29	.37	---	2.66	3.15
Premium grade	Inst	SF	Lg	CA	.007	1220	3.28	.29	---	3.57	4.17
	Inst	SF	Sm	CA	.009	854.0	3.62	.37	---	3.99	4.68

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Grid system components**Main runner, 12' L pieces**

Enamel	Inst	Ea	Lg	---	---	---	5.39	---	---	5.39	6.20
	Inst	Ea	Sm	---	---	---	5.94	---	---	5.94	6.83
Wood grain	Inst	Ea	Lg	---	---	---	7.01	---	---	7.01	8.06
	Inst	Ea	Sm	---	---	---	7.72	---	---	7.72	8.88

Cross tees**2' L pieces**

Enamel	Inst	Ea	Lg	---	---	---	1.23	---	---	1.23	1.41
	Inst	Ea	Sm	---	---	---	1.35	---	---	1.35	1.55
Wood grain	Inst	Ea	Lg	---	---	---	1.60	---	---	1.60	1.84
	Inst	Ea	Sm	---	---	---	1.76	---	---	1.76	2.02

4' L pieces

Enamel	Inst	Ea	Lg	---	---	---	1.96	---	---	1.96	2.25
	Inst	Ea	Sm	---	---	---	2.16	---	---	2.16	2.48
Wood grain	Inst	Ea	Lg	---	---	---	2.55	---	---	2.55	2.93
	Inst	Ea	Sm	---	---	---	2.81	---	---	2.81	3.23

Wall molding, 12' L pieces

Enamel	Inst	Ea	Lg	---	---	---	2.94	---	---	2.94	3.38
	Inst	Ea	Sm	---	---	---	3.24	---	---	3.24	3.73
Wood grain	Inst	Ea	Lg	---	---	---	3.82	---	---	3.82	4.39
	Inst	Ea	Sm	---	---	---	4.21	---	---	4.21	4.84

Main runner hold-down clips**1/2" T panels (1000/carton)**

	Inst	Ctn	Lg	---	---	---	8.82	---	---	8.82	10.10
	Inst	Ctn	Sm	---	---	---	9.72	---	---	9.72	11.20

5/8" T panels (1000/carton)

	Inst	Ctn	Lg	---	---	---	9.80	---	---	9.80	11.30
	Inst	Ctn	Sm	---	---	---	10.80	---	---	10.80	12.40

Telephone rewiring. See Electrical, page 152

Television antenna. See Electrical, page 152

Thermostat. See Electrical, page 153

Tile, ceiling. See Acoustical treatment, page 22

Tile, ceramic. See Ceramic tile, page 76

Tile, quarry. See Masonry, page 286

Tile, vinyl. See Resilient flooring, page 325

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Toilets, bidets, urinals

Toilets (water closets), vitreous china, 1.6 GPF, includes seat, shut-off valve, connectors, flanges, water supply valve

Frequently encountered applications

Detach & reset operations

<i>Toilet</i>	Reset	Ea	Lg	SA	1.33	6.00	44.10	63.80	---	107.90	143.00
	Reset	Ea	Sm	SA	1.78	4.50	48.60	85.40	---	134.00	180.00
<i>Bidet</i>	Reset	Ea	Lg	SA	1.33	6.00	44.10	63.80	---	107.90	143.00
	Reset	Ea	Sm	SA	1.78	4.50	48.60	85.40	---	134.00	180.00
<i>Urinal</i>	Reset	Ea	Lg	SA	1.33	6.00	44.10	63.80	---	107.90	143.00
	Reset	Ea	Sm	SA	1.78	4.50	48.60	85.40	---	134.00	180.00

Remove operations

<i>Toilet</i>	Demo	Ea	Lg	SA	0.67	12.00	44.10	32.20	---	76.30	97.40
	Demo	Ea	Sm	SA	0.89	9.00	48.60	42.70	---	91.30	118.00
<i>Bidet</i>	Demo	Ea	Lg	SA	0.67	12.00	44.10	32.20	---	76.30	97.40
	Demo	Ea	Sm	SA	0.89	9.00	48.60	42.70	---	91.30	118.00
<i>Urinal</i>	Demo	Ea	Lg	SA	0.67	12.00	44.10	32.20	---	76.30	97.40
	Demo	Ea	Sm	SA	0.89	9.00	48.60	42.70	---	91.30	118.00

Install rough-in

<i>Toilet</i>	Inst	Ea	Lg	SA	8.00	1.00	377.00	384.00	---	761.00	991.00
	Inst	Ea	Sm	SA	10.7	0.75	416.00	514.00	---	930.00	1220.00
<i>Bidet</i>	Inst	Ea	Lg	SA	8.00	1.00	328.00	384.00	---	712.00	934.00
	Inst	Ea	Sm	SA	10.7	0.75	362.00	514.00	---	876.00	1160.00
<i>Urinal</i>	Inst	Ea	Lg	SA	8.00	1.00	304.00	384.00	---	688.00	906.00
	Inst	Ea	Sm	SA	10.7	0.75	335.00	514.00	---	849.00	1130.00

Replace operations

Toilet/water closet, includes seat and supply

<i>One piece, floor mounted</i>	Inst	Ea	Lg	SA	2.00	4.00	856.00	96.00	---	952.00	1120.00
	Inst	Ea	Sm	SA	2.67	3.00	944.00	128.00	---	1072.00	1270.00
<i>Two piece, floor mounted</i>	Inst	Ea	Lg	SA	2.00	4.00	373.00	96.00	---	469.00	568.00
	Inst	Ea	Sm	SA	2.67	3.00	411.00	128.00	---	539.00	659.00

Bidet, includes faucets and supply

	Inst	Ea	Lg	SA	1.60	5.00	849.00	76.80	---	925.80	1090.00
	Inst	Ea	Sm	SA	2.13	3.75	936.00	102.00	---	1038.00	1220.00

Urinal, includes flush valve and supply

<i>Wall mounted</i>	Inst	Ea	Lg	SA	2.67	3.00	947.00	128.00	---	1075.00	1280.00
	Inst	Ea	Sm	SA	3.56	2.25	1040.00	171.00	---	1211.00	1450.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours	Output					
					per Unit	per Day					

Toilet, floor mounted, includes seat and supply

Standard, two-piece	Inst	Ea	Lg	SA	2.00	4.00	253.00	96.00	---	349.00	430.00
	Inst	Ea	Sm	SA	2.67	3.00	279.00	128.00	---	407.00	506.00
Average, two-piece	Inst	Ea	Lg	SA	2.00	4.00	373.00	96.00	---	469.00	568.00
	Inst	Ea	Sm	SA	2.67	3.00	411.00	128.00	---	539.00	659.00
High, one-piece	Inst	Ea	Lg	SA	2.00	4.00	593.00	96.00	---	689.00	822.00
	Inst	Ea	Sm	SA	2.67	3.00	654.00	128.00	---	782.00	938.00
Premium, one-piece	Inst	Ea	Lg	SA	2.00	4.00	856.00	96.00	---	952.00	1120.00
	Inst	Ea	Sm	SA	2.67	3.00	944.00	128.00	---	1072.00	1270.00
For pressure-assisted, ADD	Inst	Ea	Lg	SA	0.67	12.00	101.00	32.20	---	133.20	163.00
	Inst	Ea	Sm	SA	0.89	9.00	112.00	42.70	---	154.70	190.00

Bidet, includes faucets and supply

Average	Inst	Ea	Lg	SA	1.60	5.00	574.00	76.80	---	650.80	771.00
	Inst	Ea	Sm	SA	2.13	3.75	633.00	102.00	---	735.00	876.00
High	Inst	Ea	Lg	SA	1.60	5.00	849.00	76.80	---	925.80	1090.00
	Inst	Ea	Sm	SA	2.13	3.75	936.00	102.00	---	1038.00	1220.00

Urinal, wall mounted

Average	Inst	Ea	Lg	SA	2.67	3.00	541.00	128.00	---	669.00	808.00
	Inst	Ea	Sm	SA	3.56	2.25	596.00	171.00	---	767.00	933.00
High	Inst	Ea	Lg	SA	2.67	3.00	947.00	128.00	---	1075.00	1280.00
	Inst	Ea	Sm	SA	3.56	2.25	1040.00	171.00	---	1211.00	1450.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	O&P

Trash compactors

Includes wiring, connection, and installation in a pre-cutout area

Standard, 15"W, knob control	Inst	Ea	Lg	EA	2.00	4.00	483.00	89.80	---	572.80	685.00
	Inst	Ea	Sm	EA	2.67	3.00	532.00	120.00	---	652.00	786.00
High, 15"W, button control	Inst	Ea	Lg	EA	2.00	4.00	535.00	89.80	---	624.80	745.00
	Inst	Ea	Sm	EA	2.67	3.00	590.00	120.00	---	710.00	852.00
To remove and reset											
	Reset	Ea	Lg	EA	1.333	6.00	---	59.80	---	59.80	86.80
	Reset	Ea	Sm	EA	1.778	4.50	---	79.80	---	79.80	116.00
Material adjustments											
Stainless steel trim	R	R	LS	Lg	---	---	34.30	---	---	34.30	39.50
	R	R	LS	Sm	---	---	37.80	---	---	37.80	43.50
Stainless steel panel / trim	R	R	LS	Lg	---	---	73.50	---	---	73.50	84.50
	R	R	LS	Sm	---	---	81.00	---	---	81.00	93.20
"Black Glas" acrylic front panel / trim											
	R	R	LS	Lg	---	---	73.50	---	---	73.50	84.50
	R	R	LS	Sm	---	---	81.00	---	---	81.00	93.20
Hardwood top	R	R	LS	Lg	---	---	49.00	---	---	49.00	56.40
	R	R	LS	Sm	---	---	54.00	---	---	54.00	62.10

Trim. See Molding, page 287

Trusses. See Framing, page 211

Vanity units. See Cabinets, page 64

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Ventilation

Flue piping or vent chimney

Prefabricated metal, UL listed

Gas, double wall, galv. steel

3" diameter	Inst	VLF	Lg	UB	.229	70.00	4.06	10.70	---	14.76	19.80
	Inst	VLF	Sm	UB	.286	56.00	4.90	13.30	---	18.20	24.50
4" diameter	Inst	VLF	Lg	UB	.242	66.00	4.97	11.30	---	16.27	21.70
	Inst	VLF	Sm	UB	.303	52.80	6.00	14.10	---	20.10	26.90
5" diameter	Inst	VLF	Lg	UB	.258	62.00	5.89	12.00	---	17.89	23.80
	Inst	VLF	Sm	UB	.323	49.60	7.12	15.00	---	22.12	29.50
6" diameter	Inst	VLF	Lg	UB	.276	58.00	6.84	12.80	---	19.64	26.10
	Inst	VLF	Sm	UB	.345	46.40	8.27	16.10	---	24.37	32.30
7" diameter	Inst	VLF	Lg	UB	.296	54.00	10.10	13.80	---	23.90	31.20
	Inst	VLF	Sm	UB	.370	43.20	12.20	17.20	---	29.40	38.50
8" diameter	Inst	VLF	Lg	UB	.320	50.00	11.20	14.90	---	26.10	34.10
	Inst	VLF	Sm	UB	.400	40.00	13.60	18.60	---	32.20	42.00
10" diameter	Inst	VLF	Lg	UB	.348	46.00	23.70	16.20	---	39.90	50.30
	Inst	VLF	Sm	UB	.435	36.80	28.60	20.20	---	48.80	61.70
12" diameter	Inst	VLF	Lg	UB	.381	42.00	31.80	17.70	---	49.50	61.70
	Inst	VLF	Sm	UB	.476	33.60	38.40	22.20	---	60.60	75.60
16" diameter	Inst	VLF	Lg	UB	.421	38.00	72.00	19.60	---	91.60	111.00
	Inst	VLF	Sm	UB	.526	30.40	87.00	24.50	---	111.50	135.00
20" diameter	Inst	VLF	Lg	UB	.471	34.00	110.00	21.90	---	131.90	158.00
	Inst	VLF	Sm	UB	.588	27.20	133.00	27.40	---	160.40	192.00
24" diameter	Inst	VLF	Lg	UB	.533	30.00	172.00	24.80	---	196.80	233.00
	Inst	VLF	Sm	UB	.667	24.00	207.00	31.00	---	238.00	283.00

Vent damper, bi-metal, 6" flue

Gas, auto., electric	Inst	Ea	Lg	UB	2.67	6.00	156.00	124.00	---	280.00	356.00
	Inst	Ea	Sm	UB	3.33	4.80	189.00	155.00	---	344.00	437.00
Oil, auto., electric	Inst	Ea	Lg	UB	2.67	6.00	187.00	124.00	---	311.00	392.00
	Inst	Ea	Sm	UB	3.33	4.80	226.00	155.00	---	381.00	480.00

All fuel, double wall, stainless steel

6" diameter	Inst	VLF	Lg	UB	.267	60.00	33.60	12.40	---	46.00	56.30
	Inst	VLF	Sm	UB	.333	48.00	40.60	15.50	---	56.10	68.70
7" diameter	Inst	VLF	Lg	UB	.286	56.00	43.20	13.30	---	56.50	68.60
	Inst	VLF	Sm	UB	.357	44.80	52.20	16.60	---	68.80	83.60
8" diameter	Inst	VLF	Lg	UB	.308	52.00	50.40	14.30	---	64.70	78.30
	Inst	VLF	Sm	UB	.385	41.60	60.90	17.90	---	78.80	95.50
10" diameter	Inst	VLF	Lg	UB	.333	48.00	73.20	15.50	---	88.70	106.00
	Inst	VLF	Sm	UB	.417	38.40	88.50	19.40	---	107.90	129.00
12" diameter	Inst	VLF	Lg	UB	.364	44.00	98.40	16.90	---	115.30	137.00
	Inst	VLF	Sm	UB	.455	35.20	119.00	21.20	---	140.20	167.00
14" diameter	Inst	VLF	Lg	UB	.400	40.00	130.00	18.60	---	148.60	175.00
	Inst	VLF	Sm	UB	.500	32.00	157.00	23.30	---	180.30	213.00

Ventilation, flue piping or vent chimney

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P
All fuel, double wall, stainless steel fittings											
Roof support											
6" diameter	Inst	Ea	Lg	UB	.533	30.00	85.80	24.80	---	110.60	134.00
	Inst	Ea	Sm	UB	.667	24.00	104.00	31.00	---	135.00	163.00
7" diameter	Inst	Ea	Lg	UB	.571	28.00	96.60	26.60	---	123.20	149.00
	Inst	Ea	Sm	UB	.714	22.40	117.00	33.20	---	150.20	181.00
8" diameter	Inst	Ea	Lg	UB	.615	26.00	105.00	28.60	---	133.60	161.00
	Inst	Ea	Sm	UB	.769	20.80	127.00	35.80	---	162.80	197.00
10" diameter	Inst	Ea	Lg	UB	.667	24.00	138.00	31.00	---	169.00	203.00
	Inst	Ea	Sm	UB	.833	19.20	167.00	38.80	---	205.80	247.00
12" diameter	Inst	Ea	Lg	UB	.727	22.00	167.00	33.80	---	200.80	240.00
	Inst	Ea	Sm	UB	.909	17.60	202.00	42.30	---	244.30	292.00
14" diameter	Inst	Ea	Lg	UB	.800	20.00	211.00	37.20	---	248.20	296.00
	Inst	Ea	Sm	UB	1.00	16.00	255.00	46.50	---	301.50	360.00
Elbow, 15 degree											
6" diameter	Inst	Ea	Lg	UB	.533	30.00	75.00	24.80	---	99.80	121.00
	Inst	Ea	Sm	UB	.667	24.00	90.60	31.00	---	121.60	148.00
7" diameter	Inst	Ea	Lg	UB	.571	28.00	84.00	26.60	---	110.60	134.00
	Inst	Ea	Sm	UB	.714	22.40	102.00	33.20	---	135.20	164.00
8" diameter	Inst	Ea	Lg	UB	.615	26.00	96.00	28.60	---	124.60	151.00
	Inst	Ea	Sm	UB	.769	20.80	116.00	35.80	---	151.80	184.00
10" diameter	Inst	Ea	Lg	UB	.667	24.00	125.00	31.00	---	156.00	188.00
	Inst	Ea	Sm	UB	.833	19.20	151.00	38.80	---	189.80	228.00
12" diameter	Inst	Ea	Lg	UB	.727	22.00	152.00	33.80	---	185.80	223.00
	Inst	Ea	Sm	UB	.909	17.60	184.00	42.30	---	226.30	272.00
14" diameter	Inst	Ea	Lg	UB	.800	20.00	182.00	37.20	---	219.20	263.00
	Inst	Ea	Sm	UB	1.00	16.00	220.00	46.50	---	266.50	320.00
Insulated tee with insulated tee cap											
6" diameter	Inst	Ea	Lg	UB	.533	30.00	142.00	24.80	---	166.80	198.00
	Inst	Ea	Sm	UB	.667	24.00	171.00	31.00	---	202.00	241.00
7" diameter	Inst	Ea	Lg	UB	.571	28.00	185.00	26.60	---	211.60	250.00
	Inst	Ea	Sm	UB	.714	22.40	223.00	33.20	---	256.20	304.00
8" diameter	Inst	Ea	Lg	UB	.615	26.00	209.00	28.60	---	237.60	281.00
	Inst	Ea	Sm	UB	.769	20.80	252.00	35.80	---	287.80	341.00
10" diameter	Inst	Ea	Lg	UB	.667	24.00	294.00	31.00	---	325.00	382.00
	Inst	Ea	Sm	UB	.833	19.20	355.00	38.80	---	393.80	464.00
12" diameter	Inst	Ea	Lg	UB	.727	22.00	414.00	33.80	---	447.80	524.00
	Inst	Ea	Sm	UB	.909	17.60	500.00	42.30	---	542.30	635.00
14" diameter	Inst	Ea	Lg	UB	.800	20.00	540.00	37.20	---	577.20	674.00
	Inst	Ea	Sm	UB	1.00	16.00	653.00	46.50	---	699.50	816.00

National Repair & Remodeling Estimator

					Man- hours	Crew Output	Avg	Avg	Avg	Avg	Avg
					per	per	Mat'l	Labor	Equip	Total	Price
					Crew Size	per Unit	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P
Joist shield											
6" diameter	Inst	Ea	Lg	UB	.533	30.00	43.20	24.80	---	68.00	84.90
	Inst	Ea	Sm	UB	.667	24.00	52.20	31.00	---	83.20	104.00
7" diameter	Inst	Ea	Lg	UB	.571	28.00	46.80	26.60	---	73.40	91.60
	Inst	Ea	Sm	UB	.714	22.40	56.60	33.20	---	89.80	112.00
8" diameter	Inst	Ea	Lg	UB	.615	26.00	57.60	28.60	---	86.20	107.00
	Inst	Ea	Sm	UB	.769	20.80	69.60	35.80	---	105.40	131.00
10" diameter	Inst	Ea	Lg	UB	.667	24.00	65.40	31.00	---	96.40	119.00
	Inst	Ea	Sm	UB	.833	19.20	79.00	38.80	---	117.80	146.00
12" diameter	Inst	Ea	Lg	UB	.727	22.00	96.60	33.80	---	130.40	159.00
	Inst	Ea	Sm	UB	.909	17.60	117.00	42.30	---	159.30	194.00
14" diameter	Inst	Ea	Lg	UB	.800	20.00	120.00	37.20	---	157.20	191.00
	Inst	Ea	Sm	UB	1.00	16.00	145.00	46.50	---	191.50	233.00
Round top											
6" diameter	Inst	Ea	Lg	UB	.533	30.00	48.00	24.80	---	72.80	90.40
	Inst	Ea	Sm	UB	.667	24.00	58.00	31.00	---	89.00	111.00
7" diameter	Inst	Ea	Lg	UB	.571	28.00	65.40	26.60	---	92.00	113.00
	Inst	Ea	Sm	UB	.714	22.40	79.00	33.20	---	112.20	138.00
8" diameter	Inst	Ea	Lg	UB	.615	26.00	87.60	28.60	---	116.20	141.00
	Inst	Ea	Sm	UB	.769	20.80	106.00	35.80	---	141.80	173.00
10" diameter	Inst	Ea	Lg	UB	.667	24.00	157.00	31.00	---	188.00	225.00
	Inst	Ea	Sm	UB	.833	19.20	190.00	38.80	---	228.80	273.00
12" diameter	Inst	Ea	Lg	UB	.727	22.00	224.00	33.80	---	257.80	306.00
	Inst	Ea	Sm	UB	.909	17.60	271.00	42.30	---	313.30	372.00
14" diameter	Inst	Ea	Lg	UB	.800	20.00	295.00	37.20	---	332.20	392.00
	Inst	Ea	Sm	UB	1.00	16.00	357.00	46.50	---	403.50	476.00
Adjustable roof flashing											
6" diameter	Inst	Ea	Lg	UB	.533	30.00	57.00	24.80	---	81.80	101.00
	Inst	Ea	Sm	UB	.667	24.00	68.90	31.00	---	99.90	123.00
7" diameter	Inst	Ea	Lg	UB	.571	28.00	64.80	26.60	---	91.40	112.00
	Inst	Ea	Sm	UB	.714	22.40	78.30	33.20	---	111.50	137.00
8" diameter	Inst	Ea	Lg	UB	.615	26.00	70.80	28.60	---	99.40	122.00
	Inst	Ea	Sm	UB	.769	20.80	85.60	35.80	---	121.40	149.00
10" diameter	Inst	Ea	Lg	UB	.667	24.00	90.60	31.00	---	121.60	148.00
	Inst	Ea	Sm	UB	.833	19.20	109.00	38.80	---	147.80	181.00
12" diameter	Inst	Ea	Lg	UB	.727	22.00	117.00	33.80	---	150.80	183.00
	Inst	Ea	Sm	UB	.909	17.60	141.00	42.30	---	183.30	223.00
14" diameter	Inst	Ea	Lg	UB	.800	20.00	146.00	37.20	---	183.20	221.00
	Inst	Ea	Sm	UB	1.00	16.00	177.00	46.50	---	223.50	270.00
Minimum Job Charge											
	Inst	Job	Lg	UB	5.33	3.00	---	248.00	---	248.00	352.00
	Inst	Job	Sm	UB	6.67	2.40	---	310.00	---	310.00	441.00

Wallpaper

Historically, wallpaper is a paper material (which may or not be coated with washable plastic). Currently, many wallpaper products are vinyl on a fabric, not a paper, backing.

Vinyl coverings with non-woven fabric, woven fabric or synthetic fiber backing can be fire, mildew and fade resistant. Vinyl coverings can often be stripped from plaster walls, whereas coverings with paper backing generally have to be steamed and/or scraped from the walls. Vinyl coverings may also be stripped from gypsum wallboard, but unless the vinyl covering has a synthetic fiber backing, it's likely to damage the wallboard paper surface.

1. **Rule of thumb:** One gallon of paste (approximately two-thirds pound of dry paste and water) should adequately cover 12 rolls with paper backing and six rolls with fabric backing. The rougher the texture of the surface to be pasted, the greater the quantity of wet paste needed.
2. **Dimensions.**
 - a. Typically, a single roll is 21" wide x 16'-6" long.
 - b. Typically, a double roll is 21" wide x 33'-0" long.
 - c. There can be variations in these measurements depending on the manufacturer. Other roll sizes are:
 - i. 24" wide x 33'-0" long.
 - ii. 27" wide x 13'-6" long.
 - iii. 36" wide x 12'-0" long.

- d. When being quoted a "price per roll" it's important to know whether the roll quoted is a single or a double.

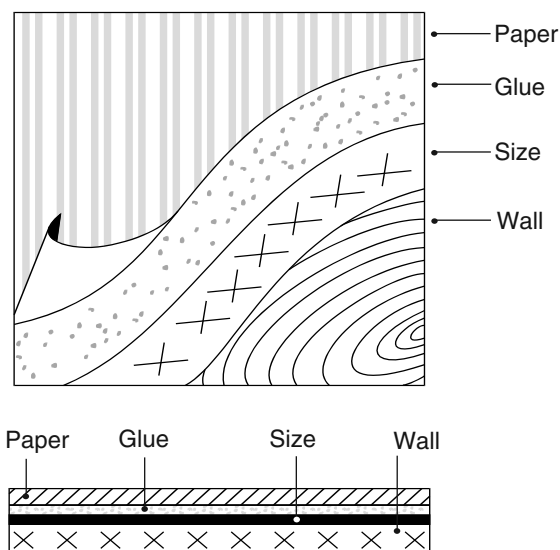
3. **Two-roll sets** are a feature of larger-scale designs. This means that a design is so large that it spans across two drops/strips of wallpaper before it repeats.

- a. When you shop for a two-roll-set design and you enter the quantity of one, this means you're getting one set (or two double rolls).
- b. When you receive your wallpaper set, you'll get an A-ROLL and a B-ROLL. This will be clearly marked on the header of your wallpaper. You install the wallpaper by alternating between the two rolls. So you'll put a drop from ROLL A, then a drop from ROLL B, then a drop from ROLL A, then ROLL B and so on across the wall.

4. **Installation.** New paper may be applied over existing paper if the existing paper has butt joints, a smooth surface, and is tight to the wall. When new paper is applied direct to plaster or drywall, you should put a coat of glue size on the wall before you apply the paper.

5. **Estimating Technique.** Determine the gross area, deduct openings and other areas not to be papered, and add 20 percent to the net area for waste. To find the number of rolls needed, divide the net area plus 20 percent by the number of SF per roll.

The steps in wallpapering



Description	Oper	Unit	Vol	Size	Man-	Crew	Unit	Day	Cost	Cost	Cost	Cost	O&P
					hours	Output							
					per	per							
					Unit	Day							

Wallpaper

Butt joint

Includes wallpaper, wall sizing, adhesive.

Standard grade, vinyl coated, simple pattern on solid background

Inst	SF	Lg	QA	.022	358.40	.78	.97	.18	1.93	2.49
Inst	SF	Sm	QA	.034	232.96	.94	1.50	.28	2.72	3.54

Average grade, vinyl coated, average pattern throughout the background

Inst	SF	Lg	QA	.025	322.56	1.08	1.11	.20	2.39	3.05
Inst	SF	Sm	QA	.038	209.66	1.30	1.68	.31	3.29	4.24

High grade, vinyl coated, detailed pattern (sculpted, embossed) throughout the background

Inst	SF	Lg	QA	.028	286.72	1.35	1.24	.23	2.82	3.58
Inst	SF	Sm	QA	.043	186.37	1.63	1.90	.35	3.88	4.98

Premium grade, vinyl coated or solid vinyl with paper or fabric backing, complex pattern and background

Inst	SF	Lg	QA	.032	250.88	1.73	1.42	.26	3.41	4.30
Inst	SF	Sm	QA	.049	163.07	2.09	2.17	.40	4.66	5.95

Labor adjustments

ADD

For ceiling 9'-0" high or more

Inst	Lg	QA	20.0	---	---	---	---	---	---
Inst	Sm	QA	20.0	---	---	---	---	---	---

For kitchens, baths, and other rooms where floor area is less than 50.0 SF

Inst	Lg	QA	32.0	---	---	---	---	---	---
Inst	Sm	QA	32.0	---	---	---	---	---	---

Water closets. See Toilets, page 415

Water filters

Automatic setup

Backwashing

1.0 CF, 5-layer sediment

---	Ea	Lg	---	---	---	629.00	---	---	629.00	723.00
---	Ea	Sm	---	---	---	719.00	---	---	719.00	827.00

1.0 CF, taste and odor, activated carbon

---	Ea	Lg	---	---	---	663.00	---	---	663.00	762.00
---	Ea	Sm	---	---	---	757.00	---	---	757.00	871.00

1.5 CF, acid neutralizing, calcite

---	Ea	Lg	---	---	---	725.00	---	---	725.00	833.00
---	Ea	Sm	---	---	---	828.00	---	---	828.00	952.00

1.0 CF, chem-free iron reduction

---	Ea	Lg	---	---	---	917.00	---	---	917.00	1050.00
---	Ea	Sm	---	---	---	1050.00	---	---	1050.00	1210.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

On Demand setup

Iron & Sulphur filter, with mechanical meter

1.0 CF, manganese greensand

	---	Ea	Lg	---	---	---	933.00	---	---	933.00	1070.00
	---	Ea	Sm	---	---	---	1070.00	---	---	1070.00	1230.00

Water heaters

Detach & reset operations

Water heater	Inst	Ea	Lg	SA	1.33	6.00	---	63.80	---	63.80	92.60
	Inst	Ea	Sm	SA	1.78	4.50	---	85.40	---	85.40	124.00

Remove operations

Water heater	Demo	Ea	Lg	SA	1.00	8.00	---	48.00	---	48.00	69.60
	Demo	Ea	Sm	SA	1.33	6.00	---	63.80	---	63.80	92.60

Replace operations

Electric

Standard model, tall

6-year Energy Saver, foam insulated

30 gal round	Inst	Ea	Lg	SA	2.00	4.00	769.00	96.00	---	865.00	1020.00
	Inst	Ea	Sm	SA	2.67	3.00	878.00	128.00	---	1006.00	1200.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	817.00	96.00	---	913.00	1080.00
	Inst	Ea	Sm	SA	2.67	3.00	934.00	128.00	---	1062.00	1260.00
50 gal round	Inst	Ea	Lg	SA	2.00	4.00	911.00	96.00	---	1007.00	1190.00
	Inst	Ea	Sm	SA	2.67	3.00	1040.00	128.00	---	1168.00	1380.00
55 gal round	Inst	Ea	Lg	SA	2.00	4.00	911.00	96.00	---	1007.00	1190.00
	Inst	Ea	Sm	SA	2.67	3.00	1040.00	128.00	---	1168.00	1380.00
65 gal round	Inst	Ea	Lg	SA	2.67	3.00	1230.00	128.00	---	1358.00	1600.00
	Inst	Ea	Sm	SA	3.56	2.25	1400.00	171.00	---	1571.00	1860.00
80 gal round	Inst	Ea	Lg	SA	2.67	3.00	1360.00	128.00	---	1488.00	1750.00
	Inst	Ea	Sm	SA	3.56	2.25	1560.00	171.00	---	1731.00	2040.00
120 gal round	Inst	Ea	Lg	SA	2.67	3.00	1920.00	128.00	---	2048.00	2400.00
	Inst	Ea	Sm	SA	3.56	2.25	2200.00	171.00	---	2371.00	2780.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Standard model, short

6-year Energy Saver, foam insulated

30 gal round	Inst	Ea	Lg	SA	2.00	4.00	769.00	96.00	---	865.00	1020.00
	Inst	Ea	Sm	SA	2.67	3.00	878.00	128.00	---	1006.00	1200.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	817.00	96.00	---	913.00	1080.00
	Inst	Ea	Sm	SA	2.67	3.00	934.00	128.00	---	1062.00	1260.00
50 gal round	Inst	Ea	Lg	SA	2.00	4.00	653.00	96.00	---	749.00	890.00
	Inst	Ea	Sm	SA	2.67	3.00	746.00	128.00	---	874.00	1040.00

Standard model, low boy, top connection

6-year Energy Saver, foam insulated

6 gal round	Inst	Ea	Lg	SA	1.60	5.00	552.00	76.80	---	628.80	747.00
	Inst	Ea	Sm	SA	2.13	3.75	631.00	102.00	---	733.00	874.00
15 gal round	Inst	Ea	Lg	SA	1.60	5.00	590.00	76.80	---	666.80	790.00
	Inst	Ea	Sm	SA	2.13	3.75	674.00	102.00	---	776.00	924.00
19.9 gal round	Inst	Ea	Lg	SA	1.60	5.00	706.00	76.80	---	782.80	923.00
	Inst	Ea	Sm	SA	2.13	3.75	806.00	102.00	---	908.00	1080.00
29 gal round	Inst	Ea	Lg	SA	2.00	4.00	802.00	96.00	---	898.00	1060.00
	Inst	Ea	Sm	SA	2.67	3.00	917.00	128.00	---	1045.00	1240.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	851.00	96.00	---	947.00	1120.00
	Inst	Ea	Sm	SA	2.67	3.00	972.00	128.00	---	1100.00	1300.00
50 gal round	Inst	Ea	Lg	SA	2.00	4.00	943.00	96.00	---	1039.00	1220.00
	Inst	Ea	Sm	SA	2.67	3.00	1080.00	128.00	---	1208.00	1430.00

Standard model, low boy, side connection

6-year Energy Saver, foam insulated

10 gal round	Inst	Ea	Lg	SA	1.60	5.00	548.00	76.80	---	624.80	742.00
	Inst	Ea	Sm	SA	2.13	3.75	626.00	102.00	---	728.00	869.00
15 gal round	Inst	Ea	Lg	SA	1.60	5.00	529.00	76.80	---	605.80	720.00
	Inst	Ea	Sm	SA	2.13	3.75	605.00	102.00	---	707.00	844.00
20 gal round	Inst	Ea	Lg	SA	1.60	5.00	626.00	76.80	---	702.80	831.00
	Inst	Ea	Sm	SA	2.13	3.75	715.00	102.00	---	817.00	971.00
29 gal round	Inst	Ea	Lg	SA	2.00	4.00	678.00	96.00	---	774.00	919.00
	Inst	Ea	Sm	SA	2.67	3.00	775.00	128.00	---	903.00	1080.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	720.00	96.00	---	816.00	968.00
	Inst	Ea	Sm	SA	2.67	3.00	823.00	128.00	---	951.00	1130.00

Water heaters, electric, deluxe model

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Deluxe model, tall

10-year Energy Saver, foam insulated

30 gal round	Inst	Ea	Lg	SA	2.00	4.00	958.00	96.00	---	1054.00	1240.00
	Inst	Ea	Sm	SA	2.67	3.00	1090.00	128.00	---	1218.00	1440.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	1010.00	96.00	---	1106.00	1300.00
	Inst	Ea	Sm	SA	2.67	3.00	1150.00	128.00	---	1278.00	1510.00
50 gal round	Inst	Ea	Lg	SA	2.00	4.00	1100.00	96.00	---	1196.00	1400.00
	Inst	Ea	Sm	SA	2.67	3.00	1260.00	128.00	---	1388.00	1630.00
55 gal round	Inst	Ea	Lg	SA	2.00	4.00	977.00	96.00	---	1073.00	1260.00
	Inst	Ea	Sm	SA	2.67	3.00	1120.00	128.00	---	1248.00	1470.00
66 gal round	Inst	Ea	Lg	SA	2.67	3.00	1420.00	128.00	---	1548.00	1810.00
	Inst	Ea	Sm	SA	3.56	2.25	1620.00	171.00	---	1791.00	2110.00
80 gal round	Inst	Ea	Lg	SA	2.67	3.00	1550.00	128.00	---	1678.00	1970.00
	Inst	Ea	Sm	SA	3.56	2.25	1770.00	171.00	---	1941.00	2280.00
119 gal round	Inst	Ea	Lg	SA	2.67	3.00	2110.00	128.00	---	2238.00	2620.00
	Inst	Ea	Sm	SA	3.56	2.25	2410.00	171.00	---	2581.00	3020.00

Deluxe model, short

10-year Energy Saver, foam insulated

30 gal round	Inst	Ea	Lg	SA	2.00	4.00	958.00	96.00	---	1054.00	1240.00
	Inst	Ea	Sm	SA	2.67	3.00	1090.00	128.00	---	1218.00	1440.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	1010.00	96.00	---	1106.00	1300.00
	Inst	Ea	Sm	SA	2.67	3.00	1150.00	128.00	---	1278.00	1510.00

Deluxe model, low boy, top connection

10-year Energy Saver, foam insulated

6 gal round	Inst	Ea	Lg	SA	1.60	5.00	674.00	76.80	---	750.80	887.00
	Inst	Ea	Sm	SA	2.13	3.75	770.00	102.00	---	872.00	1030.00
15 gal round	Inst	Ea	Lg	SA	1.60	5.00	708.00	76.80	---	784.80	925.00
	Inst	Ea	Sm	SA	2.13	3.75	809.00	102.00	---	911.00	1080.00
19.9 gal round	Inst	Ea	Lg	SA	1.60	5.00	815.00	76.80	---	891.80	1050.00
	Inst	Ea	Sm	SA	2.13	3.75	931.00	102.00	---	1033.00	1220.00
29 gal round	Inst	Ea	Lg	SA	2.00	4.00	991.00	96.00	---	1087.00	1280.00
	Inst	Ea	Sm	SA	2.67	3.00	1130.00	128.00	---	1258.00	1490.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	1040.00	96.00	---	1136.00	1330.00
	Inst	Ea	Sm	SA	2.67	3.00	1190.00	128.00	---	1318.00	1550.00
50 gal round	Inst	Ea	Lg	SA	2.00	4.00	1130.00	96.00	---	1226.00	1440.00
	Inst	Ea	Sm	SA	2.67	3.00	1290.00	128.00	---	1418.00	1670.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Deluxe model, low boy, side connection

10-year Energy Saver, foam insulated

10 gal round	Inst	Ea	Lg	SA	1.60	5.00	531.00	76.80	---	607.80	722.00
	Inst	Ea	Sm	SA	2.13	3.75	607.00	102.00	---	709.00	847.00
15 gal round	Inst	Ea	Lg	SA	1.60	5.00	552.00	76.80	---	628.80	747.00
	Inst	Ea	Sm	SA	2.13	3.75	631.00	102.00	---	733.00	874.00
20 gal round	Inst	Ea	Lg	SA	1.60	5.00	588.00	76.80	---	664.80	788.00
	Inst	Ea	Sm	SA	2.13	3.75	672.00	102.00	---	774.00	921.00
29 gal round	Inst	Ea	Lg	SA	2.00	4.00	674.00	96.00	---	770.00	914.00
	Inst	Ea	Sm	SA	2.67	3.00	770.00	128.00	---	898.00	1070.00
40 gal round	Inst	Ea	Lg	SA	2.00	4.00	708.00	96.00	---	804.00	953.00
	Inst	Ea	Sm	SA	2.67	3.00	809.00	128.00	---	937.00	1120.00

Gas

Standard model, high recovery, tall

6-year Energy Saver

38 gal round, 50,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1010.00	213.00	---	1223.00	1470.00
	Inst	Ea	Sm	SA	6.15	1.30	1160.00	295.00	---	1455.00	1760.00
48 gal round, 50,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1070.00	213.00	---	1283.00	1540.00
	Inst	Ea	Sm	SA	6.15	1.30	1230.00	295.00	---	1525.00	1840.00
50 gal round, 65,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1130.00	226.00	---	1356.00	1620.00
	Inst	Ea	Sm	SA	6.67	1.20	1290.00	320.00	---	1610.00	1950.00
65 gal round, 65,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1260.00	226.00	---	1486.00	1780.00
	Inst	Ea	Sm	SA	6.67	1.20	1440.00	320.00	---	1760.00	2130.00
74 gal round, 75,100 btu	Inst	Ea	Lg	SA	4.71	1.70	1660.00	226.00	---	1886.00	2240.00
	Inst	Ea	Sm	SA	6.67	1.20	1900.00	320.00	---	2220.00	2650.00
98 gal round, 75,100 btu	Inst	Ea	Lg	SA	4.71	1.70	2630.00	226.00	---	2856.00	3350.00
	Inst	Ea	Sm	SA	6.67	1.20	3000.00	320.00	---	3320.00	3920.00

Standard model, tall

6-year Energy Saver

28 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	922.00	213.00	---	1135.00	1370.00
	Inst	Ea	Sm	SA	6.15	1.30	1050.00	295.00	---	1345.00	1640.00
38 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	960.00	213.00	---	1173.00	1410.00
	Inst	Ea	Sm	SA	6.15	1.30	1100.00	295.00	---	1395.00	1690.00
50 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1020.00	226.00	---	1246.00	1500.00
	Inst	Ea	Sm	SA	6.67	1.20	1170.00	320.00	---	1490.00	1810.00

Standard model, short

6-year Energy Saver

30 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	922.00	213.00	---	1135.00	1370.00
	Inst	Ea	Sm	SA	6.15	1.30	1050.00	295.00	---	1345.00	1640.00
40 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	960.00	213.00	---	1173.00	1410.00
	Inst	Ea	Sm	SA	6.15	1.30	1100.00	295.00	---	1395.00	1690.00
50 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1020.00	226.00	---	1246.00	1500.00
	Inst	Ea	Sm	SA	6.67	1.20	1170.00	320.00	---	1490.00	1810.00

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

Deluxe model, high recovery, tall

10-year Energy Saver

38 gal round, 50,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1180.00	213.00	---	1393.00	1670.00
	Inst	Ea	Sm	SA	6.15	1.30	1350.00	295.00	---	1645.00	1980.00
48 gal round, 50,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1240.00	213.00	---	1453.00	1740.00
	Inst	Ea	Sm	SA	6.15	1.30	1420.00	295.00	---	1715.00	2060.00
50 gal round, 65,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1300.00	226.00	---	1526.00	1820.00
	Inst	Ea	Sm	SA	6.67	1.20	1480.00	320.00	---	1800.00	2170.00
65 gal round, 65,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1330.00	226.00	---	1556.00	1850.00
	Inst	Ea	Sm	SA	6.67	1.20	1520.00	320.00	---	1840.00	2210.00
74 gal round, 75,100 btu	Inst	Ea	Lg	SA	4.71	1.70	1630.00	226.00	---	1856.00	2200.00
	Inst	Ea	Sm	SA	6.67	1.20	1860.00	320.00	---	2180.00	2600.00
98 gal round, 75,100 btu	Inst	Ea	Lg	SA	4.71	1.70	2540.00	226.00	---	2766.00	3250.00
	Inst	Ea	Sm	SA	6.67	1.20	2910.00	320.00	---	3230.00	3810.00

Deluxe model, tall

10-year Energy Saver

28 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1090.00	213.00	---	1303.00	1560.00
	Inst	Ea	Sm	SA	6.15	1.30	1250.00	295.00	---	1545.00	1860.00
38 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1130.00	213.00	---	1343.00	1610.00
	Inst	Ea	Sm	SA	6.15	1.30	1290.00	295.00	---	1585.00	1910.00
50 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1190.00	226.00	---	1416.00	1700.00
	Inst	Ea	Sm	SA	6.67	1.20	1360.00	320.00	---	1680.00	2030.00

Deluxe model, short

10-year Energy Saver

30 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1090.00	213.00	---	1303.00	1560.00
	Inst	Ea	Sm	SA	6.15	1.30	1250.00	295.00	---	1545.00	1860.00
40 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.44	1.80	1130.00	213.00	---	1343.00	1610.00
	Inst	Ea	Sm	SA	6.15	1.30	1290.00	295.00	---	1585.00	1910.00
50 gal round, 40,000 btu	Inst	Ea	Lg	SA	4.71	1.70	1190.00	226.00	---	1416.00	1700.00
	Inst	Ea	Sm	SA	6.67	1.20	1360.00	320.00	---	1680.00	2030.00

Optional accessories

Water heater cabinets

24" x 24" x 72"

heaters up to 40 gal	---	Ea	Lg	---	---	---	184.00	---	---	184.00	211.00
	---	Ea	Sm	---	---	---	210.00	---	---	210.00	242.00

30" x 30" x 72"

heaters up to 75 gal	---	Ea	Lg	---	---	---	208.00	---	---	208.00	240.00
	---	Ea	Sm	---	---	---	238.00	---	---	238.00	274.00

36" x 36" x 83"

heaters up to 100 gal	---	Ea	Lg	---	---	---	415.00	---	---	415.00	477.00
	---	Ea	Sm	---	---	---	474.00	---	---	474.00	545.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P
Water heater pans, by diameter											
20" pan (up to 18" unit)	---	Ea	Lg	---	---	---	21.80	---	---	21.80	25.10
	---	Ea	Sm	---	---	---	25.00	---	---	25.00	28.70
24" pan (up to 22" unit)	---	Ea	Lg	---	---	---	26.00	---	---	26.00	30.00
	---	Ea	Sm	---	---	---	29.80	---	---	29.80	34.20
26" pan (up to 24" unit)	---	Ea	Lg	---	---	---	31.70	---	---	31.70	36.50
	---	Ea	Sm	---	---	---	36.20	---	---	36.20	41.70
28" pan (up to 26" unit)	---	Ea	Lg	---	---	---	36.80	---	---	36.80	42.30
	---	Ea	Sm	---	---	---	42.00	---	---	42.00	48.30
Water heater stands											
22" x 22", heaters up to 52 ga	---	Ea	Lg	---	---	---	89.00	---	---	89.00	102.00
	---	Ea	Sm	---	---	---	102.00	---	---	102.00	117.00
26" x 26", heaters up to 75 ga	---	Ea	Lg	---	---	---	122.00	---	---	122.00	140.00
	---	Ea	Sm	---	---	---	140.00	---	---	140.00	160.00
Free-standing restraint system											
75 gal capacity	---	Ea	Lg	---	---	---	361.00	---	---	361.00	415.00
	---	Ea	Sm	---	---	---	412.00	---	---	412.00	474.00
100 gal capacity	---	Ea	Lg	---	---	---	384.00	---	---	384.00	441.00
	---	Ea	Sm	---	---	---	438.00	---	---	438.00	504.00
Wall mount platform restraint system											
75 gal capacity	---	Ea	Lg	---	---	---	310.00	---	---	310.00	357.00
	---	Ea	Sm	---	---	---	355.00	---	---	355.00	408.00
100 gal capacity	---	Ea	Lg	---	---	---	344.00	---	---	344.00	396.00
	---	Ea	Sm	---	---	---	393.00	---	---	393.00	452.00

Solar water heating systems

Complete closed loop solar system with solar electric water heater with exchanger, differential control, heating element, circulator, collector and tank, and panel sensors. The material costs given include the subcontractor's overhead and profit

82-gallon capacity collector

One deluxe collector

---	LS	Lg	---	---	---	3570.00	---	---	3570.00	4110.00
---	LS	Sm	---	---	---	3830.00	---	---	3830.00	4400.00

Two deluxe collectors

Standard collectors	---	LS	Lg	---	---	4420.00	---	---	4420.00	5080.00
	---	LS	Sm	---	---	4740.00	---	---	4740.00	5450.00
Deluxe collectors	---	LS	Lg	---	---	4550.00	---	---	4550.00	5230.00
	---	LS	Sm	---	---	4880.00	---	---	4880.00	5610.00

Three collectors

Economy collectors	---	LS	Lg	---	---	5190.00	---	---	5190.00	5970.00
	---	LS	Sm	---	---	5560.00	---	---	5560.00	6390.00
Standard collectors	---	LS	Lg	---	---	5320.00	---	---	5320.00	6120.00
	---	LS	Sm	---	---	5700.00	---	---	5700.00	6560.00

Four collectors

Economy collectors	---	LS	Lg	---	---	5600.00	---	---	5600.00	6440.00
	---	LS	Sm	---	---	6000.00	---	---	6000.00	6900.00
Standard collectors	---	LS	Lg	---	---	5740.00	---	---	5740.00	6600.00
	---	LS	Sm	---	---	6150.00	---	---	6150.00	7070.00

Water heaters, solar, 120-gallon capacity

Description	Oper	Unit	Vol	Size	Man-	Crew	Unit	Day	Cost	Cost	Cost	Cost	O&P
					hours	Output							
					per	per							
					Unit	Day							

120-gallon capacity system

Three collectors

Economy collectors	---	LS	Lg	---	---	---			6430.00	---	---	6430.00	7400.00
	---	LS	Sm	---	---	---			6890.00	---	---	6890.00	7930.00
Standard collectors	---	LS	Lg	---	---	---			6580.00	---	---	6580.00	7570.00
	---	LS	Sm	---	---	---			7050.00	---	---	7050.00	8110.00

Four standard collectors

	---	LS	Lg	---	---	---			7700.00	---	---	7700.00	8860.00
	---	LS	Sm	---	---	---			8250.00	---	---	8250.00	9490.00

Five collectors

Economy collectors	---	LS	Lg	---	---	---			8400.00	---	---	8400.00	9660.00
	---	LS	Sm	---	---	---			9000.00	---	---	9000.00	10400.00
Standard collectors	---	LS	Lg	---	---	---			8540.00	---	---	8540.00	9820.00
	---	LS	Sm	---	---	---			9150.00	---	---	9150.00	10500.00

Six collectors

Economy collectors	---	LS	Lg	---	---	---			9100.00	---	---	9100.00	10500.00
	---	LS	Sm	---	---	---			9750.00	---	---	9750.00	11200.00
Standard collectors	---	LS	Lg	---	---	---			9240.00	---	---	9240.00	10600.00
	---	LS	Sm	---	---	---			9900.00	---	---	9900.00	11400.00

Material adjustments

Collector mounting kits, one required per collector panel

Adjustable position hinge	---	Ea	Lg	---	---	---			79.80	---	---	79.80	91.80
	---	Ea	Sm	---	---	---			85.50	---	---	85.50	98.30
Integral flange	---	Ea	Lg	---	---	---			7.00	---	---	7.00	8.05
	---	Ea	Sm	---	---	---			7.50	---	---	7.50	8.63

Additional panels

Economy collectors	---	Ea	Lg	---	---	---			700.00	---	---	700.00	805.00
	---	Ea	Sm	---	---	---			750.00	---	---	750.00	863.00
Standard collectors	---	Ea	Lg	---	---	---			840.00	---	---	840.00	966.00
	---	Ea	Sm	---	---	---			900.00	---	---	900.00	1040.00
Deluxe collectors	---	Ea	Lg	---	---	---			980.00	---	---	980.00	1130.00
	---	Ea	Sm	---	---	---			1050.00	---	---	1050.00	1210.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Individual components

Solar storage tanks, glass lined with fiberglass insulation

66 gallon	---	Ea	Lg	---	---	---	833.00	---	---	833.00	958.00
	---	Ea	Sm	---	---	---	893.00	---	---	893.00	1030.00
82 gallon	---	Ea	Lg	---	---	---	945.00	---	---	945.00	1090.00
	---	Ea	Sm	---	---	---	1010.00	---	---	1010.00	1160.00
120 gallon	---	Ea	Lg	---	---	---	1430.00	---	---	1430.00	1650.00
	---	Ea	Sm	---	---	---	1540.00	---	---	1540.00	1770.00

Solar electric water heaters, glass lined with fiberglass insulation, heating element with thermostat

66 gallon, 4.5 KW	---	Ea	Lg	---	---	---	832.00	---	---	832.00	956.00
	---	Ea	Sm	---	---	---	891.00	---	---	891.00	1020.00
82 gallon, 4.5 KW	---	Ea	Lg	---	---	---	956.00	---	---	956.00	1100.00
	---	Ea	Sm	---	---	---	1020.00	---	---	1020.00	1180.00
120 gallon, 4.5 KW	---	Ea	Lg	---	---	---	1140.00	---	---	1140.00	1310.00
	---	Ea	Sm	---	---	---	1220.00	---	---	1220.00	1400.00
Additional element	---	Ea	Lg	---	---	---	46.20	---	---	46.20	53.10
	---	Ea	Sm	---	---	---	49.50	---	---	49.50	56.90

Solar electric water heaters with heat exchangers, glass lined with fiberglass insulation, two copper exchangers, powered circulator, differential control, adjustable thermostat

82 gallon, 4.5 KW, 1/20 HP	---	Ea	Lg	---	---	---	1240.00	---	---	1240.00	1430.00
	---	Ea	Sm	---	---	---	1330.00	---	---	1330.00	1530.00
120 gallon, 4.5 KW, 1/20 HP	---	Ea	Lg	---	---	---	1630.00	---	---	1630.00	1880.00
	---	Ea	Sm	---	---	---	1750.00	---	---	1750.00	2010.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	O&P

Water softener, with bypass valve

Detach & reset operations

Water softener	D	R	Ea	Lg	SA	2.67	3.00	---	128.00	---	128.00	186.00
	D	R	Ea	Sm	SA	3.81	2.10	---	183.00	---	183.00	265.00

Remove operations

Water softener	Demo	Ea	Lg	SA	1.33	6.00	---	63.80	---	63.80	92.60
	Demo	Ea	Sm	SA	1.90	4.20	---	91.20	---	91.20	132.00

Electronically metered control valve

24,000 grains	Inst	Ea	Lg	SA	8.00	1.00	641.00	384.00	---	1025.00	1290.00
	Inst	Ea	Sm	SA	11.43	0.70	707.00	549.00	---	1256.00	1610.00
32,000 grains	Inst	Ea	Lg	SA	8.00	1.00	716.00	384.00	---	1100.00	1380.00
	Inst	Ea	Sm	SA	11.43	0.70	790.00	549.00	---	1339.00	1700.00
48,000 grains	Inst	Ea	Lg	SA	8.00	1.00	863.00	384.00	---	1247.00	1550.00
	Inst	Ea	Sm	SA	11.43	0.70	951.00	549.00	---	1500.00	1890.00
64,000 grains	Inst	Ea	Lg	SA	8.00	1.00	1160.00	384.00	---	1544.00	1890.00
	Inst	Ea	Sm	SA	11.43	0.70	1270.00	549.00	---	1819.00	2260.00

Manually set timer control valve

24,000 grains	Inst	Ea	Lg	SA	8.00	1.00	499.00	384.00	---	883.00	1130.00
	Inst	Ea	Sm	SA	11.43	0.70	550.00	549.00	---	1099.00	1430.00
32,000 grains	Inst	Ea	Lg	SA	8.00	1.00	519.00	384.00	---	903.00	1150.00
	Inst	Ea	Sm	SA	11.43	0.70	572.00	549.00	---	1121.00	1450.00
48,000 grains	Inst	Ea	Lg	SA	8.00	1.00	655.00	384.00	---	1039.00	1310.00
	Inst	Ea	Sm	SA	11.43	0.70	722.00	549.00	---	1271.00	1630.00
64,000 grains	Inst	Ea	Lg	SA	8.00	1.00	696.00	384.00	---	1080.00	1360.00
	Inst	Ea	Sm	SA	11.43	0.70	767.00	549.00	---	1316.00	1680.00

Weather vanes. See Cupolas, page 105

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Unit
							Cost	Cost	Cost	Cost	O&P

Windows

Windows, with related trim and frame

Quality designation of an unit relates to both materials and workmanship.

"O" is the fixed or stationary sash and "X" is the operable sash.

To 12 SF

Aluminum	Demo	Ea	Lg	LB	1.000	16.00	---	33.30	---	33.30	46.60
	Demo	Ea	Sm	LB	1.54	10.40	---	51.30	---	51.30	71.80
Wood	Demo	Ea	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	Ea	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00

13 SF to 50 SF

Aluminum	Demo	Ea	Lg	LB	1.60	10.00	---	53.30	---	53.30	74.60
	Demo	Ea	Sm	LB	2.46	6.50	---	81.90	---	81.90	115.00
Wood	Demo	Ea	Lg	LB	2.00	8.00	---	66.60	---	66.60	93.30
	Demo	Ea	Sm	LB	3.08	5.20	---	103.00	---	103.00	144.00

Aluminum

Casement, includes screen and hardware

Window opens outward on side-mounted pivots

3 to 5 SF

Single pane, mill finish	Inst	Set	Lg	CA	2.00	4.00	210.00	82.10	---	292.10	357.00
	Inst	Set	Sm	CA	3.08	2.60	232.00	126.00	---	358.00	444.00
Double pane, bronze or white	Inst	Set	Lg	CA	2.00	4.00	251.00	82.10	---	333.10	404.00
	Inst	Set	Sm	CA	3.08	2.60	277.00	126.00	---	403.00	496.00
Double pane, thermal	Inst	Set	Lg	CA	2.00	4.00	274.00	82.10	---	356.10	430.00
	Inst	Set	Sm	CA	3.08	2.60	302.00	126.00	---	428.00	524.00

6 to 8 SF

Single pane, mill finish	Inst	Set	Lg	CA	2.00	4.00	262.00	82.10	---	344.10	417.00
	Inst	Set	Sm	CA	3.08	2.60	289.00	126.00	---	415.00	509.00
Double pane, bronze or white	Inst	Set	Lg	CA	2.00	4.00	276.00	82.10	---	358.10	432.00
	Inst	Set	Sm	CA	3.08	2.60	304.00	126.00	---	430.00	527.00
Double pane, thermal	Inst	Set	Lg	CA	2.00	4.00	353.00	82.10	---	435.10	520.00
	Inst	Set	Sm	CA	3.08	2.60	389.00	126.00	---	515.00	624.00

9 to 13 SF

Single pane, mill finish	Inst	Set	Lg	CA	2.00	4.00	304.00	82.10	---	386.10	465.00
	Inst	Set	Sm	CA	3.08	2.60	335.00	126.00	---	461.00	563.00
Double pane, bronze or white	Inst	Set	Lg	CA	2.00	4.00	324.00	82.10	---	406.10	487.00
	Inst	Set	Sm	CA	3.08	2.60	357.00	126.00	---	483.00	587.00
Double pane, thermal	Inst	Set	Lg	CA	2.00	4.00	405.00	82.10	---	487.10	580.00
	Inst	Set	Sm	CA	3.08	2.60	446.00	126.00	---	572.00	690.00

Windows, aluminum, picture, fixed, non-opening

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl O&P

Jalousie, includes screen and hardware

3 to 11 SF	Inst	Set	Lg	CA	2.00	4.00	293.00	82.10	---	375.10	452.00
	Inst	Set	Sm	CA	3.08	2.60	323.00	126.00	---	449.00	548.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	420.00	94.00	---	514.00	615.00
	Inst	Set	Sm	CA	3.51	2.28	463.00	144.00	---	607.00	734.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	725.00	110.00	---	835.00	988.00
	Inst	Set	Sm	CA	4.10	1.95	799.00	168.00	---	967.00	1150.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	1030.00	131.00	---	1161.00	1370.00
	Inst	Set	Sm	CA	4.91	1.63	1140.00	202.00	---	1342.00	1590.00

Picture, fixed, non-opening pane

Single pane, mill finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	74.00	94.00	---	168.00	217.00
	Inst	Set	Sm	CA	3.51	2.28	81.60	144.00	---	225.60	296.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	178.00	94.00	---	272.00	337.00
	Inst	Set	Sm	CA	3.51	2.28	197.00	144.00	---	341.00	428.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	213.00	110.00	---	323.00	399.00
	Inst	Set	Sm	CA	4.10	1.95	235.00	168.00	---	403.00	506.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	280.00	131.00	---	411.00	506.00
	Inst	Set	Sm	CA	4.91	1.63	308.00	202.00	---	510.00	637.00

Double pane, bronze or white finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	92.10	94.00	---	186.10	238.00
	Inst	Set	Sm	CA	3.51	2.28	102.00	144.00	---	246.00	318.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	212.00	94.00	---	306.00	375.00
	Inst	Set	Sm	CA	3.51	2.28	233.00	144.00	---	377.00	470.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	280.00	110.00	---	390.00	476.00
	Inst	Set	Sm	CA	4.10	1.95	309.00	168.00	---	477.00	591.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	332.00	131.00	---	463.00	566.00
	Inst	Set	Sm	CA	4.91	1.63	366.00	202.00	---	568.00	703.00

Double pane with thermal, bronze or white finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	136.00	94.00	---	230.00	288.00
	Inst	Set	Sm	CA	3.51	2.28	150.00	144.00	---	294.00	374.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	277.00	94.00	---	371.00	451.00
	Inst	Set	Sm	CA	3.51	2.28	306.00	144.00	---	450.00	553.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	330.00	110.00	---	440.00	533.00
	Inst	Set	Sm	CA	4.10	1.95	364.00	168.00	---	532.00	654.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	395.00	131.00	---	526.00	638.00
	Inst	Set	Sm	CA	4.91	1.63	436.00	202.00	---	638.00	783.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Sliding, horizontal, includes screen and hardware**1 sliding lite, 1 fixed lite (XO)**

Single pane, mill finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	122.00	94.00	---	216.00	272.00
	Inst	Set	Sm	CA	3.51	2.28	134.00	144.00	---	278.00	356.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	183.00	94.00	---	277.00	343.00
	Inst	Set	Sm	CA	3.51	2.28	202.00	144.00	---	346.00	434.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	297.00	110.00	---	407.00	495.00
	Inst	Set	Sm	CA	4.10	1.95	327.00	168.00	---	495.00	612.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	347.00	131.00	---	478.00	583.00
	Inst	Set	Sm	CA	4.91	1.63	383.00	202.00	---	585.00	722.00

Double pane, bronze or white finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	158.00	94.00	---	252.00	314.00
	Inst	Set	Sm	CA	3.51	2.28	174.00	144.00	---	318.00	402.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	267.00	94.00	---	361.00	438.00
	Inst	Set	Sm	CA	3.51	2.28	294.00	144.00	---	438.00	540.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	337.00	110.00	---	447.00	541.00
	Inst	Set	Sm	CA	4.10	1.95	371.00	168.00	---	539.00	663.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	483.00	131.00	---	614.00	739.00
	Inst	Set	Sm	CA	4.91	1.63	532.00	202.00	---	734.00	894.00

Double pane with thermal, bronze or white finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	234.00	94.00	---	328.00	401.00
	Inst	Set	Sm	CA	3.51	2.28	258.00	144.00	---	402.00	499.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	329.00	94.00	---	423.00	510.00
	Inst	Set	Sm	CA	3.51	2.28	363.00	144.00	---	507.00	619.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	451.00	110.00	---	561.00	672.00
	Inst	Set	Sm	CA	4.10	1.95	497.00	168.00	---	665.00	807.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	581.00	131.00	---	712.00	853.00
	Inst	Set	Sm	CA	4.91	1.63	641.00	202.00	---	843.00	1020.00

2 sliding lites, 1 fixed lite (XOX)

Single pane, mill finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	170.00	94.00	---	264.00	328.00
	Inst	Set	Sm	CA	3.51	2.28	188.00	144.00	---	332.00	418.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	257.00	94.00	---	351.00	427.00
	Inst	Set	Sm	CA	3.51	2.28	283.00	144.00	---	427.00	527.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	415.00	110.00	---	525.00	631.00
	Inst	Set	Sm	CA	4.10	1.95	458.00	168.00	---	626.00	762.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	486.00	131.00	---	617.00	743.00
	Inst	Set	Sm	CA	4.91	1.63	536.00	202.00	---	738.00	899.00

Windows, aluminum, sliding, vertical

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per					
					Unit	Day	Unit	Unit	Unit	Unit	Price
							Cost	Cost	Cost	Cost	Incl
											O&P

Double pane, bronze or white finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	221.00	94.00	---	315.00	386.00
	Inst	Set	Sm	CA	3.51	2.28	244.00	144.00	---	388.00	482.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	373.00	94.00	---	467.00	561.00
	Inst	Set	Sm	CA	3.51	2.28	411.00	144.00	---	555.00	675.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	472.00	110.00	---	582.00	696.00
	Inst	Set	Sm	CA	4.10	1.95	520.00	168.00	---	688.00	834.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	676.00	131.00	---	807.00	961.00
	Inst	Set	Sm	CA	4.91	1.63	745.00	202.00	---	947.00	1140.00

Double pane with thermal, bronze or white finish

3 to 11 SF	Inst	Set	Lg	CA	2.29	3.50	328.00	94.00	---	422.00	509.00
	Inst	Set	Sm	CA	3.51	2.28	362.00	144.00	---	506.00	618.00
12 to 23 SF	Inst	Set	Lg	CA	2.29	3.50	461.00	94.00	---	555.00	661.00
	Inst	Set	Sm	CA	3.51	2.28	508.00	144.00	---	652.00	785.00
24 to 32 SF	Inst	Set	Lg	CA	2.67	3.00	631.00	110.00	---	741.00	879.00
	Inst	Set	Sm	CA	4.10	1.95	695.00	168.00	---	863.00	1040.00
33 to 40 SF	Inst	Set	Lg	CA	3.20	2.50	814.00	131.00	---	945.00	1120.00
	Inst	Set	Sm	CA	4.91	1.63	897.00	202.00	---	1099.00	1310.00

Sliding, vertical, single hung, includes screen and hardware

Single pane, mill finish

4 to 8 SF	Inst	Set	Lg	CA	2.00	4.00	94.00	82.10	---	176.10	223.00
	Inst	Set	Sm	CA	3.08	2.60	104.00	126.00	---	230.00	296.00
9 to 12 SF	Inst	Set	Lg	CA	2.00	4.00	119.00	82.10	---	201.10	252.00
	Inst	Set	Sm	CA	3.08	2.60	131.00	126.00	---	257.00	328.00
13 to 19 SF	Inst	Set	Lg	CA	2.29	3.50	187.00	94.00	---	281.00	347.00
	Inst	Set	Sm	CA	3.51	2.28	206.00	144.00	---	350.00	439.00
20 to 28 SF	Inst	Set	Lg	CA	2.67	3.00	240.00	110.00	---	350.00	429.00
	Inst	Set	Sm	CA	4.10	1.95	264.00	168.00	---	432.00	539.00

Double pane, bronze or white finish

4 to 8 SF	Inst	Set	Lg	CA	2.00	4.00	135.00	82.10	---	217.10	270.00
	Inst	Set	Sm	CA	3.08	2.60	149.00	126.00	---	275.00	348.00
9 to 12 SF	Inst	Set	Lg	CA	2.00	4.00	186.00	82.10	---	268.10	329.00
	Inst	Set	Sm	CA	3.08	2.60	205.00	126.00	---	331.00	413.00
13 to 19 SF	Inst	Set	Lg	CA	2.29	3.50	205.00	94.00	---	299.00	368.00
	Inst	Set	Sm	CA	3.51	2.28	226.00	144.00	---	370.00	462.00
20 to 28 SF	Inst	Set	Lg	CA	2.67	3.00	248.00	110.00	---	358.00	438.00
	Inst	Set	Sm	CA	4.10	1.95	273.00	168.00	---	441.00	550.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Double pane with thermal, bronze or white finish

4 to 8 SF	Inst	Set	Lg	CA	2.00	4.00	236.00	82.10	---	318.10	386.00
	Inst	Set	Sm	CA	3.08	2.60	260.00	126.00	---	386.00	476.00
9 to 12 SF	Inst	Set	Lg	CA	2.00	4.00	314.00	82.10	---	396.10	476.00
	Inst	Set	Sm	CA	3.08	2.60	346.00	126.00	---	472.00	575.00
13 to 19 SF	Inst	Set	Lg	CA	2.29	3.50	379.00	94.00	---	473.00	567.00
	Inst	Set	Sm	CA	3.51	2.28	418.00	144.00	---	562.00	682.00
20 to 28 SF	Inst	Set	Lg	CA	2.67	3.00	414.00	110.00	---	524.00	629.00
	Inst	Set	Sm	CA	4.10	1.95	456.00	168.00	---	624.00	760.00

Storm, includes screen and hardware

3 to 11 SF	Inst	Set	Lg	CA	1.45	5.50	92.70	59.50	---	152.20	190.00
	Inst	Set	Sm	CA	2.23	3.58	102.00	91.60	---	193.60	246.00
12 to 23 SF	Inst	Set	Lg	CA	1.45	5.50	144.00	59.50	---	203.50	249.00
	Inst	Set	Sm	CA	2.23	3.58	159.00	91.60	---	250.60	311.00
24 to 32 SF	Inst	Set	Lg	CA	1.60	5.00	200.00	65.70	---	265.70	322.00
	Inst	Set	Sm	CA	2.46	3.25	221.00	101.00	---	322.00	395.00
33 to 40 SF	Inst	Set	Lg	CA	1.60	5.00	240.00	65.70	---	305.70	367.00
	Inst	Set	Sm	CA	2.46	3.25	264.00	101.00	---	365.00	445.00

Vinyl

Awning windows, opens outward on top-mounted pivots. Vinyl frames, standard colors for exterior and interior finish; double glazed; includes screen and weatherstripping.

Unit is one ventilating lite wide

3 - 6 SF

Average quality	Inst	Set	Lg	CA	0.83	9.60	231.00	34.10	---	265.10	314.00
	Inst	Set	Sm	CA	1.28	6.24	255.00	52.60	---	307.60	367.00
High quality	Inst	Set	Lg	CA	1.07	7.50	415.00	43.90	---	458.90	538.00
	Inst	Set	Sm	CA	1.64	4.88	457.00	67.30	---	524.30	620.00
Premium quality	Inst	Set	Lg	CA	1.333	6.00	527.00	54.70	---	581.70	682.00
	Inst	Set	Sm	CA	2.05	3.90	580.00	84.20	---	664.20	785.00

7 - 12 SF

Average quality	Inst	Set	Lg	CA	0.83	9.60	371.00	34.10	---	405.10	474.00
	Inst	Set	Sm	CA	1.28	6.24	409.00	52.60	---	461.60	544.00
High quality	Inst	Set	Lg	CA	1.07	7.50	538.00	43.90	---	581.90	681.00
	Inst	Set	Sm	CA	1.64	4.88	593.00	67.30	---	660.30	777.00
Premium quality	Inst	Set	Lg	CA	1.333	6.00	684.00	54.70	---	738.70	863.00
	Inst	Set	Sm	CA	2.05	3.90	754.00	84.20	---	838.20	984.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Casement windows, opens outward on bottom-mounted crank pivots. Vinyl frames, standard colors for exterior and interior finish; double glazed; includes screen and weatherstripping.

3 - 11 SF, 1 ventilating lite, no fixed lites

Average quality	Inst	Set	Lg	CJ	1.67	9.60	327.00	62.10	---	389.10	463.00
	Inst	Set	Sm	CJ	2.56	6.24	360.00	95.20	---	455.20	547.00
High quality	Inst	Set	Lg	CJ	2.13	7.50	496.00	79.20	---	575.20	682.00
	Inst	Set	Sm	CJ	3.28	4.88	547.00	122.00	---	669.00	800.00
Premium quality	Inst	Set	Lg	CJ	2.67	6.00	626.00	99.30	---	725.30	858.00
	Inst	Set	Sm	CJ	4.10	3.90	689.00	152.00	---	841.00	1010.00

12 - 23 SF, 1 ventilating lite, no fixed lites

Average quality	Inst	Set	Lg	CJ	2.08	7.68	385.00	77.40	---	462.40	551.00
	Inst	Set	Sm	CJ	3.21	4.99	424.00	119.00	---	543.00	654.00
High quality	Inst	Set	Lg	CJ	2.67	6.00	607.00	99.30	---	706.30	837.00
	Inst	Set	Sm	CJ	4.10	3.90	669.00	152.00	---	821.00	983.00
Premium quality	Inst	Set	Lg	CJ	3.33	4.80	794.00	124.00	---	918.00	1090.00
	Inst	Set	Sm	CJ	5.13	3.12	875.00	191.00	---	1066.00	1270.00

24 - 32 SF, 2 ventilating lites, no fixed lites

Average quality	Inst	Set	Lg	CJ	2.38	6.72	461.00	88.50	---	549.50	655.00
	Inst	Set	Sm	CJ	3.66	4.37	509.00	136.00	---	645.00	775.00
High quality	Inst	Set	Lg	CJ	3.05	5.25	728.00	113.00	---	841.00	996.00
	Inst	Set	Sm	CJ	4.69	3.41	803.00	174.00	---	977.00	1170.00
Premium quality	Inst	Set	Lg	CJ	3.81	4.20	953.00	142.00	---	1095.00	1290.00
	Inst	Set	Sm	CJ	5.86	2.73	1050.00	218.00	---	1268.00	1510.00

33 - 40 SF, 2 ventilating lites, 1 fixed lite

Average quality	Inst	Set	Lg	CJ	2.78	5.76	554.00	103.00	---	657.00	782.00
	Inst	Set	Sm	CJ	4.28	3.74	610.00	159.00	---	769.00	925.00
High quality	Inst	Set	Lg	CJ	3.56	4.50	874.00	132.00	---	1006.00	1190.00
	Inst	Set	Sm	CJ	5.46	2.93	963.00	203.00	---	1166.00	1390.00
Premium quality	Inst	Set	Lg	CJ	4.44	3.60	1140.00	165.00	---	1305.00	1550.00
	Inst	Set	Sm	CJ	6.84	2.34	1260.00	254.00	---	1514.00	1810.00

Double hung windows, two sashes / lites per unit, insulated glass, includes screens and weatherstripping

4 - 8 SF, 1 operable unit (X)

Average quality	Inst	Set	Lg	CJ	1.74	9.20	235.00	64.70	---	299.70	361.00
	Inst	Set	Sm	CJ	2.68	5.98	259.00	99.70	---	358.70	437.00
High quality	Inst	Set	Lg	CJ	2.29	7.00	360.00	85.20	---	445.20	534.00
	Inst	Set	Sm	CJ	3.52	4.55	397.00	131.00	---	528.00	640.00
Premium quality	Inst	Set	Lg	CJ	2.78	5.75	591.00	103.00	---	694.00	825.00
	Inst	Set	Sm	CJ	4.28	3.74	652.00	159.00	---	811.00	972.00

National Repair & Remodeling Estimator

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

9 - 12 SF, 1 operable unit (X)

Average quality	Inst	Set	Lg	CJ	2.17	7.36	297.00	80.70	---	377.70	454.00
	Inst	Set	Sm	CJ	3.35	4.78	327.00	125.00	---	452.00	550.00
High quality	Inst	Set	Lg	CJ	2.86	5.60	441.00	106.00	---	547.00	655.00
	Inst	Set	Sm	CJ	4.40	3.64	485.00	164.00	---	649.00	787.00
Premium quality	Inst	Set	Lg	CJ	3.48	4.60	674.00	129.00	---	803.00	957.00
	Inst	Set	Sm	CJ	5.35	2.99	743.00	199.00	---	942.00	1130.00

13 - 19 SF, 1 operable unit (X)

Average quality	Inst	Set	Lg	CJ	2.48	6.44	348.00	92.20	---	440.20	530.00
	Inst	Set	Sm	CJ	3.82	4.19	384.00	142.00	---	526.00	640.00
High quality	Inst	Set	Lg	CJ	3.27	4.90	546.00	122.00	---	668.00	798.00
	Inst	Set	Sm	CJ	5.02	3.19	601.00	187.00	---	788.00	953.00
Premium quality	Inst	Set	Lg	CJ	3.97	4.03	743.00	148.00	---	891.00	1060.00
	Inst	Set	Sm	CJ	6.11	2.62	818.00	227.00	---	1045.00	1260.00

20 - 28 SF, 2 operable units and 1 fixed unit (XOX), or 2 operable units (XX)

Average quality	Inst	Set	Lg	CJ	2.90	5.52	474.00	108.00	---	582.00	696.00
	Inst	Set	Sm	CJ	4.46	3.59	522.00	166.00	---	688.00	833.00
High quality	Inst	Set	Lg	CJ	3.81	4.20	607.00	142.00	---	749.00	897.00
	Inst	Set	Sm	CJ	5.86	2.73	669.00	218.00	---	887.00	1070.00
Premium quality	Inst	Set	Lg	CJ	4.64	3.45	915.00	173.00	---	1088.00	1290.00
	Inst	Set	Sm	CJ	7.14	2.24	1010.00	266.00	---	1276.00	1530.00

Garden windows, 13-1/4" projection, bronze tempered glass in top panel, includes shelves

6 to 9 SF	Inst	Set	Lg	CA	2.00	4.00	792.00	82.10	---	874.10	1030.00
	Inst	Set	Sm	CA	3.08	2.60	873.00	126.00	---	999.00	1180.00
10 to 12 SF	Inst	Set	Lg	CA	2.67	3.00	975.00	110.00	---	1085.00	1270.00
	Inst	Set	Sm	CA	4.10	1.95	1070.00	168.00	---	1238.00	1470.00

Jalousie, includes screen and hardware

3 to 11 SF	Inst	Set	Lg	CA	1.23	6.50	320.00	50.50	---	370.50	438.00
	Inst	Set	Sm	CA	1.89	4.23	352.00	77.60	---	429.60	514.00
12 to 24 SF	Inst	Set	Lg	CA	1.23	6.50	479.00	50.50	---	529.50	621.00
	Inst	Set	Sm	CA	1.89	4.23	528.00	77.60	---	605.60	716.00
24 to 32 SF	Inst	Set	Lg	CA	1.33	6.00	805.00	54.60	---	859.60	1000.00
	Inst	Set	Sm	CA	2.05	3.90	887.00	84.20	---	971.20	1140.00
33 to 40 SF	Inst	Set	Lg	CA	1.45	5.50	1110.00	59.50	---	1169.50	1360.00
	Inst	Set	Sm	CA	2.23	3.58	1220.00	91.60	---	1311.60	1540.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Picture, fixed, non-opening sash / lite, insulated glass**3 - 11 SF, 1 fixed unit (O)**

Standard quality	Inst	Set	Lg	CA	2.00	4.00	104.00	82.10	---	186.10	234.00
	Inst	Set	Sm	CA	3.08	2.60	114.00	126.00	---	240.00	309.00
Average quality	Inst	Set	Lg	CA	2.29	3.50	148.00	94.00	---	242.00	302.00
	Inst	Set	Sm	CA	3.51	2.28	164.00	144.00	---	308.00	390.00
High quality	Inst	Set	Lg	CA	2.86	2.80	223.00	117.00	---	340.00	420.00
	Inst	Set	Sm	CA	4.40	1.82	245.00	181.00	---	426.00	535.00
Premium quality	Inst	Set	Lg	CA	3.48	2.30	282.00	143.00	---	425.00	524.00
	Inst	Set	Sm	CA	5.33	1.50	311.00	219.00	---	530.00	664.00

12 - 23 SF, 1 fixed unit (O)

Standard quality	Inst	Set	Lg	CA	2.11	3.80	156.00	86.60	---	242.60	301.00
	Inst	Set	Sm	CA	3.24	2.47	172.00	133.00	---	305.00	384.00
Average quality	Inst	Set	Lg	CA	2.40	3.33	223.00	98.50	---	321.50	394.00
	Inst	Set	Sm	CA	3.70	2.16	246.00	152.00	---	398.00	495.00
High quality	Inst	Set	Lg	CA	3.01	2.66	334.00	124.00	---	458.00	557.00
	Inst	Set	Sm	CA	4.62	1.73	368.00	190.00	---	558.00	689.00
Premium quality	Inst	Set	Lg	CA	3.65	2.19	423.00	150.00	---	573.00	697.00
	Inst	Set	Sm	CA	5.63	1.42	467.00	231.00	---	698.00	860.00

24 - 32 SF, 1 fixed unit (O)

Standard quality	Inst	Set	Lg	CA	2.17	3.68	261.00	89.10	---	350.10	424.00
	Inst	Set	Sm	CA	3.35	2.39	287.00	138.00	---	425.00	523.00
Average quality	Inst	Set	Lg	CA	2.48	3.22	372.00	102.00	---	474.00	571.00
	Inst	Set	Sm	CA	3.83	2.09	410.00	157.00	---	567.00	692.00
High quality	Inst	Set	Lg	CA	3.10	2.58	558.00	127.00	---	685.00	820.00
	Inst	Set	Sm	CA	4.76	1.68	615.00	195.00	---	810.00	981.00
Premium quality	Inst	Set	Lg	CA	3.77	2.12	707.00	155.00	---	862.00	1030.00
	Inst	Set	Sm	CA	5.80	1.38	779.00	238.00	---	1017.00	1230.00

33 - 44 SF, 1 fixed unit (O) or 2 fixed units (OO)

Standard quality	Inst	Set	Lg	CA	2.30	3.48	355.00	94.40	---	449.40	540.00
	Inst	Set	Sm	CA	3.54	2.26	391.00	145.00	---	536.00	653.00
Average quality	Inst	Set	Lg	CA	2.29	3.50	507.00	94.00	---	601.00	715.00
	Inst	Set	Sm	CA	3.51	2.28	559.00	144.00	---	703.00	844.00
High quality	Inst	Set	Lg	CA	2.67	3.00	761.00	110.00	---	871.00	1030.00
	Inst	Set	Sm	CA	4.10	1.95	838.00	168.00	---	1006.00	1200.00
Premium quality	Inst	Set	Lg	CA	4.00	2.00	963.00	164.00	---	1127.00	1340.00
	Inst	Set	Sm	CA	6.15	1.30	1060.00	253.00	---	1313.00	1570.00

44 - 55 SF, 2 fixed units (OO) or 3 fixed units (OOO)

Standard quality	Inst	Set	Lg	CA	2.41	3.32	461.00	99.00	---	560.00	669.00
	Inst	Set	Sm	CA	3.70	2.16	508.00	152.00	---	660.00	797.00
Average quality	Inst	Set	Lg	CA	2.75	2.91	659.00	113.00	---	772.00	916.00
	Inst	Set	Sm	CA	4.23	1.89	726.00	174.00	---	900.00	1080.00
High quality	Inst	Set	Lg	CA	3.45	2.32	989.00	142.00	---	1131.00	1340.00
	Inst	Set	Sm	CA	5.30	1.51	1090.00	218.00	---	1308.00	1560.00
Premium quality	Inst	Set	Lg	CA	4.19	1.91	1250.00	172.00	---	1422.00	1680.00
	Inst	Set	Sm	CA	6.45	1.24	1380.00	265.00	---	1645.00	1960.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Sliding, horizontal, insulated glass, includes screen and hardware**3 - 11 SF, 1 sliding sash, 1 fixed sash (XO)**

Standard quality	Inst	Set	Lg	CA	2.11	3.80	126.00	86.60	---	212.60	266.00
	Inst	Set	Sm	CA	3.24	2.47	139.00	133.00	---	272.00	346.00
Average quality	Inst	Set	Lg	CA	2.40	3.33	180.00	98.50	---	278.50	345.00
	Inst	Set	Sm	CA	3.70	2.16	198.00	152.00	---	350.00	440.00
High quality	Inst	Set	Lg	CA	3.01	2.66	349.00	124.00	---	473.00	575.00
	Inst	Set	Sm	CA	4.62	1.73	385.00	190.00	---	575.00	708.00
Premium quality	Inst	Set	Lg	CA	3.65	2.19	666.00	150.00	---	816.00	976.00
	Inst	Set	Sm	CA	5.63	1.42	734.00	231.00	---	965.00	1170.00

12 - 23 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.22	3.61	198.00	91.20	---	289.20	356.00
	Inst	Set	Sm	CA	3.40	2.35	219.00	140.00	---	359.00	447.00
Average quality	Inst	Set	Lg	CA	2.53	3.16	283.00	104.00	---	387.00	471.00
	Inst	Set	Sm	CA	3.90	2.05	312.00	160.00	---	472.00	583.00
High quality	Inst	Set	Lg	CA	3.16	2.53	495.00	130.00	---	625.00	751.00
	Inst	Set	Sm	CA	4.88	1.64	546.00	200.00	---	746.00	908.00
Premium quality	Inst	Set	Lg	CA	3.85	2.08	780.00	158.00	---	938.00	1120.00
	Inst	Set	Sm	CA	5.93	1.35	859.00	243.00	---	1102.00	1330.00

24 - 32 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.29	3.50	291.00	94.00	---	385.00	467.00
	Inst	Set	Sm	CA	3.51	2.28	321.00	144.00	---	465.00	571.00
Average quality	Inst	Set	Lg	CA	2.61	3.06	416.00	107.00	---	523.00	628.00
	Inst	Set	Sm	CA	4.02	1.99	458.00	165.00	---	623.00	758.00
High quality	Inst	Set	Lg	CA	3.27	2.45	640.00	134.00	---	774.00	924.00
	Inst	Set	Sm	CA	5.03	1.59	705.00	207.00	---	912.00	1100.00
Premium quality	Inst	Set	Lg	CA	3.98	2.01	1100.00	163.00	---	1263.00	1500.00
	Inst	Set	Sm	CA	6.11	1.31	1220.00	251.00	---	1471.00	1750.00

33 - 40 SF, 2 sliding sash, 1 fixed sash (XOX)

Standard quality	Inst	Set	Lg	CA	2.42	3.31	409.00	99.40	---	508.40	610.00
	Inst	Set	Sm	CA	3.72	2.15	451.00	153.00	---	604.00	732.00
Average quality	Inst	Set	Lg	CA	2.76	2.90	584.00	113.00	---	697.00	831.00
	Inst	Set	Sm	CA	4.23	1.89	644.00	174.00	---	818.00	984.00
High quality	Inst	Set	Lg	CA	3.46	2.31	832.00	142.00	---	974.00	1160.00
	Inst	Set	Sm	CA	5.33	1.50	917.00	219.00	---	1136.00	1360.00
Premium quality	Inst	Set	Lg	CA	4.19	1.91	1340.00	172.00	---	1512.00	1780.00
	Inst	Set	Sm	CA	6.45	1.24	1480.00	265.00	---	1745.00	2070.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Sliding, vertical, insulated glass, includes screen and hardware

4 - 8 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.22	3.61	120.00	91.20	---	211.20	266.00
	Inst	Set	Sm	CA	3.40	2.35	132.00	140.00	---	272.00	348.00
Average quality	Inst	Set	Lg	CA	2.53	3.16	172.00	104.00	---	276.00	343.00
	Inst	Set	Sm	CA	3.90	2.05	189.00	160.00	---	349.00	442.00
High quality	Inst	Set	Lg	CA	3.16	2.53	245.00	130.00	---	375.00	463.00
	Inst	Set	Sm	CA	4.88	1.64	270.00	200.00	---	470.00	591.00
Premium quality	Inst	Set	Lg	CA	3.85	2.08	412.00	158.00	---	570.00	695.00
	Inst	Set	Sm	CA	5.93	1.35	453.00	243.00	---	696.00	862.00

9 - 12, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.33	3.43	154.00	95.70	---	249.70	311.00
	Inst	Set	Sm	CA	3.59	2.23	170.00	147.00	---	317.00	402.00
Average quality	Inst	Set	Lg	CA	2.67	3.00	220.00	110.00	---	330.00	407.00
	Inst	Set	Sm	CA	4.10	1.95	243.00	168.00	---	411.00	515.00
High quality	Inst	Set	Lg	CA	3.33	2.40	324.00	137.00	---	461.00	564.00
	Inst	Set	Sm	CA	5.13	1.56	357.00	211.00	---	568.00	706.00
Premium quality	Inst	Set	Lg	CA	4.04	1.98	488.00	166.00	---	654.00	793.00
	Inst	Set	Sm	CA	6.20	1.29	538.00	255.00	---	793.00	975.00

13 - 19 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.41	3.32	197.00	99.00	---	296.00	366.00
	Inst	Set	Sm	CA	3.70	2.16	218.00	152.00	---	370.00	463.00
Average quality	Inst	Set	Lg	CA	2.75	2.91	282.00	113.00	---	395.00	482.00
	Inst	Set	Sm	CA	4.23	1.89	311.00	174.00	---	485.00	601.00
High quality	Inst	Set	Lg	CA	3.43	2.33	379.00	141.00	---	520.00	633.00
	Inst	Set	Sm	CA	5.30	1.51	418.00	218.00	---	636.00	785.00
Premium quality	Inst	Set	Lg	CA	4.19	1.91	571.00	172.00	---	743.00	897.00
	Inst	Set	Sm	CA	6.45	1.24	629.00	265.00	---	894.00	1090.00

20 - 28 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.55	3.14	262.00	105.00	---	367.00	448.00
	Inst	Set	Sm	CA	3.92	2.04	289.00	161.00	---	450.00	557.00
Average quality	Inst	Set	Lg	CA	2.91	2.75	374.00	119.00	---	493.00	598.00
	Inst	Set	Sm	CA	4.47	1.79	412.00	184.00	---	596.00	731.00
High quality	Inst	Set	Lg	CA	3.64	2.20	537.00	149.00	---	686.00	827.00
	Inst	Set	Sm	CA	5.59	1.43	592.00	230.00	---	822.00	1000.00
Premium quality	Inst	Set	Lg	CA	4.42	1.81	699.00	181.00	---	880.00	1060.00
	Inst	Set	Sm	CA	6.78	1.18	771.00	278.00	---	1049.00	1280.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Storm, includes screen and hardware

3 to 11 SF	Inst	Set	Lg	CA	1.45	5.50	32.30	59.50	---	91.80	120.00
	Inst	Set	Sm	CA	2.23	3.58	35.60	91.60	---	127.20	169.00
12 to 24 SF	Inst	Set	Lg	CA	1.45	5.50	39.40	59.50	---	98.90	129.00
	Inst	Set	Sm	CA	2.23	3.58	43.40	91.60	---	135.00	178.00
24 to 32 SF	Inst	Set	Lg	CA	1.60	5.00	74.60	65.70	---	140.30	178.00
	Inst	Set	Sm	CA	2.46	3.25	82.20	101.00	---	183.20	236.00
33 to 40 SF	Inst	Set	Lg	CA	1.60	5.00	117.00	65.70	---	182.70	226.00
	Inst	Set	Sm	CA	2.46	3.25	129.00	101.00	---	230.00	290.00

Wood**Awning windows, opens outward on top-mounted pivots.**

Pine frames, exterior treated and primed, interior natural finish; double glazed; includes screen and weatherstripping.

Unit is one ventilating lite wide

3 - 6 SF

Average quality	Inst	Set	Lg	CA	0.83	9.60	365.00	34.10	---	399.10	467.00
	Inst	Set	Sm	CA	1.28	6.24	402.00	52.60	---	454.60	536.00
High quality	Inst	Set	Lg	CA	1.07	7.50	502.00	43.90	---	545.90	638.00
	Inst	Set	Sm	CA	1.64	4.88	553.00	67.30	---	620.30	730.00
Premium quality	Inst	Set	Lg	CA	1.333	6.00	638.00	54.70	---	692.70	811.00
	Inst	Set	Sm	CA	2.05	3.90	703.00	84.20	---	787.20	927.00

7 - 12 SF

Average quality	Inst	Set	Lg	CA	0.83	9.60	475.00	34.10	---	509.10	593.00
	Inst	Set	Sm	CA	1.28	6.24	523.00	52.60	---	575.60	675.00
High quality	Inst	Set	Lg	CA	1.07	7.50	640.00	43.90	---	683.90	797.00
	Inst	Set	Sm	CA	1.64	4.88	705.00	67.30	---	772.30	905.00
Premium quality	Inst	Set	Lg	CA	1.333	6.00	740.00	54.70	---	794.70	927.00
	Inst	Set	Sm	CA	2.05	3.90	815.00	84.20	---	899.20	1060.00

For aluminum clad (baked white enamel exterior)

ADD	Inst	Lg	---	---	---	---	20.0	---	---	20.0	---
	Inst	Sm	---	---	---	---	20.0	---	---	20.0	---

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Casement windows, opens outward on bottom-mounted crank pivots.

Pine frames, exterior treated and primed, interior natural finish; double glazed; includes screen and weatherstripping.

3 - 11 SF, 1 ventilating lite, no fixed lites

Average quality	Inst	Set	Lg	CJ	1.67	9.60	385.00	62.10	---	447.10	530.00
	Inst	Set	Sm	CJ	2.56	6.24	425.00	95.20	---	520.20	622.00
High quality	Inst	Set	Lg	CJ	2.13	7.50	536.00	79.20	---	615.20	727.00
	Inst	Set	Sm	CJ	3.28	4.88	591.00	122.00	---	713.00	850.00
Premium quality	Inst	Set	Lg	CJ	2.67	6.00	669.00	99.30	---	768.30	908.00
	Inst	Set	Sm	CJ	4.10	3.90	737.00	152.00	---	889.00	1060.00

12 - 23 SF, 1 ventilating lite, no fixed lites

Average quality	Inst	Set	Lg	CJ	2.08	7.68	550.00	77.40	---	627.40	741.00
	Inst	Set	Sm	CJ	3.21	4.99	606.00	119.00	---	725.00	864.00
High quality	Inst	Set	Lg	CJ	2.67	6.00	865.00	99.30	---	964.30	1130.00
	Inst	Set	Sm	CJ	4.10	3.90	953.00	152.00	---	1105.00	1310.00
Premium quality	Inst	Set	Lg	CJ	3.33	4.80	1150.00	124.00	---	1274.00	1500.00
	Inst	Set	Sm	CJ	5.13	3.12	1270.00	191.00	---	1461.00	1720.00

24 - 32 SF, 2 ventilating lites, no fixed lites

Average quality	Inst	Set	Lg	CJ	2.38	6.72	966.00	88.50	---	1054.50	1240.00
	Inst	Set	Sm	CJ	3.66	4.37	1060.00	136.00	---	1196.00	1420.00
High quality	Inst	Set	Lg	CJ	3.05	5.25	1240.00	113.00	---	1353.00	1580.00
	Inst	Set	Sm	CJ	4.69	3.41	1360.00	174.00	---	1534.00	1810.00
Premium quality	Inst	Set	Lg	CJ	3.81	4.20	1790.00	142.00	---	1932.00	2250.00
	Inst	Set	Sm	CJ	5.86	2.73	1970.00	218.00	---	2188.00	2570.00

33 - 40 SF, 2 ventilating lites, 1 fixed lite

Average quality	Inst	Set	Lg	CJ	2.78	5.76	966.00	103.00	---	1069.00	1260.00
	Inst	Set	Sm	CJ	4.28	3.74	1060.00	159.00	---	1219.00	1450.00
High quality	Inst	Set	Lg	CJ	3.56	4.50	1240.00	132.00	---	1372.00	1610.00
	Inst	Set	Sm	CJ	5.46	2.93	1360.00	203.00	---	1563.00	1850.00
Premium quality	Inst	Set	Lg	CJ	4.44	3.60	1790.00	165.00	---	1955.00	2290.00
	Inst	Set	Sm	CJ	6.84	2.34	1970.00	254.00	---	2224.00	2620.00

For aluminum clad (baked white enamel) exterior

ADD	Inst	Lg	---	---	---	---	20.0	---	---	20.0	---
	Inst	Sm	---	---	---	---	20.0	---	---	20.0	---

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

**Double hung windows, two sashes / lites per unit, insulated glass,
includes screens and weatherstripping**

4 - 8 SF, 1 operable unit (X)

Average quality	Inst	Set	Lg	CJ	1.74	9.20	377.00	64.70	---	441.70	524.00
	Inst	Set	Sm	CJ	2.68	5.98	416.00	99.70	---	515.70	618.00
High quality	Inst	Set	Lg	CJ	2.29	7.00	601.00	85.20	---	686.20	810.00
	Inst	Set	Sm	CJ	3.52	4.55	662.00	131.00	---	793.00	944.00
Premium quality	Inst	Set	Lg	CJ	2.78	5.75	926.00	103.00	---	1029.00	1210.00
	Inst	Set	Sm	CJ	4.28	3.74	1020.00	159.00	---	1179.00	1400.00

9 - 12 SF, 1 operable unit (X)

Average quality	Inst	Set	Lg	CJ	2.17	7.36	532.00	80.70	---	612.70	725.00
	Inst	Set	Sm	CJ	3.35	4.78	587.00	125.00	---	712.00	849.00
High quality	Inst	Set	Lg	CJ	2.86	5.60	766.00	106.00	---	872.00	1030.00
	Inst	Set	Sm	CJ	4.40	3.64	844.00	164.00	---	1008.00	1200.00
Premium quality	Inst	Set	Lg	CJ	3.48	4.60	1010.00	129.00	---	1139.00	1340.00
	Inst	Set	Sm	CJ	5.35	2.99	1110.00	199.00	---	1309.00	1560.00

13 - 19 SF, 1 operable unit (X)

Average quality	Inst	Set	Lg	CJ	2.48	6.44	659.00	92.20	---	751.20	887.00
	Inst	Set	Sm	CJ	3.82	4.19	726.00	142.00	---	868.00	1030.00
High quality	Inst	Set	Lg	CJ	3.27	4.90	842.00	122.00	---	964.00	1140.00
	Inst	Set	Sm	CJ	5.02	3.19	928.00	187.00	---	1115.00	1330.00
Premium quality	Inst	Set	Lg	CJ	3.97	4.03	1370.00	148.00	---	1518.00	1780.00
	Inst	Set	Sm	CJ	6.11	2.62	1510.00	227.00	---	1737.00	2050.00

20 - 28 SF, 2 operable units and 1 fixed unit (XOX), or 2 operable units (XX)

Average quality	Inst	Set	Lg	CJ	2.90	5.52	803.00	108.00	---	911.00	1070.00
	Inst	Set	Sm	CJ	4.46	3.59	885.00	166.00	---	1051.00	1250.00
High quality	Inst	Set	Lg	CJ	3.81	4.20	1080.00	142.00	---	1222.00	1440.00
	Inst	Set	Sm	CJ	5.86	2.73	1190.00	218.00	---	1408.00	1670.00
Premium quality	Inst	Set	Lg	CJ	4.64	3.45	1740.00	173.00	---	1913.00	2240.00
	Inst	Set	Sm	CJ	7.14	2.24	1910.00	266.00	---	2176.00	2570.00

For aluminum clad (baked white enamel) exterior

ADD	Inst		Lg	---	---	---	20.0	---	---	20.0	---
	Inst		Sm	---	---	---	20.0	---	---	20.0	---

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Picture, fixed, non-opening sash / lite, insulated glass**3 - 11 SF, 1 fixed unit (O)**

Standard quality	Inst	Set	Lg	CA	2.00	4.00	333.00	82.10	---	415.10	498.00
	Inst	Set	Sm	CA	3.08	2.60	367.00	126.00	---	493.00	600.00
Average quality	Inst	Set	Lg	CA	2.29	3.50	440.00	94.00	---	534.00	638.00
	Inst	Set	Sm	CA	3.51	2.28	485.00	144.00	---	629.00	759.00
High quality	Inst	Set	Lg	CA	2.86	2.80	693.00	117.00	---	810.00	962.00
	Inst	Set	Sm	CA	4.40	1.82	764.00	181.00	---	945.00	1130.00
Premium quality	Inst	Set	Lg	CA	3.48	2.30	905.00	143.00	---	1048.00	1240.00
	Inst	Set	Sm	CA	5.33	1.50	998.00	219.00	---	1217.00	1450.00

12 - 23 SF, 1 fixed unit (O)

Standard quality	Inst	Set	Lg	CA	2.11	3.80	413.00	86.60	---	499.60	596.00
	Inst	Set	Sm	CA	3.24	2.47	455.00	133.00	---	588.00	709.00
Average quality	Inst	Set	Lg	CA	2.40	3.33	552.00	98.50	---	650.50	772.00
	Inst	Set	Sm	CA	3.70	2.16	608.00	152.00	---	760.00	912.00
High quality	Inst	Set	Lg	CA	3.01	2.66	795.00	124.00	---	919.00	1090.00
	Inst	Set	Sm	CA	4.62	1.73	876.00	190.00	---	1066.00	1270.00
Premium quality	Inst	Set	Lg	CA	3.65	2.19	1100.00	150.00	---	1250.00	1480.00
	Inst	Set	Sm	CA	5.63	1.42	1210.00	231.00	---	1441.00	1720.00

24 - 32 SF, 1 fixed unit (O)

Standard quality	Inst	Set	Lg	CA	2.17	3.68	588.00	89.10	---	677.10	801.00
	Inst	Set	Sm	CA	3.35	2.39	649.00	138.00	---	787.00	938.00
Average quality	Inst	Set	Lg	CA	2.48	3.22	897.00	102.00	---	999.00	1170.00
	Inst	Set	Sm	CA	3.83	2.09	988.00	157.00	---	1145.00	1360.00
High quality	Inst	Set	Lg	CA	3.10	2.58	1200.00	127.00	---	1327.00	1560.00
	Inst	Set	Sm	CA	4.76	1.68	1330.00	195.00	---	1525.00	1800.00
Premium quality	Inst	Set	Lg	CA	3.77	2.12	1630.00	155.00	---	1785.00	2090.00
	Inst	Set	Sm	CA	5.80	1.38	1800.00	238.00	---	2038.00	2400.00

33 - 44 SF, 1 fixed unit (O) or 2 fixed units (OO)

Standard quality	Inst	Set	Lg	CA	2.30	3.48	706.00	94.40	---	800.40	944.00
	Inst	Set	Sm	CA	3.54	2.26	778.00	145.00	---	923.00	1100.00
Average quality	Inst	Set	Lg	CA	2.29	3.50	1020.00	94.00	---	1114.00	1300.00
	Inst	Set	Sm	CA	3.51	2.28	1120.00	144.00	---	1264.00	1490.00
High quality	Inst	Set	Lg	CA	2.67	3.00	1550.00	110.00	---	1660.00	1940.00
	Inst	Set	Sm	CA	4.10	1.95	1710.00	168.00	---	1878.00	2200.00
Premium quality	Inst	Set	Lg	CA	4.00	2.00	1930.00	164.00	---	2094.00	2450.00
	Inst	Set	Sm	CA	6.15	1.30	2130.00	253.00	---	2383.00	2800.00

44 - 55 SF, 2 fixed units (OO) or 3 fixed units (OOO)

Standard quality	Inst	Set	Lg	CA	2.41	3.32	1000.00	99.00	---	1099.00	1290.00
	Inst	Set	Sm	CA	3.70	2.16	1100.00	152.00	---	1252.00	1480.00
Average quality	Inst	Set	Lg	CA	2.75	2.91	1360.00	113.00	---	1473.00	1720.00
	Inst	Set	Sm	CA	4.23	1.89	1500.00	174.00	---	1674.00	1960.00
High quality	Inst	Set	Lg	CA	3.45	2.32	2370.00	142.00	---	2512.00	2920.00
	Inst	Set	Sm	CA	5.30	1.51	2610.00	218.00	---	2828.00	3310.00
Premium quality	Inst	Set	Lg	CA	4.19	1.91	3010.00	172.00	---	3182.00	3700.00
	Inst	Set	Sm	CA	6.45	1.24	3310.00	265.00	---	3575.00	4180.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

Sliding, horizontal, insulated glass, includes screen and hardware**3 - 11 SF, 1 sliding sash, 1 fixed sash (XO)**

Standard quality	Inst	Set	Lg	CA	2.11	3.80	340.00	86.60	---	426.60	513.00
	Inst	Set	Sm	CA	3.24	2.47	375.00	133.00	---	508.00	618.00
Average quality	Inst	Set	Lg	CA	2.40	3.33	520.00	98.50	---	618.50	736.00
	Inst	Set	Sm	CA	3.70	2.16	573.00	152.00	---	725.00	872.00
High quality	Inst	Set	Lg	CA	3.01	2.66	856.00	124.00	---	980.00	1160.00
	Inst	Set	Sm	CA	4.62	1.73	943.00	190.00	---	1133.00	1350.00
Premium quality	Inst	Set	Lg	CA	3.65	2.19	1140.00	150.00	---	1290.00	1520.00
	Inst	Set	Sm	CA	5.63	1.42	1260.00	231.00	---	1491.00	1770.00

12 - 23 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.22	3.61	436.00	91.20	---	527.20	629.00
	Inst	Set	Sm	CA	3.40	2.35	480.00	140.00	---	620.00	748.00
Average quality	Inst	Set	Lg	CA	2.53	3.16	679.00	104.00	---	783.00	927.00
	Inst	Set	Sm	CA	3.90	2.05	749.00	160.00	---	909.00	1090.00
High quality	Inst	Set	Lg	CA	3.16	2.53	1080.00	130.00	---	1210.00	1420.00
	Inst	Set	Sm	CA	4.88	1.64	1190.00	200.00	---	1390.00	1650.00
Premium quality	Inst	Set	Lg	CA	3.85	2.08	1630.00	158.00	---	1788.00	2090.00
	Inst	Set	Sm	CA	5.93	1.35	1800.00	243.00	---	2043.00	2410.00

24 - 32 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.29	3.50	668.00	94.00	---	762.00	900.00
	Inst	Set	Sm	CA	3.51	2.28	736.00	144.00	---	880.00	1050.00
Average quality	Inst	Set	Lg	CA	2.61	3.06	960.00	107.00	---	1067.00	1250.00
	Inst	Set	Sm	CA	4.02	1.99	1060.00	165.00	---	1225.00	1450.00
High quality	Inst	Set	Lg	CA	3.27	2.45	1280.00	134.00	---	1414.00	1660.00
	Inst	Set	Sm	CA	5.03	1.59	1410.00	207.00	---	1617.00	1910.00
Premium quality	Inst	Set	Lg	CA	3.98	2.01	1970.00	163.00	---	2133.00	2500.00
	Inst	Set	Sm	CA	6.11	1.31	2170.00	251.00	---	2421.00	2850.00

33 - 40 SF, 2 sliding sash, 1 fixed sash (XOX)

Standard quality	Inst	Set	Lg	CA	2.42	3.31	1020.00	99.40	---	1119.40	1310.00
	Inst	Set	Sm	CA	3.72	2.15	1120.00	153.00	---	1273.00	1510.00
Average quality	Inst	Set	Lg	CA	2.76	2.90	1210.00	113.00	---	1323.00	1550.00
	Inst	Set	Sm	CA	4.23	1.89	1340.00	174.00	---	1514.00	1780.00
High quality	Inst	Set	Lg	CA	3.46	2.31	1670.00	142.00	---	1812.00	2120.00
	Inst	Set	Sm	CA	5.33	1.50	1840.00	219.00	---	2059.00	2420.00
Premium quality	Inst	Set	Lg	CA	4.19	1.91	2430.00	172.00	---	2602.00	3040.00
	Inst	Set	Sm	CA	6.45	1.24	2680.00	265.00	---	2945.00	3450.00

Description	Oper	Unit	Vol	Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					Crew per Unit	per Day	Unit Cost	Unit Cost	Unit Cost	Unit Cost	Incl O&P

Sliding, vertical, insulated glass, includes screen and hardware**4 - 8 SF, 1 sliding sash, 1 fixed sash (XO)**

Standard quality	Inst	Set	Lg	CA	2.22	3.61	283.00	91.20	---	374.20	453.00
	Inst	Set	Sm	CA	3.40	2.35	312.00	140.00	---	452.00	554.00
Average quality	Inst	Set	Lg	CA	2.53	3.16	369.00	104.00	---	473.00	570.00
	Inst	Set	Sm	CA	3.90	2.05	407.00	160.00	---	567.00	692.00
High quality	Inst	Set	Lg	CA	3.16	2.53	544.00	130.00	---	674.00	807.00
	Inst	Set	Sm	CA	4.88	1.64	599.00	200.00	---	799.00	970.00
Premium quality	Inst	Set	Lg	CA	3.85	2.08	821.00	158.00	---	979.00	1170.00
	Inst	Set	Sm	CA	5.93	1.35	905.00	243.00	---	1148.00	1380.00

9 - 12, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.33	3.43	334.00	95.70	---	429.70	518.00
	Inst	Set	Sm	CA	3.59	2.23	368.00	147.00	---	515.00	630.00
Average quality	Inst	Set	Lg	CA	2.67	3.00	465.00	110.00	---	575.00	688.00
	Inst	Set	Sm	CA	4.10	1.95	513.00	168.00	---	681.00	825.00
High quality	Inst	Set	Lg	CA	3.33	2.40	688.00	137.00	---	825.00	983.00
	Inst	Set	Sm	CA	5.13	1.56	758.00	211.00	---	969.00	1170.00
Premium quality	Inst	Set	Lg	CA	4.04	1.98	987.00	166.00	---	1153.00	1370.00
	Inst	Set	Sm	CA	6.20	1.29	1090.00	255.00	---	1345.00	1610.00

13 - 19 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.41	3.32	449.00	99.00	---	548.00	655.00
	Inst	Set	Sm	CA	3.70	2.16	495.00	152.00	---	647.00	782.00
Average quality	Inst	Set	Lg	CA	2.75	2.91	629.00	113.00	---	742.00	881.00
	Inst	Set	Sm	CA	4.23	1.89	693.00	174.00	---	867.00	1040.00
High quality	Inst	Set	Lg	CA	3.43	2.33	794.00	141.00	---	935.00	1110.00
	Inst	Set	Sm	CA	5.30	1.51	875.00	218.00	---	1093.00	1310.00
Premium quality	Inst	Set	Lg	CA	4.19	1.91	1330.00	172.00	---	1502.00	1770.00
	Inst	Set	Sm	CA	6.45	1.24	1460.00	265.00	---	1725.00	2050.00

20 - 28 SF, 1 sliding sash, 1 fixed sash (XO)

Standard quality	Inst	Set	Lg	CA	2.55	3.14	596.00	105.00	---	701.00	832.00
	Inst	Set	Sm	CA	3.92	2.04	656.00	161.00	---	817.00	980.00
Average quality	Inst	Set	Lg	CA	2.91	2.75	742.00	119.00	---	861.00	1020.00
	Inst	Set	Sm	CA	4.47	1.79	818.00	184.00	---	1002.00	1200.00
High quality	Inst	Set	Lg	CA	3.64	2.20	975.00	149.00	---	1124.00	1330.00
	Inst	Set	Sm	CA	5.59	1.43	1070.00	230.00	---	1300.00	1560.00
Premium quality	Inst	Set	Lg	CA	4.42	1.81	1550.00	181.00	---	1731.00	2040.00
	Inst	Set	Sm	CA	6.78	1.18	1710.00	278.00	---	1988.00	2350.00

					Man- hours	Crew Output	Avg Mat'l	Avg Labor	Avg Equip	Avg Total	Avg Price
					Crew per Unit	per Day	Unit	Unit	Unit	Unit	Incl
Description	Oper	Unit	Vol	Size	Unit	Day	Cost	Cost	Cost	Cost	O&P

Storm, includes screen and hardware

3 to 11 SF	Inst	Set	Lg	CA	1.45	5.50	73.80	59.50	---	133.30	168.00
	Inst	Set	Sm	CA	2.23	3.58	81.30	91.60	---	172.90	222.00
12 to 24 SF	Inst	Set	Lg	CA	1.45	5.50	88.80	59.50	---	148.30	186.00
	Inst	Set	Sm	CA	2.23	3.58	97.90	91.60	---	189.50	241.00
24 to 32 SF	Inst	Set	Lg	CA	1.60	5.00	117.00	65.70	---	182.70	226.00
	Inst	Set	Sm	CA	2.46	3.25	129.00	101.00	---	230.00	289.00
33 to 40 SF	Inst	Set	Lg	CA	1.60	5.00	166.00	65.70	---	231.70	283.00
	Inst	Set	Sm	CA	2.46	3.25	183.00	101.00	---	284.00	352.00

Wiring. See Electrical, page 148

Index

A

Abbreviations used	20
Access doors	348
Accessibility	
site	6
workplace	5
Accessories	
bath	37-40
boiler	255
fiberglass panels	163
fireplaces	164-165
Accordion doors	86
Accurate estimating methods	5
Acoustical tile/panels	
adhesive cost	21
adhesive set	22
ceiling tile	22-23
demolition	120
dimensions	21
estimating technique	21
furring strips	23-24
installation	21
painting	305
patterns	23
stapled/no grid	23
suspended ceiling systems	411-414
wall tile	22-23
Acrylic	
bathtubs	45, 47-49
dome skylights	399-401
flooring, wood parquet blocks	253
Adhesives	
ceiling panels	22
ceramic tile	98
drywall panels	26-27
floor panels	23
gypsum drywall panels	27
hardboard wall panels	27-28
plastic wall panels	27-28
polystyrene wall panels	25-26
polyurethane foam wall panels	25-26
subfloor	24
wall panels	25-28
Adjustable roof flashing	420
Adjuster, insurance	5
Adobe, brick	279
Aggregate, ready mix concrete	95-96
Air conditioning systems	
diffusers/grilles	30
ductwork	31-32
fans and ventilators	33-34
system components	28-32
system units, complete	35
Air conditioning units	
fan coil	35
heat pumps	36
PTAC wall/window	36
window	36
Air return, cold	31
Air supply registers	31
Air tool operator	
crew rates	15
wages	11
Air tools, demolition	106-107
Aluminum	
carport, freestanding	67
casement windows	432
columns	87-88
ductwork, A/C	31
exterior shutters	360
garage doors	214
gutters and downspouts	248

jalousie windows	433
kickplates	124
patio cover	67
picture windows	433
roofing	332
roofing, demolition	114
sash, window glass	222
shower and tub doors	349-353
sliding glass door	351-353
sliding glass door, demolition	119
sliding, horizontal windows	434-435
sliding, vertical windows	435-436
storm windows	436
thresholds	125
weathervanes	105
windows	432-436
windows, demolition	117-118
Aluminum ductwork, flexible	32
Aluminum siding	
clapboard	366
corrugated	366
demolition	366
dimensions	363
estimating	363
installation	363
panels	366
shingles	366
American Standard Products	
Americast fixtures	354-355, 391-393
countertop bathroom sinks	375-377
kitchen sinks	391-393
pedestal sinks	378-380
shower bases	354-355
sinks	391-393
wall hung bathroom sinks	384-385
Americast	
shower bases	354-355
sinks	391-393
Angle bar, bathroom	38
Anti-algae caulking	74
Aqua Glass shower surround	356
Arch roof, calculating paint coverage	301
Architectural, cement, white	97
Archway, entrance	154
Area modification factors	
calculating	12
Canada	14
U-S	12
Ash, V-grooved, paneling	315
Ash-sen, paneling	315
Ashlar pattern, tile installation	23
Asphalt shingles	332-336
demolition	115, 332
Assembled package door units	127
Attic, access doors	348
Average costs	4
Average manhours per unit	4
Awning windows	
vinyl	436
wood	442
Awnings	
canopies	68-69
canvas	69
patio	67-68
sunroom/garden room	69
window	68-69
wood, patio	185

B

Backer board, cement	77
Backfilling	155
Backsplash	
butcher block	104
ceramic tile	98

engineered stone	103
Formica	98, 99-100
granite	101-102
marble	101-102
quartz	102
Silestone	103
stainless steel	104
Balusters, stair	407
Balustrade, curved oak	410
Bar sinks	396
Bars, towel	40
Base cabinets, kitchen	54-56
installation procedure	53
Base shoe, solid pine	289
Baseboard	287-290
Basement stairs	408
Bases, shower	354-355
Basketweave fence, redwood	156
Bath accessories	37-40
demolition	113
Bath caulking	
anti-algae	74
mildew resistant	74
Bathroom, sinks	375-391
Bathroom angle bar	38
Bathroom door locksets	124
Bathroom heaters	
electric, ceiling	253-254
electric, wall	254
Bathroom wallpaper	422
Bathtub wall, ceramic tile	75
Bathtubs	
acrylic	45, 46, 47-49
alcove/recessed/integral apron	46-47
cast iron	44, 47
demolition	359
free-standing	50
free-standing accessories	50
remove & reset	44, 51
rough-in	45
shower fixture	45, 51
shower tub units	359
steel	44, 47, 49-50
whirlpool	44-45, 46-47
Batt insulation	258-263
demolition	114
Batten siding	364
Batts, pine	372-373
Beams	
built-up	169-170
demolition	109
dimension lumber	169-172
glu-lam	223-242
single member	170-172
Bedroom door locksets	124
Benefits, employer paid	11
Bevel siding	
demolition	116
dimensions	363
wood	368-369
Bi-folding closet doors	78-81
Bidets	415-416
Birch	
blinds	361
paneling	316
shutters	361
Blender, kitchen	165
Blinds, exterior	
birch	361
Cellwood	362
door	360
pine	360
western hemlock	361

Block flooring, hardwood	252
Block, concrete	
demolition.....	279
dimensions.....	272
exterior walls.....	281
fences	283-284
foundations	279-280
heavyweight.....	280
lightweight.....	280
partitions	282-283
retaining walls.....	279-280
slump	284-285
walls	279-280
walls, insulating.....	265
Block, glass.....	286
Blocking, demolition.....	172-173
Board and batten siding	
aluminum.....	363
wood	372-373
Board fence systems	156-158
Board sheathing	
demolition.....	208-209
subfloor	210
wall.....	208
Board siding.....	372
demolition.....	116
Boilers	
accessories.....	255
check valve.....	255
circulator pump.....	255
gas fired.....	254-255
oil fired.....	254-255
Bolted ledgers.....	184
Bottom plates	185
Box stairs.....	408-409
Box-type rain gutter.....	248-249
Bracing.....	173
demolition.....	109
Brass kickplates	124
Brick	
adobe.....	279
chimneys.....	273-274
columns	274-277
concrete slump	285
demolition.....	107
dimensions.....	272
paint, one coat.....	309
running bond	273-274
standard.....	273-278
veneer	277-278
walls	277-278
Bricklayer	
crew rates	15, 17
wages.....	11
Bricktender	
crew rates	15, 17
wages.....	11
Bridging	
demolition.....	109
solid, between joists	174-175
Bronze kickplates.....	124
Bronze, boilers, circulator pump.....	255
Builder's series spa.....	404-405
Building Repair Estimate.....	10
Building Repair Estimate form	
checklist.....	6
example	8
explanation	6, 9
Built-in dishwashers	121
Built-in food center.....	165
Built-up roofing	
demolition.....	115
dimensions.....	330
over concrete deck.....	338
over existing roof	336-338
over wood deck	337

Burglary detection systems.....	151-152
Butcher block countertops.....	104
Button, doorbell.....	150
Butyl caulk.....	72
BX cable.....	148
Bypassing closet doors.....	82-85

C

Cabinetry.....	54-66
Cabinets, kitchen	
demolition.....	113
description	52
installation procedure	52
natural finish.....	306
painting	306
quality of	52
Cabinets, medicine	41-43
Cabinets, vanity.....	64-66
Cable, service entrance	147
Calculating	
area modification factors	12
overhead expenses	301
paint coverage.....	6
total hourly cost	11
Canada	
adjusting factors.....	12
area modification factors	14
Canopies	
aluminum.....	67-69
canvas	69
carport.....	67
door.....	68-69
window.....	68-69
Canvas awnings.....	69
Carpenter	
crew rates	15-17
wages.....	11
Carpet pad	70-71
Carport, freestanding.....	67
Casement windows	
aluminum.....	432
vinyl.....	437
wood	443
Cast iron	
bathroom sinks	388-390
bathtubs.....	47, 49
boilers, circulator pump.....	255
kitchen sinks	393-394
Cast-in-place concrete	
footings	91-92
forming.....	92-93
foundations	92-93
interior floor finishing	95
reinforcing steel rods.....	94
retaining walls.....	92
slabs.....	94
Caulking	
anti-algae	74
bath/kitchen	73-74
butyl flex.....	72
elastomeric	74
gun.....	74
latex.....	72
mildew resistant.....	74
multi-purpose	72
oil base	73
silicone.....	73
Cavity walls, insulating	264-265
CDX plywood sheathing.....	208-209
Cedar	
fencing.....	156-158
roofing	340-344
siding	369
Cedar molding, trim board.....	298-299

Ceiling	
joists.....	178
panels	22-23
tiles.....	22-23
Ceiling applications	
drywall.....	145
drywall adhesive	26
paint.....	304-306
plaster lath	319
wallpaper	422
Ceiling hung space heaters.....	256
Ceiling light fixtures	
indoor.....	268-270
outdoor.....	270
Ceiling systems, suspended	
demolition.....	412
grid.....	412
tile/panels, acoustical	22-23
Ceiling/wall tile	
demolition.....	22
stapled	23
Cellwood shutters.....	362
Cement	
architectural	97
painting	311
Cement masons	
crew rates	16
wages.....	11
Ceramic tile	
adhesive	98
bathtub wall installation	75
cement backer board.....	77
countertops.....	76, 98
cove/base	76
demolition.....	76-77
dimensions.....	75
estimating techniques.....	75
floors	76
installation methods.....	75
mortar.....	98
wainscot cap.....	77
walls	77
Chain link fence.....	158-159
fabric.....	159-160
galvanized steel.....	158-159
vinyl coat.....	158-159
Chain-drive garage door opener	217
Change orders	7
Channel molding, Marlite	271
Checklist, estimating	6
Chemical additives, concrete	97
Chemical feed pumps,	
soft water systems	431
Chimes, doorbell	150
Chimney, vent	418-420
Chimneys	
brick	273-274
demolition.....	273-274
factory built	164
flashing.....	345
Circline lighting fixtures (LED capable)	269
Circular area, paint coverage	301
Clapboard siding	
aluminum.....	366
demolition.....	114
Clay tile roofing	332-336
demolition.....	115
Clean-up center, kitchen.....	52
Cleaning.....	302-303
Cleaning, paint preparation	
exteriors	308-309
interiors	302-303
Clients	
communication with.....	7
evaluating	7

Closet door systems			painter.....17
accordion.....86			paperhanger.....18
bi-folding.....78-81			plasterer.....17
bypassing.....82-85			plumber.....18, 19
demolition, with track.....117			roofer.....18
hardware.....87			sheet metal worker.....19
mirrored.....80-81, 84-85			tile setter.....19
prefinished.....81			Crown Molding.....294-296
sliding.....82-85			Cup holder.....37
track and hardware.....87			Cupolas.....104-105
unfinished.....78-80			Curtain rod, shower.....38
Closets			Curved stairways.....410
kitchen utility.....56			Cylinder, surface area, calculating paint coverage.....301
mirrored.....80-81, 84-85			D
Clothes dryer vent.....347			Daily production, average.....4
Cold air return.....31			Dampers, air conditioning, variable volume.....29
enameled metal.....34-35			Dampers, motorized.....29
Collectors, solar.....428-429			Dead locks.....124
mounting kits.....429			Deck insulation.....265-266
Colonial style			Decking
entrances.....154			demolition.....185
shutters.....361			roof.....196
Colonnades, columns.....87-88			wood patio.....185
Coloring, concrete.....97			Demolition
Column headings, book, explained.....4			acoustical ceiling tile.....120
Columns			adobe brick.....279
aluminum.....87			aluminum roofing.....114
brick.....274-277			aluminum siding.....366
brick, demolition.....17			asphalt shingles.....115, 332
demolition.....109			awning, wood.....185
entrance.....87-88			bath accessories.....113
extruded aluminum.....87			bathtub.....359
framing.....176			beams.....109, 223-242
framing, demolition.....176			bevel siding.....116
wood.....88			block, concrete.....279
Common rafters			blocking.....172-173
cut-up roofs.....189-191, 193-194			board and batten.....372-373
gable or hip.....186			board sheathing.....208-209
Communication with clients.....7			board siding.....116
Compactors, trash.....417			bottom plates.....185
Composition shingle roofing.....332-336			bracing.....109, 173
Compressors, air conditioning.....29			brick.....107
Concrete			brick chimneys.....273-274
architectural.....97			brick columns.....274-276
cast-in-place.....94			bridging.....109, 174-175
chemical additives.....97			built-up hot roofing.....115
coloring.....97			cabinets, kitchen.....113
demolition.....106-107			ceiling furring strips.....176
finish grading.....89			ceiling joists.....110
interior floor finishes.....89			ceiling tile.....120
labor.....89			chimneys.....273-274
painting.....309, 311			clapboard.....114
pour and finish slabs.....94			clay tile roofing.....115
ready mix.....95-96			closet doors, with track.....117
reinforcing.....89			columns.....109, 176
screeds.....94			concrete block.....108
Concrete block			concrete block fences.....283
demolition.....108			concrete block partitions.....282-283
dimensions.....272			concrete footings.....106
exterior walls.....281			concrete foundations.....92
fences.....283-284			concrete retaining walls.....92
foundations.....279-280			concrete slabs.....107
heavyweight.....280			corrugated roofing.....332
lightweight.....280			deck, roof.....112
partitions.....282-283			deck, wood.....185
retaining walls.....279-280			decking.....112, 196
slump.....284-285			diagonal bracing.....109, 173
Concrete countertops.....98			diagonal let-ins.....109, 173
Concrete footings			dimensional lumber.....109-112, 169
cast-in-place.....91-92			doors.....117
demolition.....106			downspouts.....114
dimensions.....89			drop siding.....116
estimating techniques.....89			drywall.....119, 146
installation techniques.....89			
labor.....89			
Concrete foundations			
demolition.....106-107			
dimensions.....89			
estimating techniques.....89			
installation techniques.....89			
interior floor finishes.....89			
labor.....89			
pour and finish slabs.....94			
Concrete steps, painting.....311			
Concrete, cast-in-place			
footings.....91-92			
forming.....94			
foundations.....92-93			
interior floor finishes.....89			
retaining walls.....92-93			
slabs.....94			
Condenser pad.....29			
Condensing units, A/C.....29			
Cone, surface area, calculating paint coverage.....301			
Cooking center, kitchen.....52			
Copper roofs, cupola.....105			
Corinthian cap, column.....87-88			
Corner boards, siding.....365			
Corner cabinets			
kitchen.....55			
vanity.....66			
Corner posts, chain link fence.....160			
Corner studs, applications.....168			
Corrugated aluminum			
demolition, roofing/siding.....114			
downspouts.....248			
roofing.....332			
siding.....366			
Corrugated fiberglass panels.....162			
Cosmetic box.....41			
Cost basis, using to estimate.....4			
Cost data, accuracy.....2			
Cost difference			
new construction.....5			
repair and remodeling.....5			
Counterspace, rule of thumb.....52			
Countertop bathroom sinks			
American Standard Products.....375-377			
Kohler Products.....377			
vitreous china.....375-378			
Countertops			
butcher block.....104			
ceramic tile.....98			
concrete.....98			
engineered stone.....103			
Formica.....98-101			
granite.....101-102			
imitation granite/marble.....103			
marble.....101-102			
quartz.....102			
Silestone.....103			
stainless steel.....104			
terrazzo.....104			
Country style Dutch doors.....131			
Cove, ceramic tile.....76			
Cover, patio.....67-68			
Coverage calculations, painting.....301			
Crew compositions.....4, 15-19			
Crew rates			
air tool operator.....15			
bricklayer.....15, 17			
bricktender.....15, 17			
carpenter.....15, 16, 17			
cement mason.....16			
electrician.....16, 18			
equipment operator.....19			
fence erector.....16			
floorlayer.....16			
glazier.....16			
lather.....17			

dumpsters	105	shakes, wood	116	plates	185
entry doors	117	sheathing	112, 208-210	posts	176
excavation	155	sheathing, subfloor	210	rafters	186-195
exterior walls	108	sheet flooring	120, 325	sheathing	208-210
fascia	109, 176	sheet metal	114	solid roof decking	196
fences, concrete block	283	sheetrock	146	studs	196-208
fences, masonry	108	shingles	332	Disconnect switch, entrance	147
fiberboard sheathing	208	shingles, wood	116, 341	Dish, soap	38
finish carpentry	113	shower bases	354	Dishwashers	
finishes	119-120	shower stalls	356	built-in	121
fire doors	117	shower tub units	359	installation	121
firestops	110	siding	114-115	Disposers, garbage	218-219
floor joists	110	slabs	94	Domes, skylight	398-400
floors, ceramic tile	76	sliding closet doors	117	Door	
floors, quarry tile	109	slump block	284	blinds, exterior	360
folding closet doors	117	slump brick	285	canopies	68-69
footings	91	solid bridging	109	chimes	150
framing	109-117	steel garage doors	117	jamb assemblies	127
furring strips	110	stiffeners	110	sill assembly	127
furring strips on ceilings	176	storm combination doors	117	sills, exterior	122
gable ends	197-198	stucco	119, 319	Door frames	
garage doors	117	studs	196-208	assembly	126
glass	220-222	subfloor	113	exterior, metal	122
glass sliding doors	119	suspended ceilings	120	exterior, wood	122
glazed block	286	tile, clay or concrete	338	Door openers, garage	217
glazing	118	toilets, bidets, urinals	415	Door swing, kitchen cabinet	52
glu-lam beams	223-242	top plates	185	Doorbell systems	150
glu-lam ledgers	246-247	trim	287	Doors	
glu-lam products	110, 223-247	trusses	113	access	348
glu-lam purlins	242-244	underlayment	210	accordion	86
glu-lam sub-purlins	244-245	vanity cabinets	64	bi-folding	78-81
gutters	114	veneer, brick	107	bypassing	82-85
gypsum board	119	wall furring strips	177	closet	78-87
gypsum panels	119	wall sheathing	208	Colonial	126
hardboard siding	115	wallboard	119	demolition	117
hardwood flooring	113	wallpaper	120	Dutch	131
headers	110, 177-178	walls	112	entrance	128-131
insulating ceiling tile	120	walls, ceramic tile	77	exterior, metal	130
insulating glass	118	walls, masonry	107, 279	exterior, wood	128-129
insulation	114	water softener	431	fire doors	131
joists	110, 178-184	weather protection	114	frames, interior	123
kitchen cabinets	113	windows	117-118, 432	French, exterior	131
lath	110	wood deck	185	French, interior	132
ledgers	111	wood roofing	115	garden	132
lintels	177-178	wood shakes/shingles	340-341	glass, sliding	133-138
loose fill	114	wood siding	114-115	interior systems	126
lumber	109-113, 169	Demolition, with air tools	106-107	interior, wood, passage	138-142
Marlite panels	113	Description column, book	4	louver	79, 142
Masonite siding	115	Designer Group spa	405-406	mirrored	80-81, 84-85
masonry	107	Detailed estimate	5	package door units	127
medicine cabinets	113	importance of	7	pocket	143
molding	113	Detectors		screen	143
paneling	113	carbon monoxide	149	shower	349-353
particleboard	210	detach & reset	149	sliding	82-85
partitions, block	282-283	fire	151	steel	144
patio framing	185	motion	152	storm	143
plaster	119, 319	smoke	149	tub	349-354
plastic tile	119	Diagonal let-ins	173	with sidelights	130
plates	111, 185	Diamond lath	317	Doors, finishing	
plywood	208-210	metal	319	exterior, paint	310
plywood sheathing	112	Diffusers, air conditioning	30	interior, paint	305-306
plywood siding	116	Digging	155	natural finish	306
posts	109, 176	Dimension lumber		Dormer louvers	347
quarry tile	286	beams	169-172	Double door entrances	154
rafters	111, 186-195	blocking	172-173	Double hung windows	
receptors	354	bracing	173	vinyl	437-438
resilient flooring	120, 325	bridging	174-175	wood	444
retaining walls	106-107	columns	176	Double roll top countertop, Formica	99
rigid insulation	114	demolition	109-113	Double top plate	185
roof decking	112, 196	diagonal let-ins	173	Douglas fir, fencing	156-158
roof sheathing	209	fascia	176	Downspouts	
roofing	112, 114-115, 338	girders	169-172	aluminum	248
rough carpentry	109-113	headers	177-178	copper	248
screen block	285	joists	178-184	demolition	114
screen doors	117	ledgers	184	painting	310, 312
shake roof	340	lintels	177-178	Drainage, gutters and downspouts	248-249
		patio decking	185	Drawer base, kitchen	56

Drip edge flashing.....	347	Entrances	154	lateral reinforcing	284
Drop siding		Equipment operator		lightweight block.....	284
demolition.....	116	crew rates	19	masonry	284
dimensions.....	364	wages.....	11	masonry, demolition.....	108
installation	364	Equipment unit cost, average.....	4	split rail.....	161
wood	370-371	Estimate		Fiberboard sheathing.....	208
Drywall		adjusting for area.....	12-14	Fiberglass	
adhesive	26-27	blank form	10	bathtubs, acrylic	45, 47-49
ceiling application.....	145	charging for	7	ceiling panels.....	412-413
ceiling panels.....	146-147	checklist.....	6	garage doors	215
demolition.....	146	form	8-10	insulation, Johns-Manville.....	258-264
dimensions.....	145	starting	7	molding	163
estimating techniques.....	145	Estimating methods.....	5	panels	162
fire resistant	147	Estimating techniques.....	5, 6	screening, door.....	143
installation techniques	145	acoustical tile.....	21	shingles.....	329
painting	303-304	aluminum siding.....	363	shower tub units	359
repair, paint preparation.....	303	batten siding	364	shower units.....	359
tape joints	146	brick	272	Filler strips, chain link.....	160
wall application.....	145	built-up roofing.....	330	Filter, water	422-423
wall panels	146	ceramic tile	75	Filters, water, soft water systems.....	431
water resistant.....	147	concrete block	272	Finger joint pine moldings	
Dual glazed windows	442-443	concrete footings	89	base.....	287-289
Ductwork		drop siding.....	364	casing.....	291
air conditioning.....	31-32	drywall.....	145	chair rail.....	292
insulated	32	fiberglass shingles.....	329	crown molding.....	294-295
Dumpsters, rental.....	105	finish grading.....	89	Finish carpentry, demolition.....	113
Duolux		forms, screeds and rods	89, 94-95	Finish grading	91
paneling	314	insulating tile	21	Finishes	
pegboard	315	mortar.....	317	concrete floor.....	89
E		painting.....	300	demolition.....	119-120
Eaves, painting.....	301	plywood siding.....	365	natural	306-307
Economy hardboard, paneling	314	quarry tile.....	272	paint.....	302-313
Elastomeric caulking.....	74	roll roofing	329	wood floor	307
Electric fired		suspended ceilings	411	Finishing, concrete floor.....	95
bathroom ceiling heaters.....	253-254	vertical siding.....	364	Fir, wood	
bathroom, wall heater	254	wallpaper.....	421	decking	185
furnaces	256	wood shingle siding.....	365	flooring	251
Electric water heaters, solar.....	428-430	wood shingles.....	329	shutters	360
Electrical work		Evaluating clients	7	Fire alarm systems	151
burglary detection systems	151-152	Excavation	155	Fire damage	6
carbon monoxide detector	149	Exterior		Fire doors	131
doorbell systems.....	150	concrete block walls.....	281	Fire-resistant drywall	145-147
EMT	148	corner framing	168	Fire-retardant fiberglass panels.....	162
fire alarm systems.....	151	door frames.....	122	Fireplaces.....	164-165
ground cable	148	finishes, demolition	119-120	accessories.....	164-165
ground rod with clamp	148	french doors.....	131	mantels.....	271
intercom systems.....	151	masonry walls demolition	108	trim kit	165
meter socket	147	metal doors	130	Firestops, demolition	110
panelboard.....	148	painting.....	300	Fixed type skylights.....	398-401
phone jack wiring	152	shutters	360-362	Fixtures, lighting	268-270
service entrance cable	147	sills, doors	122	Flashing	345-346
signal bell.....	151	wood doors	128-129	roof vent	420
smoke detector.....	149	Exterior key switch, garage door opener.....	217	Flat panels, fiberglass.....	162
television antenna wiring	152	Extruded aluminum columns.....	87	Flexible coated ductwork, A/C.....	32
thermostat	153	Extruded polystyrene foam insulation.....	267	Flexible moldings, resin	297
weathercap	147	F		Floor finishes, concrete	89
wiring.....	148	Fabric awning.....	69	Floor framing	
Electrician		Fabricated ductwork, A/C.....	31-32	applications	168
crew rates	16, 18	Factors, area modification.....	12	joists	178-184
wages.....	11	Fan coil, A/C system	35	joists, demolition	110
EMT	148	Fans and ventilators, roof type.....	33	Floor mounted space heaters	257
Enameled cast iron sinks		Fascia.....	176	Flooring	
bar.....	396	demolition.....	109	ceramic tile	75
bathroom.....	388-390	Federal unemployment insurance.....	11	demolition.....	76, 109
kitchen	393-394	Felt underlayment, sheet flooring.....	324	hardwood.....	250-253
Kohler Products	388-390	Fence erector		installation, wood	250-253
utility.....	397	crew rates	16	mastic.....	250
Enameled steel sinks,		wages.....	11	oak	251-252
American Standard Products.....	391-393	Fence estimate, complete.....	161	panel adhesive	24
End posts, chain link fence.....	161	Fence posts		parquet.....	252-253
Engineered stone countertops.....	103	chain link.....	158-159, 160	quarry tile.....	286
Entrance columns	87-88	redwood	156-158	resilient.....	324-328
Entrance disconnect switch.....	147	split rail.....	161	Floorlayer	
Entrance doors.....	128-132	Fences		crew rates	16
demolition.....	117	chain link.....	158-159	wages.....	11

Floors, wood	
cleaning	302-303
finishing	307
natural finish	307
painting, wood	307
sealing	305
stainwax	307
waxing	307
Flue piping	418-420
Fluorescent lighting	268
Flush face paneling, birch	316
Foam insulation	267
Foil-faced insulation	262-263
Folding closet doors	78-81
demolition	117
Food centers, small appliance	165
Footings	
cast in place	91-92
concrete	89-90
excavation for	155
Forced warm air systems	256
Formica countertops	98-101
cost adjustments	100
Forming, concrete	
footings	91
foundation	95
retaining wall	92-93
slabs	95
Foundation vents, galvanized	347
Foundations	
concrete block	279-280
demolition	92
poured from truck	95-96
Framing	
applications	166
beams	166
blocking	172-173
bracing	173
bridging	174-175
columns	176
demolition	109-117
diagonal let-ins	173
dimension lumber	166
fascia	176
headers	177-178
joists	178-184
ledgers	184
lintels	177-178
patio decking	185
plates	185
posts	176
rafters	186-195
rough carpentry	166-213
sheathing	208-210
solid roof decking	196
studs	196-208
Free-standing bathtubs	50
Free-standing carport	67
French doors	131-132
Fringe benefits	11
Front end loader, excavation	155
Fruit juicer	165
Furnaces	
electric fired	256
gas	256
oil fired	256
Furring strips	
demolition	110
over plaster	24
over wood	24

G

Gable	
ends	197-198, 198-205
rafters	186-188, 192-193
shakes	340
shingles	341-343

Galvanized netting	321
Galvanized steel	
ductwork, A/C	31
fence posts	158-159, 160
Gambrel roof,	
calculating paint coverage	301
Garage door openers	217
Garage doors	214-217
demolition	117
wood	216-217
Garbage compactors	417
Garbage disposers	
Badger	218
In-Sink-Erator	218
parts/accessories	219
remove/reset	218-219
Garden doors	132
Garden windows, vinyl	438
Gas fired	
boilers	254-255
furnaces	256
space heaters	256-257
Gas valve, fireplace	164
Gate posts, chain link fence	161
Gates	
chain link fence	159-160
split-rail	161
Girders	169-172
Glass	
roof windows	404
skywindows	402-403
Glass and glazing	220-222
Glass block	286
Glass doors	
demolition	117, 119
shower	351-353
sliding	133-138
tub	351-354
Glass shelf, bathroom	37
Glazed block	286
Glazed tile	286
Glazier	
crew rates	16
wages	11
Glazing	220-222
demolition	118-119
Glu-lam beams	
3-1/8	223-226
5-1/8	226-231
6-3/4	232-234
8-3/4	235-238
10-3/4	239-242
Glu-lam products	
beams	223-242
ledgers	246-247
purlins	242-244
sub-purlins	244-245
Grab bars	37-38
Grading	
cast in place concrete	94
footings	91
slabs	94
Granite countertops	101-102
Gravel stop	346
Grid system, suspended ceiling	412-414
Grid, ceiling	412-414
Ground cable	148
Ground rod	148
Grout mix	95
Guide, how to use book	4
Gun applied adhesives	24-28
Gun, caulking	74
Gusset, framing	166
Gutter accessories	249
aluminum	248
cleaning	308

copper	248
demolition	114
painting	301
painting, 2 coats	312
steel	249
vinyl	249
Gutters and downspouts	248-249
Gypsum	
adhesive	26-27
lath	319
panels, demolition	119
plaster	320
plasterboard	146-147

H

Hand excavation	155
Handlesets, door	124-125
Hanger applications	166
Hanging island cabinets	58
Hardboard	
adhesive	27
demolition	115
installation	314
paneling	314
plywood paneling	314
siding	366
underlayment	210, 328
Hardware	
door	124-125
sliding door	82-85
Hardwood flooring	
applications	250-253
block	252
demolition	113
fir	251
machine sand	251, 253
maple	251
oak	251-252
parquet	252-253
penetrating stainwax	221
strip	251
teak	252
walnut	252
waxing	307
yellow pine	251
Hardwood molding	287-299
base cap	290
base shoe	289
baseboard	287-289
block, baseboard	290
block, corner	290
block, plinth	290
brick mold	291
casing	291-292
chair rail	292-293
coffered ceiling	293
corner trim	293
cove	293
crown	294-296
panel cap	296
quarter round	296
trim board	298-299
window seat	299
window sill	299
window trim set	299
Headers	177-178
demolition	110
Heat pumps	36
Heaters	
electric, bath	253-254
floor mounted	257
space heater	256-257
wall	257
Heating systems	
boilers	254-255
forced air	256
furnace	256

Heavyweight blocks, concrete.....	280
Hiders, identifying	6
Hip	
rafters.....	186-188, 192-193
shakes.....	340
shingles.....	341-343
Historical price data.....	5
collecting	6
Hoods, range	322-323
Hook, robe.....	38
Horizontal blocking	172-173
Horizontal slide	
aluminum windows	434-435
vinyl windows.....	440
wood windows	446
Hot air heating.....	256
Hot tub, whirlpool	404-406
Hot water boilers	254-255
Hourly cost, total	11
How to use book	4

I

Imitation stone countertops.....	103
In-Sink-Erator garbage disposer.....	218, 218
Incandescent lighting fixtures.....	269-270
Indoor lighting	268-270
Inspection, visual	7
Installation techniques	
acoustical tile.....	21
aluminum siding.....	363
batten siding	364
bevel siding	363
brick.....	272
built-up roofing.....	330-331
ceramic tile	75
concrete block.....	272
concrete footings.....	89
drop siding.....	364
drywall.....	145
fiberglass shingles.....	329
inside/outside siding corners	365
insulating tile	21
lath.....	317
mortar.....	317
painting	300
paneling	365
plaster.....	317
plywood siding.....	365
quarry tile.....	272
roll roofing.....	329
sheet flooring products.....	324
stucco.....	317
suspended ceilings	411
tile products	324, 364
wallpaper.....	421, 422
wood shingle.....	329
wood shingle siding.....	365
Insulated ductwork.....	32
Insulating	
block walls	265
cavity walls.....	264-265
glass.....	221-222
roofs	265-266
walls	265-266
Insulating tile, acoustical	
ceiling.....	22-23
demolition.....	120
dimensions.....	21
wall.....	22-23
Insulation	
batt or roll.....	258-263
demolition.....	114
extruded polystyrene rigid foam.....	267
foil-faced	260, 262-263
Kraft-faced	259-261
loose fill	264-265

perlite.....	265
rafters.....	260-262
rigid.....	265-266
studs	262-263
unfaced.....	258-263
Vermiculite	265
Insurance claims adjuster.....	5
Insurance, liability	11
Intercom systems	151
Interior	
doors.....	138-143
French doors.....	132
painting.....	300
Interior doors	
frames, wood	123
types	126
Interior finishes	
concrete floor.....	89
demolition.....	119-120
painting.....	300
painting, estimating	300
Interlocking tile shingles.....	332-336, 338
Invoices, cataloguing	6
Ironworker, reinforcing, wages.....	11
Island cabinets, kitchen	57

J

Jacuzzi spa	404-406
Jalousie windows	
aluminum.....	433
vinyl.....	438
Jamb assembly, door.....	127
Jamb-type garage doors	
aluminum.....	214
fiberglass	215
steel.....	216
wood	216
Job summary file, variance report	6
Jobs, estimating	5
Johns-Manville fiberglass insulation	258-264
Joists	
bridging.....	174-175
ceiling/floor	178-184
demolition.....	110, 178-184
framing hanger	166
insulation	258-264
LF of stick	178-181
SF of area	181-184

K

Key switch, exterior, garage door opener.....	217
Kickplates	124
Kitchen	
counters, rule of thumb.....	52
food center.....	165
sinks	391-395
wallpaper	422
work triangle	52
Kitchen cabinets	
base with drawers.....	54-55
corner base.....	55-56
demolition.....	113
description	52
drawer base	56
installation procedure	52
island base	57
island corner base.....	57
island hanging	58-59
oven	59
range.....	59-60, 61-62
refrigerator	61
sink.....	59-60
utility closet	56
wall	62-64
with lazy Susan	56

Kitchen caulking	
anti-algae	74
mildew resistant.....	74
Kohler Products	
bar sinks	396
countertop bathroom sinks	377-378
kitchen sinks	393-395
pedestal sinks.....	380-384
shower stalls	359
sinks	385-388
utility sinks.....	397
Kraft-faced insulation	259-261

L

Labor	
concrete installation.....	89
masonry installations	272
unit cost	4
Labor costs	
local	4, 12
tile patterns	23
Laborer	
crew rates	17
wages.....	11
Lacquer	306-307
Lantern post	270
Lasco	
shower stalls	356-358
shower tub units	359
Lateral reinforcing	
concrete block.....	280, 281
concrete block partitions	284
Latex	
caulking	72
paint, application	304-305
Lath and plaster	319-320
caulking	72
demolition.....	119-120
installation	317
Lather	
crew rates	17
wages.....	11
Lattice, molding.....	296
Lauan, doors	140-141
Lavatories	375-391
Lay-down type ventilators, entire structure	34
Lay-in suspended ceiling system	413
Layout, kitchen	52
Lazy Susan cabinet.....	56
Leaf guard	249
LED-capable lighting fixtures.....	268-270
Ledger, demolition	111
Ledgers	184
glu-lam	246-247
Let-ins, diagonal bracing	173
Liability insurance	11
Light, medicine cabinet.....	42
Lighting	
fixtures.....	268-270
fluorescent	268
incandescent	269-270
indoor.....	268-270
outdoor.....	270
porch ceiling	270
porch wall	270
post lantern fixture	270
track lighting	270
wall fixtures	270
with motion sensor.....	270
Lightweight blocks, concrete.....	280
Line posts, chain link fence	158-159
Linoleum	
cove	327
installation	324
Lintels	177-178
Loaded wage, total	11

Local labor rates	4, 12
Locksets	124
Log lighter, fireplace	164
Loose fill insulation, demolition ...	114, 264-265
Louver	
closet doors	79
doors, prehung	142
vents	347
Louvers, painting	
natural finish	306
paint	305
Low profile	
skylights	399-401
skywindows	403
Lumber	
beams	169-172
blocking	172-173
bracing	173
bridging	174-175
columns	176
demolition	109-113, 169
diagonal let-ins	173
dimension	169
fascia	176
girders	169-172
headers	177-178
joists	178-184
ledgers	184
lintels	177-178
patio decking	185
plates	185
posts	176
rafters	186-195
sheathing	208-210
solid roof decking	196
studs	196-208
Lumber list	7
Luminous panels, ceiling	412-413

M

Machine sand	
hardwood flooring	251, 253
parquetry	252-253
Manhours per unit, average	4
Mantels, fireplace	271
Maple flooring	251
Marble countertops	101-102
Marble setter, wages	11
Marble tops, vanity cabinets	65
Marlite paneling	271
demolition	113
Mason, cement, crew rates	16
Masonite	
paneling, installation	315
siding	367
Masonite panels, Marlite	271
Masonry	
adobe brick walls	279
block dimensions	272
brick	279
brick veneers	277-278
chimneys, brick	273-274
columns, brick	274-277
concrete block	279-284
concrete screen block	285
concrete slump brick	285
demolition	107
exterior walls, block	281
fences, concrete block	284
fences, lightweight block	284
floors, quarry tile	286
foundations, concrete block	279-280
glass block	286
glazed block	286
painting	309
partitions, concrete block	282-283

quarry tile	286
retaining walls, block	279-280
textured screen block	285
tile	286
walls	279
Material pricing, acoustical tile	21
Material storage	6
Material takeoff	7
Material unit cost, average	4
MDF molding	
baseboard	287-288
block, corner	290
block, plinth	290
brick mold	291
casing	291-292
chair rail	292
corner trim	293
crown	294-296
quarter round	296
window seat	299
Meat grinder	165
Medicare tax	11
Medicine cabinets	41-43
3-way mirror	41-42
demolition	113
light fixtures	42
recessed	42-43
sliding door	41
surface mounted	41-42
swing door	42
Membrane roofing	
demolition	337
over concrete deck	338
over existing roof	336
over wood deck	337
Metal ductwork, flexible	32
Metal joist hanger, application	166
Metal lath	319
Meter socket	147
Methods, estimating	5
Mildew resistant caulking	74
Milled fence boards, dog-eared	156
Millwork and trim, paint	305, 308
Mineral fiber ceiling panels	23
Mineral surfaced roll roofing	339
demolition	115
dimensions	329
Mirror, medicine cabinet	41-42
Mirrored closet door systems	80-81
Mirrors	43
3-way	41-42
tri-view	41-42
Mixer, kitchen	165
Modification factors, area	12
Molding and trim	287-299
base cap	290
base shoe	289
baseboard	287-290
baseboard with shoe	289
bookcase, build-in	290
brick mold	291
casing	291-292
chair rail	292-293
coffered ceiling	293
corner trim	293
cove	293
crown	294-296
demolition	113
hardwood	287-296
lattice	296
Marlite	271
MDF	287-288, 290, 292, 294-296
natural finishes	306
painting	308
panel cap	296
particleboard shelving	297

pine	287-297
quarter round	296
trim board	298-299
window seat	299
window sill	299
window stool and apron	299
window trim set	299
Moldings, block	
baseboard, corner	290
corner, rosette	290
plinth	290
Moldings, flexible resin	297
Mortar	
ceramic tile	98
installation	317
Mosaic tile, installation	75
Motion detectors	152
lighting fixtures	270
Motorized dampers, A/C duct	29
Multi-purpose caulk	72

N

Nailed ledgers	184
National Estimator Cloud	7
Natural finishes	306
stain	311
Natural gas fired, boiler	254-255
Netting, galvanized	321
Newels, stair	407
Non-acoustical rated panels	412, 413
Non-taxable benefits	11
Nosing, roof edge flashing	345-346
Notes section	4
Nylon carpet	71

O

Oak	
doors	141-142
flooring	251-252
paneling	316
paneling, flush face	316
stairways	410
Oil base caulking	73
Oil fired	
boilers	254-255
furnaces	256
One coat paint applications	
cement base paint	311
exterior painting	309-311
interior painting	303-306
latex	304-305
latex enamel	304-305
natural finishes	306-307
sealer	304
sizing	303
stain	311
One-flue chimneys	273-274
Open stairs	409
Openers, garage door	217
Operation column	4
OSB, underlayment, installation	328
OSB strand board sheathing	209
Outdoor lighting	270
Oven cabinets, kitchen	59
Overhead and profit	4, 6-7
Overhead expenses	6

P

Package door units	127
Pad, carpet	70-71
Paint	
characteristics	300
coverage, estimating	300
preparation	302-303
removal	303

Painter		brick mold.....	291	Portland cement, ceramic tile installation	75
crew rates	17	casing	291	Post light fixture, LED capable.....	270
wages.....	11	chair rail	292-293	Post-formed countertops, Formica.....	98-99
Painting and cleaning		coffered ceiling	293	Posts.....	176
exterior	308-309	corner trim.....	293	chain link fence.....	158-159, 160
interior	300	cove	293	demolition.....	109, 176
Panel		crown	294-296	redwood fence.....	156
adhesives.....	24-25	panel cap	296	split rail fence	161
shutters, exterior	360	quarter round	296	Prefabricated fireplaces.....	164
Panel siding		shelving.....	297	Prefinished	
aluminum.....	366	trim board	298-299	closet doors	81
hardboard	368	window sill.....	299	panel shutters	362
Masonite	367	window stool and apron	299	Prehung doors	
vinyl.....	368	window trim set.....	299	exterior	128-132
Panelboard	148	Pine shutters.....	360	interior	138-143
Paneling		Pine siding.....	371	metal	144
demolition.....	113, 314	Pits, digging	155	Preparation, painting.....	302-303
hardboard	314	Plain siding, painting.....	309	Presdwood	
Marlite	271	Plane and specification sheet.....	7	paneling	314
plywood.....	314	Plank and beam construction,		pegboard	315
Panels		roof decking	196	Price data	5-6
acoustical.....	22-23, 412, 413	Plaster		Productivity, your company.....	7
adhesive set.....	22-23	ceilings.....	320	Profit allowance	4
drywall.....	146-147	demolition.....	119, 319	Project schedule	7
fiberglass	162	installation	317	Propane fired boiler.....	254-255
mineral fiber	23	painting	304-305	Property damage appraiser	5
painting	305	sealer application	304	Provincial shutters	360
Paper, wallcovering.....	421	sizing, paint preparation	303	PTAC wall/window unit A/C	36
Paperhanger		walls	320	Pumps, heat	36
crew rates	18	Plasterboard, gypsum.....	146-147	Purlins, glu-lam.....	242-244
wages.....	11	Plasterer		PVC, downspouts.....	249
Parquetry, hardwood flooring.....	252-253	crew rates	17		
Particleboard		wages.....	11	Q	
demolition.....	210	Plastic		Quarry tile.....	286
subfloor	210	laminated countertops	98-101	demolition.....	109, 286
underlayment, installation	314, 328	panel adhesives.....	27	dimensions.....	272
Partition walls		shower stalls	356-358	floors	286
concrete block.....	282-283	Plates	185	Quartz countertops	102
demolition.....	112	gable ends	197-198		
framing, stud/plates	196	LF of stick	196-197	R	
studs	198-201	LF of wall	205-208	Radio controlled garage door opener	217
Passage doors, interior, latches	124	per SF of wall area.....	198-205	Rafters	186-195
Paste		walls/partitions	205-208	common	186-191
flooring installations	324	Plumber		cut-up roofs.....	189-191, 193-194
wallpaper	421	crew rates	18, 19	demolition.....	111, 186-195
Patio		wages.....	11	gable or hip.....	186-188, 192-193
awnings.....	67-68	Plywood, underlayment, installation.....	328	insulation	260-262
cover	67-68	Plywood paneling.....	314	LF of stick	186-191
framing.....	185	demolition.....	314	SF of area	192-195
Patterns, acoustical tile, labor.....	23	installation	314	Railings, stair.....	407
Pedestal sinks	378-384	Plywood sheathing	208-209	Rails, split rail fence	161
Pediments.....	154	demolition.....	112	Rain diverter	345
Peel-off caulk.....	74	Plywood siding		Rain gutters.....	248-249
Pegboard, installation	315	board and batten.....	372-373	Raised panel louver doors	126
Per measure estimating	5	board on board.....	372	Range cabinets.....	59-60, 61-62
Perlite, loose fill insulation	265	demolition.....	115	Range hoods.....	322-323
Philippine mahogany paneling.....	317	dimensions.....	365	designer models	323
Phone jack, wiring	152	installation	365	Rates, wage	11
Photographs, before and after.....	6	Pocket doors	143	Ready mix concrete	95-96
Picture windows		Polish, hardwood flooring.....	251-253	Receptors, shower	354-355
aluminum.....	433	Polycarbonate dome skylights.....	398-400	demolition	354
vinyl	439	Polystyrene		Recessed, medicine cabinets.....	42-43
wood	445	foam insulation.....	267	Rectangular ductwork, A/C	31
Pilasters	154	molded foam shutters.....	362	Rectangular surface area,	
Pine moldings.....	287-299	panels, adhesive.....	25-26	calculating paint coverage	301
base	289	Polyurethane foam panels, adhesive.....	25-26	Red cedar fence, split rail.....	161
base & shoe.....	289	Ponderosa pine fireplace mantels	271	Red cedar roofing	
base cap	290	Porcelain enameled steel sink		shakes.....	340
base shoe	289	bathroom	391	shingles.....	341-343
baseboard.....	287-289	kitchen	391-393, 395	Red cedar siding	
baseboard with shoe	289	Porch columns	87-88	bevel	369
block, baseboard.....	290	Porch floors, painting		board and batten.....	372-373
block, corner.....	290	cement	311	board on board.....	372
block, plinth	290	concrete	313	drop.....	370
bookcase, build-in	290	preparation, cleaning.....	308	lap	369
		wood	310		

shakes.....	373
shingles.....	374
Redwood	
cupolas.....	104
decking.....	185
fence posts.....	156-158
fencing.....	156-158
lath.....	319
siding.....	369
Redwood frame members.....	157-158
Redwood molding, trim board.....	298-299
Refrigerator cabinets.....	61
Registers, air supply.....	31
Reinforced concrete	
cast in place.....	91
demolition.....	106-107
footing.....	91
foundations.....	92-93
slabs.....	94-95
Reinforcing	
cast in place concrete.....	94-95
concrete.....	89
concrete block.....	280-284
masonry.....	280-284
Reinforcing ironworker, wages.....	11
Reinforcing steel rods.....	95
Remodeling jobs, estimating.....	5
Repair estimate.....	5
example.....	8-9
Residential electrical work.....	147-148
Residential jobs, estimating.....	5
Resilient flooring	
cove/top-set base.....	328
demolition.....	120
installed over concrete.....	325-327
installed over wood subfloor.....	326-327
linoleum cove.....	327
metal transition strip.....	328
preparation.....	325
related material and operations.....	328
sheet products.....	324
tile products.....	324
underlayment, installation.....	328
vinyl cove.....	327
Resin flexible molding.....	297
Retaining walls.....	279-280
concrete.....	92-93
demolition.....	92-93
Riblath.....	317
metal.....	319
Ridge or hip application, roofing.....	335-336
Rigid conduit.....	148
Rigid foam insulation.....	267
Rigid insulating board.....	265-266
Risers, stair.....	407
Robe hook.....	38
Rod, shower curtain.....	38
Roll insulation.....	258-263
Roll roofing.....	338
demolition.....	115
Roll valley.....	341-343
Romex cable, wiring.....	148
Roof	
decking.....	196
decking, demolition.....	112
edge flashing.....	347
edging.....	347
flashing.....	345-346
flashing, adjustable.....	420
insulation.....	265-266
sheathing.....	209
strength.....	6
ventilators.....	33
vents.....	347
Roof windows.....	404
Roof-type, ventilators.....	33

Roofer	
crew rates.....	18
wages.....	11
Roofing.....	329
aluminum.....	332
asphalt composition shingles.....	332-336
built-up.....	336-338
clay tile.....	338
composition shingles.....	332
demolition.....	114-115
drip edge.....	347
flashing.....	345-346
gravel stop.....	346
membrane.....	336-338
mineral surfaced roll.....	338
nails, estimating need.....	329
parapet walls.....	330
roll roofing.....	338
sheathing paper.....	344
shingles.....	332-336
tar usage.....	330
tile.....	338
top coat.....	330
wood shakes.....	340
wood shingles.....	341-343
Roofs, wood shingle.....	341-343
staining.....	311
Rough carpentry, framing.....	166-213
beams.....	169-172
blocking.....	172-173
bracing.....	173
bridging.....	174-175
columns.....	176
demolition.....	109-117
diagonal let-ins.....	173
dimension.....	169
fascia.....	176
girders.....	169-172
headers.....	177-178
joists.....	178-184
ledgers.....	184
lintels.....	177-178
patio decking.....	185
plates.....	185
posts.....	176
rafters.....	186-195
sheathing.....	208-210
solid roof decking.....	196
studs.....	196-208
Rough fence board, squared ends.....	156-158
Rough-in, bathtub.....	45
Running bond	
adobe brick.....	279
concrete slump brick.....	285
standard brick.....	274-277
textured screen block.....	285

S

Sample Building Repair Estimate form.....	8
Sanding	
hardwood flooring.....	251, 253
paint preparation.....	302-303
Schedule, project.....	7
Sconce, wall lighting.....	269
Screeds, concrete.....	94
Screen doors.....	143
demolition.....	117
Screens, painting.....	310
Screw-worm garage door opener.....	217
Sealer, application	
acoustical tile or panels.....	304
sheetrock or plaster.....	304
Sectional-type garage doors	
aluminum.....	215
fiberglass.....	215
wood.....	217

Security, job site.....	6
Self-edge countertop, Formica.....	100
Self-flashing skylights.....	398-400
Self-flashing skywindows.....	403
Selvage roll, mineral surfaced roll roofing.....	338
Service entrance cable.....	147
Shake roof.....	340
demolition.....	340
Shake siding.....	373
demolition.....	116
Shear panel, adhesives.....	25
Sheathing	
applications, framing.....	167
demolition.....	112
paper.....	344
roof.....	209
subfloor.....	210
wall.....	208
Sheet flooring products, installation.....	324
Sheet metal	
access doors.....	348
clothes dryer vent set.....	347
demolition.....	114
dormer louvers.....	347
flashing.....	345-346
foundation vents.....	347
gravel stop.....	346
roof edging.....	347
roof flashing.....	345-346
utility louvers.....	348
vents.....	347-348
vertical chimney flashing.....	345
Z bar flashing.....	345
Sheet metal worker	
crew rates.....	19
wages.....	11
Sheet vinyl flooring.....	324
demolition.....	120
Sheetrock.....	145-147
ceilings.....	146-147
demolition.....	146
repair, paint preparation.....	303
sealer application.....	304
sizing.....	303
tape joints.....	146
walls.....	146-147
Shelf	
glass, bathroom.....	37
towel supply.....	40
Shellac.....	306-307
Shelving, molding.....	297
Shingle roofs, wood.....	341-343
stain.....	311
Shingle siding	
aluminum.....	367
stain.....	311
wood.....	374
Shingles	
asphalt/fiberglass.....	332-336
demolition.....	332
nailed.....	116, 332-336
roofing.....	332-336
tile.....	338
wood, roofing.....	341-343
Shoe mold trim.....	289
Shower	
bases/receptors.....	354-355
curtain rod.....	38
demolition.....	354
fixtures.....	45, 51
Shower doors	
hinged.....	349-351
sliding.....	351-353
Shower floors, slip resistant.....	356-358
Shower modules, space saver.....	356-358

Tile setter	
crew rates	19
wages	11
Tile setter helper, wages	11
Toilet roll holder	39
Toilets	415-416
Tongue & groove roof decking	196
Toothbrush holder	37
Top plates	185
Total hourly cost, calculating	11
Towel	
bars	40
ladders	40
rings	40
shelves	40
Track lighting	270
Track, sliding door	87
Track-type garage doors	
aluminum	215
fiberglass	215
steel	216
wood	217
Tractor backhoe, excavation	155
Transmitters, garage door opener	217
Trash compactors	417
Treads, stair	408
Trenching	155
Tri-view mirror, medicine cabinet	41-42
Triangular surface area, calculating paint coverage	301
Trim, painting	305, 307
Trim and molding	287-299
Trim kit, spa	406
Truck driver, wages	11
Truss	
construction, W-type	166
demolition	113
shop fabricated, wood	211-213
Tub caulking	
anti-algae	74
mildew resistant	74
Tub doors	
hinged	349-351
sliding	354
Tub, bath	
acrylic	47-49
cast iron	44-45, 47, 49
combination tub/shower	359
demolition	359
drop-in/built-in/sunken	47-50
enameled steel	44
fiberglass, acrylic	45, 47-49
free-standing	44, 50, 51
free-standing accessories	50
recessed	46-47
remove and reset	44
rough-in	45
steel	44, 47, 49-50
sunken/built-in	44-45
whirlpool	44-45, 46-47
Two coat paint applications ...	307-309, 311-313
cement base paint	313
enamel	311-313
exterior painting	311-313
interior painting	307-308
latex	307-308
stain	313
Two flue chimneys	273-274

U

Undercounter sinks	377
Underlayment, particleboard	314
Unemployment insurance	11
Unfaced insulation	258-263
Unfinished closet doors	78-80
Unfinished hardwood plywood	315-317

Urinals	415-416
Utility closets, kitchen	56
Utility louvers, vents	348
Utility sinks, Kohler Products	397

V

V-grooved paneling	315-317
Valley roll	336-338
Vanity cabinets	64-66
2 door	65-66
marble top	65
remove and reset	66
Variable volume dampers, A/C duct	29
Varnish	306-307
Veneer, brick	277-278
demolition	107
Vent chimney	418-420
damper	459
Ventilating skylights	398-401
Ventilating systems	28-34
Ventilation	418-420
Ventilators	
attic	33-34
exhaust	34
lay-down type	34
roof	33
round top	420
wall type	33-34
Ventilators and fans, roof type	33
Vents	347-348
access doors	348
attic access	348
clothes dryer	347
dormer louvers	347
foundation	347
louver	347-348
utility louver	348
Vermiculite loose fill insulation	265
Vertical	
chimney flashing	345
reinforcing, concrete block	281
siding, dimensions	364
Vertical crown molding, fiberglass	163
Vertical slide	
aluminum windows	435-436
vinyl windows	441
wood windows	447
Vibrating plate compaction	155
Vinyl	
awning windows	436
casement windows	437
composition tile(VCT)	325-326
cove	327
double hung windows	437-438
garden windows	438
gutters and downspouts	249
jalousie windows	438
picture windows	439
plank flooring	326-327
sheet flooring	326-327
siding	368
sliding, horizontal windows	440
sliding, vertical windows	441
storm windows	442
tile flooring	325-326, 325-327
wallpaper	421, 422
wallpaper, demolition	120
windows	436-442
Vinyl coated mineral fiber tile	22-23
Visual inspection	7
Vitreous china sinks	
American Standard Products	375-377, 384-385
bathroom	375-388
Kohler Products	380-384, 384-388
utility	397
Volume control dampers, A/C duct	29

W

W-truss	
construction methods	166
shop fabricated, wood	211-213
Wage rates	11
all trades	11
craft compositions	15-19
Wainscot, ceramic tile	77
installation	75
Wall cabinets, kitchen	61-64
installation procedure	52
Wall furnace, self-contained thermostat	257
Wall hung bathroom sinks	
American Standard Products	384-385
Kohler Products	385-388
Wall insulation	265-267
demolition	114
Wall lighting fixtures	269-270
Wall molding, ceiling grid systems	414
Wall outlets, wiring	148
Wall sheathing	208
adhesives	25-28
Wall-type ventilators	33-34
Wallboard	
demolition	119
drywall application	145
Wallpaper	421-422
demolition	120
Walls	
acoustical tile	22-23
adobe brick	279
brick veneer	277-278
cavity, insulating	264-265
cement, painting	313
ceramic tile	77
ceramic tile demolition	77
concrete block	279-280
framing	198-201
furring strips	177
insulating	265-267
masonry, demolition	107
partition	198-201
plaster	320
retaining	279-280
screen block	285
shower	356-358
slump block	285
slump brick	285
stucco	321
studs	13
studs/plates	198-201
Walnut flooring	252
Water filters	422-423
soft water systems	431
Water heaters	
accessories	430
cabinets/stands	428
electric	423-426
gas	426-428
solar	428-430
Water softeners	431
chemical feed pumps	431
remove	431
water filters	431
Water-resistant drywall	145-147
Wax, flooring	251-253
Weather protection, demolition	114
Weathercap	147
Weather vanes	105
Western hemlock, shutters	361
Whirlpool bath	44-45, 46-47
spa	404-406
White cement	97
Window	
molding, seat	299
molding, sill	299

molding, stool and apron.....	299	double hung windows	444	joists.....	178-184
molding, trim set.....	299	fences	156-158	ledgers	184
painting.....	312	lath	319	lintels.....	177-178
painting, finishing.....	306-307	patios	185	patio decking.....	185
repair/reputty.....	309	picture windows.....	445	plates	185
Window units, air conditioners	36	sash, window glass.....	220-221	posts	176
Windows.....	432-448	shutters	360-361	rafters.....	186-195
aluminum.....	432-436	sliding, horizontal windows.....	446	sheathing	208-210
aluminum sliding, horizontal.....	434-435	sliding, vertical windows.....	447	solid roof decking	196
aluminum sliding, vertical.....	435-436	storm windows	448	studs	196-208
awning, vinyl.....	436	thresholds	125	Wood lath	317
awning, wood.....	442	windows	442-448	Wood molding.....	287-289
casement, aluminum.....	432	Wood doors.....	128-143	Wood paneling	
casement, vinyl.....	437	Dutch	131	demolition.....	113, 314
casement, wood	443	exterior.....	128-138	hardboard.....	314-317
demolition.....	117-118, 432	fire	131	particleboard.....	314
double glazed, casement.....	437	frames, exterior	122	plywood.....	315-317
double hung, vinyl.....	437-438	French.....	131-132	Wood roofing	
double hung, wood.....	444	garage doors	216-217	accessories.....	344
double pane.....	432-436	garden.....	132	demolition.....	112, 115
garden, vinyl.....	438	interior.....	138-143	dimensions.....	329
jalousie, aluminum	433	louver	142	shakes.....	341-343
jalousie, vinyl.....	438	metal, insulated.....	130	shingles.....	341-343
picture, aluminum	433	paneled	128-129	Wood sheathing	
picture, vinyl.....	439	pocket.....	143	applications	167
picture, wood.....	445	sidelites.....	130	board.....	208-209
roof.....	404	threshold	123	fiberboard	208
sky.....	402-403	Wood flooring		hardboard.....	210
storm, aluminum	436	applications	250-253	particleboard.....	210
storm, vinyl.....	442	block	250	plywood.....	208-209
storm, wood	448	cleaning	302-303	roof	209
vinyl.....	436-442	finishing.....	307	subfloor	210
vinyl sliding, horizontal	440	fir	251	underlayment.....	210
vinyl sliding, vertical.....	441	maple	251	wall	208
wood	442-448	natural finish.....	307	Wood siding	
wood sliding, horizontal.....	446	oak	251-252	bevel	363
wood sliding, vertical.....	447	painting, wood	308	board and batten.....	372-373
Wire lath	321	parquet.....	252-253	board on board.....	373
Wiring		sealing.....	305	demolition.....	116
burglary detection systems	151-152	stainwax	305	dimensions.....	365
doorbell systems.....	150	strip	250	drop.....	370-371
electrical service.....	148	teak	252	estimating.....	363
fire alarm systems.....	151	walnut.....	252	installation	363
food centers.....	165	waxing.....	307	plywood.....	373
intercom systems.....	151	yellow pine.....	251	shakes.....	373
outlets	148	Wood framing		shingle siding.....	365, 374
range hoods.....	322-323	beams	169-172	vertical.....	372-373
switches	148	blocking	172-173	Wood steps, painting	310
telephone jacks.....	152	bracing.....	173	Woodburning fireplaces.....	164
television antennas	152	bridging.....	174-175	Work triangle, kitchen.....	52
thermostat	153	columns	176	Workers compensation	11
Wood		demolition.....	169	Workplace accessibility	5
awning windows	442	diagonal let ins	173		
casement windows	443	dimension.....	109-117	X, Y, Z	
columns	87, 176	fascia	176	X-type bridging	174
countertops, butcher block	104	girders.....	169-172	XPS rigid foam insulation	267
cupolas	104	hanger, joist	166	Yellow pine flooring	251
decks	185	headers.....	177-178	Z bar flashing	345

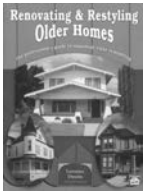
Practical References for Builders

National Estimator Cloud



Generate professional construction estimates for all residential and commercial construction from your internet browser. Includes 10 Craftsman construction cost databases, over 40,000 labor and material costs for construction, in an easy-to-use format. Cost estimates are well-organized and thoroughly indexed to speed and simplify writing estimates for nearly any residential or light commercial construction project – new construction, improvement or repair. Convert the bid to an invoice – in either QuickBooks Desktop or QuickBooks Online. Access your estimates from anywhere and on any device with a Web browser. Monthly and one-time billing options available. Visit <https://craftsman-book.com/national-estimator-cloud> for more details.

Renovating & Restyling Older Homes



Any builder can turn a run-down old house into a show-case of perfection — if the customer has unlimited funds to spend. Unfortunately, most customers are on a tight budget. They usually want more improvements than they can afford — and they expect you to deliver. This book shows how to add economical improvements that can increase the property value by two, five or even ten times the cost of the remodel. Sound impossible? Here you'll find the secrets of a builder who has been putting these techniques to work on Victorian and Craftsman-style houses for twenty years. You'll see what to repair, what to replace and what to leave, so you can remodel or restyle older homes for the least amount of money and the greatest increase in value.

416 pages, 8½ x 11, \$33.50

National Renovation & Insurance Repair Estimator



Current prices in dollars and cents for hard-to-find items needed on most insurance, repair, remodeling, and renovation jobs. All price items include labor, material, and equipment breakouts, plus special charts that tell you exactly how these costs are calculated.

488 pages, 8½ x 11, \$99.50. Revised annually

Also available as an eBook (PDF), \$49.75 at

www.craftsman-book.com

National Appraisal Estimator



An Online Appraisal Estimating Service. Produce credible single-family residence appraisals – in as little as five minutes. A smart resource for appraisers using the cost approach. Reports consider all significant cost variables and both physical and functional depreciation. For more information, visit www.craftsman-book.com/national-appraisal-estimator-online-software

Markup & Profit: A Contractor's Guide, Revised



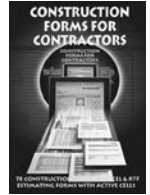
In order to succeed in a construction business, you have to be able to price your jobs to cover all labor, material and overhead expenses, and make a decent profit. But calculating markup is only part of the picture. If you're going to beat the odds and stay in business – profitably, you also need to know how to write good contracts, manage your crews, work with subcontractors and collect on your work. This book covers the business basics of running a construction company, whether you're a general or specialty contractor working in remodeling, new construction or commercial work. The principles outlined here apply to all construction-related businesses. You'll find tried and tested formulas to guarantee profits, with step-by-step instructions and easy-to-follow examples to help you learn how to operate your business successfully. Includes a link to free downloads of blank forms and checklists used in this book.

336 pages, 8½ x 11, \$59.50

Also available as an eBook (ePub, mobi for Kindle), \$39.95 at

www.craftsman-book.com

Construction Forms for Contractors



This practical guide contains 78 practical forms, letters and checklists, guaranteed to help you streamline your office, organize your jobsites, gather and organize records and documents, keep a handle on your subs, reduce estimating errors, administer change orders and lien issues, monitor crew productivity, track your equipment use, and more. Includes accounting forms, change order forms, forms for customers, estimating forms, field work forms, HR forms, lien forms, office forms, bids and proposals, subcontracts, and more. All are also on the CD-ROM included, in Excel spreadsheets, as formatted Rich Text that you can fill out on your computer, and as PDFs.

360 pages, 8½ x 11, \$48.50

eBook (PDF) also available; \$24.25 at www.craftsman-book.com

Paper Contracting: The How-To of Construction Management Contracting



Risk, and the headaches that go with it, have always been a major part of any construction project — risk of loss, negative cash flow, construction claims, regulations, excessive changes, disputes, slow pay — sometimes you'll make money, and often you won't. But many contractors today are avoiding almost all of that risk by working under a construction management contract, where they are simply a paid consultant to the owner, running the job, but leaving him the risk. This manual is the how-to of construction management contracting. You'll learn how the process works, how to get started as a CM contractor, what the job entails, how to deal with the issues that come up, when to step back, and how to get the job completed on time and on budget. Includes a link to free downloads of CM contracts legal in each state.

272 pages, 8½ x 11, \$55.50

eBook (PDF) also available; \$27.75 at www.craftsman-book.com

National Home Improvement Estimator



Current labor and material prices for home improvement projects. Provides manhours for each job, recommended crew size, and the labor cost for removal and installation work. Material prices are current. Gives step-by-step instructions for the work, with helpful diagrams, and home improvement shortcuts and tips from experts.

568 pages, 8½ x 11, \$98.75. Revised annually

Also available as an eBook (PDF), \$49.38 at

www.craftsman-book.com

Construction Contract Writer



Relying on a "one-size-fits-all" construction contract to fit your jobs can be dangerous — almost as dangerous as a handshake agreement. *Construction Contract Writer* lets you draft a contract in minutes that precisely fits your needs and the particular job, and meets state and federal requirements. You answer a series of questions — like an interview — to construct a legal contract for each project you take on. Anticipate where disputes could arise and settle them in the contract before they happen. Include the warranty protection you intend, the payment schedule, and create subcontracts from the prime contract by just clicking a box. Includes a feedback button to an attorney on the Craftsman staff to help should you need it — *No extra charge.*

\$199.95. Download *Construction Contract Writer* at

<http://www.constructioncontractwriter.com>

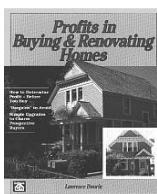
Contractor's Guide to QuickBooks by Online Accounting

This book is designed to help a contractor, bookkeeper and their accountant set up and use QuickBooks Desktop specifically for the construction industry. No use re-inventing the wheel, we have used this system with contractors for over 30 years. It works and is now the national standard. By following the steps we outlined in the book you, too, can set up a good system for job costing as well as financial reporting.

156 pages, 8½ x 11, \$68.50

eBook (PDF) also available; \$34.50 at www.craftsman-book.com

Profits in Buying & Renovating Homes



Step-by-step instructions for selecting, repairing, improving, and selling highly profitable "fixer-uppers." Shows which price ranges offer the highest profit-to-investment ratios, which neighborhoods offer the best return, practical directions for repairs, and tips on dealing with buyers, sellers, and real estate agents. Shows you how to determine your profit before you buy, what "bargains" to avoid, and how to make simple, profitable, inexpensive upgrades.

304 pages, 8½ x 11, \$24.75

Insurance Restoration Contracting: Startup to Success



Insurance restoration — the repair of buildings damaged by water, fire, smoke, storms, vandalism and other disasters — is an exciting field of construction that provides lucrative work that's immune to economic downturns. And, with insurance companies funding the repairs, your payment is virtually guaranteed. But this type of work requires special knowledge and equipment, and that's what you'll learn about in this book. It covers fire repairs and smoke damage, water losses and specialized drying methods, mold remediation, content restoration, even damage to mobile and manufactured homes. You'll also find information on equipment needs, training classes, estimating books and software, and how restoration leads to lucrative remodeling jobs. It covers all you need to know to start and succeed as the restoration contractor that both homeowners and insurance companies call on first for the best jobs.

640 pages, 8½ x 11, \$69.00

eBook (PDF) also available; \$34.50 at www.craftsman-book.com

Home Building Mistakes & Fixes



This is an encyclopedia of practical fixes for real-world home building and repair problems. There's never an end to "surprises" when you're in the business of building and fixing homes, yet there's little published on how to deal with construction that went wrong — where out-of-square or non-standard or jerry-rigged turns what should be a simple job into a nightmare. This manual describes jaw-dropping building mistakes that actually occurred, from disastrous misunderstandings over property lines, through basement floors leveled with an out-of-level instrument, to a house collapse when a siding crew removed the old siding. You'll learn the pitfalls the painless way, and real-world working solutions for the problems every contractor finds in a home building or repair jobsite. Includes dozens of those "surprises" and the author's step-by-step, clearly illustrated tips, tricks and workarounds for dealing with them.

384 pages, 8½ x 11, \$52.50

eBook (PDF) also available; \$26.25 at www.craftsman-book.com

Home Inspection Handbook

Every area you need to check in a home inspection — especially in older homes. Twenty complete inspection checklists: building site, foundation and basement, structural, bathrooms, chimneys and flues, ceilings, interior & exterior finishes, electrical, plumbing, HVAC, insects, vermin and decay, and more. Also includes information on starting and running your own home inspection business.

324 pages, 5½ x 8½, \$39.95

eBook (PDF) also available; \$19.98 at www.craftsman-book.com

Contractor's Survival Manual Revised

The "real skinny" on the down-and-dirty survival skills that no one likes to talk about — unique, unconventional ways to get through a debt crisis: what to do when the bills can't be paid, finding money and buying time, conserving income, transferring debt, setting payment priorities, cash float techniques, dealing with judgments and liens, and laying the foundation for recovery. Here you'll find out how to survive a downturn and the key things you can do to pave the road to success. Have this book as your insurance policy; when hard times come to your business it will be your guide.

336 pages, 8½ x 11, \$38.00

eBook (PDF) also available; \$19.00 at www.craftsman-book.com

National Construction Estimator

Current building costs for residential, commercial, and industrial construction. Estimated prices for every common building material. Provides manhours, recommended crew, and gives the labor cost for installation.

672 pages, 8½ x 11, \$97.50. Revised annually

Also available as an eBook (PDF), \$48.75 at www.craftsman-book.com



Building Code Compliance for Contractors & Inspectors

An answer book for both contractors and building inspectors, this manual explains what it takes to pass inspections under the 2009 *International Residential Code*. It includes a code checklist for every trade, covering some of the most common reasons why inspectors reject residential work — footings, foundations, slabs, framing, sheathing, plumbing, electrical, HVAC, energy conservation and final inspection. The requirement for each item on the checklist is explained, and the code section cited so you can look it up or show it to the inspector. Knowing in advance what the inspector wants to see gives you an (almost unfair) advantage. To pass inspection, do your own pre-inspection before the inspector arrives. If your work requires getting permits and passing inspections, put this manual to work on your next job. If you're considering a career in code enforcement, this can be your guidebook.

8½ x 11, 232 pages, \$32.50

eBook (PDF) also available; \$16.25 at www.craftsman-book.com



Builder's Guide to Room Additions

How to tackle problems that are unique to additions, such as requirements for basement conversions, reinforcing ceiling joists for second-story conversions, handling problems in attic conversions, what's required for footings, foundations, and slabs, how to design the best bathroom for the space, and much more. Besides actual construction, you'll even find help in designing, planning, and estimating your room addition jobs.

352 pages, 8½ x 11, \$34.95



Estimating Home Building Costs, Revised

Estimate every phase of residential construction from site costs to the profit margin you include in your bid. Shows how to keep track of manhours and make accurate labor cost estimates for site clearing and excavation, footings, foundations, framing and sheathing finishes, electrical, plumbing, and more. Provides and explains sample cost estimate worksheets with complete instructions for each job phase. This practical guide to estimating home construction costs has been updated with digital *Excel* estimating forms and worksheets that ensure accurate and complete estimates for your residential projects. Enter your project information on the worksheets and *Excel* automatically totals each material and labor cost from every stage of construction to a final cost estimate worksheet. Load the enclosed CD-ROM into your computer and create your own estimate as you follow along with the step-by-step techniques in this book.

336 pages, 8½ x 11, \$38.00

eBook (PDF) also available; \$19.00 at www.craftsman-book.com



Drafting House Plans eBook

Here you'll find step-by-step instructions for drawing a complete set of house plans for a one-story house, an addition to an existing house, or a remodeling project. This book shows how to visualize spatial relationships, use architectural scales and symbols, sketch preliminary drawings, develop detailed floor plans and exterior elevations, and prepare a final plot plan. It even includes code-approved joist and rafter spans and how to make sure that drawings meet code requirements. **188 pages**

Only available as an eBook (PDF), \$17.48 at www.craftsman-book.com

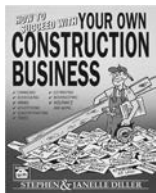
Concrete at Home



Build artistic custom concrete floors, cabinets, countertops, sinks, dividers, fireplaces, mantle pieces and more. In the pages of this 216-page, four-color book you'll find hundreds of ideas for ways to use concrete on the job. You'll learn how to custom design, pour, finish, and seal one-of-a-kind custom interior and exterior floors. Includes information on admixtures, crack control, custom finishes, self-leveling compounds, and reinforcement techniques. Shows how to apply inlays, linework, and stamps and finishes to concrete floors. Explains how to create custom concrete countertops and sinks. Illustrates the fundamentals of concrete wall design, including innovative uses for concrete block, applying color and texture on walls, using ties, rebar, and forms for walls. How to design, form and place fireplace surrounds, water pieces, columns, and more from concrete.

216 pages, 9 x 11, \$32.00

How to Succeed With Your Own Construction Business



Everything you need to start your own construction business: setting up the paperwork, finding the jobs, advertising, using contracts, dealing with lenders, estimating, scheduling, finding and keeping good employees, keeping the books, and coping with success. If you're considering starting your own construction business, all the knowledge, tips, and blank forms you need are here.

336 pages, 8½ x 11, \$28.50

eBook (PDF) also available, \$14.25 at www.craftsman-book.com

Rough Framing Carpentry

If you'd like to make good money working outdoors as a framer, this is the book for you. Here you'll find shortcuts to laying out studs; speed cutting blocks, trimmers and plates by eye; quickly building and blocking rake walls; installing ceiling backing, ceiling joists, and truss joists; cutting and assembling hip trusses and California fills; arches and drop ceilings — all with production line procedures that save you time and help you make more money. Over 100 on-the-job photos of how to do it right and what can go wrong.

304 pages, 8½ x 11, \$26.50

National Building Cost Manual



Square-foot costs for residential, commercial, industrial, military, schools, greenhouses, churches and farm buildings. Includes important variables that can make any building unique from a cost standpoint. Quickly work up a reliable budget estimate based on actual materials and design features, area, shape, wall height, number of floors, and support requirements. Includes free download of Craftsman's easy-to-use software

that calculates total in-place cost estimates or appraisals. Use the regional cost adjustment factors provided to tailor the estimate to any jobsite in the U.S. Then view, print, email or save the detailed PDF report as needed.

280 pages, 8½ x 11, \$98.00. Revised annually

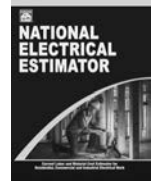
eBook (PDF) also available, \$49.00 at www.craftsman-book.com

National Electrical Estimator

This year's prices for installation of all common electrical work: conduit, wire, boxes, fixtures, switches, outlets, loadcenters, panelboards, raceway, duct, signal systems, and more. Provides material costs, manhours per unit, and total installed cost. Explains what you should know to estimate each part of an electrical system.

552 pages, 8½ x 11, \$97.75. Revised annually

eBook (PDF) also available, \$48.88 at www.craftsman-book.com



National Painting Cost Estimator

A complete guide to estimating painting costs for just about any type of residential, commercial, or industrial painting, whether by brush, spray, or roller. Shows typical costs and bid prices for fast, medium, and slow work, including material costs per gallon, square feet covered per gallon, square feet covered per manhour, labor, material, overhead, and taxes per 100 square feet, and how much to add for profit.

448 pages, 8½ x 11, \$98.00. Revised annually

Also available as an eBook (PDF), \$49.00 at www.craftsman-book.com



National Plumbing & HVAC Estimator

Manhours, labor and material costs for all common plumbing and HVAC work in residential, commercial, and industrial buildings. You can quickly work up a reliable estimate based on the pipe, fittings and equipment required. Every plumbing and HVAC estimator can use the cost estimates in this practical manual. Sample estimating and bidding forms and contracts also included. Explains how to handle change orders, letters of intent, and warranties. Describes the right way to process submittals, deal with suppliers and subcontract specialty work.

480 pages, 8½ x 11, \$98.25. Revised annually

eBook (PDF) also available, \$49.13 at www.craftsman-book.com



Easy Scheduling

Easy Scheduling presents you with a complete set of "real world" scheduling tools that are specifically tailored to meet the needs of small- to medium-sized construction businesses. Step by step, it shows you how to use Microsoft Project to build a schedule that will synchronize everyone's efforts into an organized system that becomes the foundation of all planning and communication for all your jobs. You'll see how to establish realistic project goals, set checkpoints, activities, relationships and time estimates for each task, as well as establish priorities. You'll learn how to create a project flowchart to keep everyone focused and on track, and see how to use CSI (Construction Specification Institute) coding to organize and sort tasks, methods, and materials across multiple projects. If you want an easy way to schedule your jobs, Microsoft Project and Easy Scheduling is the answer for you. (Does not include Microsoft Project.)

316 pages, 8½ x 11, \$66.95. Published by BNI.

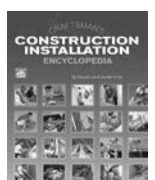


Craftsman's Construction Installation Encyclopedia

Step-by-step installation instructions for just about any residential construction, remodeling or repair task, arranged alphabetically, from Acoustic tile to Wood flooring. Includes hundreds of illustrations that show how to build, install, or remodel each part of the job, as well as manhour tables for each work item so you can estimate and bid with confidence. Also includes a CD-ROM with all the material in the book, handy look-up features, and the ability to capture and print out for your crew the instructions and diagrams for any job.

792 pages, 8½ x 11, \$65.00

Also available as an eBook (PDF), \$32.50 at www.craftsman-book.com



Basic Engineering for Builders



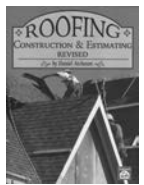
This book is for you if you've ever been stumped by an engineering problem on the job, yet wanted to avoid the expense of hiring a qualified engineer. Here you'll find engineering principles explained in non-technical language and practical methods for applying them on the job. With the help of this book you'll be able to understand engineering functions in the plans and how to meet the requirements, how to get permits issued

without the help of an engineer, and anticipate requirements for concrete, steel, wood and masonry. See why you sometimes have to hire an engineer and what you can undertake yourself: surveying, concrete, lumber loads and stresses, steel, masonry, plumbing, and HVAC systems. This book is designed to help you, the builder, save money by understanding engineering principles that you can incorporate into the jobs you bid.

400 pages, 8½ x 11, \$39.50

eBook (PDF) also available; \$19.75 at www.craftsman-book.com

Roofing Construction & Estimating, Revised

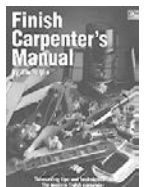


Detailed, step-by-step instructions, with photographs and diagrams, for installing, repairing and estimating nearly every type of roof covering available today for residential and commercial structures: asphalt shingles, roll roofing, wood shingles and shakes, clay tile, slate, metal, built-up, elastomeric, TPO and more. Provides guidance on sheathing, synthetic and felt underlayment, as well as tips and tricks from an experienced pro for dealing with those difficult points on a roof that are prone to leaks, such as valleys and roof penetrations. For each roofing type, instructions are provided for estimating material quantities and labor costs, with formulas, easy-to-follow examples and sample estimates for you to test your skill. Use these methods to create reliable estimates that will help insure a profit on every job you take.

448 pages, 8½ x 11, \$62.50

eBook (PDF) also available, \$31.25 at www.craftsman-book.com

Finish Carpenter's Manual

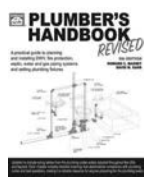


Everything you need to know to be a finish carpenter: assessing a job before you begin, and tricks of the trade from a master finish carpenter. Easy-to-follow instructions for installing doors and windows, ceiling treatments (including fancy beams, corbels, cornices and moldings), wall treatments (including wainscoting and sheet paneling), and the finishing touches of chair, picture, and plate rails. Specialized interior work includes

cabinetry and built-ins, stair finish work, and closets. Also covers exterior trims and porches. Includes manhour tables for finish work, and hundreds of illustrations and photos.

208 pages, 8½ x 11, \$32.50

Plumber's Handbook Revised, 6th Edition



This new edition explains simply and clearly, in non-technical, everyday language, how to install all components of a plumbing system to comply not only with recent changes in the 2021 *International Plumbing Code* and the 2021 *Uniform Plumbing Code*, but with the requirements of the Americans with Disabilities Act. Originally written for working plumbers to assure safe, reliable, code-compliant plumbing installations that pass inspection the

first time, Plumber's Handbook, because of its readability, accuracy and clear, simple diagrams, has become the textbook of choice for numerous schools preparing plumbing students for the plumber's exams. Now, with a set of questions for each chapter, full explanations for the answers, and with a 200-question sample exam in the back, this handbook is one of the best tools available for preparing for almost any plumbing journeyman, master or state-required plumbing contracting exam.

384 pages, 8½ x 11, \$67.00

eBook (PDF) also available; \$33.50 at www.craftsman-book.com

Paint Contractor's Manual

How to start and run a profitable paint contracting company: getting set up and organized to handle volume work, avoiding mistakes, getting maximum production from your crews and the most value from your advertising dollar. Shows how to estimate all prep and painting. Loaded with manhour estimates, sample forms, contracts, charts, tables and examples you can use.

224 pages, 8½ x 11, \$46.50

Also available as an eBook (PDF), \$23.25 at www.craftsman-book.com

Builder's Guide to Accounting Revised

Step-by-step, easy-to-follow guidelines for setting up and maintaining records for your building business. This practical guide to all accounting methods shows how to meet state and federal accounting requirements, explains the new depreciation rules, and describes how the Tax Reform Act can affect the way you keep records. Full of charts, diagrams, simple directions and examples to help you keep track of where your money is going. Recommended reading for many state contractor's exams. Each chapter ends with a set of test questions, and a CD-ROM included FREE has all the questions in interactive self-test software. Use the Study Mode to make studying for the exam much easier, and Exam Mode to practice your skills.

60 pages, 8½ x 11, \$51.50

Also available as an eBook (PDF), \$25.75 at www.craftsman-book.com

Estimating Electrical Construction Revised

Estimating the cost of electrical work can be a very detailed and exacting discipline. It takes specialized skills and knowledge to create reliable estimates for electrical work. See how an expert estimates materials and labor for residential and commercial electrical construction. Learn how to use labor units, the plan take-off, and the bid summary to make an accurate estimate, how to deal with suppliers, use pricing sheets, and modify labor units. This book provides extensive labor unit tables and blank forms on a CD for estimating your next electrical job.

272 pages, 8½ x 11, \$59.00

Also available as an eBook (PDF), \$29.50 at www.craftsman-book.com

Concrete Construction

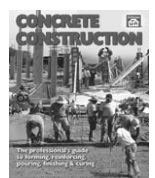
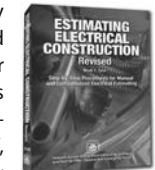
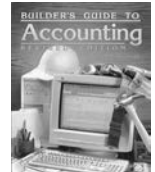
Just when you think you know all there is about concrete, many new innovations create faster, more efficient ways to do the work. This comprehensive concrete manual has both the tried-and-tested methods and materials, and more recent innovations. It covers everything you need to know about concrete, along with Styrofoam forming systems, fiber reinforcing adjuncts, and some architectural innovations, like architectural foam elements, that can help you offer more in the jobs you bid on. Every chapter provides detailed, step-by-step instructions for each task, with hundreds of photographs and drawings that show exactly how the work is done. To keep your jobs organized, there are checklists for each stage of the concrete work, from planning, to finishing and protecting your pours. Whether you're doing residential or commercial work, this manual has the instructions, illustrations, charts, estimating data, rules of thumb and examples every contractor can apply on their concrete jobs.

288 pages, 8½ x 11, \$28.75

Also available as an eBook (PDF), \$14.38 at www.craftsman-book.com

Ceramic Tile Essentials Quick-Cards

This extended, 6-page laminated card, covers the essentials of ceramic tile. Great for contractors, builders, architects and engineers... anyone who needs a quick overview of the basics involved in this key in Construction. **6 pages, 8½ x 11, \$7.95**



Painter's Handbook eBook

Loaded with "how-to" information you'll use every day to get professional results on any job: the best way to prepare a surface for painting or repainting; selecting and using the right materials and tools (including airless spray); tips for repainting kitchens, bathrooms, cabinets, eaves and porches; how to match and blend colors; why coatings fail and what to do about it. Lists 30 profitable specialties in the painting business.

Available only as an eBook (PDF); \$16.50 at www.craftsman-book.com

Contractor's Year-Round Tax Guide Revised



How to set up and run your construction business to minimize taxes: corporate tax strategy and how to use it to your advantage, and what you should be aware of in contracts with others. Covers tax shelters for builders, write-offs and investments that will reduce your taxes, accounting methods that are best for contractors and what the I.R.S. allows and what it often questions.

208 pages, 8½ x 11, \$26.50

Cabinetmaking: From Design To Finish



Every aspect of cabinetmaking, from layout, through joinery, to finishing techniques. Gives illustrated instructions for designing cabinets to fit the kitchen workcenter; create dado, mortise, tenon, lap and dowel joints; make frames and panels; construct cabinets; and install cabinet hardware.

416 pages, 5½ x 8½, \$22.00

BNI Construction Dictionary: Pocket Edition

This handy reference fits perfectly in your pocket and yet offers extensive coverage of construction terms. If you're looking for a good construction dictionary that's portable, this is it!

Published by: BNI Building News. 86 Pages, 4½ x 7½, \$17.95

Handbook of Construction Contracting, Vol. 1

Volume 1: Everything you need to know to start and run your construction business; the pros and cons of each type of contracting, the records you'll need to keep, and how to read and understand house plans and specs so you find any problems before the actual work begins. All aspects of construction are covered in detail, including all-weather wood foundations, practical math for the job site, and elementary surveying.

416 pages, 8½ x 11, \$32.75

Handbook of Construction Contracting, Vol. 2

Volume 2: Everything you need to know to keep your construction business profitable, including estimating methods, controlling costs, concrete, masonry, rough carpentry, roof covering, insulation, doors and windows, exterior finishes, specialty finishes, scheduling, managing workers, marketing, spec building and land development.

320 pages, 8½ x 11, \$33.75

Smart Business for Contractors

In this book, a construction attorney explains how you should charge for your work, how to figure your overhead expenses, and how to calculate a realistic hourly rate to apply on each estimate. Includes how to bill and collect on your invoices, what you should always include in your contracts and creative new ways of dealing with contract disputes. Shows how to keep customers happy so they'll hand you referrals, how best to handle subcontractors, and how to find a good accountant. You'll learn the pros and cons of incorporating, how to handle tax issues such as what you can and can't deduct, and what you're allowed to depreciate, and how to plan the future of your company. Reading this book is like getting good advice from a construction lawyer – at a fraction of the cost.

Published by: Taunton Press. 204 pages, 8½ x 11, \$19.95

Contractor's Plain-English Legal Guide

For today's contractors, legal problems are like snakes in the swamp – you might not see them, but you know they're there. This book tells you where the snakes are hiding and directs you to the safe path. With the directions in this easy-to-read handbook you're less likely to need a \$250-an-hour lawyer. Includes simple directions for starting your business, writing contracts that cover just about any eventuality, collecting what's owed you, filing liens, protecting yourself from unethical subcontractors, and more. For about the price of 15 minutes in a lawyer's office, you'll have a guide that will make many of those visits unnecessary. Includes a CD-ROM with blank copies of all the forms and contracts in the book.

272 pages, 8½ x 11, \$49.50

Craftsman eLibrary

Craftsman's eLibrary license gives you immediate access to 60+ PDF eBooks in our bookstore for 12 full months!

You pay only one low price. \$129.99.

Visit www.craftsman-book.com for more details.



BNI Remodeling Costbook 2024

Now you can quickly and easily estimate the cost of all types of home remodeling projects. You'll find prices for the most difficult types of estimates, such as demolition, cutting and patching, working around existing conditions, plus minimum quantity and costs.

Published by BNI Building News. 525 Pages, 8½ x 11, \$129.95

BNI Home Remodeler's Costbook 2024

Developed in cooperation with the National Association of Home Builders, this book let's you quickly and easily estimate the cost of all types of home remodeling projects, including additions, new kitchens and baths, and much more. You'll quickly agree that this costbook is the first place to turn, whether you're preparing a preliminary estimate, evaluating a subcontractor's bid, or submitting a formal budget proposal. It puts at your fingertips accurate and up-to-date material and labor costs for thousands of cost items, based on the latest national averages and standard labor productivity rates. What's more, the book includes detailed regional cost modifiers for adjusting your estimate to your local conditions.

Published by: BNI Building News. 372 pages, 8½ x 11, \$124.95

BNI Home Builder's Costbook 2024

Here's the easy way to estimate the cost of all types of residential construction projects! It's designed specifically for home builders. This costbook is the first place you should turn, whether you're preparing a preliminary estimate, evaluating a subcontractor's bid, or submitting a formal budget proposal. It puts at your fingertips accurate and up-to-date material and labor costs for thousands of cost items used in home construction -- concrete, framing, insulation, painting, flooring, plumbing, and wiring -- based on the latest national averages and standard labor productivity rates.

Published by: BNI Building News. 328 Pages, 8½ x 11, \$119.95

BNI General Construction Costbook 2024

Over 12,000 unit prices provide you with cost coverage for all aspects of construction -- from sitework and concrete, to doors and painting. The cost data is broken down into material and labor costs, to allow for maximum flexibility and accuracy in estimating.

Published by: BNI Building News. 572 pages, 8½ x 11, \$129.95

Construction Inspection Manual, 9th Edition

This extensively revised and updated ninth edition is updated with detailed testing procedures, and inspection checklists covering everything from sitework and earthwork to finishes and electrical installations.

376 pages, 8½ x 11, \$94.95

Now you can generate professional estimates from your internet browser with **National Estimator Cloud**.
<https://craftsman-book.com/national-estimator-cloud>



Craftsman Book Company
6058 Corte del Cedro
Carlsbad, CA 92011

☎ Call me.
1-800-829-8123
Fax (760) 438-0398

In A Hurry?

We accept phone orders charged to your
☐ Visa, ☐ MasterCard, ☐ Discover or ☐ American Express

Card _____
Exp. date _____ CVV# _____ Initials _____

Order online <http://www.craftsman-book.com>

Name _____
e-mail address (for order tracking and special offers) _____
Company _____
Address _____
City/State/Zip _____ ☐ This is a residence
Total enclosed _____ (In California add 7.5% tax)

*Free Media Mail shipping, within the US
when your check covers your order in full.*

Tax Deductible: Treasury regulations make these references tax deductible when used in your work. Save the canceled check or charge card statement as your receipt.

10-Day Money Back Guarantee

- | | |
|---|--|
| <input type="radio"/> 39.50 Basic Engineering for Builders | <input type="radio"/> 32.75 Handbook of Construction Contracting Volume 1 |
| <input type="radio"/> 17.95 BNI Construction Dictionary: Pocket Edition | <input type="radio"/> 33.75 Handbook of Construction Contracting Volume 2 |
| <input type="radio"/> 129.95 BNI General Construction Costbook 2024 | <input type="radio"/> 52.50 Home Building Mistakes & Fixes |
| <input type="radio"/> 119.95 BNI Home Builder's Costbook 2024 | <input type="radio"/> 39.95 Home Inspection Handbook |
| <input type="radio"/> 124.95 BNI Home Remodeler's Costbook 2024 | <input type="radio"/> 28.50 How to Succeed With Your Own Construction Business |
| <input type="radio"/> 129.95 BNI Remodeling Costbook 2024 | <input type="radio"/> 69.00 Insurance Restoration Contracting: Startup to Success |
| <input type="radio"/> 51.50 Builder's Guide to Accounting Revised | <input type="radio"/> 59.50 Markup & Profit: A Contractor's Guide, Revisited |
| <input type="radio"/> 34.95 Builder's Guide to Room Additions | <input type="radio"/> 98.00 Natl. Building Cost Manual w/FREE Natl. Est. Download |
| <input type="radio"/> 32.50 Building Code Compliance for Contractors & Inspectors | <input type="radio"/> 97.50 National Construction Estimator |
| <input type="radio"/> 22.00 Cabinetmaking: From Design to Finish | <input type="radio"/> 97.75 National Electrical Estimator |
| <input type="radio"/> 7.95 Ceramic Tile Essentials Quick-Card | <input type="radio"/> 98.75 National Home Improvement Estimator |
| <input type="radio"/> 32.00 Concrete at Home | <input type="radio"/> 98.00 National Painting Cost Estimator |
| <input type="radio"/> 28.75 Concrete Construction | <input type="radio"/> 98.25 National Plumbing & HVAC Estimator |
| <input type="radio"/> 48.50 Construction Forms for Contractors | <input type="radio"/> 99.50 National Renovation & Insurance Repair Estimator |
| <input type="radio"/> 94.95 Construction Inspection Manual, 9th Edition | <input type="radio"/> 55.50 Paper Contracting: The How-To of Constr Mgmt Contracting |
| <input type="radio"/> 26.50 Contractor's Guide to QuickBooks by Online Accounting | <input type="radio"/> 46.50 Paint Contractor's Manual |
| <input type="radio"/> 49.50 Contractor's Plain-English Legal Guide | <input type="radio"/> 67.00 Plumber's Handbook Revised, 6th Edition |
| <input type="radio"/> 38.00 Contractor's Survival Manual Revised | <input type="radio"/> 24.75 Profits in Buying & Renovating Homes |
| <input type="radio"/> 38.00 Contractor's Year-Round Tax Guide Revised | <input type="radio"/> 33.50 Renovating & Restyling Older Homes |
| <input type="radio"/> 65.00 Craftsman's Construction Installation Encyclopedia | <input type="radio"/> 62.50 Roofing Construction & Estimating, Revised |
| <input type="radio"/> 66.95 Easy Scheduling | <input type="radio"/> 26.50 Rough Framing Carpentry |
| <input type="radio"/> 59.00 Estimating Electrical Construction Revised | <input type="radio"/> 19.95 Smart Business for Contractors |
| <input type="radio"/> 38.00 Estimating Home Building Costs, Revised | <input type="radio"/> 98.50 National Repair & Remodeling Estimator |
| <input type="radio"/> 32.50 Finish Carpenter's Manual | |

Prices subject to change without notice

Construction Contract Writer Download

www.ConstructionContractWriter.com

Consumer protection laws in every state put residential construction contractors at a disadvantage. Leave any of the required notices out of your contract and you risk a fine or even jail time.



California and **Oregon** contractors who omit a notice risk losing their license.
Pennsylvania's Home Improvement Act requires a long list of disclosures.
Florida levies a \$500 fine for omitting the recovery fund notice.
Illinois imposes a fine of \$2,500 for starting work without a contract.
Massachusetts contracts have to comply with MA General Laws 142A.
New Jersey makes defective contracts punishable as consumer fraud.
New York levies a fine of up to \$2,500 for omitting required notices.
Texas requires several pages of contract disclosures for residential work.
Virginia imposes a 5-year warranty unless the contract disclaims warranties.
Many states prohibit arbitration if the contract omits an arbitration notice.
27 states require a home solicitation act notice in the contract.
50 states require the Reg Z notice for work on an owner-occupied home.
50 states require special disclosures if the job includes thermal insulation.



In every state, the construction contractor is liable for any defect in a residential construction contract. The property owner has no risk at all.

Construction Contract Writer ensures that you comply with both state and federal law on every job – residential, commercial, industrial or public works subcontract.

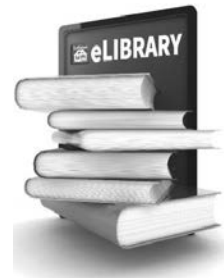
Single-state edition includes updates for three years, \$199.95

When you download, use promo code 2024nrr and pay only \$169.96

Craftsman's eLibrary

Get 100+ eBooks all for one price!

Craftsman's eLibrary license gives you immediate access to over 75 PDF eBooks in our bookstore for 12 full months! You pay only one low price.
\$129.99.



- Accounting & finance
- Building codes
- Electrical
- Excavation & grading
- Estimating & bidding
- Plumbing & HVAC
- Business & office management
- Concrete
- Exam preparation
- Engineering
- Kitchen design
- Remodeling & restoration

For a full listing, visit the eBooks category link at **www.craftsman-book.com** in the Product Directory at the left side of the page.

Craftsman eBooks are digital versions of the print editions in text-searchable, PDF format. Craftsman eBooks are for use in the freely distributed Adobe Reader. Get Adobe Reader.

This eLibrary license authorizes your personal use on three devices. Return to this site at any time to get additional downloads or repeat any download.