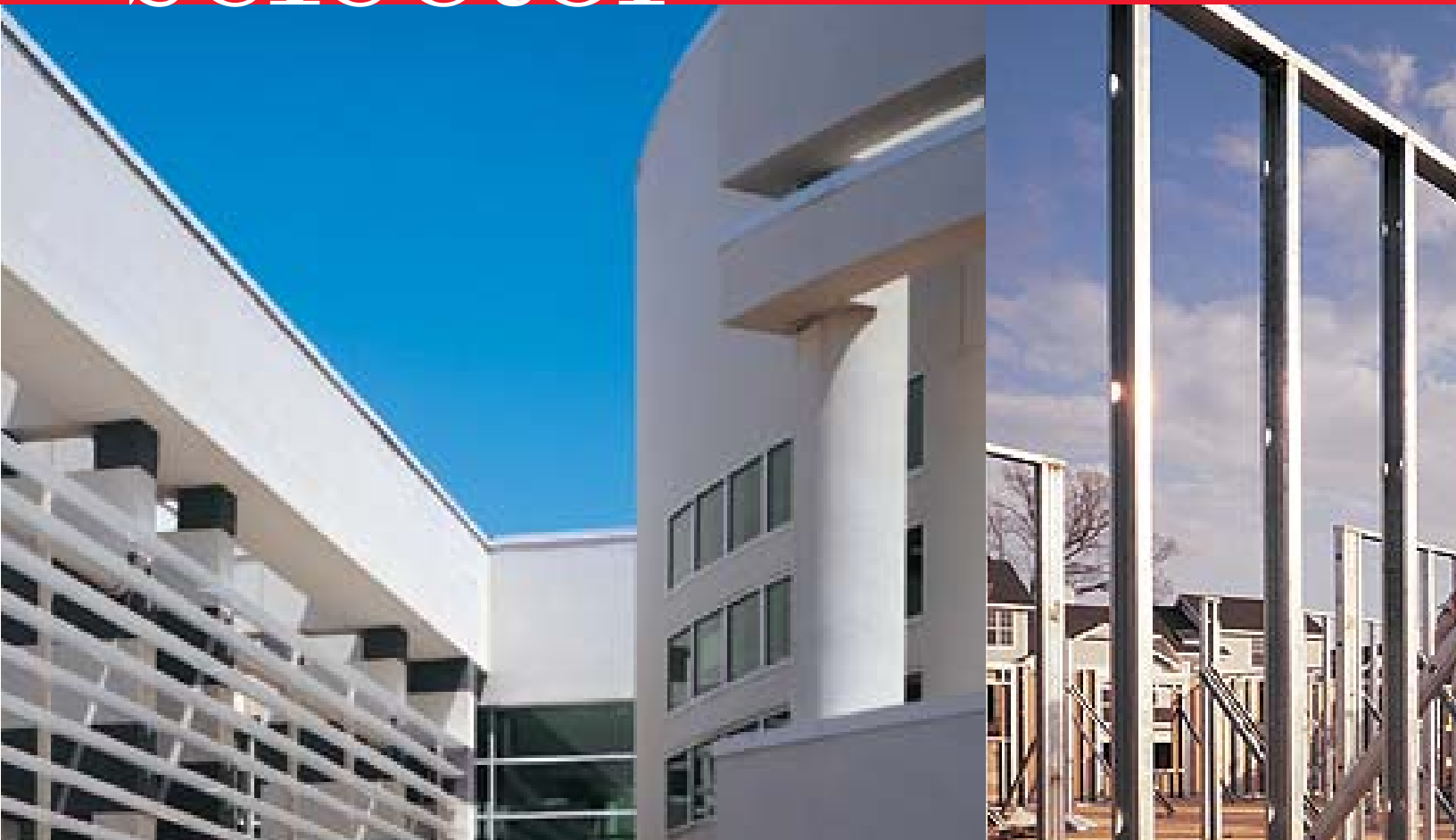


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# construction selector



## Introduction

USG Corporation companies offer a wide range of quality products and performance-engineered systems to meet specialized requirements for modern building design. The manufacture of these products to carefully controlled standards ensures uniform quality. This *Construction Selector* covers products and systems from two USG Corporation companies:

**United States Gypsum Company** manufactures gypsum products, cement board panels, and related components for high-performance systems. The Company has been a leader in the building industry since its founding in 1902.

**USG Interiors, Inc.**, manufactures commercial ceiling products, relocatable partitions, and mineral fiber insulation for building construction. The Company offers the widest product range in the industry and has the unique capability to market integrated interior systems.

The USG Research and Technology Center, largest and most advanced in the industry, continually develops new products and high-performance systems which are designed to provide improved function and utility while reducing construction time and cost. Products and systems are marketed only after thorough testing and field trial.

USG Corporation employs technical service and sales representatives to help design professionals gain maximum performance from materials and systems by advising on selection, proper detailing, and specifications. See the back cover for contact information.

## Contents

The USG Architectural Reference Library has one binder devoted to U.S. Gypsum Company products and systems, and separate literature dedicated to USG Interiors, Inc. Because of the different criteria used for selection from these two volumes, the USG Interiors binder uses a different format, while the U.S. Gypsum Company binder contains the same folders familiar from previous editions, numbered and organized according to CSI divisions.

This *Construction Selector* is the key reference index to the USG Architectural Reference Library. It summarizes fire-rated construction and acoustical performance data for various systems to permit quick comparison and selection. Cross-references are provided to the System Folders that contain complete descriptions, installation details and specifications. Product Folders provide technical data on components used in construction systems.

The table below gives the sequence of folders comprising the USG Architectural Reference Library. The numeral before each division title indicates the CSI MASTERFORMAT Division classification. Copies of all folders listed are available through Company sales offices.

The System Folders and Product Folders are arranged in numerical sequence. The first numeral in the title number is the appropriate division number (two digits for two-digit division numbers) so that folders can easily be filed.

Folder No. & Title		Section No.
<b>Div. 7/Thermal &amp; Moisture Protection</b>		
SA700	Exterior Substrate Systems	07240
SA727	USG™ Fire Stop Systems	07840
<b>Div. 9/Finishes</b>		
SA920	Plaster Systems	09210
SA923	Drywall/Steel Framed Systems	09250
SA924	Drywall/Wood Framed Systems	09250
SA925	USG Area Separation Fire Wall/Party Wall Systems	09250
SA926	USG Cavity Shaft Wall Systems	09250
SA927	Gypsum Panels & Accessories	09250
SA928	SHEETROCK® Brand Vinyl-Faced Gypsum Panels	09720
SA929	Abuse-Resistant Systems	09250
SA932	DUROCK® Brand Cement Board Systems	09305
SA933	SHEETROCK® Brand Textures and Finish Products	09940
<b>Div.11/Equipment</b>		
SA1119	STRUCTOCORE™ Security Wall Systems	11190

## How to Use This Selector

This folder is divided into nine sections—A to I—covering the categories indicated below. Within the first six sections are listed brief analyses as documented by fire or sound tests, federal specifications, ASTM designations, or other pertinent criteria. They usually are arranged sequentially according to fire ratings—the criterion that most often governs selection.

The analysis applicable to each system, as listed in the sections A through F, are repeated in the individual folder covering that system, indicated by number in the “Folder Reference” column.

- A Partitions**—pages 6 to 16—include mechanically fastened and laminated assemblies, demountable, steel- and wood-framed, load-bearing and non-load-bearing—in gypsum base and veneer finishes, gypsum drywall, cement board and conventional lath and plaster.
- B Ceilings**—pages 17 to 31—include suspended, furred, and direct-attachment types, employing drywall, veneer finishes, conventional plaster, and mineral fiber tile or panel surfaces with companion floor or roof construction.
- C Structural fireproofing**—pages 32 to 34—shows basic methods of protecting columns and beams with gypsum base and veneer finishes, mineral fireproofing, and gypsum drywall.
- D Exterior walls**—pages 35 to 36—includes load-bearing wood and steel stud systems and exterior curtain wall assemblies.
- E Exterior wall furring**—page 37—compares methods of furring exterior walls, including veneer and conventional plaster and drywall furring systems.
- F Through-penetration and head-of-wall firestop systems**—pages 38 to 40—provides firestop systems to block smoke and flames from passing through floor and wall penetrations and the intersection of fire rated walls and the floor or roof above.
- G Metric Conversions**—page 41—includes information on metric-sized products.
- H Product and system catalogs**—page 42—provides a brief description of each catalog in the Architectural Reference Library.
- I Products/specification standards**—pages 42-43—Federal specification and ASTM designation qualifications of USG Corporation products; UL designations; code research reports; and NER listings.

## Test Conditions and Certification

Fire and sound tested assemblies listed in this *Selector* are based on characteristics, properties and performance of materials and systems obtained under controlled test conditions as set forth in the appropriate ASTM Standard in effect at the time of test. These listings are short summaries to serve as a compilation and guide of construction assemblies available in the selection process. For complete information on construction details and components used in these systems, refer to the individual Folder reference.

USG Corporation will provide certification for published fire, sound and structural data covering systems designed and constructed according to its published specifications. Tests are conducted on Company products assembled to meet performance requirements of established test procedures specified by various agencies. System performance following any substitution of materials or compromise in assembly design cannot be certified and may result in failure under critical conditions.

Sound tests are conducted under controlled laboratory conditions according to ASTM procedures. Comparable field performance depends on building design and careful attention to detailing and workmanship.

Certain sound tests, conducted in accordance with ASTM methods, measured sound transmission of 11 frequencies. These data have been retained in this selector to serve as a guide to the designer. Based on experience, the STC values are very close to those obtained for the assembly under current methods at 16 frequencies.

Sound ratings shown for steel-framed partitions apply to systems constructed with 25 ga. steel studs, unless otherwise noted. Heavier gauge studs are more rigid and may not provide the same sound ratings.




## Abbreviations

In the test analysis following, abbreviation of “est” indicates estimated; abbreviation N/A indicates not applicable or not available. Estimated fire ratings are based on an engineering evaluation by qualified professionals. Other abbreviations are shown below.

acoust	acoustical	ht	height
alt	alternate	insul	insulating or insulation
alum	aluminum	int	interior
appl	applied	lamin	laminated
ASTM	Amer. Soc. for Testing and Materials	lbr	lumber
att	attached	lightwt	lightweight
atten	attenuation	lim	limiting
betw	between	max	maximum
bd	board	met	metal
bikts	blankets	min	mineral or minimum
cem	cement	nom	nominal
chan	channel	noncomb	noncombustible
clg	ceiling	o.c.	on center
col	column	opp	opposite
com	common	oz	ounce
conc	concrete	partn	partition
contin	continuous	perim	perimeter
conv	conventional	plywd	plywood
corrug	corrugated	prot	protected or protection
cr	cold rolled	qtr	quarter
ctd	coated	recom	recommended
dbl	double	reg	regular
Des	Design	rel	relocatable
ea	each	resil	resilient
exp	exposed	run	runner(s)
extendg	extending	SAFB	sound attenuation fire blankets
fin	finish or finished	sep	separate
fireprfg	fireproofing	separ	separated
fixt	fixture	stag	staggered
flr	floor	stl	steel
freq	frequency	subflr	subfloor
ft	foot or feet	susp	suspended or suspension
fur	furring	syst	system
ga	gauge	thickn	thickness
GA	Gypsum Association	unfin	unfinished
galv	galvanized	USG	USG Corporation
hex	hexagonal	vert	vertically
horiz	horizontally	wd	wood
hr	hour	wt	weight (lb./sq. ft.)

## Details

In details, shaded backgrounds designate materials indicated below:

	Sound-deadening material; column or beam fireproofing.		Furring channels.
	RC-1™ Resilient Channels or equivalent.		

## Agencies

**Fire**  
UL—Underwriters Laboratories Inc.  
OSU—Ohio State University  
U of C—University of California  
WHI—Warnock Hersey International  
CEG—Consulting Engineers Group  
GA—Gypsum Assoc. (Fire Resistance Design Manual GA-600)

## Sound

RAL—Riverbank Acoustical Laboratories  
G & H—Geiger & Hamme  
CK—Cedar Knolls Acoust. Laboratories  
BBN—Bolt, Beranek and Newman  
KAL—Kodaras Acoustical Laboratories  
SA—Shiner & Assoc.

## Sound rating

STC—sound transmission class per ASTM test procedures  
CAC—ceiling attenuation class—per ASTM procedures

IIC—impact insulation class per ASTM test procedures  
MTC—music/machinery transmission class

# Index to Products and Systems

## Product or System Folder Reference

**A**  
Accessories, structural & trim.....SA920, SA927  
Acoustical ceiling finish, spray.....SA933  
Acoustical ceilings.....SC2000  
Acoustical sealant.....SA927  
Adhesives, ceramic tile.....SA932  
Adhesives, drywall.....SA927  
Aluminum foil-backed panel.....SA920, SA927  
Area separation walls.....SA925  
ASTM Specs.....pages 42-43, SA100

**B**  
Back-blocking system.....SA924  
Basecoat plaster.....SA920  
Brick veneer curtain walls.....SA700, SA923

**C**  
Caged beam construction.....SA920, SA923  
Cavity shaft walls.....SA926  
Ceiling heat components.....SA920  
Ceiling texture finishes.....SA933  
Cement board, exterior.....SA700  
Cement board, interior.....SA932  
Ceramic tile base.....SA700, SA927, SA932  
Channels, furring & lathing.....SA920, SA927  
Chase walls.....SA920, SA923, SA924, SA926  
Column fireproofing.....SA920, SA923  
Concrete fasteners.....SA927  
Concrete finishing compound.....SA920, SA927  
Construction joints.....SA727  
Control joints.....SA920, SA927  
Corner, casing beads.....SA920, SA927  
Curtain walls.....SA700, SA923  
Curved walls.....SA923

**D**  
Dry-set mortar.....SA932  
Drywall ceilings.....SA923, SA924  
Drywall fireproofing.....SA923  
Drywall furring systems.....SA923  
Drywall partitions, laminated.....SA923, SA924, SA926  
Drywall partitions, steel framed.....SA923, SA925, SA926  
Drywall partitions, wood-framed.....SA924, SA925

**E**  
EIFS.....SA700  
Exterior curtain walls.....SA700, SA923  
Exterior insulation & finish system.....SA700  
Exterior walls and ceilings.....SA700, SA923, SA924

## Product or System Folder Reference

**F**  
Federal Specs.....page 38, SA100  
Finishing lime.....SA920  
Firestop system, walls & floors.....SA727  
Fire-wall systems.....SA925  
Floating angle construction.....SA920, SA924  
Floor protector, cement board.....SA932  
Foil-back Gypsum Panels, lath.....SA920, SA927

**G**  
Gauging plasters.....SA920  
Grout, ceramic tile.....SA700, SA932  
Gypsum ceiling board.....SA927  
Gypsum lath ceilings.....SA920  
Gypsum lath partitions.....SA920, SA926  
Gypsum liner panels.....SA927  
Gypsum Panels.....SA927, SA928  
Gypsum plaster bases.....SA920

**H**  
Head-of-wall construction joints.....SA727  
Hearth extension, cement board.....SA932

**I**  
Insulating furring.....SA920, SA923  
Insulating Gypsum Panels, lath.....SA920, SA927

**J**  
Joint treatment.....SA927

**L**  
Lathing accessories, clips.....SA920  
Lime, hydrated.....SA920

**M**  
Metal lath & accessories.....SA920  
Metal stud partitions.....SA920, SA923, SA925, SA926  
Metal trim.....SA920, SA927  
Mini-brick exterior finish.....SA700  
Mouldings, drywall.....SA927, SA928  
MTC sound rating.....SA923

References listed are *principal source* of information in this Architectural Technical Literature series. Repetition or additional data may occur in other folders.

## Product or System Folder Reference

**P**  
Party walls.....SA920, SA923, SA924, SA925  
Plaster bases.....SA920  
Plaster ceilings.....SA920  
Plaster furring systems.....SA920  
Plaster partitions, steel-framed.....SA920  
Plaster partitions, wood-framed.....SA920  
Plastering lime.....SA920  
Plasters—basecoat, finish.....SA920  
Plastic trim.....SA920, SA927, SA928  
Poke-thru insulation.....SA727  
Prefinished gypsum panels.....SA928  
Primer.....SA927, SA933

**R**  
Radiant heat ceiling components.....SA920  
Resilient ceilings.....SA920, SA924  
Resilient partitions.....SA920, SA924, SA925

**S**  
Screws.....SA920, SA927  
Security walls.....SA920, SA1119  
Shaft wall partitions.....SA926  
Sheathing, gypsum.....SA927  
Soffits, drywall.....SA923  
Sound control partitions.....SA923  
Sound control floor/ceilings.....SA924  
Stucco.....SA700, SA920, SA923

**T**  
Tape, reinforcing.....SA920, SA927  
Texture finishes.....SA933  
Textured ceilings.....SA933  
Thin-brick exterior finish.....SA700  
Through-penetrations.....SA727  
Tile accessories.....SA932  
Tile backer board.....SA932  
Trim accessories.....SA920, SA927

**U**  
Underlayment, floor & counter top.....SA932

**V**  
Veneer finishes.....SA920  
Veneer plaster systems.....SA920  
Vent shaft construction.....SA926  
Vinyl-faced Gypsum Panels.....SA928  
Vinyl trim.....SA920, SA927, SA928

**W**  
Wallboard & accessories.....SA927  
Wallcovering, vinyl.....SA928  
Wall furring systems.....SA920, SA922, SA923  
Wall panels, prefinished.....SA928  
Wall shield, cement board.....SA932  
Wood-frame partitions, ceilings.....SA920, SA924, SA925

This Index lists all UL Designs that involve the products of the United States Gypsum Company and USG Interiors, Inc. UL Design numbers appear with their corresponding references, the UL Fire Resistance Directory, or the *Construction*

UL Des. No.	Ref.	UL Des. No.	Ref.	UL Des. No.	Ref.
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SA100/USG Corporation 5

## Selector Guide to Sound-Rated Partitions<sup>(1)</sup>

STC range	60-69	55-59	50-54	45-49
Drywall or Veneer Plaster	24, 25, 28, 29, 30, 34, 64, 88, 89	11, 14, 16, 17, 19 20, 21, 24, 25, 26, 31, 46, 47, 64, 82 89, 100, 104, 105, 108, 109	1, 8, 13, 14, 19, 21, 23, 34, 44, 47, 52, 55, 62, 64, 71, 79, 96, 98, 101, 106, 109, 110, 115	1, 3, 6, 7, 9, 10, 12, 19, 20, 32, 39, 40, 53, 54, 64, 65, 66, 69, 79, 80, 95, 96, 100, 107, 110

(1) Assemblies are identified by numbers in right outside margin, 1 to 115

, pages 6 through 16.

### Notes on Using This Selector Guide

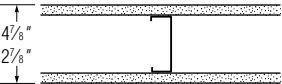

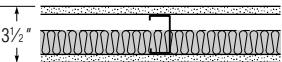
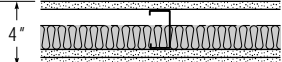
- Two recent tests permit SHEETROCK Brand Gypsum Panel products and IMPERIAL Brand Gypsum Base products to be applied horizontally or vertically in partitions without compromising the fire rating. These tests are UL Design U419 for non-load-bearing partitions and UL Design U423 for load-bearing partitions. When either of these tests are listed with a USG system, it means that the system can now be built with the panels oriented in either direction.
- The two fire tests indicated above also demonstrated that when FIRECODE or FIRECODE C Core products are used, the horizontal joints on opposite side of the studs need not be staggered (as was previously required).
- In partitions indicating the use of 1/2" DUROCK Brand Cement Board, it is permissible to substitute 5/8" DUROCK Brand Cement Board without compromising the fire rating.
- In partitions indicating the use of 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, or 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, it is permissible to substitute 5/8" FIBEROCK Brand Abuse-Resistant Panels without compromising the fire rating.
- Note that in partitions indicating the use of SHEETROCK Brand Exterior Sheathing or DUROCK Brand Cement Panels for sheathing applications, it is permissible to substitute 5/8" FIBEROCK Brand Sheathing without compromising the fire rating.
- Where thermal insulation is shown in assembly drawings, the specific product is required to achieve the stated fire rating. Glass fiber insulation cannot be substituted for mineral wool insulation.
- In fire-rated non-load-bearing partitions, steel studs should not be attached to ceiling runners.
- For specific information regarding the assemblies shown in this folder, consult the current UL Fire Resistance Directory.
- In multi-layer applications, only the joints of the face layer need be finished.


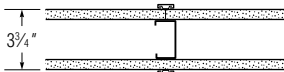
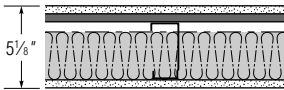
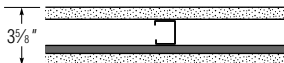
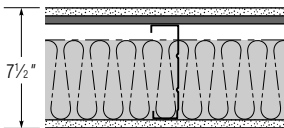
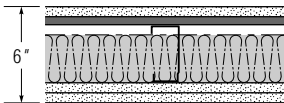
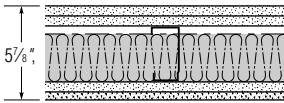
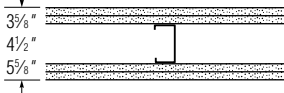

### Details

Substitutions, designations, materials indicated in drawing.

RC-1™ Resilient Channels or equivalent.

Furring channels.

Fire-rated construction		Acoustical performance		Folder reference		
Detail & physical data	Description & test no.	STC	Description & test no.			
<b>Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster Steel Stud Partitions (Non-Load-Bearing) – 1-Hour Rating</b>						
	wt. 6	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, or IMPERIAL Brand Abuse-Resistant Gypsum Base, FIRECODE Core—3-5/8" 25 ga steel studs 24" o.c.—panels screw att—joints fin—perimeter caulked— <b>UL Des U419 or U465</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE Core, and veneer finish surface	40 49 51	<b>USG-860808</b> Based on 3" SAFB in cavity panels— <b>SA-870717</b> Based on FIRECODE C Core panels and 3" SAFB 25" wide, creased to fit cavity— <b>RAL-TL-90-166</b>	SA700 SA707 SA923	<b>1</b>
		5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—1-5/8" 25 ga steel 38 studs 24" o.c., single layer panels vert appl & screw att 12" o.c.—joints fin—perimeter caulked— <b>U of C 7-31-62</b>		<b>USG-860809</b>	SA923	<b>2</b>
		veneer plaster only (not drywall) 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, & veneer finish—2-1/2" 25 ga steel studs—base screw att—joints stag & taped—1/16" veneer finish—perimeter caulked—stud spacing at 16" recommended— <b>GA-WP-1240</b>	45	Based on 3-5/8" studs 24" o.c. with 1" SAFB in cavity— <b>CK-664-1</b>	SA920	<b>3</b>
	wt. 8	3-1/2" 20 ga. steel studs 16 o.c.—5/8" IMPERIAL Brand Gypsum Base, FIRECODE Core, one side—DUROCK Brand cement board other side—gypsum panels and cement board screw-attached to studs—3" SAFB—USG Plaster Bonder over cement board and treated joints—joints treated with USG setting-type joint compound and paper tape—Diamond Brand veneer basecoat with IMPERIAL Brand finish— <b>UL Des U404</b>			SA920	<b>4</b>
	wt. 7	5/8" DUROCK or 5/8" IMPERIAL Brand FIRECODE Base—3-1/2" 20 ga. studs—3" THERMAFIBER SAFB—board screw-attached 8" o.c. with 1-5/8" DUROCK screws—USG Plaster Bonder over untreated joint areas—joints treated with USG setting-type joint compound and paper tape—USG Plaster Bonder over cement board and treated joints—Diamond Brand veneer basecoat with veneer or conventional finish— <b>UL Des U407</b>		SA920		<b>5</b>
	wt. 5	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2-1/2" studs 24" o.c.—single layer panels ea side screw att—1-1/2" SAFB—joints fin—perimeter caulked— <b>UL Des U419 or U448</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	45 48	<b>RAL-TL-69-42</b> Based on 3-5/8" studs & 2" SAFB— <b>SA-800422</b>	SA923	<b>6</b>
		5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—2-1/2" 25 ga steel studs 24" o.c.—1-1/2" SAFB—panels apply horiz & screw-att—horiz joints fin— <b>CEG 8-11-83</b> —rating also applies to assembly with 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, panels and joints fin— <b>CEG 5-9-84</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE Core, and veneer finish surface	47	<b>SA-831001</b>	SA923	<b>7</b>
	wt. 6	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2-1/2" 25 ga steel studs 24" o.c.—single layer panels one side screw att—1-1/2" SAFB—double layers opp side—panels screw att—joints fin—perimeter caulked— <b>UL Des U419 or U448</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	50 41	<b>SA-800504</b> Based on same construction without SAFB— <b>RAL-TL-69-148</b>	SA923	<b>8</b>
	wt. 7					

Fire-rated construction	Acoustical performance		Folder reference	
Detail & physical data	Description & test no.	STC	Description & test no.	
Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster (continued)				
Steel Stud Partitions (Non-Load-Bearing) – 1-Hour Rating				
	Face layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw att—1-5/8" 25 ga steel studs 24" o.c.—base layer 1/4" SHEETROCK Brand Gypsum Panels, screw att—joints fin—perimeter caulked— <b>GA-WP-1090</b> —rating also applies with IMPERIAL Brand gypsum Base, FIRECODE C Core, and veneer finish surface	53	Based on 1-1/2" SAFB & 2-1/2" studs— <b>CK-684-13</b>	SA923 <b>9</b>
	Alternate based on 2-1/2" 25 ga steel studs & 1/2" face layer laminated— <b>GA-WP-1051</b>	53	Based on 2" glass fiber— <b>NGC-2318</b>	SA923 <b>10</b>
	Alternate based on 2-1/2" 25 ga steel studs & face layer of 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core — <b>GA-WP-1015</b>	55	Based on 1-1/2" SAFB— <b>CK-684-14</b>	SA923 <b>11</b>
	Alternate based on 2-1/2" 25 ga steel studs & base layer of 3/8" SHEETROCK Brand Gypsum Panels— <b>GA-WP-1053</b>	54	Based on 2" glass fiber— <b>CK-8104.02</b>	SA923 <b>12</b>
wt. 7				
	5/8" SHEETROCK Brand Vinyl-Faced Gypsum Panels, FIRECODE Core—2-1/2" steel studs 24" o.c. with battens screw att to each stud—aluminum battens over tracks— <b>UL Des U405</b>	45	<b>G&amp;H NG-146FT</b> Based on 3" insulation	SA928 <b>13</b>
wt. 5				
	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-5/8" 25 ga steel studs 24" o.c.—3" SAFB—RC-1 chan or equiv one side spaced 24" o.c., screw-att to studs—gypsum panels screw-att to studs & RC-1 chan or equiv—joints fin—perimeter caulked— <b>UL Des U419 or U451</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	50 54 55 55	<b>RAL-TL-87-156</b> (42 MTC) Based on 5/8" thick panels— <b>RAL-TL-83-216</b> (47 MTC) Based on 5/8" IMPERIAL Brand Gypsum Base, FIRECODE Core, & creased 3" SAFB— <b>SA-860635</b> Based on 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, & on 25" wide creased SAFB— <b>SA-850415</b> Based on 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core— <b>USG-850409</b>	SA707 SA920 SA923 <b>14</b>
wt. 6				
	3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core—1-5/8" studs 24" o.c.—panels screw att —joints stag & fin— <b>UL Des U496 or U451</b> —UL Des U451 has panels applied over RC-1 chan or equiv one side			SA923 <b>15</b>
	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—6" 20 ga steel studs 24" o.c.—5" SAFB—RC-1 chan or equiv one side spaced 24" o.c., screw-att to studs—gypsum panels screw-att to studs & RC-1 chan or equiv—joints stag and fin—perimeter caulked— <b>UL Des U419 or U451</b>	56 56	<b>RAL-TL-87-139</b> (48 MTC) Based on 5/8" thick SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>RAL-TL-84-141</b> (50 MTC)	SA923 <b>16</b>
wt. 6				
Steel Stud Partition (Non-Load-Bearing) – 1-1/2-hour Rating				
	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-5/8" 20 ga studs 24" o.c.—3" SAFB—RC-1 chan or equiv one side spaced 24" o.c., screw-att to studs—2 layers gypsum panels screw-att to studs, 1 layer screw-att to chan—face layer joints fin—perimeter caulked— <b>UL U452</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	58 59	<b>RAL-TL-83-215</b> (52 MTC) 8-3/8" wall with 6" 20 ga struc studs & 5" SAFB— <b>RAL-TL-84-140</b> (54 MTC)	SA920 SA923 <b>17</b>
wt. 8				
Steel Stud Partitions (Non-Load-Bearing) – 2-Hour Rating				
	3-1/2" 20 ga. steel studs 16" o.c.—double-layer 5/8" IMPERIAL Brand FIRECODE Base one side—DUROCK Brand Cement Board face layer, 5/8" SHEETROCK Brand gypsum sheathing, FIRECODE Core, base layer other side—gypsum panels and cement board screw-attached to studs—3" SAFB—USG Plaster Bonder over Cement Board and treated joints—face layer joints treated with USG setting-type joint compound and paper tape—DIAMOND Brand veneer basecoat with IMPERIAL Brand finish— <b>UL Des U404</b>			SA920 <b>18</b>
wt. 11				
	Double layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—1-5/8" 25 ga steel studs 24" o.c.—joints stag—base layer screw att—face layer strip lamin or screw att—face layer joints fin—perim caulked— <b>UL Des U412 or U419</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	50 55 52	Based on 3-5/8" stud assembly without SAFB— <b>USG-840817</b> Based on 3-5/8" studs and 1-1/2." SAFB— <b>SA-800421</b> Based on lamin, face layer, 1-1/2" SAFB and 2-1/2" studs — <b>SA-860932</b> Based on 2-1/2" studs, screw-att face layer and 1-1/2" SAFB— <b>CK-654-40</b>	SA707 SA920 SA923 <b>19</b>
wt. 10				
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, plain or vinyl faced appl ea side—1-5/8" steel studs 24" o.c.—base layers screw att—face layer lamin or screw att—face layer joints fin—perimeter caulked— <b>UL Des U411 or U419</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	48 56	Based on 3-5/8" studs and 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>BBN-770408</b> Based on 3-5/8" studs and 3" SAFB— <b>USG-840818</b>	SA920 SA923 <b>20</b>
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, or SHEETROCK Brand Abuse-Resistant Gypsum Panels, FIRECODE Core, or IMPERIAL Brand Abuse-Resistant Gypsum Base, FIRECODE Core, ea side, 2-1/2" 25 ga steel studs 24" o.c.—joints stag—base and face layers screw att—joints fin—perimeter caulked— <b>UL Des U419</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	51 56	Based on 2-1/2" SAFB in cavity— <b>GA-WP-1548</b> Based on 2" SAFB in cavity— <b>USG-840819</b>	SA923 <b>21</b>
wt. 12				

# A Partitions

## Fire-rated construction

### Detail & physical data

### Description & test no.

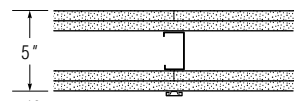
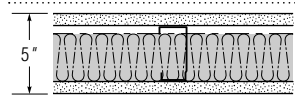
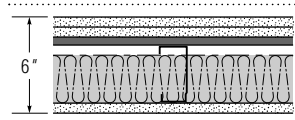
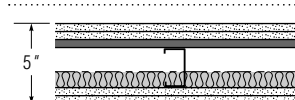
## Acoustical performance

### STC Description & test no.

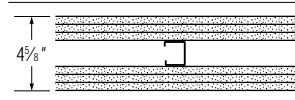
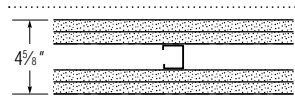
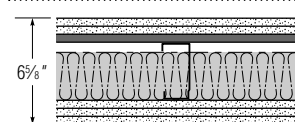
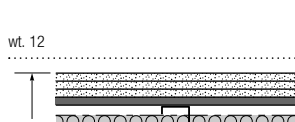
### Folder reference

## Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster (continued)

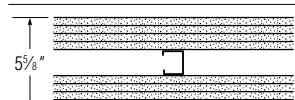
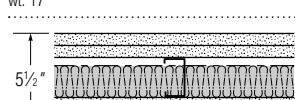
### Steel Stud Partitions (Non-Load-Bearing) – 2-Hour Rating

 <p>wt. 10</p>	Double layer 5/8" SHEETROCK Vinyl-Faced Gypsum Panels, FIRECODE Core— 2-1/2" 25 ga steel studs 24" o.c.—panels screw att— <b>UL Des U411 or U419</b>			SA928	<b>22</b>
 <p>wt. 7</p>	3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core, ea. side—min. 3-1/2" 25 ga steel studs 24" o.c.—3" SAFB—panels screw att— joints stag & fin—perimeter caulked— <b>UL Des U419 or U491</b>	50	<b>USG-910617</b>	SA707 SA923	<b>23</b>
 <p>wt. 9</p>	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-5/8" 20 ga studs 24" o.c.—3" SAFB—RC-1 chan or equiv one side spaced 24" o.c., screw-att to studs—single-layer gypsum panels screw-att to studs, double layer screw-att to chan—face layer joints fin—perimeter caulked— <b>UL Des U419 or U453</b>	60 59	Based on 1/2" thick panels, 6" 20 ga struc studs, 5" SAFB— <b>RAL-TL-87-140</b> (54 MTC) Based on 5/8" thick panels, 6" 20 ga struc studs, 5" SAFB— <b>RAL-TL-84-136</b> (54 MTC)	SA923	<b>24</b>
 <p>wt. 10</p>	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2-1/2" 25 ga steel studs 24" o.c.—min. 1" SAFB—RC-1 chan or equiv one side, spaced 24" o.c. screw-att to studs—double layer gypsum panels screw-att to chan, 2 layers screw-att to steel studs—face layer joints fin—perimeter caulked— <b>UL Des U454</b>	60 61 57 63 62	<b>RAL-TL-87-154</b> (54 MTC) Based on 5/8" thick panels— <b>RAL-TL-83-214</b> (57 MTC) Based on 5/8" thick panels— <b>USG-871207</b> Based on 6" 20 ga struc studs & 5" SAFB— <b>RAL-TL-87-141</b> (59 MTC) Based on 5/8" thick panels, 6" 20 ga struc studs & 5" SAFB— <b>RAL-TL-84-139</b> (58 MTC)	SA923	<b>25</b>

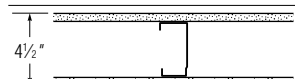
### Steel Stud Partitions (Non-Load-Bearing) – 3-Hour Rating

 <p>wt. 13</p>	3 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side— 1-5/8" 25 ga steel studs 24" o.c.—panels screw-att with face layer joints fin— perimeter caulked—rating based on assembly with or without sound atten fire blankets— <b>UL Des U419 or U435</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	59	Based on assembly with 1-1/2" SAFB in cavity— <b>SA-830112</b>	SA920 SA923	<b>26</b>
 <p>wt. 14</p>	Steel stud—Double layer 3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core, ea side—1-5/8" 25 ga steel studs 24" o.c.—Panels screw att with face layer joints fin—perimeter caulked— <b>UL Des U419 or U435</b> —rating also applies with IMPERIAL Brand Base, ULTRACODE Core, and veneer finish surface			SA923	<b>27</b>
 <p>wt. 12</p>	Resil Stud Drywall—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-5/8" 20 ga studs 24" o.c.—3" SAFB—RC-1 chan or equiv one side, spaced 24" o.c. screw-att to studs—3 layers gypsum panels screw-att to studs, double layer screw-att to chan—face layer joints fin—perimeter caulked— <b>UL Des U419 or U455</b>	61 62 64 63 65	<b>RAL-TL-87-153</b> (56 MTC)Based on 5/8" thick panels— <b>RAL-TL-83-213</b> (59 MTC) Based on 6" 20 ga struc studs & 5" SAFB— <b>RAL-TL-87-142</b> (59 MTC) Based on 5/8" thick panels, 6" 20 ga struc studs & 5" SAFB— <b>RAL-TL-84-138</b> (59 MTC) Based on 5/8" thick panels, 6" 20 ga struc studs, 5" SAFB, acoustical sealant bead between panels and studs, dabs 8" o.c. between panel layers on stud side— <b>RAL-TL-84-150</b> (60 MTC)	SA707 SA920 SA923	<b>28</b>
 <p>wt. 14</p>	Resil Stud Drywall—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-5/8" 20 ga studs 24" o.c.—3" SAFB—RC-1 chan or equiv one side, spaced 24" o.c. screw-att to studs—3 layers gypsum panels screw-att to studs, 3 layers screw-att to chan—face layer joints fin—perimeter caulked— <b>UL Des U419 or U455</b>	63 65	<b>RAL-TL-87-152</b> (58 MTC) 6" 20 ga struc studs, 5" SAFB <b>RAL-TL-87-143</b> (61 MTC)	SA923	<b>29</b>

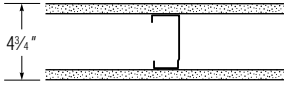
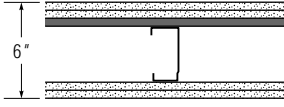
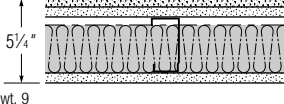
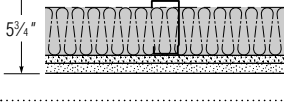
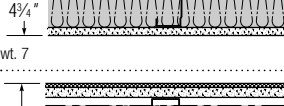

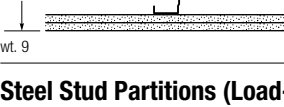

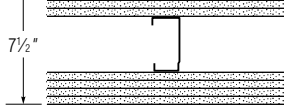
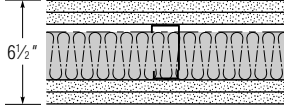
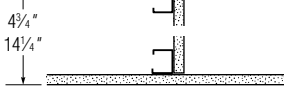
### Steel Stud Partitions (Non-Load-Bearing) – 4-Hour Rating

 <p>wt. 17</p>	Steel Stud—4 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—1-5/8" 25 ga steel studs 24" o.c.—panels screw att with face layer joints fin—perimeter caulked— <b>UL Des U419 or U435</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	62	Based on assembly with 1-1/2" SAFB in cavity— <b>SA-830113</b>	SA920 SA923	<b>30</b>
 <p>wt. 11</p>	Steel Stud—2 layers 3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core, ea side—2-1/2" 25 ga steel studs 24" o.c.—2" SAFB—panels screw att with face layer joints fin— <b>UL Des U419 or U490</b>	56	<b>SA-910907</b>	SA707 SA923	<b>31</b>

### Steel Stud Partition (Load-Bearing) – 45-Minute Rating

 <p>wt. 6</p>	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-1/2" 20 ga steel studs 24" o.c.—panels screw att—joints fin— <b>UL Des U423 or U425</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	47	Based on 3" SAFB in cavity— <b>SA-861001</b>	SA923	<b>32</b>
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Fire-rated construction		Acoustical performance		Folder	
Detail & physical data		Description & test no.		reference	
Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster (continued)					
Steel Stud Partition (Load-Bearing) – 1 hour Rating					
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—3-1/2" 20 ga steel studs 24" o.c.—panels screw att—joints fin— <b>UL Des U423 or U425</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE Core, and veneer finish surface	40 41	<b>USG-810519</b> Based on 2" SAFB in cavity— <b>USG-810518</b>	SA923	<b>33</b>
wt. 6					
	Double layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-1/2" 20 ga steel studs 24" o.c.—SAFB optional—RC-1 chan or equiv one side, spaced 24" o.c. screw-att to studs—panels screw att to chan one side, to studs other side—face layer joints fin— <b>UL Des U423 or U440</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	61 51	Based on 3-1/2" 16 ga struc studs, 5/8" thick panels, lateral bracing and 3" SAFB— <b>SA-830628</b> Based on 3-1/2" 16 ga struc studs and lateral bracing— <b>SA-840715</b>	SA923	<b>34</b>
wt. 10					
	Face layer 1/2" DUROCK Brand Cement Board—base layer 5/8" SHEETROCK Brand Gypsum Panels or sheathing, FIRECODE Core—min. 3-1/2", 20 ga struc studs 16" o.c.—3" SAFB—panels screw att— <b>UL Des U473</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE Core, and veneer finish surface	N/A		SA932	<b>35</b>
wt. 9					
	Face layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—base layer 1/2" DUROCK Brand Cement Board—panel screw att—min. 3-1/2" 20 ga struc studs 16" o.c.—3" SAFB— <b>UL Des U485</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE Core, and veneer finish surface	N/A		SA932	<b>36</b>
	1/2" DUROCK Brand cement panel—3-1/2 studs 16" o.c.—3" SAFB—joints taped and treated—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side—panels screw att— <b>UL Des U404</b>	N/A		SA932	<b>37</b>
wt. 7					
	5/8" DUROCK Brand cement panel and 1/4" ceramic tile (or DUROSCREEN 1100 or USG veneer plaster system)—3-1/2" studs 16" o.c.—3" SAFB—panels screw att— <b>UL Des U407</b>	N/A		SA932	<b>38</b>
Steel Stud Partitions (Load-Bearing) – 1-1/2-hour Rating					
	Double layer 1/2" SHEETROCK Brand gypsum panels, FIRECODE C Core—3-1/2" 20 ga steel studs 24" o.c.—panels screw att—face layer joints fin— <b>UL Des U425</b>	49 49	Based on 2" SAFB— <b>USG-811009</b> Based on 2" SAFB and 6" 20 ga struc studs— <b>USG-810940</b>	SA923	<b>39</b>
wt. 9					
Steel Stud Partitions (Load-Bearing) – 2-hour Rating					
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—3-1/2" 20 ga steel studs 24" o.c.—panels screw att—face layer joints fin— <b>load-bearing up to 100% allowable stud axial load when min 2" Thermafiber SAFB is used in stud cavities; otherwise load-bearing up to 80% allowable steel axial load—UL Des U423 or U425</b>	48 49	Based on 2" SAFB in cavity— <b>USG-811006</b> Based on 2" SAFB and 6" 20 ga struc stud— <b>USG-810937</b>	SA923	<b>40</b>
wt. 10					
	Alternate based on three layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core each side— <b>load bearing up to 100% allowable stud axial load—UL Des U423</b>			SA923	<b>41</b>
Steel Stud Partition (Load-Bearing) – 3-hour Rating					
	Four layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—3-1/2" 20 ga steel studs 24" o.c.—panels screw att—face layer joints fin— <b>load-bearing up to 100% allowable stud axial load—UL Des U426</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	N/A		SA923	<b>42</b>
wt. 18					
	Double layer 3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core—3-1/2" 20 ga. structural studs 24" o.c.—3" SAFB—face layer joints fin— <b>UL Des U490</b>			SA923	<b>43</b>
Steel Stud Double Wall Chases – 1-Hour Rating					
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, ea side—1-5/8" 25 ga steel studs 24" o.c. in 2 rows—5/8" gypsum panel gussets or steel run braces spanning chase screw-att to studs—panels screw att—joints fin— <b>UL Des U420</b>	52	Based on 3-1/2" insulation one side— <b>RAL-TL-76-155</b>	SA923	<b>44</b>
4 3/4" 14 3/4"					
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side— <i>fireproofed steel truss</i> —2-1/2" 25 ga steel studs 24" o.c. in 2 rows spaced 8" apart—5/8" gypsum panel gussets spanning chase att to stud at qtr & ctr points—panels screw-att—joints fin—includes 3 hr. truss— <b>UL Des U805</b>	N/A		SA923	<b>45</b>

## Fire-rated construction

## Detail &amp; physical data

## Description &amp; test no.

## Acoustical performance

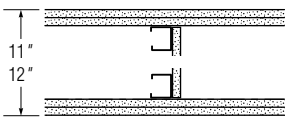
## STC

## Description &amp; test no.

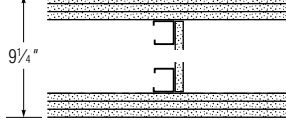
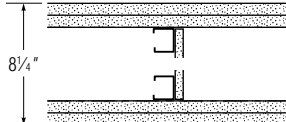
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### Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster (continued)

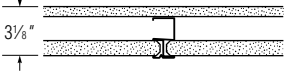
#### Steel Stud Double Wall Chases – 2-Hour Rating

wt. 11 	Double layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—1-5/8" 25 ga steel studs 24" o.c. in 2 rows spaced 5-3/4" apart—1/2" gypsum panel gussets spanning chase att to studs at qtr points—panels screw att—face layer joints fin—perimeter caulked—est. fire rating based on <b>UL Des U412 and U420</b>	55	<b>SA-860907</b>	SA923	<b>46</b>
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, ea side—1-5/8" 25 ga steel studs 24" o.c. in 2 rows spaced 6-1/4" apart—5/8" gypsum panel gussets or stl run braces spanning chase screw-att to studs—panels appl screw att—face layer joints fin— <b>UL Des U420</b>	52 57	<b>RAL-TL-76-162</b> Based on 3-1/2" insulation one side— <b>RAL-TL-76-156</b>	SA923	<b>47</b>

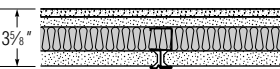

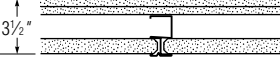
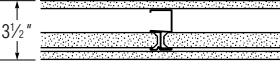
#### Steel Stud Double Wall Chases – 3-Hour Rating

wt. 12 	3 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—1-5/8" studs 24" o.c. in 2 rows spaced 3" apart—steel truss member—gypsum panel gussets or stl run braces spanning chase screw-att to studs—panels screw att—face layer joints fin—2 hr. rating applies with 2 layers panels ea side—1 hr. rating applies with single layer 5/8" panels ea side— <b>UL Des U436</b>	N/A		SA923	<b>48</b>
wt. 13 	Double layer 3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core, ea side—1-5/8" studs 24" o.c. in two rows spaced 2" apart—steel truss member—gypsum panel gussets or stl run braces spanning chase screw-att to studs—panels screw att—face layer joints fin— <b>UL Des U436</b>			SA923	<b>49</b>

#### Cavity Shaft Wall System – 1-Hour Rating

wt. 8 	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, one side — 1" SHEETROCK Brand Gypsum Liner Panels set betw USG steel C-H studs 24" o.c.—joints fin— <b>UL Des U415 or U469</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE Core, and veneer finish surface and/or SAFB in cavity	N/A		SA926	<b>50</b>
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#### Shaft Wall System – 2-Hour Rating

	1/2" DUROCK Brand Cement Board—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—1" SHEETROCK Brand Gypsum Liner Panels set betw USG steel 20 ga.min C-H studs 24" o.c.—1-1/2" SAFB—Cement Board screw att & laminated to gypsum panel with 4" strip ceramic tile mastic—cement board joints fin— <b>UL Des U415 or U459</b>	N/A		SA926	<b>51</b>
	1" SHEETROCK Brand Gypsum Liner Panels, set betw 4"USG steel C-H studs 24" o.c. one side—3/4" SHEETROCK Brand gypsum panels, ULTRACODE Core, other side—3" SAFB—joints fin—perimeter caulked— <b>UL Des U415 or U492</b>	52	<b>SA-910913</b>	SA707 SA923 SA926	<b>52</b>
	Double layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side—1" SHEETROCK Brand liner panels set betw USG 25 ga. steel C-H studs 24" o.c.—face layer joints fin— <b>UL Des U415 or U438</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	39 47	<b>USG-750302</b> Based on 1" SAFB in cavity— <b>BBN-750706</b>	SA926	<b>53</b>
	1/2" SHEETROCK Brand gypsum panels, FIRECODE C Core, one side—1" SHEETROCK Brand gypsum liner Panels set betw USG steel C-H studs 24" o.c. and 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, other side—joints fin— <b>UL Des U415 or U467</b> —rating also applies with IMPERIAL Brand gypsum base, FIRECODE C Core, and veneer finish surface	47	Based on 1" SAFB in cavity— <b>BBN-750704</b>	SA926 SA925	<b>54</b>

## Fire-rated construction

## Detail &amp; physical data

## Description &amp; test no.

## Acoustical performance

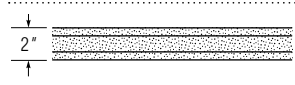
## STC

## Description &amp; test no.

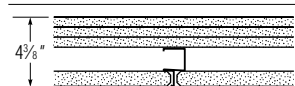
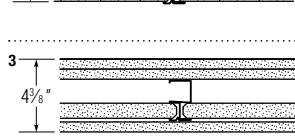
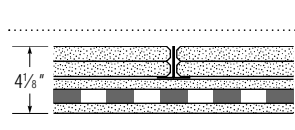
## Folder reference

## Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster (continued)

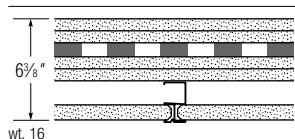
## Shaft Wall Systems – 2-Hour Rating

 <p>4" wt. 10</p>	<p>Double layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side—1" SHEETROCK Brand Gypsum Liner Panels set betw USG 25 ga. steel C-H studs 24" o.c.—RC-1 chan or equiv spaced 24" o.c.—panels &amp; RC-1 chan screw-att to side opp liner panels—face layer appl vert—joints fin—<b>UL Des U415</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface</p>	51	Based on 1-1/2" SAFB in cavity— <b>BBN-750412</b>	SA926	<b>55</b>
 <p>2"</p>	<p>Vent Shaft Gypsum Drywall—1-5/8" steel runners—25 ga. steel angles—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1" SHEETROCK Brand Gypsum Liner Panel—<b>UL Des U529</b></p>			SA926	<b>56</b>
 <p>3"</p>	<p>2" Laminated Solid—double layer 1" SHEETROCK Brand Gypsum Liner Panels laminated—2"x1" 25 ga. channels back to back &amp; welded 24" o.c.—2 layers, 1/2" SHEETROCK Brand Gypsum Panels screw att—joints stag—<b>OSU T-4481</b></p>			N/A	<b>57</b>

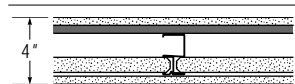
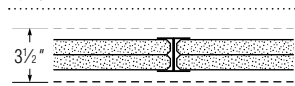
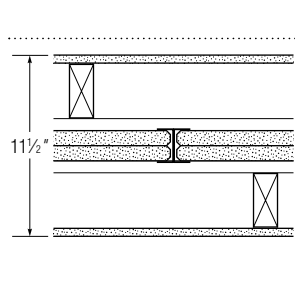
## Shaft Wall Systems – 3-Hour Rating

 <p>4 3/8"</p>	<p>3 layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side—face layer joints fin—1" SHEETROCK Brand Gypsum Liner Panels set between USG 25 ga. steel C-H studs 24" o.c., other side—rating also applies with IMPERIAL Brand FIRECODE C Base and veneer finish surface or SAFB in cavity—<b>UL Des U415</b></p>	N/A			<b>58</b>
 <p>4 3/8"</p>	<p>Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side—1" SHEETROCK Brand Gypsum Liner Panels set between USG 25 ga. steel C-H studs 24" o.c. and 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, other side—face layer joints fin—rating also applies with IMPERIAL Brand FIRECODE C Base and veneer finish surface or SAFB in cavity—<b>UL Des U415</b></p>	N/A			<b>59</b>
 <p>4 3/8"</p>	<p>Shaft Wall—double layer 1" SHEETROCK Brand Gypsum Liner Panels laminated—2"x1" 25 ga. channels back to back &amp; welded 24" o.c.—face &amp; base layer of 5/8" SHEETROCK Brand Gypsum Panels, furring channel 24" o.c., joints stag—<b>OSU-T-4423</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>			N/A	<b>60</b>

## Cavity Shaft Wall System – 4-Hour Rating

 <p>6 3/8" wt. 16</p>	<p>1" SHEETROCK Brand Gypsum Liner Panels set betw USG 25 ga. steel C-H studs 24" o.c.—2 layers SHEETROCK Brand Gypsum Panels, ULTRACODE Core, furring channel 24" o.c., 2 layers SHEETROCK Brand Gypsum Panels, ULTRACODE Core—face layer joints fin <b>UL Des U408</b></p>	N/A		SA926	<b>61</b>
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## Area Separation Wall Systems – 2-Hour Rating

 <p>4" wt. 10</p>	<p>1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1" SHEETROCK Brand Gypsum Liner Panels set in USG 25 ga. steel C-H studs 24" o.c.—RC-1 chan or equiv 24" o.c. screw att to side opp liner panels—single layer panels ea side screw att—joints fin—perim caulked—<b>UL Des U415</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface</p>	50	Based on 1-1/2" SAFB in cavity— <b>BBN-750411</b>	SA925	<b>62</b>
 <p>3 1/2"</p>	<p>Solid Area Separation Wall—two 1" SHEETROCK Brand Gypsum Liner Panels set in USG H-studs 24" o.c.—min. 3/4" air space both sides separating liner panels from any adjacent construction—<b>UL Des U336</b></p>	N/A		SA925	<b>63</b>
 <p>11 1/2"</p>	<p>Solid Area Separation Wall—two 1" SHEETROCK Brand Gypsum Liner Panels set in USG H-studs 24 o.c.—wd or steel studs each side min 3/4" from liner panels—1/2" SHEETROCK Brand Gypsum Panels—<b>UL Des U336</b></p>	<p>54 46 58 57 60 45 54 57</p>	<p><b>RAL-TL-88-348</b> Based on 2" SAFB on one side—<b>RAL-TL-88-353</b> Based on 2x4s and 2" SAFB on both sides—<b>RAL-TL-88-347</b> Based on 2x4s and 3" SAFB one side—<b>RAL-TL-88-351</b> Based on 2x4s and 3" SAFB on both sides—<b>RAL-TL-88-350</b> Based on 2x3s, 5/8" gypsum panels, no SAFB—<b>BBN-730104</b> Based on 2x3s, 5/8" gypsum panels, 2" SAFB one side—<b>BBN-730103</b> Based on 2x3s, 5/8" gypsum panels, 2" SAFB both sides—<b>BBN-730102</b></p>	SA925	<b>64</b>

## Fire-rated construction

## Detail &amp; physical data

## Description &amp; test no.

## Acoustical performance

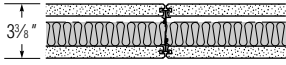
## STC Description &amp; test no.

Folder  
reference

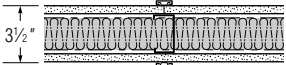
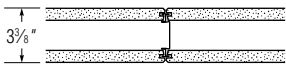
## Non-Combustible Wall Systems – Gypsum Drywall or Veneer Plaster (continued)

### Solid Area Separation Wall System – 3-Hour Rating

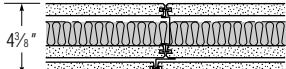
#### Relocatable Walls – No Rating

	Rel ULTRAWALL Partn—concealed "T" studs 24" o.c.— 3/4" x 24" bevel edge ULTRAWALL gypsum panels—1-1/2" SAFB—joints unfin— perimeter caulked—N/A	48	<b>RAL-TL-70-251</b>	FACTS ON DEMAND 800 874 0306	<b>65</b>
	Systems ULTRAWALL Partn—aluminum H-studs 24" o.c.—steel floor runner—ARL-300 ceiling runner—3/4" x 24" bevel edge ULTRAWALL Gypsum Panels—perimeter gaskets—joints finished with vinyl trim—N/A	42 46	<b>USG-850509</b> Based on same construction with 1-1/2" THERMAFIBER SAFB— <b>USG-850510</b>	FACTS ON DEMAND 800 874 0306	<b>66</b>

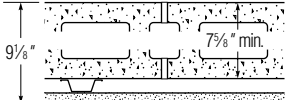
#### Relocatable Walls – 1-Hour Rating

	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—alum battens 24" o.c.—2-1/2" 25 ga steel studs 24" o.c.—2" insulation— <b>UL Des U406</b>			N/A	<b>67</b>
	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—alum battens 24" o.c.—2-1/2" 25 ga steel studs 24" o.c.—2" insulation— <b>U of C 7-27-70</b>			N/A	<b>68</b>
	Rel ULTRAWALL Partn—concealed "H" studs 24" or 30" o.c.—3/4" x 24" or 30" bevel edge ULTRAWALL gypsum panels—joints unfin—perim gaskets—based on 24" panels— <b>U of C 8-18-67</b> —based on 30" panels— <b>UL Des U427</b>	42 47	Based on 24" panels— <b>BBN-701008</b> Based on 24" panels and 1" THERMAFIBER SAFB in cavity— <b>BBN-701216</b>	FACTS ON DEMAND 800 874 0306	<b>69</b>
	Rel ULTRAWALL Partn—concealed "H" studs 24" o.c.—stl flr run—painted stl clg run with int tabs—3/4" x 24" bevel edge ULTRAWALL gypsum panels—joints unfin— <b>WHI-120/121</b> —based on alum clg run— <b>UL Des U427</b>	N/A		FACTS ON DEMAND 800 874 0306	<b>70</b>

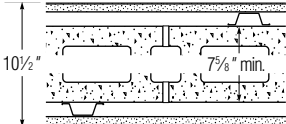
#### Relocatable Wall – 2-Hour Rating

	Rel ULTRAWALL Partn—concealed "H" studs 24" o.c.—1-1/2" SAFB— 3/4" x 24" bevel edge panels one side—double layer opp side with 3/4" Z-runners betw layers—joints unfin—perim caulked—painted— <b>UL Des U416</b>	50	<b>RAL-TL-70-198</b>	FACTS ON DEMAND 800 874 0306	<b>71</b>
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#### Furred Masonry – 3-Hour Rating

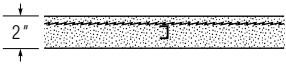
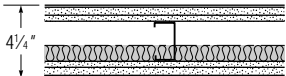
	Concrete Blok (UL Classified)—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, or 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, & veneer finish—7/8" deep met fur chan 24" o.c.—base att with 1" drywall screws 8" o.c. at butt joints, 12" o.c. in field—1/16" veneer finish—joints fin— <b>UL Des U914</b>	N/A		SA920	<b>72</b>
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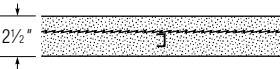
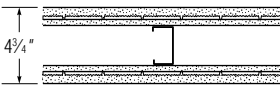
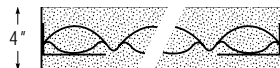

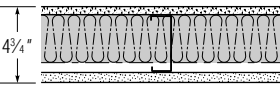


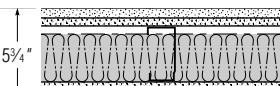

#### Furred Masonry – 4-Hour Rating

	Concrete Blok (UL Classified)—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, or 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, & veneer finish—7/8" deep met fur chan 24" o.c.—base att with 1" drywall screws 8" o.c. at butt joints, 12" o.c. in field—1/16" veneer finish—joints fin— <b>UL Des U910</b>	N/A		SA920	<b>73</b>
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## Non-Combustible Wall Systems – Conventional Lath & Plaster

### Steel Stud Partitions – 1-Hour Rating

	2" Solid Metal Lath & Plaster—3/4" cr chan 16" o.c.—2.5 lb. metal lath wire-tied to chan—100:2:100:2 gypsum sand plaster— <b>OSU-T-129</b>	37	<b>NBS-523 F45</b>	SA920	<b>74</b>
	3/8" Rocklath Type X base, both sides, 8" o.c.—2-1/2" 20 ga steel studs 16" o.c.— 1" THERMAFIBER insulation—7/16" plaster base coat, 1/16" plaster finish coat— <b>UL Des U488</b>			N/A	<b>75</b>

Fire-rated construction		Acoustical performance		Folder
Detail & physical data		Description & test no.		reference
Non-Combustible Wall Systems – Conventional Lath & Plaster (continued)				
Steel Stud Partitions – 2-Hour Rating				
	2 1/2" Solid Metal Lath & Plaster—3/4" cr chan 16" o.c.—3.4 lb. metal lath wire-tied to chan—1:2-1:3 gypsum perlite plaster— <b>GA WP 1930</b>		N/A	<b>76</b>
	2-1/2" studs 16" o.c.—3/8" ROCKLATH Type X base, both sides, 8" o.c.—3.4 lb. self-furring diamond mesh lath, both sides, 8" o.c.—3/4" gypsum sand plaster, both sides— <b>UL U484</b>	N/A	SA920	<b>77</b>
Security Wall – 2-Hour Rating				
	STRUCTOCORE 18 ga. steel panels att to 18 ga. steel perimeter angles—3/4" min. coverage STRUCTO-BASE gypsum plaster sanded at 2:1 by weight in two coats—IMPERIAL Brand finish plaster applied 1/16" thick— <b>UL Des U476</b>	N/A	SA1119	<b>78</b>
Non-Combustible Wall Systems – Cement Board				
Steel Stud Partitions (Non-Load-Bearing) – 1-Hour Rating				
	1/2" DUROCK Brand cement panel and 1/4" ceramic tile—3-5/8" 20 ga steel studs 16" o.c.—3" SAFB—joint taped—alt. design 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, one side— <b>UL Des U442</b>	48 50	<b>SA-840321</b> Based on alt. design— <b>SA-840313</b>	SA932 <b>79</b>
wt. 14				
	1/2" DUROCK Brand cement panel one side—3-5/8" 20 ga steel studs 16" o.c.—3" SAFB—joints taped—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core other side— <b>UL Des U457</b>	47	Based on 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core— <b>USG-840222</b>	SA932 <b>80</b>
wt. 7				
Steel Stud Partitions (Non-Load-Bearing) – 2-Hour Rating				
	1/2" DUROCK Brand cement panel—base layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side, double-layer other side—3-5/8" 25 ga steel studs 16" o.c.—3" SAFB—cement panel att with 1 1/2" DUROCK Brand screws—joints taped— <b>UL Des U474</b>	N/A	SA932	<b>81</b>
	1/2" DUROCK Brand cement panel and 1/4" ceramic tile—base layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3-5/8" 25 ga steel studs 16" o.c.—3" SAFB—joints taped—alt. design 2 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side— <b>UL Des U443</b>	58 56	<b>SA-851028</b> Based on alt. design— <b>SA-851016</b>	SA932 <b>82</b>
wt. 18				
Steel Stud Partitions (Non-Load-Bearing) – 1-Hour Rating				
	1/2" DUROCK Brand cement panel—base layer 5/8" SHEETROCK Brand Gypsum Panels or sheathing, FIRECODE Core—min. 3-1/2" 20 ga studs 16" o.c.—3" SAFB—joints taped— <b>UL Des U473</b>	N/A	SA932	<b>83</b>
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—base layer 1/2" DUROCK Brand cement panel—min. 3-1/2" 20 ga studs 16" o.c.—3" SAFB— <b>UL Des U485</b>	N/A	SA932	<b>84</b>
	1/2" DUROCK Brand cement panel—3-1/2" studs 16" o.c.—3" SAFB—joints taped and treated—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side— <b>UL Des U404</b>	N/A	SA932	<b>85</b>
	5/8" DUROCK Brand cement panel and 1/4" ceramic tile (USG veneer plaster system)—3-1/2" studs 16" o.c.—3" SAFB— <b>UL Des 407</b>	N/A	SA932	<b>86</b>

## Fire-rated construction

## Detail &amp; physical data

## Description &amp; test no.

## Acoustical performance

## STC Description &amp; test no.

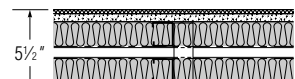
Folder  
reference

### Non-Combustible Wall Systems – Cement Board (continued)

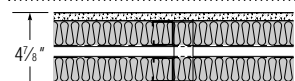
#### Steel Stud Partitions (Load-Bearing) – 2-Hour Rating

	1/2" DUROCK Brand cement panel—base layer 5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core—3-1/2" studs 16" o.c.—3" SAFB—joints taped and treated—double layer 1-5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side— <b>UL Des 404</b>	N/A	SA932	<b>87</b>
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#### Chase Walls – 1-Hour Rating

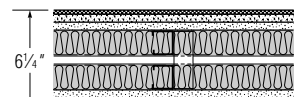
	1/2" DUROCK Brand cement panel and 1/4" ceramic tile—1-5/8" 25 ga steel studs 16" o.c. in two rows with horiz braces—1-1/2" SAFB—board att with 1-1/4" DUROCK Brand screws—joints taped—alt. design 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, one side— <b>UL Des U445</b>	61 60	Based on 3" SAFB & 3 3/8" studs— <b>SA-840524</b> Based on 3" SAFB & alt. design— <b>SA-840515</b>	SA932	<b>88</b>
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Wt. 17

	1/2" DUROCK Brand cement panel one side—1-5/8" 25 ga steel studs 16" o.c. in two rows with horiz braces—1-1/2" SAFB in both stud cavities—joints taped—alt. design 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, other side— <b>UL Des U458</b>	57	Based on 3-5/8" 25 ga steel studs and 3" SAFB— <b>SA-840505</b>	SA932	<b>89</b>
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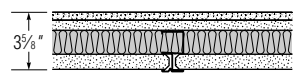
wt. 7

#### Chase Wall – 2-Hour Rating

	1/2" DUROCK Brand cement panel and 1/4" ceramic tile—base layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1-5/8" 25 ga steel studs 16" o.c. in two rows with horiz braces—1-1/2" SAFB—joints taped—alt. design 2 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, one side— <b>UL Des U444</b>	65 62	<b>SA-851112</b> Based on alt. design— <b>SA-851102</b>	SA932	<b>90</b>
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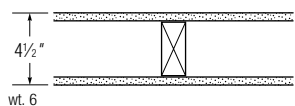
wt. 18

#### Cavity Shaft Wall – 2-Hour Rating

	1/2" DUROCK Brand Cement Panel—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—1" SHEETROCK Brand Gypsum Liner Panels set betw USG steel 20 ga. min C-H studs 24" o.c.—1-1/2" SAFB—cement board screw att & laminated to gypsum panel—joints fin— <b>UL Des U415 or U459</b>	N/A	SA926 SA932	<b>91</b>
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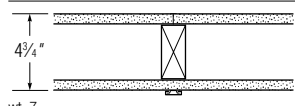
### Wood Framed Wall Systems – Gypsum Drywall or Veneer Plaster

#### Wood Stud Partition (Load-Bearing) – 45-Minute Rating

	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2x4 16" o.c.—panels nailed 7" o.c.—1-5/8" cem ctd nails—joints fin— <b>UL Des U317</b>	N/A	SA924	<b>92</b>
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wt. 6

#### Wood Stud Partitions (Load-Bearing) – 1-Hour Rating

	5/8" SHEETROCK Brand vinyl-faced Gypsum Panels, FIRECODE Core—2x4 16" o.c.—panels fastened 7" o.c. with 1-7/8" fasteners— <b>UL Des U305</b>		SA928	<b>93</b>
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wt. 7

U of C 10-27-64	N/A	SA920	<b>94</b>
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wt. 7

UL Des U305 and UL Des U314	34 37 46	Based on 16" stud spacing and screws 6" o.c.— <b>USG-30-FT-G&amp;H</b> Based on 24" stud spacing— <b>USG-860807</b> Based on 24" stud spacing & 3" SAFB— <b>BBN-700725</b>	SA924	<b>95</b>
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wt. 7

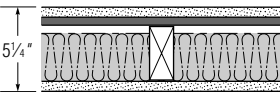
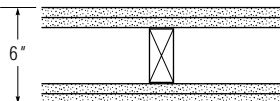
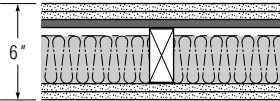
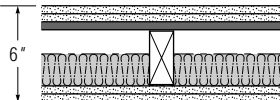
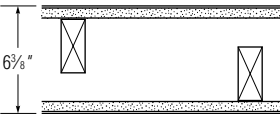
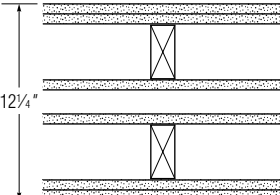
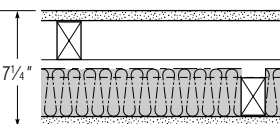
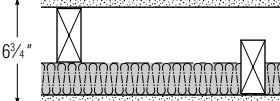
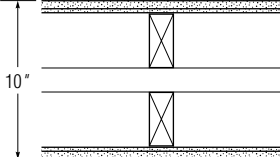
GA-WP-3341	45 53	<b>RAL-TL-69-52</b> Based on 5/8" lamin. face layers & 1-1/2" SAFB— <b>USG-221-ST-G-H</b>	SA924	<b>96</b>
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wt. 8

T-1396-OSU	41	Based on RC-1 chan or equiv one side only— <b>USG-860802</b>	SA924	<b>97</b>
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wt. 7

14

Fire-rated construction		Acoustical performance		Folder reference	
Detail & physical data		Description & test no.		STC Description & test no.	
Wood Framed Wall Systems – Gypsum Drywall or Veneer Plaster (continued)					
Wood Stud Partitions (Load-Bearing) – 1-Hour Rating					
	Resil partition 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2x4 16" or 24" o.c.—3" SAFB—RC-1 chan or equiv one side, spaced 24" o.c.—panels app horiz & att to channels—end joints back-blocked with RC-1 chan with 1" Type S screws—opp side direct att—joints fin—perimeter caulked— <b>UL Des U327</b>	50	<b>BBN-760903</b>	SA707 SA924	<b>98</b>
wt. 7					
Wood Stud Partitions (Load-Bearing) – 2-Hour Rating					
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, or SHEETROCK Brand Gypsum Panels, Water-Resistant, FIRECODE Core, or SHEETROCK Brand Vinyl-Faced Gypsum Panels, FIRECODE Core, ea side—2x4 16" o.c.—base layer att 6" o.c.—face layer att 8" o.c.—joints fin— <b>UL Des U301</b>	N/A		SA924 SA928	<b>99</b>
wt. 12					
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—2x4 16" o.c.—2" SAFB—RC-1 chan or equiv one side, spaced 24" o.c.—both base layers appl vert and face layers appl horiz—resil layers perim caulked—joints fin— <b>UL Des U334</b>	59 49	<b>RAL-TL-67-239</b> Based on same construction without SAFB— <b>RAL-TL-67-212</b>	SA924	<b>100</b>
wt. 12					
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ea side—2x4 16" o.c.—2" SAFB—RC-1 chan or equiv one side, spaced 24" o.c.—both base layers appl vert and face layers appl horiz—resil layers perim caulked—joints fin— <b>UL Des U334</b>	58 52	<b>USG-810219</b> Based on same assembly (non-fire rated) without SAFB— <b>USG-810218</b>	SA924	<b>101</b>
wt. 13					
Double Stud Chase Wall (Load-Bearing) – 1-Hour Rating					
	Stag Wd Stud—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2x4 spaced 24" o.c. max on ea side of 2x6 com plate—panels att 7" o.c.—perim caulked—joints fin— <b>UL Des U340</b>	N/A		SA920 SA924	<b>102</b>
Double Stud Chase Wall (Load-Bearing) – 2-Hour Rating					
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, outside, both sides—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, inside, both sides—2x4 wd studs 24" o.c.— <b>UL Des U342</b>			SA924	<b>103</b>
	Alternate based on 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, both outside double layer & inside single layer— <b>GA WP 3810</b>	57	3-1/2" glass fiber both walls— <b>RAL-TL-73-224</b>	N/A	<b>104</b>
	Alternate based on 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, outside double layers only— <b>GA WP 3812</b>	57	3-1/2" glass fiber both walls—based on TL-73-224	N/A	<b>105</b>
Double Stud Chase Walls (Non-Load-Bearing) – 1-Hour Rating					
	Stag Wd Stud—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—2x3 non-load-bearing studs 16" o.c.—2x3 plates 1" apart—panels fastened 7" o.c.—3" SAFB one side—jointsfin—perim caulked—est. fire rating based on UL Des U305 and U340	54	Based on screws or nails 7" o.c.— <b>RAL-TL-77-149</b>	SA924	<b>106</b>
wt. 8					
	Stag Wd Stud—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—2x4 16" o.c. on 2x6 com plate—panels att 7" .c.—2" SAFB one side—operim caulked—jointsfin—est. fire rating based on UL Des U305	45	Based on FIRECODE Core panels— <b>RAL-TL-69-213</b>	SA924	<b>107</b>
wt. 8					
	Wd Stud—base layer 1/4" SHEETROCK Brand Gypsum Panels—face layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE Core, laminated to base layer—2x4 wd studs 16" o.c.— <b>GA WP 5510</b>	55	Based on 1-1/2" THERMAFIBER SAFB in cavity— <b>G &amp; H BW-32ST</b>	N/A	<b>108</b>
10"					

## Fire-rated construction

## Detail &amp; physical data

## Description &amp; test no.

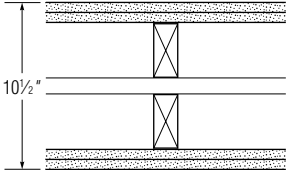
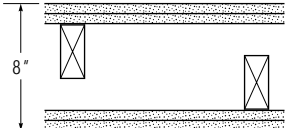
## Acoustical performance

## STC Description &amp; test no.

Folder  
reference

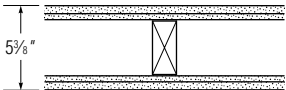
## Wood Framed Wall Systems – Gypsum Drywall or Veneer Plaster (continued)

## Double Stud Chase Walls (Non-Load-Bearing) – 2-Hour Rating

 <p>10 1/2"</p>	<p>Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—2 rows 2x4 16" o.c. on sep plates 1" apart—base layer att 24" o.c.—face layer att 8" o.c.—stagger vert joints 16" o.c.—perim caulked—joints fin— <b>GA-WP-3820</b></p>	51	<p><b>RAL-TL-69-214</b> Based on 3-1/2" thick insulation in one cavity—<b>USG-710120</b> <b>GA-NGC-3056</b></p>	SA924	<b>109</b>
		56			
		58			
 <p>8"</p> <p>wt. 13</p>	<p>Stag Wd Stud—Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—2x4 16" o.c. on 2x6 com plate—base layer att 24" o.c.—face layer att 8" o.c.—stagger vert joints 16" o.c.—perim caulked—joints fin— <b>GA-WP-3910</b></p>	47	<p><b>RAL-TL-69-211</b> <b>GA-NGC-2377</b></p>	SA924	<b>110</b>
		51			

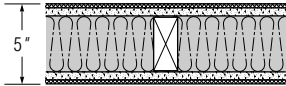
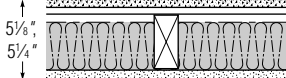
## Wood Framed Wall Systems – Conventional Lath &amp; Plaster

## Wood Stud Partition (Load-Bearing) – 1-Hour Rating

 <p>5 3/8"</p>	<p>3/8" ROCKLATH base, both sides, 4" o.c.—2x4 16" o.c.—1/2" 1:2 gypsum-sand plaster—<b>GA WP 3430</b></p>			N/A	<b>111</b>
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## Wood Framed Wall Systems – Cement Board

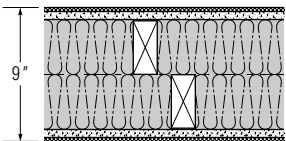
## Wood Stud Wall (Load-Bearing) – 1-Hour Rating

 <p>5"</p> <p>wt. 15</p>	<p>1/2" DUROCK Brand cement panel and 1/4" ceramic tile—2x4 studs 16" o.c.—3-1/2" SAFB—board att 8" o.c.—joints taped—alt. design 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, one side— <b>UL Des U329</b></p>	37 40	<p><b>USG-840404</b> Based on alt. design—<b>USG-840314</b></p>	SA932	<b>112</b>
 <p>5 1/8" 5 1/4"</p>	<p>1/2" DUROCK Brand cement panel—base layer 15/32" plywood—2 x 4 studs 16" o.c.—3" SAFB—joints taped and treated—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side—<b>UL Des U303</b></p>	N/A		SA932	<b>113</b>

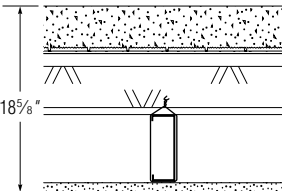
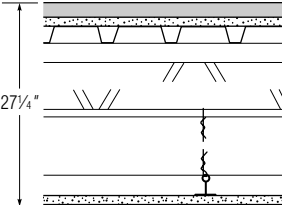
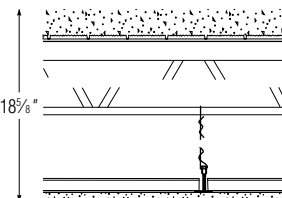
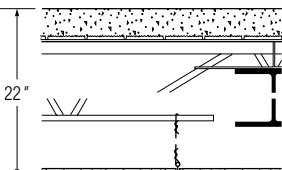
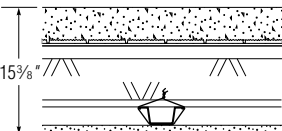
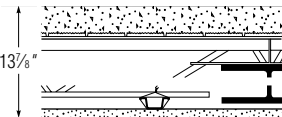
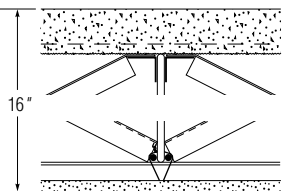
## Wood Stud Wall (Load-Bearing) – 2-hour Rating

 <p>5 5/8" 6"</p>	<p>1/2" DUROCK Brand cement panel—base layer 5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core—2 x 4 studs 16" o.c.—3" SAFB—joints taped and treated—double-layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side—<b>UL Des U308</b></p>	N/A		SA932	<b>114</b>
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## Double Stud Chase Wall (Load-Bearing) – 2-Hour Rating

 <p>9"</p> <p>wt. 18</p>	<p>1/2" DUROCK Brand cement panel and 1/4" ceramic tile—2 rows 2x4 16" o.c. on 2x8 com plate—3-1/2" SAFB both cavities—board att 8" o.c.—joints taped— <b>load-bearing up to 50% allowable design load—WHI-495-0505 &amp; 0508</b></p>	50	<p><b>SA-840523</b></p>	SA932	<b>115</b>
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Fire-rated construction		Acoustical performance		Folder reference	
Detail & Physical data		Description & test no.		STC IIC Description & test no.	
Non-Combustible Ceiling Systems – Gypsum Drywall or Veneer Plaster					
Steel Bar Joist Framing – 1-Hour Rating					
 <p>18 5/8"</p> <p>clg. wt. 2</p>	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—panels screw att 12" o.c. rt. angl. to 3-5/8" 25 ga steel studs 24" o.c.—studs wire tied to open web steel joists 24" o.c.—joints fin—2-1/2" concrete on riblath over joist— <b>GA FC 1105</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A		N/A	1
Steel Bar Joist Framing – 1-1/2-Hour Rating					
 <p>27 1/4"</p> <p>clg. wt. 4</p>	USG Drywall Suspension System—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—susp grid with main run 4" o.c. and cross tees 2" o.c.—gypsum panels screw-att to grid—joints stag and fin—min 1" roof insul and 5/8" gypsum bd on steel deck over bar joists—1 hr. rating based on assembly with 1/2" thick panels— <b>UL Des P510</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A		SA923 SA920	2
 <p>18 5/8"</p>	USG Drywall Suspension System—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—gypsum panels screw-att below grid with 1" Type S screws 12" o.c.—joints stag & fin—2-1/2" conc on riblath over bar joist— <b>UL Des G528</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A		SC2000 SC1963	3
 <p>22"</p>	1/2" x 2" x 4" Gypsum Lay-In Panels, FIRECODE C Core, in Susp Exp Grid Sys—2-1/2" conc on riblath over bar joist— <b>UL Des G259</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A		SC2000 SC1963	4
 <p>15 3/8"</p> <p>clg. wt. 2</p>	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—panels screw att 12" o.c. rt. angl. to met fur chan 24" o.c.—chan wire tied to open web steel joists 24" o.c.—joints fin—2" concrete on riblath or steel deck over joist— <b>UL Des G502</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A		N/A	5
Steel Bar Joist Framing – 2-Hour Rating					
 <p>13 7/8"</p> <p>clg. wt. 3</p>	1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—met fur chan 24" o.c.—joints fin—2-1/2" conc on riblath or corrug stl deck over bar joist— <b>UL Des G515</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	54*	ASTM E1414	SA923 SA920	6
 <p>16"</p> <p>clg. wt. 2</p>	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—panels screw att 8" o.c. rt. angl. to met fur chan 48" o.c.—chan wire to open web steel joists 12" o.c.— <b>UL Des G503</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface			N/A	7

clg. wt. 2

\*CAC value per ASTM E1414 test procedure for horizontally adjacent spaces.

\*CAC value per ASTM E1414 test procedure for horizontally adjacent spaces.

## Fire-rated construction

## Detail &amp; Physical data

## Description &amp; test no.

## Acoustical performance

## STC IIC Description &amp; test no.

Folder  
reference

## Non-Combustible Ceiling Systems – Gypsum Drywall or Veneer Plaster (continued)

## Steel Bar Joist Framing – 2-Hour Rating (continued)

	<p>1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—panels screw att 12" o.c. rt. angl. to met fur chan 24" o.c.—chan wire tied to open web steel joists 24" o.c.—joints fin—2-1/2" concrete on riblath or steel deck over joist—<b>GA FC 2030</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	53	NGC-4075	N/A	<b>8</b>
	<p>USG Drywall Suspension System—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—gypsum panels screw-att below grid with 1" Type S screws 12" o.c.—joints fin—2-1/2" conc on riblath or steel deck over bar joist—3 hr. rating with 5/8" panels &amp; 3" thick concrete—<b>UL Des G523</b>—rating also applies with IMPERIAL Brand gypsum base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	N/A		SC2000 SC1963	<b>9</b>
	<p>USG Drywall Suspension System—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—gypsum panels screw-att below grid 8" o.c.—joints stag &amp; fin—2-1/2" conc on riblath over bar joist—<b>UL Des G526</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	N/A		SC2000 SC1963	<b>10</b>
	<p>1/2" x 24" x 24" Gypsum Lay-In Panels, FIRECODE C Core, on Susp Exp Grid Syst—2-1/2" conc deck on riblath or corrugated steel deck over bar joist—<b>UL Des G222</b>—fire rating 1 1/2 hr. with 1/2" x 24" x 48" panels;—<b>UL Des G259</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	N/A		SC2000 SC1963	<b>11</b>

clg. wt. 2

## Steel Bar Joist Framing – 3-Hour Rating

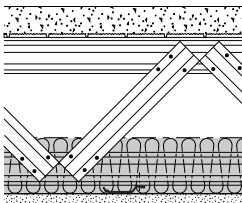
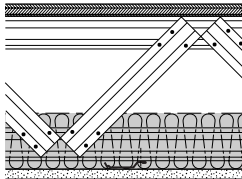
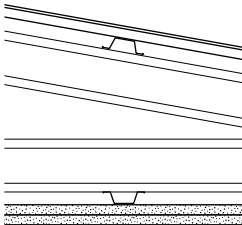
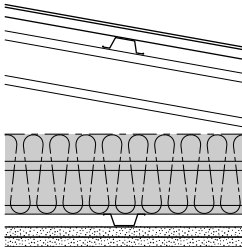
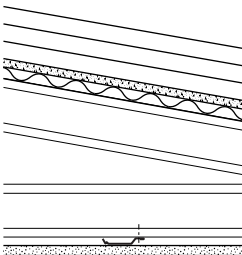
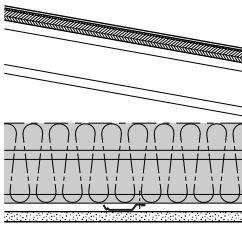
	<p>5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—met fur chan 24" o.c.—panels att 12" o.c.—joints fin—2-1/2" conc on corrugated steel deck or riblath over bar joist—<b>UL Des G512</b></p>	N/A		SA923	<b>12</b>
	<p>USG Drywall Suspension System—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—susp grid to main run 4' o.c. and cross tees 2' o.c.—gypsum panels screw-att to grid—joints fin—3-1/4" conc on riblath or corrugated steel deck over bar joist—rating also applies with 5/8" panels and 2-3/4" conc slab—<b>UL Des G529</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	N/A		SA923	<b>13</b>

clg. wt. 3

## Steel C-Joist Framing – 1-Hour Rating

	<p>1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—7" 18 ga steel joists 24" o.c.—double layer gypsum panel clg att to joists—double layer gypsum panels around beam—joints stg—<b>UL Des L524</b>—rating also applies with IMPERIAL Brand FIRECODE or FIRECODE C base and veneer finish surface</p>	39	<p>Based on 9-1/2" 16 ga steel joists—<b>USG-760105</b> Based on 9-1/2" 16 ga steel joists and 3" SAFB—<b>USG-760310</b> Based on 9-1/2" 16 ga steel joists and carpet pad—<b>USG-760106</b> Based on 9-1/2" 16 ga steel joists and carpet &amp; pad with 3" SAFB—<b>USG-760405</b></p>	SA923	<b>14</b>
	<p>5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—7-1/2" 18 ga struc steel joists 24" o.c.—2-1/2" conc flr on corrug steel deck—gypsum panel ceiling att to joists with 1" Type S-12 screws 12" o.c.—joints fin—est. fire rating based on witnessed laboratory test—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	43		SA923	<b>15</b>
	<p>Resil ceiling—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—panels screw att 12" o.c. rt. angl. to RC-1 chan or equiv 24" o.c.—RC-1 chan or equiv screw att to 6" 18 ga struc steel joists 24" o.c.—joints fin—2" concrete on steel deck over joist—<b>GA FC 1145</b>—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface</p>	45		SA923	<b>16</b>
		70		SA923	<b>15</b>

clg. wt. 2

Fire-rated construction		Acoustical performance		Folder reference
Detail & Physical data	Description & test no.	STC	IIC	
Floor/Ceiling Assemblies – 1-Hour Rating				
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw-attached to RC-1 channels (or equivalent)—joints finished—channels screw-attached to bottom chord of steel trusses—insulation optional in concealed space directly over gypsum ceiling membrane—concrete floor over riblath or corrugated steel deck— <b>UL Des G540, G542, G543, G544</b>			SA923 17
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw-attached to RC-1 channels (or equivalent)—joints finished—channels screw-attached to bottom chord of steel trusses—insulation optional in concealed space directly over gypsum ceiling membrane—plywood flooring or floor topping mixture over plywood subflooring— <b>UL Des L549, L551, L552, L553</b>			SA923 18
Roof/Ceiling Assemblies – 1-Hour Rating				
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw-attached to met fur chan or RC-1 channels (or equivalent)—joints finished— channels spaced max 24" o.c., mechanically attached to bottom chord of steel trusses—insulation optional in concealed space, spaced a min 1" from gypsum ceiling membrane—roof covering and roof insulation over steel roof deck— <b>UL Des P515</b>			SA923 19
	Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw-attached to met fur chan or RC-1 channels (or equivalent)—joints finished— channels spaced max 24" o.c., mechanically attached to bottom chord of steel trusses—insulation optional in concealed space directly over gypsum ceiling membrane—roof covering and roof insulation over steel roof deck— <b>UL Des P515, P524</b>			SA923 20
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw-attached to RC-1 channels (or equivalent)—joints finished—channels 16" o.c., screw-attached to bottom chord of steel trusses—steel roof deck over trusses—roof covering and roof insulation over 1/2" DUROCK Brand Cement Board or 1/2" SHEETROCK Brand Gypsum Panels, min 1" thick insulation for 1 hr rating, min 2" thick insulation for 1-1/2 hr rating— <b>UL Des P521, P525, P527, P529</b>			SA923 21
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw-attached to RC-1 channels (or equivalent)—joints finished—channels screw-attached to bottom chord of steel trusses—insulation optional in concealed space directly over gypsum ceiling membrane—roofing system over min. 23/32" thick plywood decking— <b>UL Des P523, P526, P528, P530</b>			SA923 22

## Fire-rated construction

## Detail &amp; Physical data

## Description &amp; test no.

## Acoustical performance

## STC

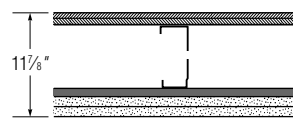
## IIC

## Description &amp; test no.

Folder  
reference

## Non-Combustible Ceiling Systems – Gypsum Drywall or Veneer Plaster (continued)

## Steel C-Joist Framing – 1-1/2-Hour Rating



clg. wt. 5

5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—3/4" T & G plywd fir att to joists—9-3/8" 16 ga struc steel joists 24" o.c.—double layer gypsum panel clg att to RC-1 chan or equiv screw att to joist 16" o.c.—joints fin—**UL Des L527**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, veneer surface finish

48

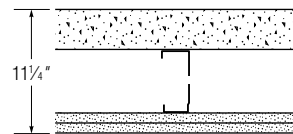
51

**USG-771101**Based on carpet & pad—**SA-781110**

SA923

**23**

## Steel C-Joist Framing – 2-Hour Rating



clg. wt. 5

5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—7-1/2" 18 ga struc steel joists 24" o.c.—2-1/2" conc flr over corrug steel deck—dbl layer gypsum panel ceiling—base panels att with 1" Type S-12 screws 12" o.c.—face panels att with 1-7/8" Type S-12 screws 12" o.c.—joints stag and fin—est fire rating based on witnessed laboratory test—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface

44

73

**KAL-443533**

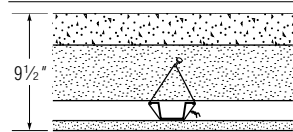
Based on carpet &amp; pad—

**KAL-443680**Based on RC-1 resil chan or equiv 24" o.c.—**KAL-443534**

SA923

**24**

## Precast Concrete – 2-Hour Rating

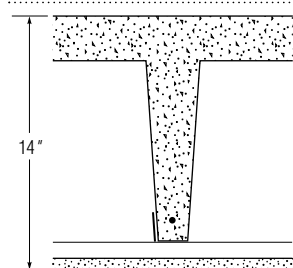


clg. wt. 3

5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—met fur chan 24" o.c.—panels att with 1" Type S screws—joints fin—2" prestressed reg or lightwt conc units with 6" deep stems 48" o.c.—**UL Des J502 or J503**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface

N/A

SA923

**25**

clg. wt. 3

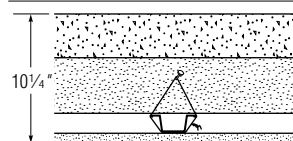
5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—panels screw att 8" o.c. rt. angl. to met fur chan 24" o.c.—joints fin—chan screw att to hanger straps on 2-1/2" precast conc joists 35" o.c.—joist leg 10" deep—**GA FC 2120**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface

N/A

N/A

**26**

## Precast Concrete – 3-Hour Rating



clg. wt. 3

5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—met fur chan 24" o.c.—panels att with 1" Type S screws—joints fin—prestressed 2-3/4" reg or 2-1/2" lightwt conc units with 6" deep stems 48" o.c.—**UL Des J502 or J504**

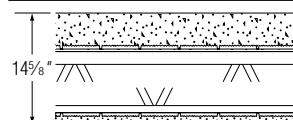
N/A

SA920

**27**

## Non-Combustible Ceiling Systems – Conventional Lath &amp; Plaster

## Steel Bar Joist Framing – 1-Hour Rating



clg. wt. 4

5/8" RED TOP gypsum plaster, sanded 1:2-1:3—applied over 3/8" riblath wire tied 5" o.c. to open web steel joists 24" o.c.—2" concrete on riblath over joist—**GA FC 1180**

N/A

N/A

**28**

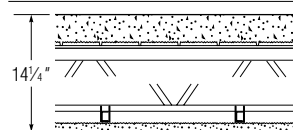
Alternate based on 5/8" RED TOP gypsum plaster-vermiculite or 7/8" RED TOP wood fiber plaster—**GA FC 2160**

N/A

N/A

**29**

## Steel Bar Joist Framing – 2-Hour Rating



clg. wt. 4

3/4" cold rolled channel furred or suspended—3.4# diamond mesh lath & 5/8" 100:2-100:3 gypsum-sand plaster—2-1/2" concrete on riblath over 28 ga. corrugated steel deck over bar joist—**BMS-92**

N/A

SA920

**30**

## Fire-rated construction

## Detail &amp; Physical data

## Description &amp; test no.

## Acoustical performance

## STC

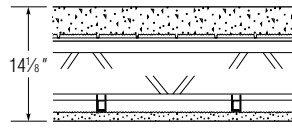
## IIC

## Description &amp; test no.

## Folder reference

## Non-Combustible Ceiling Systems – Conventional Lath &amp; Plaster (continued)

## Steel Bar Joist Framing – 2½-Hour Rating



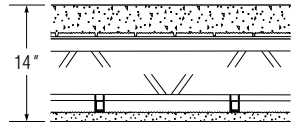
3/4" cold rolled channel furred or suspended—3.4# diamond mesh lath & 3/4" neat wood fiber gypsum plaster—2-1/2" concrete on riblath or 28 ga. corrugated steel deck over bar joist—**UL Report R5429-1**

N/A

SA920

31

## Steel Bar Joist Framing – 3-Hour Rating



3/4" cold rolled channel furred or suspended—3.4# diamond mesh lath & 7/8" neat wood fiber gypsum plaster—2-1/2" concrete on riblath or 28 ga corrugated steel deck over bar joist—**BMS-92**

N/A

SA920

32

Alternate based on 5/8" 1:2-1:3 RED TOP gypsum plaster-vermiculite or 7/8" RED TOP wood fiber plaster neat—**GA FC 3140**

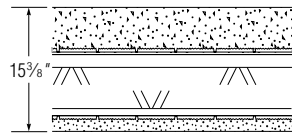
N/A

N/A

33

clg. wt. 4

## Steel Bar Joist Framing – 4-Hour Rating



7/8" 1:2-1:3 RED TOP gypsum plaster-vermiculite—applied over 3/8" riblath wire tied 5" o.c. to open web steel joists 24" o.c.—2" concrete on riblath over joist—**BMS 92**

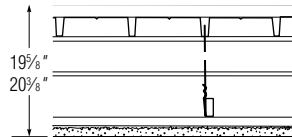
N/A

N/A

34

clg. wt. 5

## Rib-Type Steel Roof Deck – 1-1/2-Hour Rating



Suspended 3.4# diamond mesh metal lath & 3/4" 100:2-100:3 gypsum-sand plaster—rib type steel roof deck with 1" wood-fiber insulation—**NBS-57**

N/A

SA920

35

Suspended 3.4# diamond mesh metal lath & 1" 100:2 gypsum-sand plaster—rib type steel roof deck with 1-1/2" wood-fiber insulation—**NBS-58**

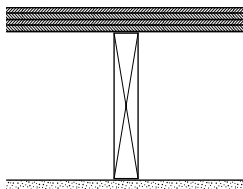
N/A

SA920

36

## Wood Framed Ceiling Systems – Gypsum Drywall or Veneer Plaster

## Floor/Ceiling – 1-Hour Rating



5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, ceiling—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—panels att 6" o.c.—joints fin—**UL Des L501**—rating also applies with IMPERIAL Brand gypsum base, FIRECODE or FIRECODE C Core, and veneer finish surface

38

32

Based on 1-1/4" nom wd flr—**CK-6412-7**

SA924

37

39

56

Based on 1-1/4" nom wd flr, 44 oz carpet & 40 oz pad atop flooring—**CK-6412-8**

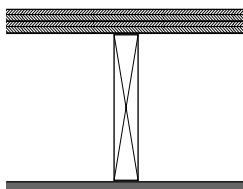
1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—panels att 6" o.c.—joints fin—**UL Des L512**

N/A

SA924

38

clg. wt. 3



Resil ceiling—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core —1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—RC-1 chan or equiv spaced 24" o.c.—joints fin—**UL Des L514**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface

N/A

SA924

39

Resil ceiling—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core —1-1/4" nom wd sub & fin flr—44 oz carpet & 40 oz pad atop flr—2x10 wd joist 16" o.c.—RC-1 chan or equiv screw att to joists—joints fin—est. fire rating based on UL Des L514

47

67

Based on 1/2" SHEETROCK Brand gypsum panels, FIRECODE C Core—**CK-6512-7**

SA924

40

48

66

Based on 5/8" SHEETROCK Brand gypsum panels, FIRECODE Core—**CK-6412-9**

clg. wt. 3

## Fire-rated construction

## Detail &amp; Physical data

## Description &amp; test no.

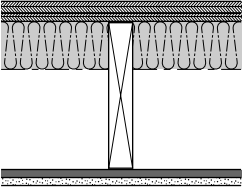
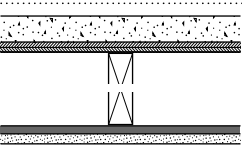
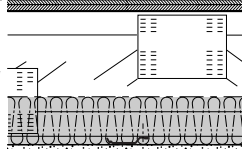
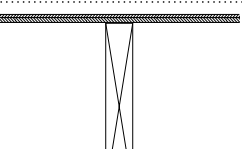
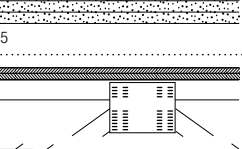
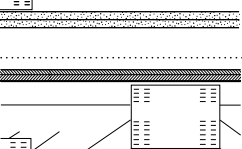
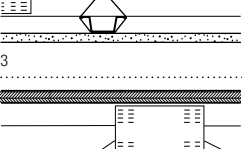
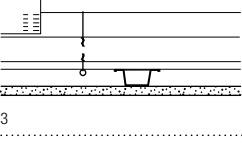

## Acoustical performance

## STC IIC Description &amp; test no.

## Folder reference

# Wood Framed Ceiling Systems – Gypsum Drywall or Veneer Plaster (continued)

## Floor/Ceiling – 1-Hour Rating

	Resil ceiling—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1-1/4" nom wd sub & fin flr—2x10 wd joist 16" o.c.—3" SAFB betw joists—RC-1 chan or equiv screw att to joists—panels att with 1" Type S screws—joints fin—est fire rating based on UL Des L514—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	51	46	Based on 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>CK-6512-9</b>	SA924	<b>41</b>
	Resil ceiling—1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1-1/4" nom wd sub & fin flr—44 oz carpet & 40 oz pad atop flr—2x10 wd joist 16" o.c.—3" SAFB betw joists—RC-1 chan or equiv screw att to joists—panels att with 1" Type S screws—joints fin—est. fire rating based on UL Des L514	50	46	Based on 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core— <b>CK-6412-3</b>		
	Resil ceiling—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1-5/8" perlite-sand conc over 5/8" plywd subflr—2x10 wd joists 16" o.c.—RC-1 chan or equiv screw att to joists—joints fin— <b>UL Des L516</b> —rating also applies with IMPERIAL Brand gypsum base, FIRECODE or FIRECODE C Core, and veneer finish surface	52	71	Based on 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>CK-6512-8</b>	SA924	<b>42</b>
	Resil ceiling—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1-5/8" perlite-sand conc over 5/8" plywd subflr—2x10 wd joists 16" o.c.—RC-1 chan or equiv screw att to joists—joints fin— <b>UL Des L516</b> —rating also applies with IMPERIAL Brand gypsum base, FIRECODE or FIRECODE C Core, and veneer finish surface	51	70	Based on 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core— <b>CK-6412-4</b>		
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2 x 4 lumber secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—RC-1 channels (or equivalent) spaced 12" or 16" o.c.—joints finished—optional insulation directly over gypsum ceiling membrane—optional ceiling damper— <b>UL Des L521, L546, L550</b>	59		Based on 3" SAFB, 3/4" gypsum concrete & 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>USG 740704</b>	SA924	<b>43</b>
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2 x 4 lumber secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—RC-1 channels (or equivalent) spaced 12" or 16" o.c.—joints finished—optional insulation directly over gypsum ceiling membrane—optional ceiling damper— <b>UL Des L521, L546, L550</b>	47		Based on 3" SAFB, vinyl tile atop flooring— <b>USG 740703</b>		
		65		Based on 3" SAFB, 44 oz. carpet & 40 oz. pad atop flooring— <b>USG 740705</b>		
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2 x 4 lumber secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—RC-1 channels (or equivalent) spaced 12" or 16" o.c.—joints finished—optional insulation directly over gypsum ceiling membrane—optional ceiling damper— <b>UL Des L521, L546, L550</b>				SA924	<b>44</b>
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2 x 4 lumber secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—RC-1 channels (or equivalent) spaced 12" or 16" o.c.—joints finished—optional insulation directly over gypsum ceiling membrane—optional ceiling damper— <b>UL Des L521, L546, L550</b>					
	Base layer: 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—screw att at rt. angl. to 2x10 wd joists 24" o.c.—Face layer: 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core screw att 12" o.c. at rt angl. to joists—joints of second layer offset 24" and fin.—Floor: 1/2" plywd w/ ext glue appl rt. angl to joists w/8d nails. <b>Also for roof-ceilings, incl. trusses—GA FC 5406 and RC2601</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A			SA920	<b>45</b>
	Base layer: 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core—screw att at rt. angl. to 2x10 wd joists 24" o.c.—Face layer: 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core screw att 12" o.c. at rt angl. to joists—joints of second layer offset 24" and fin.—Floor: 1/2" plywd w/ ext glue appl rt. angl to joists w/8d nails. <b>Also for roof-ceilings, incl. trusses—GA FC 5406 and RC2601</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface					
	Base layer: 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—screw att at rt. angl. trusses 24" o.c.—Face layer: 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core screw att 12" o.c. at rt angl. to joists—joints of second layer offset 24" and fin.—Floor: 23/32" plywood w/ ext glue appl rt. angl to joists w/ 6d ring nails— <b>UL Des L542</b> —rating also applies with 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	N/A			SA920	<b>46</b>
	Base layer: 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—screw att at rt. angl. trusses 24" o.c.—Face layer: 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core screw att 12" o.c. at rt angl. to joists—joints of second layer offset 24" and fin.—Floor: 23/32" plywood w/ ext glue appl rt. angl to joists w/ 6d ring nails— <b>UL Des L542</b> —rating also applies with 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface					
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2x4 lbr secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—met fur chan 24" o.c. wire-tied to trusses—panels att with 1" Type S screws 12" o.c.—joints fin— <b>UL Des L528</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A			SA920 SA924	<b>47</b>
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2x4 lbr secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—met fur chan 24" o.c. wire-tied to trusses—panels att with 1" Type S screws 12" o.c.—joints fin— <b>UL Des L528</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface					
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2x4 lbr secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—susp grid with main run 4' o.c. and cross tees 2' o.c.—panels att with 1" Type S-12 screws 12" o.c.—joints fin— <b>UL Des L529</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A			SA920 SA924	<b>48</b>
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—wd truss of 2x4 lbr secured with steel truss plates—trusses 24" o.c.—3/4" nom plywd flr—susp grid with main run 4' o.c. and cross tees 2' o.c.—panels att with 1" Type S-12 screws 12" o.c.—joints fin— <b>UL Des L529</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface					
	1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—susp grid with main run 4' o.c. and cross tees 2' o.c.—panels screw-att below grid—joints fin— <b>UL Des L525</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface	N/A			SA924	<b>49</b>
	1/2" or 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—susp grid with main run 4' o.c. and cross tees 2' o.c.—panels screw-att below grid—joints fin— <b>UL Des L525</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE or FIRECODE C Core, and veneer finish surface					

\* RC-1 Resilient Channel or equivalent may be used in place of metal furring channel.

## Fire-rated construction

## Detail &amp; Physical data

## Description &amp; test no.

## Acoustical performance

## STC

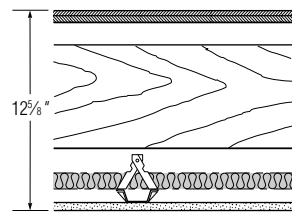
## IIC

## Description &amp; test no.

## Folder reference

## Wood Framed Ceiling Systems – Gypsum Drywall or Veneer Plaster (continued)

## Floor/Ceiling – 1-Hour Rating



clg. wt. 3

1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, ceiling—3/4" T&G plywood—I-shaped wd joist 24" o.c.—met fur chan 24" o.c.—clip-att to joist—1" THERMAFIBER insul laid over chan below joists—panels screw att to chan 12" o.c.—joints fin—**UL Des L530** based on TJI® joists—**UL Des L531**—9" deep WSI® joist; rating also applies with 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface

47

40

**RAL-TL-81-87—RAL-IN-81-16**

SA920

**50**

54

Based on carpet &amp; pad atop

SA924

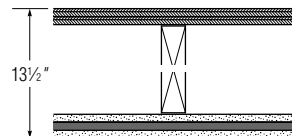
43

flooring—**RAL-IN-81-17**

Based on cushioned vinyl atop

flooring—**RAL-IN-81-19**

## Floor/Ceiling – 1-1/2-Hour Rating



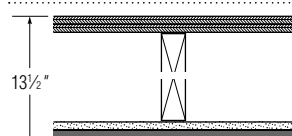
clg. wt. 4

Resil ceiling—2 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—RC-1 chan or equiv spaced 24" o.c. screw att over base layer panels—face layer screw att to chan 12" o.c.—joints fin—**UL Des L510**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface

N/A

Assembly not recommended when sound control is a major consideration

SA924

**51**

clg. wt. 4

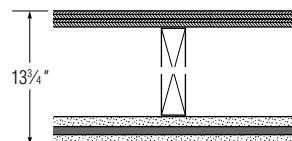
Resil 2 layers 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, & veneer finish ceiling—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—RC-1 chan or equiv 24" o.c. screw-att over base layer—face layer screw att to chan 12" o.c.—1/16" veneer finish—joints taped—**UL Des L510**

N/A

SA920

**52**

## Floor/Ceiling – 2-Hour Rating



clg. wt. 5

Resil ceiling—2 layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—1" nom wd sub & fin flr—2x10 wd joist 16" o.c.—RC-1 chan or equiv spaced 24" o.c. screw att over base layer panels—face layer screw att to chan 12" o.c.—joints fin—**UL Des L511**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface

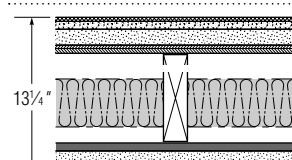
N/A

Assembly not recommended when sound control is a major consideration

SA924

**53**

SA920



clg. wt. 5

Floor/ceiling—floor of 8" x 8" ceramic tile, 1/2" DUROCK Brand exterior cement board, 1" SHEETROCK Brand Gypsum Liner Panels, 1/2" plywood—2x10 wd joist 16" o.c.—3" SAFB—ceiling of 2 layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, over RC-1 chan or equiv 16" o.c.—**UL Des L541**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface

60

52

**RAL-TL-89-141** (54 MTC)—

SA707

**54**

58

**RAL-IN-89-5**

Based on vinyl tile over oriented board

in place of ceramic tile and cement

board—**RAL-TL-89-145** (53 MTC)—**RAL-IN-89-7**

Based on carpet/pad over oriented

strand board in place of ceramic tile and

Cement Board—**RAL-TL-89-146** (54 MTC)—**RAL-IN-89-8**

59

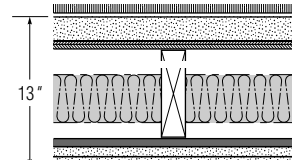
51

Based on carpet/pad over oriented

strand board in place of ceramic tile and

Cement Board—**RAL-TL-89-146** (54 MTC)—**RAL-IN-89-8**

62



clg. wt. 5

Floor/ceiling—floor of carpet/pad, 1-1/2" flooring, 1/2" plywood—2x10 wd joists 16" o.c.—3" SAFB—ceiling of 2 layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, over RC-1 chan or equiv 16" o.c.—**UL Des L541**—rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface

59

69

**RAL-TL-90-40** (54 MTC)—

SA924

**55**

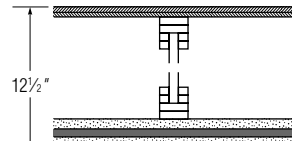
59

**RAL-IN-90-5**

Based on vinyl tile in place of

carpet/pad—**RAL-TL-90-40**(54 MTC)—**RAL-IN-90-6**

37



clg. wt. 5

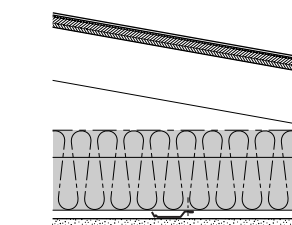
Base layer: 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—screw att at rt. angl. to 9-1/2" min wood truss joists 24" o.c. RC-1 chan or equiv or metal fur chan at rt. angl. to joists 16" o.c.—Double face layer: 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core screw att 8" o.c. at rt angl. to chan—joints offset 24" and fin.—Floor: 5/8" T&G plywood w/ext glue appl rt. angl to joists—**UL Des L538**—rating also applies with 5/8" IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface

N/A

SA920

**56**

## Roof/Ceiling Assemblies– 1-Hour Rating



5/8" SHEETROCK Brand Gypsum Panel, FIRECODE C Core, pitched wood trusses of min. 2 x 4 lumber, any UL Class A, B or C roofing system—RC-1 channels or equivalent spaced 12" or 16" o.c.—joints finished—optional insulation directly over gypsum ceiling membrane—ceiling damper optional—**UL Des P522**

N/A

SA924

**57**

## Fire-rated construction

## Detail &amp; Physical data

## Description &amp; test no.

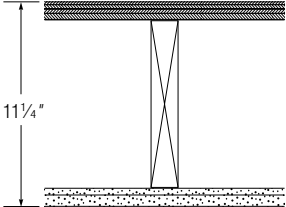
## Acoustical performance

## STC IIC Description &amp; test no.

## Folder reference

## Wood Framed Ceiling Systems – Conventional Lath & Plaster

### Floor Ceiling – 1-Hour Rating

	5/8" 1:2 RED TOP gypsum plaster-perlite over 3/8" type X ROCKLATH plaster base at rt. angl. to 2x10 wd joists 16" o.c.—1" nom. T&G sub and finish floor— <b>GA FC 5470</b>	N/A	N/A	<b>58</b>
	1/2" 1:2 sanded RED TOP gypsum plaster over 3/8" type X ROCKLATH plaster base at rt. angl. to 2"x10" joists 16" o.c.—1" nom. T&G sub and finish floor— <b>GA FC 5490</b>	N/A	N/A	<b>59</b>
	5/8" 1:2-1:3 sanded RED TOP gypsum plaster over 3.4# diamond lath nailed 6" o.c. at rt. angl. to 2x10 wd joists 16" o.c.—1" nom. T&G sub and finish floor— <b>GA FC 5510</b>	N/A	N/A	<b>60</b>

clg. wt. 4

## Physical data

## Construction detail

## Fire-rated construction

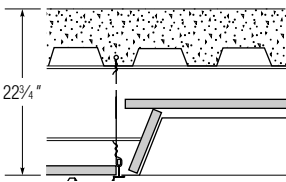
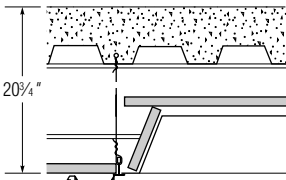
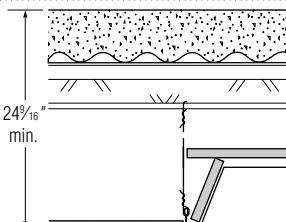
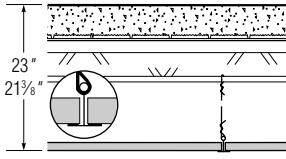
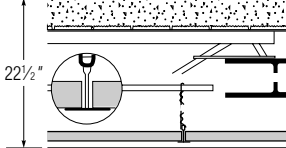
## Description &amp; test no.

## Comments

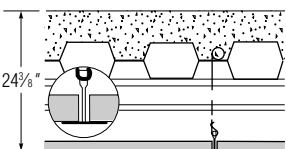
## Folder reference

## Acoustical and Air Distributing Ceilings

### 3-Hour Rated Acoustical Floor-Ceiling Assemblies

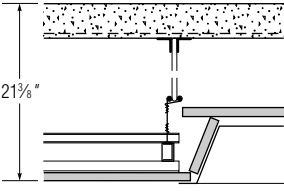
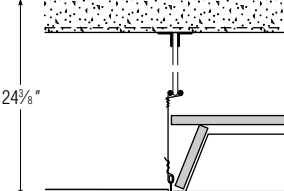
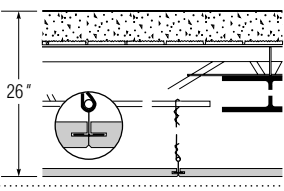
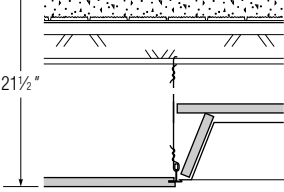
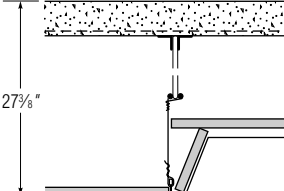
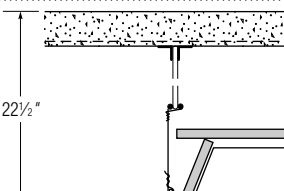
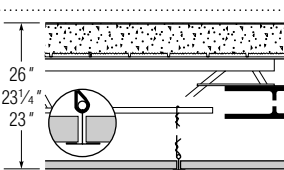
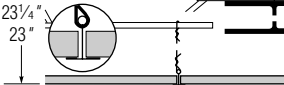
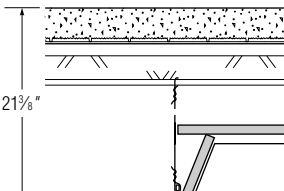
	5/8" or 3/4" FR-83 acoust clg panels in DXLP (with Types PSS, PSSP, PSR & PSRP metal ceiling pans), DXL, DXLZ or SDXL Susp Exp Grid Syst —light fixt and air duct optional—3-1/4" concrete on 1-1/2" stl roof deck— <b>UL Des D218</b>		SC2000 SC1963	<b>61</b>
	5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—3-1/4" concrete on cellular and 3-1/2" concrete on fluted stl floor units— <b>UL Des D219</b>	DXLA, DXLZA or SDXLA Susp Exp Grid Syst may be used instead, but fire rating is limited to 2-hr.; DXLT, DXLTA, DXLTZ or DXLTZA Susp Exp Grid Syst may be also used, but fire rating is limited to 1-1/2-hr.	SC2000 SC1963	<b>62</b>
	5/8" or 3/4" FR-83 or FR-X1 or 1/2" or 5/8" FR-4 or 1/2" FC-CB-acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—3-1/2" concrete deck on riblath over bar joists— <b>UL Des G205</b>	DXLA, DXLZA or SDXLA Susp Exp Grid Syst may be used instead, but fire rating is limited to 2-hr.; DXLT, DXLTA, DXLTZ or DXLTZA Susp Exp Grid Syst may be also used, but fire rating is limited to 1-1/2-hr.; 1/2" FC-CB gypsum panels may be used as a clg panel for fire ratings of 1 or 1-1/2-hr.	SC2000 SC1963	<b>63</b>
	5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—3" concrete deck on riblath over bar joists— <b>UL Des G211</b>	DXLA, DXLZA, SDXLA or ZXLA Susp Exp Grid Syst may be used instead, but fire rating is limited to 2-hr.; 1/2" FC-CB gypsum panels may be used as a clg panel for fire rating of 1-hr.	SC2000 SC1963	<b>64</b>
	5/8" FR-81; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst —light fixt and air duct optional—3-1/2" concrete deck on riblath or steel deck (increase conc. 1/2") over bar joists— <b>UL Des G213</b>	When FR-4 or M clg panels are used, the fire rating is limited to 2-hr.; 1/2" FC-CB gypsum panels may be used as a clg panel for fire ratings of 1- or 1-1/2-hr.	SC2000 SC1963	<b>65</b>

### 2-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies

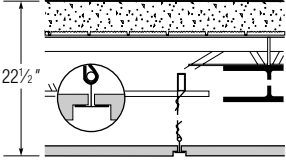
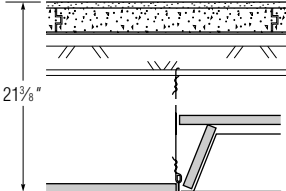
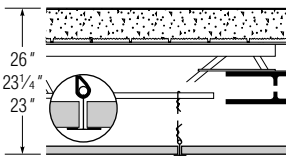
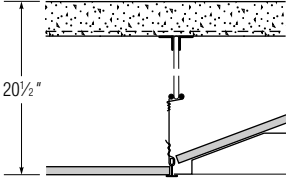
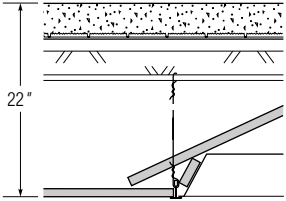
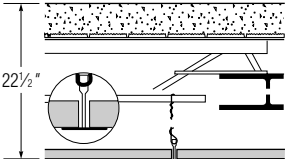
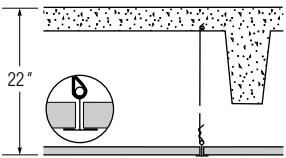
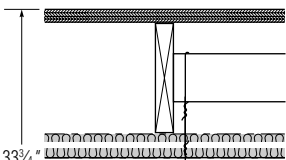
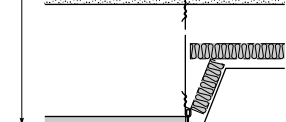
	3/4" FR-83 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" conc deck on fluted or cellular steel floor— <b>UL Des D215</b>		SC2000 SC1963	<b>66</b>
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Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

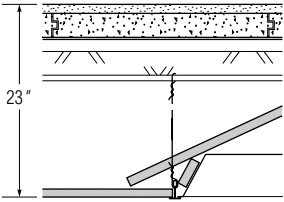
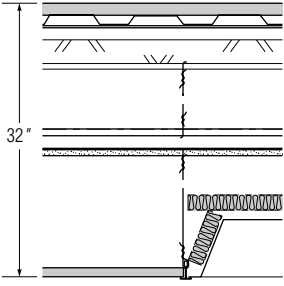
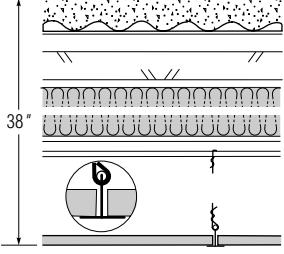
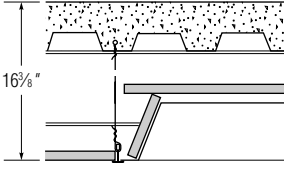
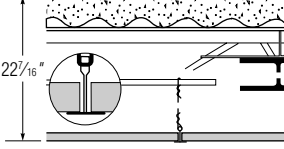
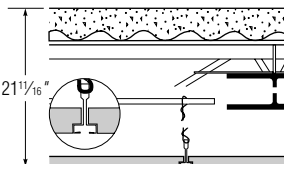
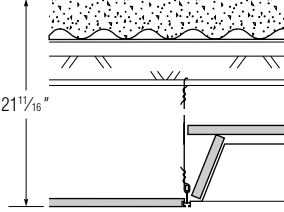


Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>2-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies (continued)</b>			
 <p>2 1/8"</p>	<p>5/8" or 3/4" 12" x 12" or 24" FR-83 acoust clg panels in Concealed Z-Spline Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G002</b></p>		<p>SC2000 SC1963</p> <p><b>67</b></p>
 <p>2 7/8"</p>	<p>3/4" 12" x 12" or 24", or 24" x 24" FR-83 acoust clg panels in Concealed Z-Spline Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G007</b></p>		<p>SC2000 SC1963</p> <p><b>68</b></p>
 <p>26"</p>	<p>5/8" or 3/4" 12" x 12", or 24" x 24" FR-83 acoust clg panels in DXL, DXLZ or SDXL Concealed Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G008</b></p>		<p>SC2000 SC1963</p> <p><b>69</b></p>
 <p>21 1/2"</p>	<p>3/4" 12" x 12", or 24" x 24" FR-83 acoust clg panels in DXL, DXLA, DXLZA, ZxLA, DXLZ, SDXL or SDXLA Concealed Z-Spline Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G040</b></p>		<p>SC2000 SC1963</p> <p><b>70</b></p>
 <p>27 7/8"</p>	<p>5/8" FR-81 or FR-4; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G202</b></p>		<p>SC2000 SC1963</p> <p><b>71</b></p>
 <p>22 1/2"</p>	<p>5/8" or 3/4" FR-83 acoust clg panels in DXL Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G203</b></p>	<p>DXLT Susp Exp Grid Syst may be used instead, but fire rating is limited to 1-1/2-hr.</p>	<p>SC2000 SC1963</p> <p><b>72</b></p>
 <p>26"</p>	<p>5/8" FR-81, FR-4 or M; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G204</b></p>		<p>SC2000 SC1963</p> <p><b>73</b></p>
 <p>23"</p>	<p>5/8" FR-81 or FR-4; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G215</b></p>		<p>SC2000 SC1963</p> <p><b>74</b></p>
 <p>21 3/8"</p>	<p>5/8" or 3/4" FR-83 acoust clg panels in DXL, SDXL or DXLZ or Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists—<b>UL Des G227</b></p>		<p>SC2000 SC1963</p> <p><b>75</b></p>

Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>2-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies (continued)</b>			
	3/4" AP min. acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists— <b>UL Des G228</b>	SC2000 SC1963	<b>76</b>
	5/8" or 3/4" FR-83 or 3/4" FR-X1-acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt and air duct optional—1/2" floor topping over 2" T&G building units on bar joists— <b>UL Des G230</b>	SC2000 SC1963	<b>77</b>
	3/4" FR-83 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists— <b>UL Des G231</b>	SC2000 SC1963	<b>78</b>
	5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in Susp Exp Grid Syst—light fixt optional—2-1/2" concrete deck on riblath over bar joists— <b>UL Des G234</b>	SC2000 SC1963	<b>79</b>
	3/4" FR-83 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists— <b>UL Des G252</b>	SC2000 SC1963	<b>80</b>
	3/4" FR-83 or FR-X1 acoust clg panels in DXLT, DXLTA, DXLTZ or DXLTZA Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" concrete deck on riblath over bar joists— <b>UL Des G265</b>	SC2000 SC1963	<b>81</b>
	5/8" FR-81, FR-4 or M; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLT, DXLTZ, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt and air duct optional—2-1/2" conc deck with 6" deep pan beam— <b>UL Des J201</b>	DXLTA or DXLTZA Susp Exp Grid Syst may be used instead, but fire rating is limited to 1-1/2-hr. SC2000 SC1963	<b>82</b>
	5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLT, DXLTZ, DXLZ or SDXL Susp Exp Grid Syst—light fixt and air duct optional—2" prestressed conc units with 6" deep stems 48" o.c.— <b>UL Des J202</b>	SC2000 SC1963	<b>83</b>
	5/8" FR-4; or 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or ZXLX Susp Exp Grid Syst—light fixt and air duct optional—USG Drywall Suspension System (DGL)-1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—susp grid with main runners and cross tees—gypsum panels screw-att to grid-joints stag & fin—1" nom wd sub (diagonally) or 15/32" wd sub (perpendicular) over wd joists 16" o.c.; 1" nom or 19/32" fin fir (perpendicular) or fir topping mixture— <b>UL Des L211</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	SC2000 SC1963	<b>84</b>

Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

CAC range†	Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>2-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies (continued)</b>				
23"		3/4" FR-83 or FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst— —light fixt, air duct and speakers optional—2" precast concrete units & 3/4" noncomb insul over bar joists— <b>UL Des P213</b>	SC2000 SC1963	<b>85</b>
32"		5/8" FR-4 or FR-83 or 3/4" FR-83 or FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXLA Susp Exp Grid Syst—light fixt, air duct and speakers optional—USG Drywall Suspension System (DGL)—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—susp grid with main runners and cross tees 4' o.c.—gypsum panels screw-att to grid-joints stag & fin—1" to 3" noncomb insul over 1" stl roof deck or 1-1/2" stl floor and formunits over bar joists— <b>UL Des P237</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface	SC2000 SC1963	<b>86</b>
38"		5/8" FR-4, 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXLA Susp Exp Grid Syst—light fixt, air duct and speakers optional—insul clg membrane below joists—2" insul conc on corrug stl deck over bar joists— <b>UL Des P241</b>	SC2000 SC1963	<b>87</b>
<b>1-1/2-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies</b>				
16 3/8"		5/8" FR-4, M or FR-81; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels or 1/2" FC-CB gypsum lay-in tile in DXL or DXLA Susp Exp Grid Syst—light fixt and speakers optional—2-1/2" concrete on Fluted or cellular stl deck— <b>UL Des D209</b>	SC2000 SC1963	<b>88</b>
22 7/16"		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXLT, DXLTA, DXLTZ or DXLTZA Susp Exp Grid Syst—light fixt, air duct and speakers optional— 2-1/2" concrete on corrug stl deck over bar joists— <b>UL Des G262</b>	When AP-1 clg panels are used, the fire rating is limited to 1-hr. SC2000 SC1963	<b>89</b>
21 11/16"		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXLF (with CM or CP metal ceiling Panels) Susp Exp Grid Syst—light fixt, air duct and speakers optional—2-1/2" concrete on corrug stl deck over bar joists— <b>UL Des G264</b>	When AP-1 clg panels are used, the fire rating is limited to 1-hr. SC2000 SC1963	<b>90</b>
21 11/16"		5/8" or 3/4" FR-83 or 3/4" AP or FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—2-1/2" conc on corrug steel deck over bar joists— <b>UL Des G267</b>	SC2000 SC1963	<b>91</b>

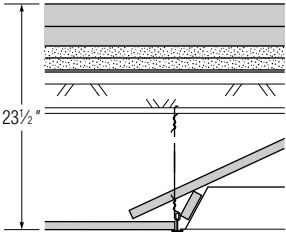
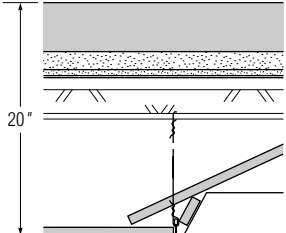
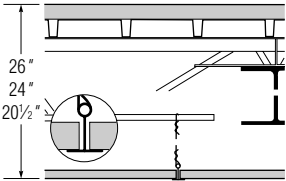
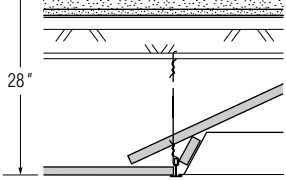
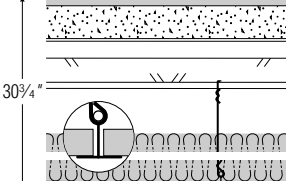
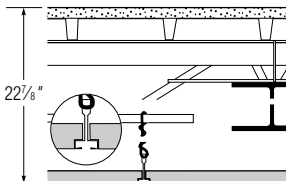
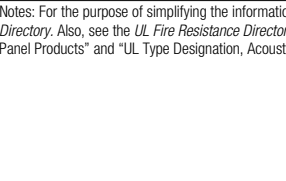
Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>1-1/2-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies (continued)</b>			
	5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1-1/2" poured gypsum 1-1/2" poured gypsum roof deck over 1/2" gypsum form board or 2" laminated gypsum plank building units over bar joists— <b>UL Des P207</b>		SC2000 SC1963 <b>92</b>
	5/8" FR-4; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXLA or DXLP (with Types PAR, PARP, PAS, PASP, PSR, PSRP, PSS & PSSP metal ceiling pans), Direct-Hung Susp Exp Grid Syst—light fixt, air duct and speakers optional—1-1/2" stl roof deck & 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core and a wide variety of roof insul products over bar joists—alt design 1/2" DUROCK Brand cement panel in place of gypsum panels— <b>UL Des P230</b>	When AP clg panels are used, the fire rating is limited to 1-hr.	SC2000 SC1963 <b>93</b>
	5/8" FR-4 or FR-83; or 3/4" FR-83 or FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXLA Susp Exp Grid Syst—light fixt, air duct and speakers optional—USG Drywall Suspension System (DGL)—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core—susp grid with main runners and and cross tees 4" o.c.—gypsum panels screw-att to grid—joints stag & fin—1-1/2" poured gypsum roof deck over 1/2" gypsum form board over bar joists— <b>UL Des P239</b> —rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish surface		SC2000 SC1963 <b>94</b>
	3/4" FR-83 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1-5/8" and 1-7/8" noncomb insul (two layers) over 2" poured gypsum roof deck over 1/2" gypsum form board or 2" laminated gypsum plank building units over bar joists— <b>UL Des P242</b>		SC2000 SC1963 <b>95</b>
	5/8" FR-4; or 3/4" FR-83 or FR-81 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXLA Susp Exp Grid Syst—light fixt and air duct optional—6" glass fiber batt insul over back of ceiling panels and grid system—metal roof deck over 4" glass fiber batt insul over Z-purlins— <b>UL Des P268</b>		SC2000 <b>96</b>
	5/8" FR-4 or FR-83; or 3/4" FR-83 or FR-X1 acoust clg panels in DXL, DXLZ, or SDXL Susp Exp Grid Syst—light fixt and air duct optional—min. 2-1/4" insul concrete over 1" foamed plastic insul over stl roof deck— <b>UL Des P269</b>		SC2000 <b>97</b>

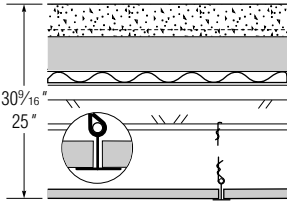
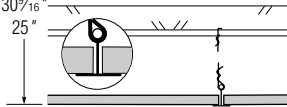
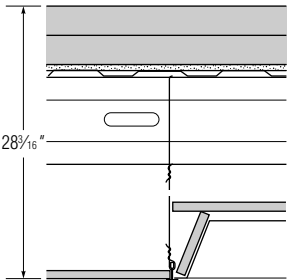
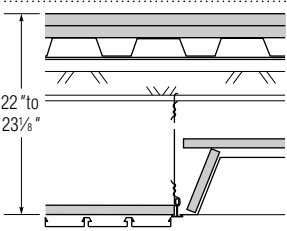
Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

CAC range†	Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>1-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies</b>				
20 1/4"		3/4" FR-83 min acoust tile in Concealed Accessible Grid Syst— light fixt and air duct optional—1" nom wd sub (diagonally) or 15/32" wd sub (perpendicular) over wd joists 16" o.c.; 1" nom or 19/32" fin fir (perpendicular) or fir topping mixture— <b>UL Des L006</b>	SC2000 SC1963	<b>98</b>
22 5/8" 21 5/8"		5/8" FR-81, FR-4 or M; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in DXL, DXLZ, or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1" nom wd subband fin fir over 2 x 10 wd joists— <b>UL Des L202</b>	SC2000 SC1963	<b>99</b>
22 5/8" 21 5/8"		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels or 1/2" FC-CB gypsum clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXL Susp Exp Grid Syst—light fixt and air duct optional—1" nom wd sub and fin fir over 2 x 10 wd joists— <b>UL Des L206</b>	SC2000 SC1963	<b>100</b>
18 1/2"		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt and speakers optional—2" conc on riblath over bar joists— <b>UL Des G201</b>	SC2000 SC1963	<b>101</b>
25 1/2"		5/8" FR-4 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1" nom wd sub (diagonally) or 15/32" wd sub (perpendicular) over wd joists 16" o.c.; 1" nom or 19/32" fin fir (perpendicular) or fir topping mixture— <b>UL Des L212</b>	SC2000 SC1963	<b>102</b>
21 5/8" 21 3/4"		5/8" M, 5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL, SDXLA or ZXL Susp Exp Grid Syst—1-1/2" stl roof deck & 3/4" noncomb insul over bar joists— <b>UL Des P201</b>	SC2000 SC1963	<b>103</b>
22" 22 5/8"		5/8" M, 5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in Susp Exp Grid Syst—light fixt and air duct optional—7/8" stl roof deck & 1" noncomb insul over bar joists— <b>UL Des P202</b>	SC2000 SC1963	<b>104</b>
26" 24" 20 1/2"		3/4" FR-83 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1-1/2" stl roof deck & 1" noncomb insul over bar joists—alt. Design 1/2" DUROCK Brand cement panel in place of gypsum panels, 24" plenum depth, for restrained assembly—1 hr. fire rating— <b>UL Des P214</b>	SC2000 SC1963	<b>105</b>

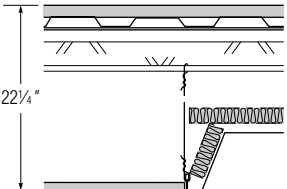
Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>1-Hour Rated Acoustical Floor and Roof-Ceiling Assemblies (continued)</b>			
	3/4" FR-83 or FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—2" laminated gypsum plank building units over 1-5/8" and 1-7/8" noncomb insul (two layers) over bar joists— <b>UL Des P228</b>	SC2000 SC1963	<b>106</b>
	3/4" FR-83 or FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1" to 8" rigid foamed plastic insulation over 1-1/2" poured gypsum roof deck over 1/2" gypsum form board or 2" laminated gypsum plank building units over bar joists— <b>UL Des P229</b>	SC2000 SC1963	<b>107</b>
	5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1-1/2" stl roof deck & 1/2" SHEETROCK Brand Gypsum Panels & insul over bar joists— <b>UL Des P235</b>	SC2000 SC1963	<b>108</b>
	5/8" FR-4 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—6" insul batts over clg—1" fluted stl roof deck & insul over bar joists— <b>UL Des P238</b>	SC2000 SC1963	<b>109</b>
	5/8" FR-4 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—1-1/2" poured gypsum roof deck over 1/2" gypsum form board or 2" laminated gypsum plank building units over bar joists— <b>UL Des P244</b>	SC2000 SC1963	<b>110</b>
	5/8" FR-4 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—6" insul batts over clg—3/4" noncomb insuland 2" metal-edge conc plank over bar joists— <b>UL Des P245</b>	SC2000 SC1963	<b>111</b>
	5/8" FR-81 or 5/8" or 3/4" FR-83 acoust clg panels in DXLF (with CM or CP metal ceiling Panels) Susp Exp Grid Syst—light fixt and air duct optional—6" insul batts over clg—1-1/2" stl roof deck & 5/8" SHEETROCK Brand Gypsum Panels & insul over bar joists— <b>UL Des P254</b>	SC2000 SC1963	<b>112</b>

Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

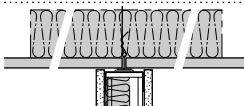
CAC range†	Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>1-Hour Rated Ceilings Mineral Fiber Surfaces (continued)</b>				
		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLZ or SDXL Susp Exp Grid Syst—light fixt, air duct and speakers optional—2" vermiculite conc & foamed plastic insul & corrug stl roof deck over bar joists— <b>UL Des P246</b>	SC2000 SC1963	<b>113</b>
		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt, air duct and speakers optional—2" vermiculite conc & foamed plastic insul & corrug stl roof deck over bar joists— <b>UL Des P255</b>	SC2000 SC1963	<b>114</b>
		5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLZ, DXLZA, SDXL or SDXLA Susp Exp Grid Syst—light fixt and air duct optional—2-7/16" noncomb insul (two layers) over 1/2" gypsum sheathing over stl roof deck over "C" joists— <b>UL Des P257</b>	SC2000 SC1963	<b>115</b>
		5/8" M, 5/8" or 3/4" FR-83 or 3/4" FR-X1 acoust clg panels in DXL, DXLA, DXLP (with Types PAR, PARP, PAS, PASP, PSS, PSSP, PSR, & PSRP metal ceiling pans), DXLZ, DXLZA, SDXL, SDXLA or ZXLA Susp Exp Grid Syst—light fixt and air duct optional—1" to 2" noncomb insul (two layers) over stl roof deck over barjoists— <b>UL Des P267</b>	SC2000 SC1963	<b>116</b>

### 3/4-Hour Rated Acoustical Floor and Roof-Ceiling Assembly

		5/8" M; 5/8" or 3/4" FR-83; or 3/4" FR-X1 acoust clg panels in Susp Exp Grid Syst—light fixt and air duct optional—7/8" stl roof deck & 1" noncomb insul over bar joists— <b>UL Des P203</b>	SC2000 SC1963	<b>117</b>
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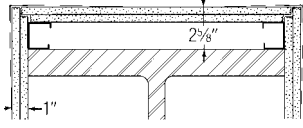
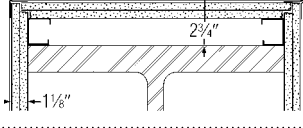
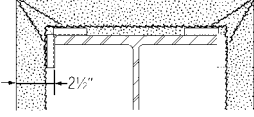
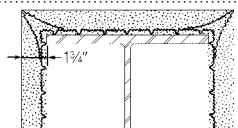
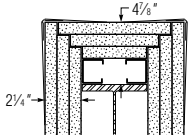
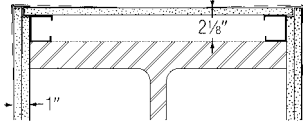
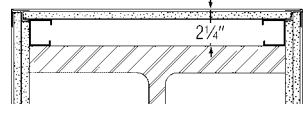
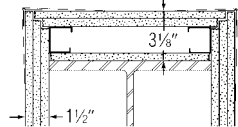
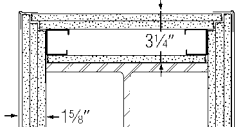
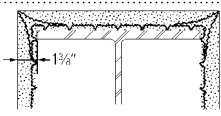
Notes: For the purpose of simplifying the information on these fire-rated acoustical ceiling assemblies, unrestrained ratings only are provided. For restrained assemblies and unrestrained beam ratings, see the *UL Fire Resistance Directory*. Also, see the *UL Fire Resistance Directory* for specific ceiling tile sizes and other assembly details. For a list of ceiling product codes to UL Type Designation in test descriptions, see "UL Type Designation, Acoustical Tile and Panel Products" and "UL Type Designation, Acoustical Suspension Products" on page 43.

### Class A Acoustical Ceiling Assemblies

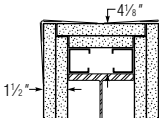
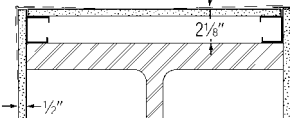
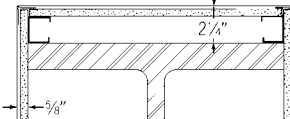
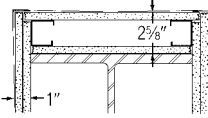
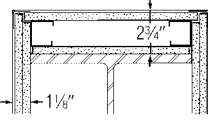
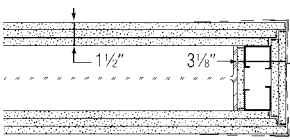
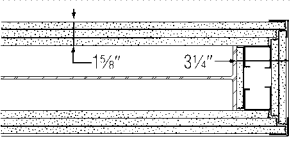
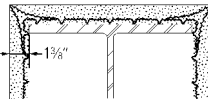
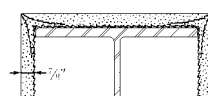
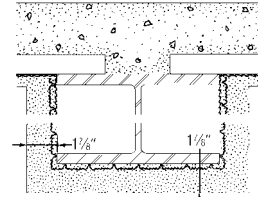
35 to 39 clg. wt. 1.3		ACOUSTONE "F" 3/4" x 12" x 12" or 12" x 24" min. acoust tile on Concealed Z-runner Syst— <b>ASTM E84</b> Class A surfaces	Basic concealed spline acoustical tile system; STC estimated	SC2000 SC1963	<b>118</b>
35 to 39 clg. wt. 1.0		5/8" or 3/4" x 24" x 24" or 24" x 48" acoust clg panels in Susp Exposed Grid Syst— <b>ASTM E84</b> Class A surfaces	Basic Class A lay-in panels; NRC varies with pattern	SC2000 SC1963	<b>119</b>
40 to 44 clg. wt. 1.5		AURATONE 5/8" x 24" x 48" acoust clg panels in Susp Exp Grid Syst—contin over partn—3" SAFB over clg— <b>ASTM E84</b> Class A surfaces	Sound test USG-820406 includes blankets extending 4 ft. each side of partition	SC2000 SC1963	<b>120</b>

\*For acoustical ceilings, fire ratings are based on tests of assemblies between vertical adjacent spaces. However, sound tests are conducted between horizontally adjacent spaces.

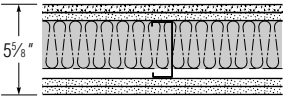
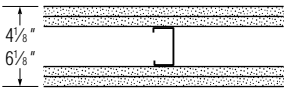
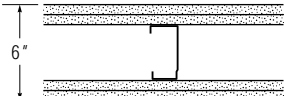
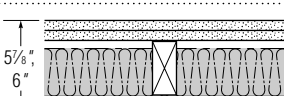
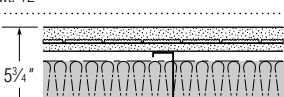
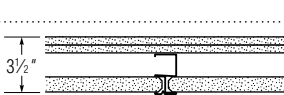
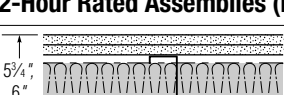
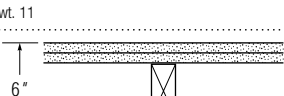
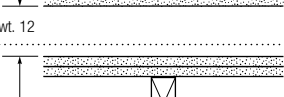
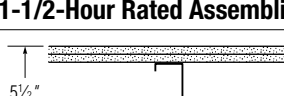
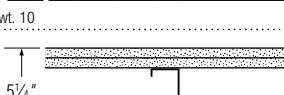
†Per E1414 test procedures for horizontal adjacent spaces. CAC replaces CSTC.

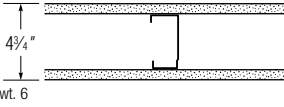

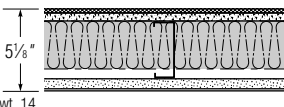
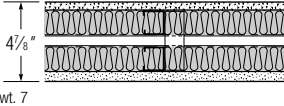
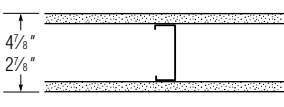
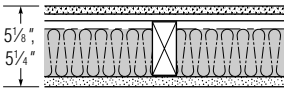
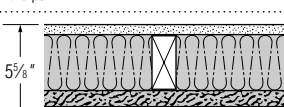
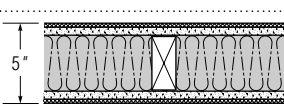
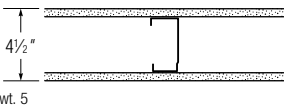
Column type	Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>Column Fireproofing</b>				
<b>4-Hour Rated Applications</b>				
W14 x228		Gypsum Drywall Fire Protection—2 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, around col—panels screw att to 1-5/8" 25 ga steel studs at corners—met corner beads—joints fin— <b>UL Des X507</b>	SA923	<b>1</b>
W14 x228		Gypsum Base & Veneer Finish Fireprfg—2 layers 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, around col—base screw att to 1-5/8" 25 ga steel studs at corners—met corner beads—1/16" veneer finish— <b>UL Des X507</b>	SA920	<b>2</b>
W10 x49		Metal lath & plaster—3.4# diamond mesh metal furred 1/2" from face of column—1-7/8" Structo-Lite plaster with fill between flange face & lath—perlite aggregate bearing UL Label— <b>UL Des X405</b>	SA920	<b>3</b>
W10 x49		Metal lath & plaster—3.4# self-furring diamond mesh metal lath wrapped around column—1-3/4" Structo-Lite plaster or 100:2-100:3 gypsum-perlite plaster—perlite aggregate bearing UL Label— <b>UL Des X402</b>	SA920	<b>4</b>
<b>3-Hour Rated Applications</b>				
W4x13 W6x15.5 W10x49		Gypsum Drywall Fire Protection—3 layers 3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core, around col, with second layer wrapped with no. 18 SWG steel wire spaced 24" o.c.—panels screw att to 1-5/8" 25 ga steel studs at corners—met corner beads—joints fin— <b>UL Des X528</b>	SA923	<b>5</b>
W14 x228		Gypsum Drywall Fire Protection—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, around col—double layer over ea web face—panels screw att to 1-5/8" 25 ga steel studs at col corners—met corner beads—joints fin— <b>UL Des X514</b>	SA923	<b>6</b>
W14 x228		Gypsum Base & Veneer Finish Fireprfg—1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, around col—double layer over ea web face—base screw att to 1-5/8" 25 ga steel studs at col corners—met corner beads—1/16" veneer finish— <b>UL Des X514</b>	SA920	<b>7</b>
W10 x49		Gypsum Drywall Fire Protection—3 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, around col—triple layer over ea flange end—inner layers on flange face separ by 1-5/8" 25 ga steel studs & screw att—met beads on corners—joints fin— <b>UL Des X515</b>	SA923	<b>8</b>
W10 x49		Gypsum Base & Veneer Finish Fireprfg—3 layers 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, around col—triple layer over ea flange end—inner layers on flange face separ by 1-5/8" 25 ga steel studs & screw att—met beads on corners—1/16" veneer finish— <b>UL Des X515</b>	SA920	<b>9</b>
W10 x49		Metal lath & plaster—3.4# self-furring diamond mesh metal lath wrapped around column—1-3/8" 100:2-100:3 gypsum-perlite plaster or Structo-Lite plaster— <b>UL Des X402</b>	SA920	<b>10</b>

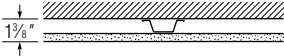
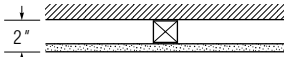
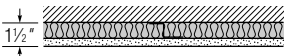
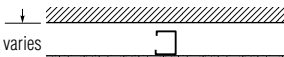
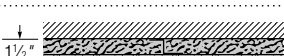
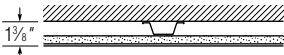
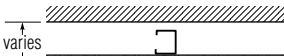
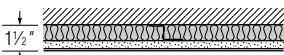

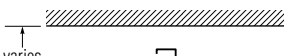
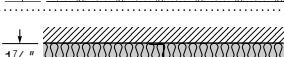
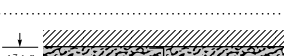


Column type	Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>2-Hour Rated Applications</b>				
W4x13 W6x15.5 W10x49		Gypsum Drywall Fire Protection—2 layers 3/4" SHEETROCK Brand Gypsum Panels, ULTRACODE Core, around col—panels screw att to 1-5/8" 25 ga steel studs at corners—met corner beads—joints fin— <b>UL Des X528</b>		SA923 <b>11</b>
W14 x228		Gypsum Drywall Fireproofing—1 layer—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, around col—panel screw att to 1-5/8" 25 ga steel studs at col corners—met corner beads—joints fin— <b>UL Des X521</b>		SA923 <b>12</b>
W14 x228		Gypsum Base & Veneer Finish Fireproofing—1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, around col—base screw att to 1-5/8" 25 ga steel stud at col corners—met corner beads—1/16" veneer finish— <b>UL Des X521</b>		SA920 <b>13</b>
W10 x49		Gypsum Drywall Fire Protection—2 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, around col—double layer over ea flange end—double layer on flange faces separ by 1-5/8" 25 ga steel stud & screw att—met beads on corners—joints fin— <b>UL Des X518</b>		SA923 <b>14</b>
W10 x49		Gypsum Base & Veneer Finish Fireproofing—2 layers 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, around col—double layer over ea flange end—double layer on flange faces separ by 1-5/8" 25 ga steel studs & screw att—met beads on corners—1/16" veneer finish— <b>UL Des X518</b>		SA920 <b>15</b>
Varies		Gypsum Drywall Fire Protection—3 layers 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, around col—triple layer over ea flange end—inner layers on flange face separ by 1-5/8" 25 ga steel studs & screw att—met beads on corners—joints fin— <b>UL Des X524</b>	Rating also applies to tapered or constant-section prefabricated metal building columns	SA923 <b>16</b>
Varies (beam only)	W8 x24 	Gypsum Base & Veneer Finish Fireproofing—3 layers 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, around col—triple layer over ea flange end—inner layer on flange face separ by 1-5/8" 25 ga steel studs & screw att—met beads on corners—1/16" veneer finish— <b>UL Des X524</b>	Rating applies to tapered or constant-section prefabricated metal building columns	SA920 <b>17</b>
W10 x49		Metal lath & plaster—3.4# self-furring diamond mesh metal lath wrapped around column—1" 100:2-100:3 gypsum-perlite plaster or Structo-Lite plaster—perlite aggregate bearing UL Label— <b>UL Des X402</b>		SA920 <b>18</b>
<b>1-Hour Rated Application</b>				
W10 x49		Metal lath & plaster—3.4# self-furring diamond mesh metal lath wrapped around column—3/4" 100:2-100:3 gypsum-sand plaster— <b>BMS-92</b>		SA920 <b>19</b>
<b>Beam Fireproofing</b>				
4 hr.	W12 x58 	Metal Lath & Plaster Caged Beam Fireproofing—3.4# self-furring diamond mesh metal lath enclosing beam—1-1/2" 100:2 gypsum-perlite plaster— <b>UL Des D403</b>	Suitable for protection of beams and girders	SA920 <b>20</b>

Column type	Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>Beam Fireproofing (continued)</b>				
3 hr. (beam only)	W8 x24 	Gypsum Drywall Caged Beam Fireprfg—1-5/8" stl run chan brackets 24" o.c.—7/8" x 1-3/8" corner angles att to brackets—3 layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, att with Type S screws—1" 20 ga hex mesh on bottom over middle layer—met beads on corners—joints fin—2-1/2" conc deck on fluted stl flr— <b>UL Des N505</b>		SA923 <b>21</b>
3 hr. (beam only)	W8 x24 	Gypsum Base & Veneer Finish Caged Beam Fireprfg—1-5/8" stl run chan brackets 24" o.c.—1/8" x 1-3/8" corner angles att to chan brackets—3 layers 5/8" IMPERIAL Brand Gypsum Base, FIRECODE Core, att with Type S screws—1" 20 ga hex mesh on bottom over middle layer—met beads on corners—joints taped—1/16" veneer finish—2-1/2" conc deck on fluted stl flr— <b>UL Des N505</b>	Fire rating for restrained assembly; 2 hr rating for unrestrained assembly	SA920 <b>22</b>
2 hr. (beam only)	W8 x24 	Gypsum Drywall Caged Beam Fireprfg—1-5/8" stl run chan brackets 24" o.c.—1-3/8" x 7/8" corner angles att to chan brackets—dbl layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, att with Type S screws—met beads on corners—joints fin—2-1/2" conc deck on fluted stl flr— <b>UL Des N501 (f)—UL Des N502</b>		SA923 <b>23</b>
		Gypsum Base & Veneer Finish Fireprf—1-5/8" stl run chan brackets—dbl laye 5/8" IMPERIAL Brand Gypsum Base, FIRECODE Core, att with Type S screws—met beads on corners—1/16" veneer finish—2-1/2" conc deck on fluted stl flr— <b>UL Des N501—UL Des N502</b>		SA920 <b>24</b>

Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>2-Hour Rated Assemblies (Non-Load-Bearing)</b>			
 <p>wt. 11</p>	Steel Stud—1/2" DUROCK Brand Cement Panel—base layer 1/2" SHEETROCK Brand Gypsum Panels, water-resistant, FIRECODE C Core, both sides—board screw-attached 8" o.c. to 3-5/8" 20 ga min steel non-load-bearing studs 16" o.c.—3" SAFB—joints taped—alt design, double-layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, interior— <b>UL Des U474</b>		SA700 <b>1</b>
 <p>wt. 12</p>	Double layer 5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core, exterior side—Double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior—2-1/2" or 3-5/8" studs 24" o.c.—base layer screw att—face layer screw att—joints stag & fin or unfin—perimeter caulked— <b>UL Des U411 or U419</b>	Based on 3-5/8" studs and 5/8" SHEETROCK Brand gypsum panels, FIRECODE C Core— <b>BBN-770408</b> 56 STC—Based on 3-5/8" studs and 3" insulation— <b>USG-840818</b>	SA700 <b>2</b>
 <p>wt. 12</p>	Double layer 5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core, exterior side—3-1/2" 20 ga struc studs 24" o.c.—dbl layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior—base layer att with 1" Type S-12 screws 12" o.c.—face layer att with 1-5/8" Type S-12 screws 12" o.c.— <b>load-bearing up to 100% allowable stud axial load when min. 2" Thermafiber SAFB is used in stud cavities; otherwise load-bearing up to 80% allowable steel axial load—UL Des U423 or U425</b>	Rating also applies with SHEETROCK Brand Gypsum Panels, water-resistant, FIRECODE Core, gypsum panel exterior	SA700 SA923 <b>3</b>
 <p>wt. 12</p>	1/2" DUROCK Brand cement panel—base layer 5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core—2 x 4 16" o.c.—3" SAFB—joints taped and treated—double-layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side— <b>UL Des. U308</b>		SA700 <b>4</b>
 <p>wt. 12</p>	Exterior Curtain Wall—3-5/8" 20 ga steel studs 16" o.c.—1/2" gypsum sheathing—self-furring metal lath—1" cement-lime stucco exterior side—3" insul blankets betw studs—5/8" SHEETROCK Brand Gypsum Panels, foil-back, FIRECODE C Core, or IMPERIAL Brand Gypsum Base, FIRECODE C Core, and 1/16" IMPERIAL Brand veneer finish interior— <b>T-4851-OSU</b>	Systems offer wide selection of exterior and interior surfaces, utilizing conventional materials	SA923 <b>5</b>
 <p>wt. 12</p>	Exterior Curtain Wall—1" SHEETROCK Brand Gypsum Liner Panels set betw steel C-H studs 24" o.c. on exterior side—2 layers SHEETROCK Brand Gypsum Panels, FIRECODE C Core, screw att on interior—joints fin— <b>U of C 4-2-75</b>	Rating also applies with IMPERIAL Brand Gypsum Base, FIRECODE C Core, and veneer finish interior	SA923 <b>6</b>
<b>2-Hour Rated Assemblies (Load-Bearing)</b>			
 <p>wt. 11</p>	Double layers 1/2" (or 5/8") DUROCK Brand Cement Panel—3-1/2" studs 16" o.c.—3" SAFB—joints taped and treated—2 layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side— <b>UL Des. U404</b>		SA700 <b>7</b>
 <p>wt. 12</p>	Wld Stud—double layer 5/8" SHEETROCK Brand Type X exterior sheathing—double layer 5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core, or SHEETROCK Brand Gypsum Panels, Water-Resistant, FIRECODE Core, interior—2x4 16" o.c.—base layer att with 1-7/8" nails 6" o.c.—face layer att with 2-3/8" nails 8" o.c. joints—exp of side fin— <b>UL Des U301</b>		SA700 SA924 <b>8</b>
 <p>wt. 44</p>	Wld Stud—double layer 1/2" layers 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior side—2x4 16" o.c.—sheathing appl horiz with 11d galv nails 6" o.c.—SHEETROCK Brand Gypsum Panels, appl horiz or vert with nails 8" o.c.—joints stag & fin— <b>UL Des U302</b>	FIRECODE Base and veneer finish interior	SA700 SA924 <b>9</b>
<b>1-1/2-Hour Rated Assemblies (Non-Load-Bearing)</b>			
 <p>wt. 10</p>	Double layer 1/2" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core, exterior side—3-1/2" 20 ga struc studs 24" o.c.—dbl layer 1/2" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior—base layers att with 1" Type S-12 screws 12" o.c.—face layers att with 1-5/8" Type S-12 screws 12" o.c.— <b>load-bearing up to 100% allowable stud axial load—UL Des U423 or U425</b>		SA700 SA923 <b>10</b>
 <p>wt. 10</p>	1/2" SHEETROCK Brand Gypsum Sheathing, exterior side—3-1/2" 20 ga struc studs 24" o.c.—double layer 5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior—base layers att with 1" Type S-12 screws 16" o.c.—face layers att with 1-5/8" Type S-12 screws 16" o.c.— <b>load-bearing up to 100% allowable stud axial load—UL Des U424 or U425</b>	Rating applicable to fire exposure on interior face only	SA923 <b>11</b>

Physical data Construction detail	Fire-rated construction Description & test no.	Comments	Folder reference
<b>1-Hour Rated Assemblies (Non-Load-Bearing)</b>			
	5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core, exterior side—3-1/2" 20 ga struc studs 24" o.c.—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior— <b>load-bearing up to 100% allowable stud axial load—UL Des U419</b>	Rating also applies with SHEETROCK Brand Gypsum Panels, water-resistant, FIRECODE Core, exterior	SA700 SA923 <b>12</b>
	3-1/2" 20 ga struc studs 24" o.c.—1/2" gypsum sheathing—1" extruded polystyrene insul installed horiz—1/2" cedar plywood exterior—3-5/8" insul bkts betw studs—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, interior—joints fin— <b>CEG 12-7-79</b>		SA923 <b>13</b>
	1/2" DUROCK Brand Cement Panel and 1/4" ceramic tile exterior side—board screw-attached 8" o.c. to 3-5/8" 20 ga. min steel non-load-bearing studs spaced 16" o.c.—3" SAFB between studs—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, or IMPERIAL Brand Gypsum Base, FIRECODE Core, and 1/16" IMPERIAL Brand finish interior— <b>UL Des U442</b>		SA700 <b>14</b>
	1/2" DUROCK Brand Cement Panel—3-5/8" 20 ga. min. steel non-load-bearing studs 16" o.c.—3" min. SAFB—board att 8" o.c.—joints fin—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>UL Des U457</b>		SA700 <b>15</b>
	1/2" DUROCK Brand cement panel—1-5/8" 20 ga. min. steel non-load-bearing studs 16" o.c. in two rows with horiz braces—1-1/2" SAFB in both stud cavities—board att 8" o.c.—joints fin—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core— <b>UL Des U458</b>		SA700 <b>16</b>
	5/8" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core, exterior side—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior—3-5/8" studs 24" o.c.—joints finished—perimeter caulked— <b>UL Des U419 or U465</b>	<b>USG-860808</b> Based on 3" insulation in cavity— <b>SA-870717</b>	SA700 <b>17</b>
	Steel Stud—1/2" DUROCK Brand Cement Panel—base layer 5/8" SHEETROCK Brand Gypsum Panels, water-resistant, FIRECODE Core—board screw-attached 8" o.c. to 3-1/2" 20 ga. min. steel load-bearing studs 16" o.c.—3" SAFB—joints fin—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, interior— <b>UL Des U473</b>		SA700 <b>18</b>
<b>1-Hour Rated Assemblies (Load-Bearing)</b>			
	1/2" DUROCK Brand cement panel—base laye 15/32" plywood—2 x 4 16" o.c.—3" SAFB—joints fin—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side— <b>UL Des. U303</b>		SA700 <b>19</b>
	5/8" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, interior side—1" extruded polystyrene insul sheathing and 1/2" plywd siding—2x4 16" o.c.—3-1/2" insul bkts—gypsum panels appl vert—joints fin— <b>UL Des U330</b>		SA924 <b>20</b>
	1/2" DUROCK Brand Cement Panel and 1/4" ceramic tile exterior—board att 8" o.c.—2 x 4 wood load bearing studs spaced 16" o.c.—3-1/2" insul between studs—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, or IMPERIAL Brand Gypsum Base, FIRECODE Core, and 1/16" IMPERIAL Brand finish interior— <b>UL Des U329</b>		SA700 <b>21</b>
	5/8" SHEETROCK Brand Type X Exterior Sheathing—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core or SHEETROCK Brand Gypsum Panels, water-resistant, FIRECODE Core, interior side—2x4 16" or 24" o.c.—panels nailed 7" o.c.—joints exp or fin—perim caulked— <b>UL Des U305</b> based on 16" stud spacing— <b>UL Des U314</b> based on 24" stud spacing, joints fin	Based on 16" stud spacing and screws 6" o.c.— <b>USG-30-FT-G&amp;H</b> Based on 24" stud spacing— <b>USG-860807</b> Based on 24" stud spacing & 3" insulation— <b>BBN 700725</b>	SA700 <b>22</b>
	1/2" DUROCK Brand cement panel—3-1/2" studs 16" o.c.—3" SAFB—5/8" SHEETROCK Brand Gypsum Panels, FIRECODE Core, other side—joints fin— <b>UL Des. U404</b>		SA700 <b>23</b>
<b>45-Min. Rated Assembly</b>			
	1/2" SHEETROCK Brand Gypsum Sheathing, FIRECODE Core—3-1/2" 20 ga struc studs 24" o.c.—1/2" SHEETROCK Brand Gypsum Panels, FIRECODE C Core, interior side— <b>load-bearing up to 100% allowable stud axial load—UL Des U423 or U425</b>		SA700 SA923 <b>24</b>

Physical data Construction detail	Description	Comments	Folder reference
<b>Drywall Assemblies</b>			
	Metal furring channels 24" o.c., 1/2" SHEETROCK Brand Gypsum Panels, foil-back, screw attached, joints finished	Good vapor retarder, no limiting height	SA923 <b>1</b>
	Wood furring strips 16" o.c., 1/2" SHEETROCK Brand Gypsum Panels, foil-back, joints finished	Surface not isolated from structural stresses	SA924 <b>2</b>
	Z-furring channels appl vert 24" o.c., THERMAFIBER blankets betw chan, 1/2" SHEETROCK Brand Gypsum Panels, foil-back, screw attached to channels, joints finished	Suitable for up to 3" thick insulation; good vapor retarder; no limiting height	SA923 SA924 <b>3</b>
	Steel studs 24" o.c., 1/2" SHEETROCK Brand Gypsum Panels, foil-back, screw-attached, joints finished	Free standing for pipe chase clearance; good vapor retarder	SA923 <b>4</b>
	Z-furring channels appl vert 24" o.c., rigid plastic foam insulation betw chan, 1/2" SHEETROCK Brand Gypsum Panels, foil-back, appl vert and screw-attached to channels, joints finished	Suitable for up to 3" thick insulation no limiting height	SA923 <b>5</b>
<b>Plaster Assemblies</b>			
	Metal furring channels 16" o.c., 1/2" IMPERIAL Brand Gypsum Base, foil-back, screw-attached to channels, 1/16" veneer finish	Good vapor retarder, no limiting height	SA920 <b>6</b>
	Steel studs 16" o.c. set in runners, 1/2" IMPERIAL Brand Gypsum Base, foil-back, screw-attached to studs, 1/16" veneer finish	Free-standing, allows for pipe chase clearance, good vapor retarder	SA920 <b>7</b>
	Z-furring channels appl vert 24" o.c., THERMAFIBER blankets betw chan, 1/2" IMPERIAL Brand Gypsum Base, foil-back, screw-attached to channels, 1/16" veneer finish	Good vapor retarder, no limiting height	SA920 <b>8</b>
	Z-furring channels appl vert 24" o.c., rigid plastic foam insulation betw chan, 1/2" IMPERIAL Brand Gypsum Base, foil-back, screw-attached to channels, 1/16" veneer finish	Suitable for up to 3" thick insulation, no limiting height	SA920 <b>9</b>
	Steel studs 16" o.c. set in runners, 3/8" ROCKLATH base attached with 1" Type S screws, 1/2" sanded basecoat plaster, lime putty finish	Freestanding; allows for pipe chase clearance; good vapor retarder.	SA920 <b>10</b>
	Z-furring channels applied vertically 16" or 24" o.c., THERMAFIBER blankets between channels, 3/8" ROCKLATH base attached with 1" Type S screws, 1/2" sanded basecoat plaster, lime putty finish	Noncombustible; system with mineral fiber insulation; suitable for up to 3" thick insulation; no limiting height	SA920 <b>11</b>
	Z-furring channels applied vertically 16" or 24" o.c., rigid plastic foam insulation between channels, 3/8" ROCKLATH base attached with 1" Type S screws, 1/2" sanded basecoat plaster, lime putty finish	Suitable for up to 3" thick insulation; no limiting height	SA920 <b>12</b>

Penetrating Item and Diameter	Type of Floor, Roof or Wall	Firestopping Material (Min. Depth)	Forming Material	Min. Annular Space	Max. Annular Space	F Rating	T Rating	UL System Number	Folder reference
<b>Steel, Iron, Metallic</b>									
Steel or Iron Pipe, up to 6"	CW, CF	1" Type SS <sup>(2)</sup>	3-1/2", min. 4 pcf	3/8"	3/4"	3	0	C-AJ-1020	SA727 <b>1</b>
Steel or Iron Pipe, up to 6"	CW, CF	2" Type SS <sup>(2)</sup>	2-1/2", min. 4 pcf	3/8"	1"	3	0	C-AJ-1020	SA727 <b>2</b>
Steel or Iron Pipe up to 24"	CW, CF	1" Type FC	3", min. 4 pcf	1/4"	1-15/16"	3	0	C-AJ-1081	SA727 <b>3</b>
Steel or Iron Pipe up to 10"	CW, CF	1" Type FC	3", min. 4 pcf	1/4"	4"	3	0	C-AJ-1081	SA727 <b>4</b>
Steel or Iron Pipe up to 12"	CW, CF	1/2" Type A	4", min. 4 pcf	1/4"	1"	2	0	C-AJ-1347	SA727 <b>5</b>
Steel or Iron Pipe up to 4"	CW, CF	1/2" Type A	4", min. 4 pcf	0"	7/8"	2	0	C-AJ-1347	SA727 <b>6</b>
Steel or Iron Pipe up to 8"	CW, CF	1" Type IA	4", min. 4 pcf	1/2"	1-3/8"	2	0	C-AJ-1348	SA727 <b>7</b>
Steel or Iron Pipe up to 8"	CW, CF	1/2" Type A	4", min. 4 pcf <sup>(1)</sup>	1/2"	1"	2	1	C-AJ-5146	SA727 <b>8</b>
Insulated Steel or Iron Pipe up to 2"	CW, CF	1" Type IA	Foam Backer <sup>(1)</sup>	1/8"	1/4"	2	1	C-AJ-5147	SA727 <b>9</b>
Insulated Steel or Iron Pipe up to 8"	CW, CF	1" Type IA	Foam Backer	1/2"	0"-1-3/8"	2	1-1/2	C-AJ-5148	SA727 <b>10</b>
Steel or Iron Pipe up to 4"	CW, CF	1" Type IA	3-1/2", min., 4 pcf <sup>(1)</sup>	1/2"	1-1/2"	2	1/2-1	C-AJ-5149	SA727 <b>11</b>
Steel or Iron Pipe up to 8"	FSD	1/2" Type A	4", min. 4 pcf	1/4"	1-5/8"	3	0	F-A-1020	SA727 <b>12</b>
Insulated Steel or Iron Pipe up to 8"	FSD	1/2" Type A	4", min. 4 pcf <sup>(1)</sup>	1/4"	5/8"	3	1	F-A-5014	SA727 <b>13</b>
Steel or Iron Pipe up to 8"	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	7/8"	1	1/4	F-C-1069	SA727 <b>14</b>
Insulated Steel or Iron Pipe up to 4"	WF	1/2" Type IA	Foam Backer <sup>(1)</sup>	0"	7/8"	1	3/4-1	F-C-5042	SA727 <b>15</b>
Steel or Iron Pipe up to 12"	CW, CF	1/2" Type IA	Foam Backer	0"	1"	2	0	W-J-1091	SA727 <b>16</b>
Steel or Iron Pipe up to 4"	GW	1" Type FC	2-1/2", min. 4 pcf	1/4"	2-1/4"	2	0	W-L-1027	SA727 <b>17</b>
Steel or Iron Pipe up to 6"	GW	1" Type FC	2-1/2", min. 4 pcf	1"	1-5/8"	2	0	W-L-1027	SA727 <b>18</b>
Steel or Iron Pipe up to 4"	GW	1/2" Type FC	2-1/2", min. 4 pcf	1/4"	1-5/8"	1	0	W-L-1039	SA727 <b>19</b>
Steel or Iron Pipe up to 3-1/2"	GW	1" Type FC	—	1/4"	1-5/8"	2	0	W-L-1063	SA727 <b>20</b>
Steel or Iron Pipe up to 4"	GW	1" Type SS <sup>(2)</sup>	2-1/2", min. 4 pcf	1/4"	1-1/4"	2	0	W-L-1064	SA727 <b>21</b>
Steel or Iron Pipe up to 1"	GW	1" Type FC	2-1/2", min. 4 pcf	3/8"	1-5/8"	2	1-2	W-L-1065	SA727 <b>22</b>
Steel or Iron Pipe up to 4"	GW	1" Type FC	—	1/4"	1-1/4"	1	0-1	W-L-1087	SA727 <b>23</b>
Insulated Steel Pipe up to 4"	GW	1/4" Type FC	—	1/4"	1/2"	2	1	W-L-5043	SA727 <b>24</b>
Insulated Steel Pipe up to 3-1/2"	GW	1" Type FC	—	1/2"	5/8"	2	3/4	W-L-5044	SA727 <b>25</b>
Insulated Steel or Iron Pipe up to 4"	GW	1" Type IA	Foam Backer <sup>(1)(3)</sup>	0"	3/8"	2	1/2	W-L-5114	SA727 <b>26</b>
Insulated Steel or Iron Pipe up to 8"	GW	1/2" Type IA	Foam Backer <sup>(1)(3)</sup>	1/4"	1-1/8"	1-2	1/2-1	W-L-5115	SA727 <b>27</b>
Insulated Steel or Iron Pipe up to 8"	GW	1" Type IA	Foam Backer <sup>(3)</sup>	0"	1/2"	2	2	W-L-5116	SA727 <b>28</b>
<b>Conduit</b>									
Nominal 4"	CW, CF	1" Type SS <sup>(2)</sup>	3-1/2", min. 4 pcf	3/8"	3/4"	3	0	C-AJ-1020	SA727 <b>29</b>
Nominal 4"	CW, CF	2" Type SS <sup>(2)</sup>	2-1/2", min. 4 pcf	3/8"	1"	3	0	C-AJ-1020	SA727 <b>30</b>
Steel Conduit up to 6" or Metallic Tubing up to 4"	CW, CF	1" Type FC	3", min. 4 pcf	1/4"	4"	3	0	C-AJ-1081	SA727 <b>31</b>
Nominal 4"	CW, CF	1/2" Type A	4", min. 4 pcf	0"	7/8"	2	0	C-AJ-1347	SA727 <b>32</b>
Nominal 4"	CW, CF	1/2" Type IA	4", min. 4 pcf	1/2"	1-3/8"	2	0	C-AJ-1348	SA727 <b>33</b>
Insulated Nominal 4"	CW, CF	1" Type IA	3-1/2", min. 4 pcf <sup>(1)</sup>	1/2"	1-1/2"	2	1/2-1	C-AJ-5149	SA727 <b>34</b>
Nominal 4"	FSD	1/2" Type A	4", Min. 4 pcf	1/4"	1-5/8"	3	0	F-A-1020	SA727 <b>35</b>
Nominal 4"	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	7/8"	1	1/4	F-C-1069	SA727 <b>36</b>
Nominal 2" Flex. Pipe	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	7/8"	1	3/4	F-C-1070	SA727 <b>37</b>
Nominal 4"	CW	1/2" Type IA	Foam Backer	0"	1"	2	0	W-J-1091	SA727 <b>38</b>
Steel Conduit or Metallic Tubing up to 4"	GW	1" Type FC	2-1/2", min. 4 pcf	1/4"	2-1/4"	2	0	W-L-1027	SA727 <b>39</b>
Nominal 4" or Metallic Tubing up to 4"	GW	1/2" Type FC	2-1/2", min. 4 pcf	1/4"	1-5/8"	1	0-1	W-L-1039	SA727 <b>40</b>
Steel Conduit or Metallic Tubing up to 3-1/2"	GW	1" Type FC	—	1/4"	1-5/8"	2	0	W-L-1063	SA727 <b>41</b>
Steel Conduit or Metallic Tubing up to 4"	GW	1" Type SS <sup>(2)</sup>	2-1/2", min. 4 pcf	1/4"	1-1/4"	2	0	W-L-1064	SA727 <b>42</b>
Nominal 1" or Metallic Tubing up to 1"	GW	1" Type FC	2-1/2", min. 4 pcf	3/8"	1-5/8"	2	2	W-L-1065	SA727 <b>43</b>
Nominal 4" or Metallic Tubing up to 4"	GW	1" Type FC	—	1/4"	1-1/4"	1	0-1	W-L-1087	SA727 <b>44</b>

Codes for Type of Floor, Roof or Wall: CF-Concrete Floor, CW-Concrete Wall, FSD-Fluted Steel Deck, GW-Gypsum Wall, WF-Wood Floor.

Codes for Firestopping Material: Type A-FIRECODE Acrylic Firestop Sealant (regular); Type A-SP-FIRECODE Acrylic Firestop Spray Sealant (Type SA); Type AS—SHEETROCK® Brand Acoustical Sealant; Type IA-FIRECODE IA Intumescent Acrylic Firestop Sealant; Type FC-FIRECODE Compound; Type SS-THERMAFIBER SMOKE SEAL Compound; Wrap-TREMSTOP D Intumescent Wrap Strips.

(1) Pipe covering material.

(2) Minimum depth dependent upon annular space dimensions.

(3) Optional.

(4) Ceramic fiber.

(5) 2-hr. wall.

(6) 2-hr. (two layers 7/8" backer rod); 1-hr. (bond breaker tape).

(7) Two layers 7/8" backer rod.

Penetrating Item and Diameter	Type of Floor, Roof or Wall	Firestopping Material (Min. Depth)	Forming Material	Min. Annular Space	Max. Annular Space	F Rating	T Rating	UL System Number	Folder reference
<b>Copper</b>									
Pipe up to 6"	CW, CF	1" Type FC	3", min. 4 pcf	1/4"	4"	3	0	C-AJ-1081	SA727 <b>45</b>
Tubing and Pipe up to 4"	CW, CF	1" Type FC	3", min. 4 pcf	1/4"	4"	3	0	C-AJ-1081	SA727 <b>46</b>
Tubing and Pipe up to 4"	CW, CF	1/2" Type A	3", min. 6 pcf <sup>(4)</sup>	0"	7/8"	2	0	C-AJ-1347	SA727 <b>47</b>
Tubing and Pipe up to 4"	CW, CF	1" Type IA	4", min. 4 pcf	1/2"	1-3/8"	2	0	C-AJ-1348	SA727 <b>48</b>
Insulated Tubing and Pipe up to 4"	CW, CF	1/2" Type A	4", min. 4 pcf	3/8"	1-1/2"	1-1/2-2	1/2-1	C-AJ-5146	SA727 <b>49</b>
Insulated Tubing and Pipe up to 2"	CW, CF	1" Type IA	Foam Backer	1/8"	1/4"	2	1	C-AJ-5147	SA727 <b>50</b>
Insulated Tubing and Pipe up to 4"	CW, CF	1" Type IA	3-1/2", min. 4 pcf	1/2"	1-1/2"	2	1/2-1	C-AJ-5149	SA727 <b>51</b>
Tubing and Pipe up to 4"	FSD	1/2" Type A	4", min. 4 pcf	1/4"	1-5/8"	3	0	F-A-1020	SA727 <b>52</b>
Insulated Tubing and Pipe up to 4"	FSD	1/2" Type A	4", min. 4 pcf	1/4"	5/8"	3	1	F-A-5014	SA727 <b>53</b>
Tubing and Pipe up to 4"	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	7/8"	1	1/4	F-C-1069	SA727 <b>54</b>
Insulated Tubing and Pipe up to 4"	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	7/8"	1	3/4-1	F-C-5042	SA727 <b>55</b>
Tubing and Pipe up to 4"	CW	1/2" Type IA	Foam Backer	0"	1"	2	0	W-J-1091	SA727 <b>56</b>
Pipe up to 6"	GW	1" Type FC	2-1/2", min. 4 pcf	1"	1-5/8"	2	0	W-L-1027	SA727 <b>57</b>
Pipe up to 4"	GW	1/2" Type FC	2-1/2", min. 4 pcf	1/4"	1-5/8"	1	0	W-L-1039	SA727 <b>58</b>
Tubing up to 4"	GW	1" Type FC	—	1/4"	1-5/8"	2	0	W-L-1063	SA727 <b>59</b>
Tubing up to 4"	GW	1" Type FC	—	1/4"	1-1/4"	1	0	W-L-1087	SA727 <b>60</b>
Insulated Tubing up to 4"	GW	1/4" Type FC	2", min. 4 pcf <sup>(1)</sup>	1/4"	1/2"	2	1	W-L-5043	SA727 <b>61</b>
Insulated Pipe or Tubing up to 4"	GW	1" Type FC	1", min. 4 pcf <sup>(1)</sup>	1/2"	5/8"	2	3/4	W-L-5044	SA727 <b>62</b>
Insulated Tubing and Pipe up to 4"	GW	1" Type IA	Foam Backer <sup>(3)</sup>	0"	3/8"	2	1/2	W-L-5114	SA727 <b>63</b>
Insulated Tubing and Pipe up to 3"	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	1/4"	1-1/8"	1-2	1/2-1	W-L-5115	SA727 <b>64</b>
<b>Cables</b>									
Cables	CW, CF	1" Type FC	3", min. 4 pcf	1/4"	4"	3	0	C-AJ-3045	SA727 <b>65</b>
Cables	CW, CF	1/2" Type IA	4", min. 4 pcf	Varies	Varies	2	0-1/2-1	C-AJ-3174	SA727 <b>66</b>
Cables	CW, CF	1/2" Type IA	4", min. 4 pcf	3/4"	3-3/16"	2	1/2	C-AJ-3175	SA727 <b>67</b>
Cables	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	Varies	Varies	1	3/4	F-C-3054	SA727 <b>68</b>
Cables	GW	1" Type FC	3", min. 4 pcf	1/4"	4-1/2"	2	0	W-L-3023	SA727 <b>69</b>
Cables	GW	1/2" Type FC	3-7/8", min. 4 pcf	1/2"	3-7/8"	1	0-1	W-L-3034	SA727 <b>70</b>
Cables	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	1/2"	1-1/2"	1-2	1/4-1/2	W-L-3162	SA727 <b>71</b>
Cables	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	1/4"	1"	1-2	1/4-1/2	W-L-3163	SA727 <b>72</b>
<b>Air Ducts</b>									
Steel Duct, Nom. 18" x 6"	CW, CF	1" Type IA	1", min. 4 pcf	Varies	1"	3	0	C-AJ-7062	SA727 <b>73</b>
Steel Duct, Nom. 4"	CW, CF	1/2" Type IA	4", min. 4 pcf	1/2"	1-3/8"	2	0	C-AJ-7063	SA727 <b>74</b>
Steel Duct, 24-ga., up to 3" x 10"	GW	1/2" Type FC	2-1/2", min. 4 pcf	7/16"	1-5/8"	1	0	W-L-7001	SA727 <b>75</b>
Steel Duct, 28-ga. Galv., Nom. 4" x 6"	GW	1" Type FC	2-1/2", min. 4 pcf	1/2"	1-5/8"	2	1/2	W-L-7002	SA727 <b>76</b>
4", 26-ga., Galv. Steel Vent Duct	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1"	1-2	0	W-L-7057	SA727 <b>77</b>
<b>Glass Pipe</b>									
Glass Pipe, Nom. 3"	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	1/2"	1-1/8"	1	0	W-L-2227	SA727 <b>78</b>
<b>Plastic</b>									
1-1/2" or 2" Sched. 40 PVC Pipe or SDR17 CPVC Pipe	CW, CF	1/2" Type IA 1" Type 1A	Foam Backer Foam Backer	3/8" 1/4"	3/4" 3/8"	2 2	1-1/2 1-1/2	C-AJ-2295	SA727 <b>79</b>
3/4" PEX Tube or 1" ENT	CW, CF	1/2" Type IA	Foam Backer <sup>(3)</sup>	1/4"	7/16"	2	1-1/2-1-3/4	C-AJ-2296	SA727 <b>80</b>
1-1/2", 2", 3" or 4" Sched. 40 PVC Pipe	CW, CF	Wrap, Type A or Type IA <sup>(4)</sup>	—	Varies	Varies	2	1	C-AJ-2301	SA727 <b>81</b>
4" Sched. 40 PVC or ABS Pipe	CW, CF	Wrap, Type A or Type IA <sup>(4)</sup>	—	1/4"	Varies	2	2	C-AJ-2304	SA727 <b>82</b>
1" Sched. 40 PVC Pipe	FSD	1" Type IA	Foam Backer	1/4"	7/16"	3	1-1/2	F-A-2062	SA727 <b>83</b>
4" Sched. 40 PVC Pipe or 4" SDR17 CPVC Pipe or 4" Sched. 40 PVC Conduit	CW, CF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1-1/2"	1	1	F-A-2063	SA727 <b>84</b>
6" Sched. 40 PVC or 6" SDR135 CPVC Pipe	CF	Wrap, Type A or Type IA <sup>(3)</sup>	—	Varies	Varies	2-3	1-1/2-2-1/2	F-A-2064	SA727 <b>85</b>

Codes for Type of Floor, Roof or Wall: CF-Concrete Floor, CW-Concrete Wall, FSD-Fluted Steel Deck, GW-Gypsum Wall, WF-Wood Floor.

Codes for Firestopping Material: Type A-FIRECODE Acrylic Firestop Sealant (regular); Type A-SP-FIRECODE Acrylic Firestop Spray Sealant (Type SA); Type AS—SHEETROCK® Brand Acoustical Sealant; Type IA-FIRECODE IA Intumescent Acrylic Firestop Sealant; Type FC-FIRECODE Compound; Type SS-THERMAFIBER SMOKE SEAL Compound; Wrap-TREMASTOP D Intumescent Wrap Strips.

- (1) Pipe covering material.
- (2) Minimum depth dependent upon annular space dimensions.
- (3) Optional.
- (4) Ceramic fiber.
- (5) 2-hr. wall.
- (6) 2-hr. (two layers 7/8" backer rod); 1-hr. (bond breaker tape).
- (7) Two layers 7/8" backer rod.

Penetrating Item and Diameter	Type of Floor, Roof or Wall	Firestopping Material (Min. Depth)	Forming Material	Min. Annular Space	Max. Annular Space	F Rating	T Rating	UL System Number	Folder reference
<b>Plastic (continued)</b>									
3" Sched. 40 PVC or ABS Pipe	WF	Wrap, 1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1/2"	1	3/4	F-C-2179	SA727 <b>86</b>
1-1/2" Sched. 40 PVC or ABS Pipe	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1"	1	1	F-C-2180	SA727 <b>87</b>
1-1/2" Sched. 40 PVC or ABS Pipe	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1"	1	1	F-C-2181	SA727 <b>88</b>
3" Sched. 40 PVC Pipe or 3" SDR17 CPVC Pipe or 3" Sched. 40 PVC Conduit	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1/2"	1	1	F-C-2182	SA727 <b>89</b>
4" Sched. 40 PVC or Sched. 40 ABS or SDR17 CPVC Pipe	WF	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	1/2"	1	3/4	F-C-2183	SA727 <b>90</b>
2" SDR13.5 CPVC Pipe	CW	1/2" Type IA	Foam Backer	1/4"	1-3/8"	2	0	W-J-2068	SA727 <b>91</b>
2", 3" or 4" Sched. 40 PVC Pipe	GW	Wrap, Type A or Type IA <sup>(3)</sup>	—	Varies	Varies	2	1	W-L-2220	SA727 <b>92</b>
Up to 4" Sched. 40 PVC or 1-1/4" SDR135 CPVC Pipe	GW	Wrap, Type A or Type IA <sup>(3)</sup>	—	Varies	Varies	1	0-1	W-L-2221	SA727 <b>93</b>
6" Sched. 40 PVC Pipe	GW	Wrap, 1/4" Type A or Type IA	—	0"	3/8"	2	1-1/2	W-L-2222	SA727 <b>94</b>
2" SDR13.5 CPVC Pipe	GW	1/2" Type IA	Foam Backer <sup>(5)</sup>	1/4"	1-3/8"	1-2	1-2	W-L-2223	SA727 <b>95</b>
3/4" PEX Tube or 1" EMT	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	1/4"	3/8"	1-2	3/4-1-1-1/2-1-3/4	W-L-2224	SA727 <b>96</b>
1-1/2" Sched. 40 PVC Pipe	GW	1" Type IA	Foam Backer <sup>(3)</sup>	1/4"	5/8"	2	2	W-L-2225	SA727 <b>97</b>
2" Sched. 40 PVC Pipe	GW	1/2" Type IA	Foam Backer <sup>(3)</sup>	0"	7/8"	1	0	W-L-2226	SA727 <b>98</b>
<b>8" Blank (no penetrant)</b>									
4-1/2" Concrete Floor, 5" Concrete Wall	CW, CF	1" Type FC	3", min. 4 pcf	—	8"	3	0-1	C-AJ-0032	SA727 <b>99</b>

Construction Joint Systems	Type of Floor, Roof or Wall	Firestopping Material (Min. Depth)	Forming Material	Joint Width	Move-ment Class	Comp./ Exten.	Assembly Rating	UL System Number	Folder reference
Floor Joint	CF	1/2" Type A	4", min. 2.5 pcf	max. 2"	—	—	2	F-F-S-0028	SA727 <b>100</b>
Head-of-Wall or Roof Assembly (Slip Track)	FSD, CF GW	1/2" Type FC	1-1/2", min. 4 pcf	max. 5/8"	II & III	80%/60%	1	HW-D-0001	SA727 <b>101</b>
Head-of-Wall or Roof Assembly (Slip Track)	FSD, CF GW	2-1/2" Type FC	—	max. 5/8"	II & III	80%/60%	2	HW-D-0002	SA727 <b>102</b>
Head-of-Wall or Roof Assembly (Slip Track)	CW, CF	1" Type FC	min. 4 pcf	max. 1"	II & III	25%/12%	2	HW-D-0009	SA727 <b>103</b>
Head-of-Wall, Flat	CF, GW	1/2" Type A	(6)	nom. 1"	II & III	25%	1-2	HW-D-0158	SA727 <b>104</b>
Head-of-Wall, Flat	CW, CF	1/2" Type A	(7)	nom. 1"	II & III	25%	2	HW-D-0159	SA727 <b>105</b>
Head-of-Wall Perpendicular/Parallel	FSD, GW	1/8" Type A-SP	min. 4 pcf	nom. 1"	II & III	25%/25%	1-2	HW-D-0160	SA727 <b>106</b>
Head-of-Wall Perpendicular/Parallel	FSD, CW	1/8" Type A-SP	min. 4 pcf	nom. 1"	II & III	25%/25%	2	HW-D-0161	SA727 <b>107</b>
Head-of-Wall or Roof Assembly	FSD, CF GW	1/2" Type FC	3-1/2", min. 4 pcf	max. 1/2"	—	—	1	HW-S-0001	SA727 <b>108</b>
Head-of-Wall or Roof Assembly	FSD, CF GW	1" Type FC	3-1/2", min. 4 pcf	max. 1/2"	—	—	2	HW-S-0001	SA727 <b>109</b>
Wall Joint	CF	1/2" Type AS	—	max. 1/2"	—	—	1	HW-S-0032	SA727 <b>110</b>
Wall Joint	CF	1" Type AS	—	max. 1/2"	—	—	2	HW-S-0032	SA727 <b>111</b>
Wall Joint	CF	1/2" Type AS	min. 4 pcf	max. 1/2"	—	—	1	HW-S-0035	SA727 <b>112</b>
Wall Joint	CF	1" Type AS	min. 4 pcf	max. 1/2"	—	—	2	HW-S-0035	SA727 <b>113</b>
Wall Joint	CW	1/2" Type A	4", min. 2.5 pcf	max. 2"	—	—	3	HW-S-0036	SA727 <b>114</b>

Codes for Type of Floor, Roof or Wall: CF-Concrete Floor, CW-Concrete Wall, FSD-Fluted Steel Deck, GW-Gypsum Wall, WF-Wood Floor.

Codes for Firestopping Material: Type A-FIRECODE Acrylic Firestop Sealant (regular); Type A-SP-FIRECODE Acrylic Firestop Spray Sealant (Type SA); Type AS—SHEETROCK® Brand Acoustical Sealant; Type IA-FIRECODE IA Intumescent Acrylic Firestop Sealant; Type FC-FIRECODE Compound; Type SS-THERMAFIBER SMOKE SEAL Compound; Wrap-TREMSTOP D Intumescent Wrap Strips.

- (1) Pipe covering material.
- (2) Minimum depth dependent upon annular space dimensions.
- (3) Optional.
- (4) Ceramic fiber.
- (5) 2-hr. wall.
- (6) 2-hr. (two layers 7/8" backer rod); 1-hr. (bond breaker tape).
- (7) Two layers 7/8" backer rod.



The federal government segment of the construction industry is in the midst of changing to metric measurement and the change may impact on U.S. Gypsum Company and USG Interiors, Inc., products.

### What Is Changing?

In metric construction, many of the building materials, systems and documents are affected.

**Dimensions**—Units have changed from feet and inches to millimeters, scales from inch fractions to feet (for example, 1/4"=1'0") to true ratios (such as 1:20). Drawings are not to be dual dimensioned, in order to avoid dimensional conflicts and errors.

**Specifications**—Specs call for metric linear dimensions, areas and volumes.

**Construction Products**—A majority of construction products do not change in size since they are not modular or panelized. They are simply "soft converted" or re-labeled in metric dimensions.

**Framing**—Stud spacing has changed from 16" to 400 mm and 24" to 600 mm. Wood studs keep their nominal name, or may be relabeled a nominal 50 mm x 100 mm or a more exact size.

**Batt Insulation**—Width has changed from 16" and 24" nominal to 400 mm and 600 mm nominal.

**Ceiling Systems**—Grids and lay-in ceiling tile, air diffusers and lighting fixtures, from 2'x2' to 600 mm x 600 mm and from 2'x4' to 600 mm x 1200 mm. Grid profiles, tile thicknesses, air diffuser capacities and fluorescent tubes have not changed.

### USG Corporation Metric Policy

USG Corporation supports the intent of the metric conversion program. USG has manufactured metric sized products for export for many years on a special order basis. USG will make every reasonable effort to make metric products available to the federal market on a special order basis.

USG Interiors, Inc., is prepared to offer metric sizes in most of its acoustical panel and suspension systems.

From U. S. Gypsum Company, metric width and length SHEETROCK Brand Gypsum Panel products will be available from designated manufacturing plants throughout the United States. Metric length DUROCK Brand Cement Board products will also be available from designated manufacturing plants. Certain minimum order quantities and up-charges may apply, as determined by local market conditions.

Bag and pail products, including SHEETROCK Brand Joint Treatment Products, spray textures, gypsum plasters and other products carry soft metric designations for size and/or weight.

**Important:** The basic USG product line remains unchanged—standard foot/inch/pound products previously available from USG will still be readily available. The addition of metric length/width products will allow us to supply all job requirements, whether standard or metric.

USG Corporation will offer assistance to construction professionals with regard to design, specification and installation issues involving our metric products, just as we always have with our standard products.

### Metric Equivalents

Dimension	Conversion Type <sup>(1)</sup>	Ft./In.	mm <sup>(2)</sup>
<b>SHEETROCK Gypsum Panels</b>			
Thickness	Soft	1/4"	6.4
		3/8"	9.5
		1/2"	12.7
		5/8"	15.9
		3/4"	19.1
		1"	25.4
Width	Hard	24"	600
		48"	1200
Length	Hard	8'	2400
		10'	3000
		12'	3600

### Steel Stud Framing

Thickness (gauge)	Soft	.0179 (25)	.45
		.0270 (22)	.69
		.0329 (20)	.84
Width	Soft	1-5/8"	41.3
		2-1/2"	63.5
		3-1/2"	88.9
		3-5/8"	92.1
		4"	101.6
Length	Hard	8'	2400
		10'	3000
		12'	3600

### THERMAFIBER Insulation

Thickness	Soft	1"	25.4
		1-1/2"	38.1
		2"	50.8
		2-1/2"	63.5
		3"	76.2
		3-1/2"	88.9
		4"	101.6
		5-1/4"	133.3
		6"	152.4
Width	Hard	16"	400
		24"	600
Length	Hard	48"	1200

(1) Conversion Type: "Soft" is metric relabeling with no physical change of dimension; "hard" is a physical change to the metric dimension shown.

(2) Conversion factors: Inches x 25.4 = mm; Feet x 304.8 = mm.

**Notes:** Availability: Items above are not stocked in metric lengths or widths. Minimum quantity orders may be required. Leadtime should be determined; upcharges may apply. Geographic availability may vary and should be verified for the project location.

Lengths: Shown on SHEETROCK Brand Gypsum Panels and steel stud framing for illustration purposes only.

Framing Spacing: 16" o.c. converts to 400 mm o.c.; 24" converts to 600 mm o.c.

### For Information and Assistance

Check current printed USG literature for more information on product sizing and availability. Information on specific metric product availability in your market area may be obtained from USG sales or customer service representatives. They can be reached at local sales offices or order centers. To reach your nearest USG sales office, call toll-free:

United States Gypsum Company—877 874-6655

USG Interiors, Inc.—877 874-4200

Title	Folder reference
<b>Exterior Substrate Systems</b>	<b>SA700</b>
Includes complete range of products for USG EXTERIOR™ Substrate Systems.	
<b>USG Fire Stop Systems</b>	<b>SA727</b>
Systems combine FIRECODE Compound and THERMAFIBER Safing Insulation to provide wall and floor through-penetration firestops that combine exceptional economy and performance.	
<b>Plaster Systems</b>	<b>SA920</b>
Veneer basecoat and finish plasters; conventional basecoat, finish coat, and gauging plasters; accessories.	
<b>Drywall/Steel Framed Systems</b>	<b>SA923</b>
Fire-resistant interior and exterior steel framed drywall systems; partitions, chase walls, resilient partitions, curved drywall partitions, soffits, floors, ceilings, column and beam fireproofing.	
<b>Drywall/Wood Framed Systems</b>	<b>SA924</b>
Basic gypsum drywall assemblies offer economical, quickly erected, load-bearing partitions, walls and ceilings wherever fire protection is desired with wood framing.	
<b>USG Area Separation Fire Wall/Party Wall Systems</b>	<b>SA925</b>
Lightweight, non-load-bearing gypsum drywall assemblies designed as vertical fire barriers for fire walls and party walls in wood-frame apartments and townhouses.	

Title	Folder reference
<b>USG Cavity Shaft Wall Systems</b>	<b>SA926</b>
Fire-resistant drywall partitions for enclosing shafts in multi-story buildings; engineered design provides a thin, lightweight assembly that offers faster installation and lower material costs.	
<b>Gypsum Panels &amp; Accessories</b>	<b>SA927</b>
Gypsum panels, coreboard, sheathing; metal and plastic trim, brackets, control joints; screws and adhesives; joint treatments.	
<b>SHEETROCK Brand Vinyl-Faced Gypsum Panels</b>	<b>SA928</b>
Predecorated vinyl-faced gypsum panels; mouldings and accessories.	
<b>Abuse-Resistant Systems</b>	<b>SA929</b>
Abuse-resistant systems using gypsum panels, gypsum fiber panels and plaster products; also types of abuse and testing methods.	
<b>DUROCK Brand Cement Board Systems</b>	<b>SA932</b>
Ceramic tile backer board for interior walls, ceilings, floors, counter tops; adhesives, mortars, grouts.	
<b>SHEETROCK Brand Textures and Finish Products</b>	<b>SA933</b>
Ready-mixed and powder texture finishes; spray acoustical finish.	
<b>STRUCTOCORE Security Wall Systems</b>	<b>SA1119</b>
Steel forming for security walls, prison cells, high-abuse walls; steel mesh design properties; details and specifications	

The listings below contain existing ASTM Standard Specifications which apply to USG Corporation materials. Upon request United States Gypsum Company will provide product certification that these products comply with the applicable ASTM standards and meet the performance values identified therein.

Product	ASTM designation
<b>Plaster</b>	
RED TOP gypsum plaster	C28
RED TOP two-purpose plaster	C28
RED TOP wood fiber plaster	C28
STRUCTO-LITE plaster	C28
RED TOP gauging plaster	C28
RED TOP keenes cement regular quick trowel	C61
STRUCTO-GAUGE plaster	C28
STRUCTO-BASE plaster	C28
IMPERIAL plaster	C587
DIAMOND plaster	C587

Product	ASTM designation
<b>Gypsum lathing</b>	
ROCKLATH plaster base 3/8" & 1/2"	C37
IMPERIAL gypsum base 1/2" & 5/8"	C588
<b>Lime</b>	
RED TOP and GRAND	
PRIZE finish limes	C206 type N
IVORY finish lime	C206 type S
<b>Gypsum panels</b>	
SHEETROCK Brand	C36
(plain) (foil-back)	
SHEETROCK Brand sq. edge	C36
SHEETROCK Brand tap. edge	C36
SHEETROCK Brand bev. edge	C36
5/8" SHEETROCK Brand FIRECODE Core	C36
SHEETROCK Brand FIRECODE C Core	C36
SHEETROCK vinyl-covered	C960
SHEETROCK Brand water-resistant	C630
SHEETROCK Brand gypsum coreboard panels	C442
SHEETROCK Brand shaft wall liner panels	C442

Product	ASTM designation
SHEETROCK Brand exterior gypsum ceiling board	C931
SHEETROCK Brand interior gypsum ceiling board	C1395
FIBEROCK Brand panels—abuse-resistant	C1278
FIBEROCK Brand panels—VHI abuse-resistant	C1278
<b>Cement panels</b>	
DUROCK Brand cement board	C1325 (ANSI A 118.9)
DUROCK Brand exterior cement board	C1186 (ANSI A118.9)
<b>Sheathing</b>	
SHEETROCK Brand gypsum sheathing	C79
<b>Joint treatment</b>	
SHEETROCK Brand joint compounds	C475
<b>Accessories</b>	
Structural steel joists, runners	C645, C955, A568 A653, A792 (alum.-zinc coating), A591 (galv. coating)
25, 22 ga. studs, 25, 22 ga. runners	C645, A568 (steel), A653, A463 (alum. coating), A792 (alum.-zinc coating) A591 (galv. coating)
20 ga. studs, 20 ga. runners	C645, A568 (steel), A653 (galv. coating), A792 (alum.-zinc coating), A591 (galv. coating)
RC-1 resilient channels	A568 (steel), A525 (galv. coating), A792 (alum.-zinc coating)
DUR-A-BEAD corner bead	C1047
SHEETROCK Brand metal trims	C1047
Shaft wall/area separation wall studs	A653 A792 (alum.-zinc coating) A591 (galv. coating)
Drywall screws	C1002, C954
SHEETROCK Brand acoustical sealant	C834
<b>Acoustical units—prefabricated</b>	
ACOUSTONE	C423, C523, C635, C636,
AURATONE	C117, E84, E119, E1264
<b>Ceiling suspension system</b>	
DONN Grid	C635, C636, C645, C841, E119, E1264
<b>Mineral fiber insulation</b>	
THERMAFIBER sound atten. fire blanket	C665
<b>UL Designations/Products</b>	
UL Type Designation	Drywall, Cement Board and Plaster Base Products
R	SHEETROCK Brand Gypsum Panels
SCX	SHEETROCK Brand Gypsum Panels, FIRECODE Core
C	SHEETROCK Brand Gypsum Panels, FIRECODE C Core
WRX	SHEETROCK Brand Gypsum Panels, FIRECODE Core, Water-Resistant
WRC	SHEETROCK Brand Gypsum Panels, FIRECODE C Core, Water-Resistant
AR	SHEETROCK Brand Abuse-Resistant Gypsum Panels
SLX	SHEETROCK Brand Gypsum Liner Panels
ULTRACODE	SHEETROCK Brand Gypsum Panels, ULTRACODE Core
SHX	SHEETROCK Brand Gypsum Sheathing, FIRECODE Core
FCV	SHEETROCK Brand Gypsum Panels, FIRECODE Core, Vinyl-Covered
FB	SHEETROCK Brand Formboard
FRX	FIBEROCK Brand Panels—Abuse-Resistant and VHI Abuse-Resistant
FRX-G	FIBEROCK Brand Sheathing and FIBEROCK Brand Panels—Water-Resistant
IPR	IMPERIAL Brand Plaster Base
IP-X1	IMPERIAL Brand Plaster Base (Type X)
IP-X2	IMPERIAL Brand Plaster Base (Type C)
IP-X3	IMPERIAL Brand Plaster Base, ULTRACODE Core
DUROCK	DUROCK Brand Cement Board
DUROCK Exterior	DUROCK Brand Exterior Cement Board
UC	ULTRAWALL Panel (Type C)

UL Type Designation	Acoustical Tile and Panel Products
AP	SANDRIFT™, FROST™, GLACIER™, "F" FISSURED™ Ceiling Panels
AP-1	SANDRIFT™, FROST™, GLACIER™, "F" FISSURED™ Ceiling Panels
FC-CB	SHEETROCK® Brand Lay-In Ceiling Tile <i>CLIMAPLUS™</i>
FR-83	Fissured, RADAR™, RADAR™ Illusion, RADAR™ <i>CLIMAPLUS™</i> , RADAR™ <i>CLIMAPLUS™</i> Illusion, Aspen, Pebbled, Touchstone <i>CLIMAPLUS™</i> Ceiling Panels
FR-81	ROCK FACE® <i>CLIMAPLUS™</i> , CLEAN ROOM™ <i>CLIMAPLUS™</i> Ceiling Panels
FR-4	RADAR™ Ceramic <i>CLIMAPLUS™</i> Ceiling Panels
FR-X1	ECLIPSE™ <i>CLIMAPLUS™</i> , MILLENNIA® <i>CLIMAPLUS™</i> Ceiling Panels
M	METAL FACE <i>CLIMAPLUS™</i> Ceiling Panels
UL Type Designation	Acoustical Suspension Products
CM	CELEBRATION™ Metal Ceiling Panels (bare metal)
CP	CELEBRATION™ Metal Ceiling Panels (painted)
DXL	DONN® Brand DX® Suspension System (15/16" wide)
DXL	DONN® Brand DXL™ Concealed Suspension System (15/16" wide)
DXLA	DONN® Brand DX® Suspension System (15/16" wide, aluminum cap)
DXLZ	DONN® Brand DX® Suspension System (15/16" wide, galvanized body)
DXLZA	DONN® Brand DX® Suspension System (15/16" wide, galvanized body, aluminum cap)
ZXLA	DONN® Brand DXLA™ Suspension System (15/16" wide, environmental)
DLT	CENTRICITEE™ Suspension System (9/16" wide)
DLTA	CENTRICITEE™ Suspension System (9/16" wide aluminum cap)
DLTZ	CENTRICITEE™ Suspension System (9/16" wide, galvanized body)
DLTZA	CENTRICITEE™ Suspension System (9/16" wide, galvanized body, aluminum cap)
DXLF	FINELINE® Suspension System (9/16" wide)
SDXL	SIMPLICITEE™ Suspension System (15/16" wide, retail)
SDXLA	SIMPLICITEE™ Suspension System (15/16" wide, retail, aluminum cap)
DGL	USG Drywall Suspension System (15/16" wide)
DGLW	USG Drywall Suspension System (1-1/2" wide)
DXLP	PARALINE® Linear Metal Ceiling System
PAR, PARP	PARALINE® Linear Metal Ceiling System (components)
PAS, PASP	PARALINE® Linear Metal Ceiling System (components)
PSR, PSRP	PARALINE® Linear Metal Ceiling System (components)
PSS, PSSP	PARALINE® Linear Metal Ceiling System (components)

**List of Code Research Reports**

<b>ICBO ES</b>	
Report No. ER-1602	Regular and Resilient Gypsum Construction and Triple-Sealed Sheathing
Report No. ER-1820	SHEETROCK Brand Gypsum Panels, Water-Resistant
Report No. ER-5050	USG Fire Stop Penetration Systems
Report No. ER-5228	USG Exterior One-Coat Stucco System
Report No. ER-5347	INSULSCREEN 2000 and 4000 EIF Systems
Report No. ER-5105	INSULSCREEN 2100 and 2600 EIF Systems
Report No. ER-5578	FIBEROCK Brand Sheathing and Water Resistant Panels

**BOCA ES**

Report No. 89-13	USG Area Separation Fire Wall/Party Wall
Report No. 97-5	INSULSCREEN 2000 and 4000 EIF Systems
Report No. 97-1	INSULSCREEN 2100 and 2600 EIF Systems
Report No. 99-41	INSULSCREEN 2200 EIF Systems
Report No. 99-47	FIBEROCK Brand AR, VHI and XL Gypsum Panels
Report No. 99-54	FIBEROCK Brand Sheathing and Water Resistant Panels

**SBCCI PST & ESI**

Report No. 9834	USG Area Separation Fire Wall/Party Wall
Report No. 9753	INSULSCREEN 2000 and 4000 EIF Systems
Report No. 9610B	INSULSCREEN 2100 and 2600 EIF Systems
Report No. 9818A	FIBEROCK Brand AR, VHI and XL Gypsum Panels
Report No. 9971	INSULSCREEN 2200 EIF System
Report No. 2006	FIBEROCK Brand Sheathing, Water Resistant and Predecorated Panels

**National Evaluation Service\***

NER-258	USG Drywall Shaft Partition Systems
NER-259	DUROCK Brand Interior Cement Board Systems
NER-396	DUROSCREEN 1000 and 1100 Direct-Applied Systems
NER-458	SHEETROCK Brand Interior Gypsum Ceiling Board

\* Recognized by ICBO, BOCA and SBCCI.



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