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# ಲೋಕೋಳಹಯೋಗಿ ಇಲಾಖೆ

ತಪ್ಪಡಿಗಳ ದರಪಟ 2023-2024

ನಂತರ 2

**PUBLIC WORKS DEPARTMENT**  
**SCHEDULE OF RATES FOR BUILDINGS 2023-2024**

**VOLUME 2**



## GOVERNMENT OF KARNATAKA



# PUBLIC WORKS DEPARTMENT SCHEDULE OF RATES FOR BUILDINGS 2023 - 2024

**VOLUME - 2**



## PREFACE

1. The Karnataka Schedule of rates for Buildings comprising of the Specifications, Rate Analysis & Technical details is a comprehensive document for the State Engineers. It consists of 22 chapters prepared by Superintending Engineer, Building Circle of Public Works Department under the authority of Chief Engineer, PWD C&B (S) as per GO No : PWD 86 RDF 2022 DATED 13-02-2023.
2. The Karnataka schedule of rates for Buildings is prepared considering the current market rates of materials in the PWD Bangalore division jurisdiction and the minimum wages for labour as per the labour department of Karnataka circular wef 01-04-2023.
3. The material rates in the SR are exclusive of GST.
4. The basic structure of the rate analysis is adopted as per the recommendation of the Technical Working Group with the adequacies of CPWD and KPWD with modifications. The rate analysis is re-worked based on the first principles and inputs from Technical Working Group and Industry experts and as per actual site experience.
5. In order to unify the rate analysis, preparation methodology for Buildings, Roads & Bridges and as per recommendations of Technical Working Group, the labour welfare cess as per Building Construction workers (Regulation & Employment and Conditions of service) act @ 1% which was subsumed in the Rate analysis is extracted from all the items and given in the form of Contractor's profit over Overhead charges as prevailing in MoRTH.

If not specifically indicated in the items themselves, the rates appearing in this schedule are inclusive of cost of all supply, carriage, handling, fitting, fixing, toll charges and all other incidental works involved in any floor, at any level including all necessary jointing materials, scaffolding to any height, usage charges of tools and plants, and all ancillary materials but exclusive of GST.

To arrive at complete rate of different items in this Schedule, 1% Sundries, 1% water charges, 10% overhead and 10% contractor's profit have been considered along with the aforesaid material cost, labour cost and other applicable costs.

6. The area specific loading as per Vol-1 Common SR shall be added to the finished rate of items mentioned in this Schedule of rates.
7. ***Quarterly rates :*** *The prevailing market rates of Cement & Steel will be assessed and the basic rates shall be approved by the Superintending Engineer PWD Bangalore Circle in consultation with Building Circle, Dharwad Circle, Bellary Circle & Mangalore Circle and published quarterly.*

8. ***Non-scheduled Rates*** : For the items which are not included in the Schedule of Rates termed as *Non-Scheduled item rates* shall be approved by the delegated authorities. *The technical sanctioning authority may decide rates of such non-schedule items with wide publicity / publications or through Expression of Interest (EoI). These rates shall be of generic items and shall be decided judiciously based on market : basic rates without adding Area Specific Loading (ASL).*
9. ***Reference codes*** : Wherever any reference is made to any Indian Standard, American Society of Testing Materials or British Standards, it shall be taken as reference to the latest edition with all amendments issued thereto. In the event of any variation between the Buildings specifications and the reference Standard, the former shall take precedence over the latter. The rate analysis with related IS codes are self explanatory for the procedure to be followed during construction
10. The rates in the Schedule of Rates are inclusive of all lead and exclusive of lift charges.
11. The floor height, space requirements, occupancy loads shall be as per NBC 2016 Chapter 4 and floor height for calculation purpose is considered as 3.60m and for every subsequent floors, the lift charges shall be paid separately.
12. ***Safety in Construction*** : The contractor shall employ only such methods of construction, tools and plant as are appropriate for the type of work or as approved by the Engineer-in-Charge in writing. The contractor shall take all precautions and measures to ensure safety of works and workmen and shall be fully responsible for the same. Safety pertaining to construction works such as excavation, centering and shuttering, trenching, blasting, demolition, electric connections, scaffolds, ladders, working platforms, gangway, mixing of bituminous materials, electric and gas welding, use of hoisting and construction machinery shall be governed by relevant safety codes and direction of the Engineer-in-Charge.
13. All works shall be carried out with due regard to the convenience of the occupants and the arrangement and programme of work must be adjusted accordingly. In case of works within Jails, Hospitals and restricted areas. the Rules & Regulations of Authorities concerned must be strictly followed. The rates given in the Schedule are deemed to be inclusive of all such factors and contingencies.
14. All materials, tools and plants are to be arranged for the work. All labours (Skilled & Unskilled) including their housing, sanitation, procurement of food stuff, medical aids etc. are to be arranged by the contractor. Cost of transport of labour, materials and all other relevant items shall have to be borne by the contractor.

15. Materials obtained by dismantling Government structures or parts thereof shall remain the property of Government. The contractor shall sort out and stack the serviceable materials within the premises and also dispose of the unserviceable rubbish as per instruction of the Engineer-in-Charge or his representative. The contractor shall remain the custodian of such dismantled materials till the charge of the same is taken over by the Engineer-in-Charge or his representative.
16. Carriage of materials (unless specifically considered in the Rate Analysis) is the sole responsibility of the contractor for which no extra payment shall be made. The contractor shall use his judgment to decide on unloading dismantled materials in appropriate places.

In extraordinary cases, where the area for disposal is not available in the respective district limits, extra provision shall be decided by the Executive Engineers with due approval from Superintending Engineers.

17. The usage of River Sand is discouraged and recommends for adoption of M-Sand or Processed Sand for construction works. However, if the availability of River Sand is abundant, separate data may be prepared by the concerned Superintending Engineers.
18. The storage and stacking of Building materials like Cement, Bricks, Concrete blocks, M-Sand, Steel, Flooring tiles, Timber& Paints shall be done by the contractor in an appropriate way as directed by the Engineer in charge. The Engineer shall check and certify the pattern & quality of the same before adopting in construction works.
19. The TMT steel used in construction works should conform to IS 1786 / IS 2830 for both Physical and Chemical tests and the same shall be tested by departmental Quality Assurance laboratories.

The reinforcement including authorized spacer bars and overlaps shall be measured in lengths for different diameters, as actually used in works nearest to a centimetre and their weight calculated on the basis of coefficient as per standard table given below. Wastage and un-authorised overlaps shall not be paid for.

#### **Cross Sectional Area and Mass of Steel Bar as per IS: 1786-2008**

<b>Dia of the bar (mm)</b>	<b>Cross sectional area in mm<sup>2</sup></b>	<b>Mass per m run in kg</b>
6	28.3	0.222
8	50.3	0.395
10	78.6	0.617
12	113.1	0.888
16	201.2	1.58

<b>Dia of the bar (mm)</b>	<b>Cross sectional area in mm<sup>2</sup></b>	<b>Mass per m run in kg</b>
18	254.6	2.00
20	314.3	2.47
22	380.3	2.98
25	491.1	3.85
28	615.8	4.83
32	804.6	6.31
36	1018.3	7.99
40	1257.2	9.86

20. The rates of materials indicated in the SR are only for deriving the finished rates of items and for working out data rates and shall not be adopted for making direct payments.
21. The Cement co-efficients adopted in the SR are as per Chief Engineer, Quality Assurance Zone, Bengaluru letter no. CE:QAZ:BNG:TS:AE-3:2020-21 :709 DATED 17-03-2021 as follows

<b>Sl No.</b>	<b>Grade of Concrete</b>	<b>Cement Co-efficient in kg/m<sup>3</sup></b>
1	M20	320
2	M25	340
3	M30	360
4	M35	390
5	M40	420

22. Rates for formwork shall be added on percentage basis to the finished concrete item rate as per Volume-I Common SR.
23. While using RMC, taking out the samples at worksite is mandatory for conducting necessary tests. It is the responsibility of the contractor to assure and ensure quality of RMC at workspot as per mix design for which the Executive Engineer shall obtain necessary test certificates as per IS standards.
24. The items related to Construction & Demolition waste are included in the SR according to the rules specified by National Green Tribunal – SLC & Govt letter no. PWD 95 EAP 2021 dated 15-03-2021.
25. The new items such as High Pressure Laminated (HPL) sheets, Wood Polymer Composite (WPC) Doors & Frames, RCC Door Frames, Deck sheets, Solid concrete bricks, PUF sheets, Granite Floorings of different categories, Water proofing, Stainless steel water tanks, Air Source Heat pump and other Building essential fixtures have been included.

26. For the works carried out in other states, respective state SRs shall be followed.
27. The '*Engineer-in-Charge*' shall mean the Executive Engineer of the Division concerned. The Sub divisional Officer concerned is authorized to carry out on behalf of the '*Engineer-in-Charge*' general supervision, day to day instructions with approval of materials and workmanship. In case of dispute, the decision of the '*Engineer-in-Charge*' shall be final and binding.
28. Adoption of SI units in all construction work is made mandatory as per recommendation of Technical Working Group.
29. Due care has been taken to prepare the *Revised Specifications & Rate Analysis for Buildings 2023-24* to the best of efforts. However, errors might have crept in inadvertently. Any mathematical errors are noticed and in case of any error or omission in the rate analysis, it may be brought to the notice of PWD Circles, so that the same can be rectified. Suggestions for improvement are welcome.



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## i. International System of Units (SI)

- Basic units: \* meter (length) \* kilogram (mass) \* second (time) \* Ampere (electric current) \* degrees Celsius (temperature) \* (luminous intensity)
- It is equal to a Newton per square meter and corresponds to the familiar pounds per square inch (psi): 1 psi = 6.89 kilopascal.
- The following are some of the common conversion factors for SI Unit conversions.

Quantity or Test	Value in Trade or Customary Unit	X Conversion Factor	=	Value in SI Unit	Symbol
Area	square inches	6.45		square centimeters	cm <sup>2</sup>
	square feet	0.0929		square meters	m <sup>2</sup>
	square yards	0.836		square meters	m <sup>2</sup>
	acres	0.405		hectares	ha
Basis Weight* or Substance (500-sheet ream) or Grammage* when expressed in g/m <sup>2</sup>	lb (17x22-500)	3.760		grams per square meter	g/m <sup>2</sup>
	lb (24x36-500)	1.627		grams per square meter	g/m <sup>2</sup>
	lb (25x38-500)	1.480		grams per square meter	g/m <sup>2</sup>
	lb (25x40-500)	1.406		grams per square meter	g/m <sup>2</sup>
	pounds per 1000 sq ft (Paperboard)	4.882		grams per square meter	g/m <sup>2</sup>
Breaking Length	meters	0.001		kilometers	km
Burst Index	g/cm <sup>2</sup>	0.0981		kilopascals	KPa.m <sup>2</sup> /g
	g/m <sup>2</sup>			grams per square meter	g/m <sup>2</sup>
Bursting Strength	pounds per square inch	6.89		kilopascals	kPa
Caliper	mils	0.0254		millimeters	mm
Concra Crush	pounds	4.45		newtons	N
Edge Crush	pounds per inch	0.175		kilonewtons per meter	kN/m
Energy	British thermal units (Btu)	1055		joules	J
Flat Crush	pounds per square inch	6.89		kilopascals	kPa
Force	kilograms	9.81		newtons	N
	pounds	4.45		newtons	N
Length	angstroms	0.1		nanometers	nm
	microns	1		micrometers	μm
	mils	0.0254		millimeters	mm
	feet	0.305		meters	m
Mass	tons (2000 lbs.)	0.907		metric tons	t
	pounds	0.454		kilograms	kg
	ounces (avd p)	28.3		grams	g
Mass per Unit Volume	ounces per gallon	7.49		kilograms per cubic meter	kg/m <sup>3</sup>
	pounds per cubic foot	1.60		kilograms per cubic meter	kg/m <sup>3</sup>
Puncture Resistance	foot pounds	1.36		joules	J
Ring Crush	pounds (for a 6" length)	0.0292		kilonewtons per meter	kN/m
Stiffness (Taber)	gram centimeters (Taber Units)	0.0981		millinewtona meters	mN•m
Tear Strength	grams	9.81		millinewtons	mN
Tensile Breaking Load	pounds per inch	0.175		kilonewtons per meter	kN/m
	kilograms per 15 millimeters	0.654		kilonewtons per meter	kN/m
Volume, Fluid	ounces (US Fluid)	29.6		milliliters	ml
	gallons	3.79		liters	L
Volume, Solid	cubic inches	16.4		cubic centimeters	Cm <sup>3</sup>
	cubic feet	0.0283		cubic meters	m <sup>3</sup>
	cubic yards	0.765		cubic meters	m <sup>3</sup>

## ii. Basic Cost of Materials

Sl No	Material Description	Unit	Rate
1	AC sheet 6 mm thick corrugated	m <sup>2</sup>	160.00
2	AC sheet 6 mm thick semi corrugated (Trafford)	m <sup>2</sup>	175.00
3	Acid and Alkali resistant tiles 300x300 mm size, 10 mm thick	10 No	530.00
4	Acid proof cement	kg	8.42
5	Acrylic distemper 1st quality having VOC content less than 50 g/l	kg	65.00
6	Acrylic emulsion having VOC content less than 50 g/l	L	141.00
7	Acrylic Exterior Paint	L	250.00
8	Acrylic Exterior Primer	L	179.00
9	Acrylic Polymer based grout	kg	250.00
10	Adhesive (General purpose)	kg	280.00
11	Adhesive (Adhesive, Lignin paste, Gun spirit adhesive, Casein glues, Bitumen rubbers)	kg	270.00
12	Adjustable Vitreous China Cistern with fittings	No	1600.00
13	Adjustable Fastening Pawl for vision glass panel	No	35.00
14	Adjustable prop-2.0 x2.0 m	No	1080.00
15	Adjustment clip 85x30x0.8mm	No	5.00
16	Alignment Bracket	No	475.00
17	Alignment Pipe - 3.00 m	No	995.00
18	All drive screws ( for gypsum board)	100 No	58.00
19	Alluminium anodised profile top cap beading	m	355.00
20	Aluminium casement window fastener (Anodised AC 15)	No	48.00
21	Aluminium casement window fastener (polyester powder coated)	No	52.00
22	Aluminium casement window fastener (powder coated )	No	53.00
23	Aluminium composite panel for Straight portion	m <sup>2</sup>	3000.00
24	Aluminium Grill	kg	300.00
25	High Pressure Laminate Solid/Dark textured Colored sheets-Single sided	m <sup>2</sup>	1900.00
26	High Pressure Laminate Solid/Dark textured Colored sheets-Double sided	m <sup>2</sup>	2400.00
27	High Pressure Laminate Wooden textured Colored sheets-Single sided	m <sup>2</sup>	2150.00
28	High Pressure Laminate Wooden textured Colored sheets-Double sided	m <sup>2</sup>	2550.00
29	Aluminium Paint	L	225.00
30	Aluminium primer	L	180.00
31	Aluminium round shape handle (anodised AC 15) outer dia 100 mm	No	60.00
32	Aluminium round shape handle (polyester powder coated) outer dia 100 mm	No	62.00
33	Aluminium round shape handle (powder coated) outer dia 100 mm	No	60.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
34	Aluminium sheets Grade 5052, 4 mm thick for Internal Corner/ Column Corners/ ( for form work)	m <sup>2</sup>	11500.00
35	Aluminium sheets Grade 5052, 4 mm thick for Mid Soldier/End soldier (for form work)	m <sup>2</sup>	32000.00
36	Aluminium sheets Grade 5052, 4 mm thick for wall panel/deck panel/ WRB panel/Kicker Panels/door closing panels ( for form work)	m <sup>2</sup>	8500.00
37	Aluminium Strip 40 mm wide and 2 mm thick	kg	300.00
38	Aluminium strips	m <sup>2</sup>	254.00
39	Aluminium strips of size 25/6 mm	No	16.00
40	Aluminium T or L sections	kg	238.00
41	Aluminium washer 2 mm thick 15 mm dia	100 No	10.00
42	Aluminium window frame section 1.2 mm thick	kg	190.00
43	Aluminum tower bolts	No	60.00
44	Aluminum U Profile (For Edges)	m	185.00
45	Anchor Fastener - M10	No	13.00
46	Anchor Wing Nut Ø100 mm	No	80.00
47	Anodised Aluminium butt hinges 100x75x4 mm	10 No	393.00
48	Anodising 15 microns on aluminium sections	kg	47.50
49	Anodising 25 microns on aluminium sections	kg	60.00
50	Anti Dust Tape	m	5.00
51	Anti Microbial Bio-Safe Coated Lightweight Calcium Silicate Tegular/Butt edged Ceiling tiles 595x595	m <sup>2</sup>	1000.00
52	Anticorrosive & Protective coating - 0.3 kg/m <sup>2</sup> for 2 coats	kg	321.00
53	Anticorrosive bituminous paint (black)	L	100.00
54	Arms GS HD - Self Top Hung -20"- Type P- Couple	pair	1350.00
55	Autoclaved aerated cement (AAC) blocks.	m <sup>3</sup>	4683.00
56	Baker rod	m	6.00
57	Ball bearing for rolling shutters	No	280.00
58	Bamboo baskets	No	95.24
59	Basket	No	2119.00
60	Bhuthalle Jute	kg	10.00
61	Bilwapathre fruit	kg	10.00
62	Bitumen washer	100 No	30.00
63	Bitumen based Primer	L	125.00
64	Bitumen felt :Type 3 grade 1	m <sup>2</sup>	212.00
65	Black plastic seat (solid) with lid C.P.brass hinges and rubber buffers	No	407.00
66	Black colour dark shade pigment	kg	70.00
67	Black Japan paint	L	135.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
68	Black Lapotra Granite colour, 18 mm thick (slab area above 0.50 m <sup>2</sup> )	m <sup>2</sup>	1300.00
69	Blown type petroleum bitumen of penetration 85/25 of approved quality	t	72400.00
70	Bolt+Nut - 16 x 30 mm	No	18.00
71	Bolt+Nut - 16 x 80 mm	No	30.00
72	Bolts and nuts	No	6.00
73	Bolts and nuts up to 300 mm in length	q	5625.00
74	Bonding plaster for Gypsum panel	kg	22.00
75	Border tiles 200x75mm size 5mm thick	No	16.00
76	Bottle Trap CP Brass 32 mm size	No	650.00
77	Boulder 50 mm to 200 mm	m <sup>3</sup>	666.00
78	Brass brackets (curtain rods) 20 mm	No	200.00
79	Brass brackets (curtain rods) 25 mm	No	200.00
80	Brass fanlight pivot	10 No	184.00
81	Brass quadrant stays 300 mm	No	121.00
82	Brass screws 25 mm	100 No	250.00
83	Brass screws 40 mm	100No	400.00
84	Brass screws 50 mm	100 No	500.00
85	Brass 150 mm floor door stopper	No	175.00
86	Brass bib-cock 15 mm dia	No	160.00
87	Brass bib-cock 20 mm dia	No	175.00
88	Brass butt hinges (heavy type) : 100x85x5.5 mm (0.56 kg)	10No	1200.00
89	Brass butt hinges (heavy type) : 125x85x5.5 mm (0.70kg)	10No	1600.00
90	Brass butt hinges (heavy type) : 75x65x4.0 mm(0.20 kg)	10No	1050.00
91	Brass butt hinges (light/ordinary type) : 100x70x4 mm	10No	675.00
92	Brass butt hinges (light/ordinary type) : 125x70x4 mm	10No	850.00
93	Brass butt hinges (light/ordinary type) : 50x40x2.5 mm	10No	300.00
94	Brass butt hinges (light/ordinary type) : 75x40x2.5 mm	10No	500.00
95	Brass chain with hook for fan light catch	No	39.00
96	Brass cupboard knob or ward robe knob 50 mm	No	50.00
97	Brass cupboard lock 6 levers (best make of approved quality) 40 mm size	No	150.00
98	Brass cupboard lock 6 levers (best make of approved quality) 50 mm size	No	180.00
99	Brass cupboard lock 6 levers (best make of approved quality) 65 mm size	No	190.00
100	Brass cupboard lock 6 levers (best make of approved quality) 75 mm size	No	210.00
101	Brass curtain rod 20 mm dia 1.25 mm thick	m	154.00
102	Brass curtain rod 25 mm dia 1.25 mm thick	m	209.00
103	Brass double acting spring hinges 100 mm	No	429.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
104	Brass double acting spring hinges 125 mm	No	440.00
105	Brass double acting spring hinges 150 mm	No	528.00
106	Brass flush bolt 100 mm	No	110.00
107	Brass flush bolt 150 mm	No	150.00
108	Brass flush bolt 250 mm	No	175.00
109	Brass full way valve with C.I. wheel (screwed end) 25 mm dia	No	375.00
110	Brass full way valve with C.I. wheel (screwed end) 32 mm dia	No	415.00
111	Brass full way valve with C.I. wheel (screwed end) 40 mm dia	No	500.00
112	Brass full way valve with C.I. wheel (screwed end) 50 mm dia	No	625.00
113	Brass full way valve with C.I. wheel (screwed end) 65 mm dia	No	1080.00
114	Brass full way valve with C.I. wheel (screwed end) 80 mm dia	No	1625.00
115	Brass handles 100 mm with plate 150x32 mm	No	175.00
116	Brass handles 125 mm with plate 175x32 mm	No	190.00
117	Brass handles 75 mm with plate 125x32 mm	No	135.00
118	Brass hanging type door stopper	No	80.00
119	Brass hard drawn hooks and eyes 100 mm	No	25.00
120	Brass hard drawn hooks and eyes 150 mm	No	30.00
121	Brass hard drawn hooks and eyes 200 mm	No	35.00
122	Brass hard drawn hooks and eyes 250 mm	No	40.00
123	Brass hard drawn hooks and eyes 300 mm	No	90.00
124	Brass helical spring 150 mm	No	319.00
125	Brass screws 20 mm	100No	200.00
126	Brass single acting spring hinges 100 mm	No	275.00
127	Brass single acting spring hinges 125 mm	No	313.00
128	Brass single acting spring hinges 150 mm	No	467.00
129	Brass stop-cock 15 mm dia	No	170.00
130	Brass stop-cock 20 mm dia	No	175.00
131	Brass tower bolt (barrel type) 100x10 mm	No	125.00
132	Brass tower bolt (barrel type) 150x10 mm	No	200.00
133	Brass tower bolt (barrel type) 200x10 mm	No	250.00
134	Brass tower bolt (barrel type) 250x10 mm	No	320.00
135	Breather Tape	m	25.00
136	Brick Aggregates	m <sup>3</sup>	650.00
137	Brick bats	m <sup>3</sup>	800.00
138	Bright finished or black enameled mild steel butt hinges 100x58x 1.90 mm	10 No	120.00
139	Bright finished or black enamelled mild steel butt hinges 125x65x2.12 mm	10 No	180.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
140	Bright finished or black enamelled mild steel butt hinges 50x37x1.50mm	10 No	75.00
141	Bright finished or black enamelled mild steel butt hinges 75x47x1.70mm	10 No	110.00
142	Bright finished or black enamelled mild steel screws 20 mm	100No	60.00
143	Bright finished or black enamelled mild steel screws 30 mm	100No	75.00
144	Bright finished or black enamelled mild steel screws 40 mm	100No	100.00
145	Bright finished or black enamelled mild steel screws 50 mm	100No	150.00
146	Bronze multiwall polycarbonate G.E. make	m <sup>2</sup>	1070.00
147	Burnt stone slabs 10cms thick	m <sup>2</sup>	1452.00
148	C Carrier Connector	No	11.00
149	C Suspension Clip	No	8.00
150	C Wall angle section 20x30x20x0.50 mm (3.00 m long)	m	95.00
151	C.I Surface box	No	200.00
152	C.I. bracket for wash basin and sinks	Pair	110.00
153	C.I. cover and frame 300x300 mm inside	No	480.00
154	C.I. grating 100x100 mm	No	50.00
155	C.I. grating 150x150 mm	No	65.00
156	C.I. grating 180X180 mm	No	75.00
157	C.I. trap for standard urinal with vent arm with operating and other couplings in C.Pbrass: 50 mm dia	No	238.00
158	C.I. trap for standard urinal with vent arm with operating and other couplings in C.Pbrass: 80 mm dia	No	281.00
159	C.I.mouth, brass ferrule 15 mm dia	No	175.00
160	C.I.mouth, brass ferrule 20 mm dia	No	200.00
161	C.I.mouth, brass ferrule 25 mm dia	No	281.00
162	C.P. Brass angle valve 15 mm	No	438.00
163	C.P. Brass bibcock 15 mm	No	450.00
164	C.P. Brass Centre Hole Basin Mixer With Cast Spout	No	1800.00
165	C.P. Brass long body bibcock 15 mm	No	625.00
166	C.P. Brass stop cock (concealed) 15 mm	No	525.00
167	C.P. brass waste 32 mm	No	106.00
168	C.P. brass waste 40 mm	No	125.00
169	C.P.brass trap 40 mm dia	No	315.00
170	C.P.brass chain with 40 mm dia rubber plug	No	40.00
171	C.P.brass toilet paper holder of standard size	No	350.00
172	C.P.brass union 40 mm dia	No	263.00
173	Cadmium plated full threaded steel screws (30x4 mm dia)	100 No	27.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
174	Calcium Silicate tegular edged ceiling tiles 495x495 mm and 15 mm thick	m <sup>2</sup>	856.00
175	Calcium Silicate base compound for jointing lightweight calcium silicate panels/tiles	kg	26.00
176	Carbon Steel galvanised (min 5 micron) dash fastner (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleave. Size 10mm x 60 mm	10 No	270.00
177	Carbon Steel galvanised (min 5 micron) dash fastner (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleave. Size 10mm x 80 mm	10 No	312.00
178	Carbon Steel galvanised (min 5 micron) dash fastner (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleave. Size 10 mm x 120 mm	10 No	380.00
179	Carbon Steel galvanised (min 5 micron) dash fastner (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleave. Size 10mm x 140 mm	10 No	468.00
180	Carbon Steel galvanised (min 5 micron) dash fastner (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleave. Size 10mm x 160 mm	10 No	598.00
181	Casement window fastener	No	49.00
182	Casurina poles 125 mm diameter (3.65 X 4 )	m	40.00
183	Caustic soda	kg	120.00
184	Cement asbestos Ridges	Pair	212.00
185	Cement Board	m <sup>2</sup>	294.00
186	Cement primer	l	135.00
187	Center pully	No	85.00
188	Central ball bearing	No	108.00
189	Centrifugally cast (spun) iron S&S 100 mm inlet and 100 mm outlet	No	500.00
190	Centrifugally cast (spun) iron S&S 100 mm inlet and 75 mm outlet	No	450.00
191	Centrifugally sand cast (spun) S&S "P" or "S" trap	No	325.00
192	Ceramic Glazed Tiles 1st quality 300 x 300mm in all shades and designs of White, Ivory, grey, Fuem Red brown etc.	m <sup>2</sup>	495.00
193	Ceramic Glazed tiles minimum thickness 5mm in all colours shades and designs except burgundy, bottle green, black	m <sup>2</sup>	495.00
194	Ceramic Tiles Pieces for Crazy Flooring	q	510.00
195	Chain link fabric fencing mesh of size 25x25 mm made of G.I. wire of dia 3 mm.	m <sup>2</sup>	400.00
196	Chain link fabric fencing mesh of size 50x50 mm made of G.I. wire of dia 4 mm	m <sup>2</sup>	330.00
197	Chain link fabric fencing mesh of size 50x50 mm made of G.I. wire of dia 4 mm, PVC coated to outer dia 5 mm	m <sup>2</sup>	360.00
198	Challies	No	768.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
199	Channel frames, C frames, H frames	kg	80.00
200	Channels and R.S. joists	q	6800.00
201	Chemical rust remover	m <sup>2</sup>	245.00
202	Chequered precast cement concrete tiles 22mm thick using marble chips of size 6mm - Light shade using white cement	m <sup>2</sup>	475.00
203	Chicken mesh	m <sup>2</sup>	12.00
204	Chlordan 20% E.C. required 34.00 / 20=1.70 litres	L	160.00
205	Chlorinated Polyvinyl - chloride (CPVC) pipe 15 mm nominal dia.	m	59.00
206	Chlorinated Polyvinyl - chloride (CPVC) pipe 20 mm nominal dia.	m	81.00
207	Chlorinated Polyvinyl - chloride (CPVC) pipe 25 mm nominal dia.	m	126.00
208	Chlorinated Polyvinyl - chloride (CPVC) pipe 32 mm nominal dia.	m	177.00
209	Chlorinated Polyvinyl - chloride (CPVC) pipe 40 mm nominal dia.	m	246.00
210	Chlorinated Polyvinyl - chloride (CPVC) pipe 50 mm nominal dia.	m	405.00
211	Chlorinated Polyvinyl - chloride (CPVC) pipe 65 mm nominal dia.	m	793.00
212	Chlorinated Polyvinyl - chloride (CPVC) pipe 80 mm nominal dia.	m	1031.00
213	Chlorinated Polyvinyl - chloride (CPVC) pipe 100 mm nominal dia.	m	1467.00
214	Chlorinated Polyvinyl - chloride (CPVC) pipe 150 mm nominal dia.	m	3145.00
215	Chlorpyrifos 20% E.C. / Lindane 20% E.C.	L	160.00
216	Chromium plated screws	10 No	16.00
217	Chromium plated brackets ( curtain rods)	No	250.00
218	Chromium plated Brass butt hinges (light/ordinary) type 100x70x4 mm	10 No	635.00
219	Chromium plated Brass butt hinges (light/ordinary) type 75x40x2.5 mm	10 No	381.00
220	Chromium plated Brass butt hinges (heavy) type 75x65x4 .0 mm (200gms)	10 No	932.00
221	Chromium plated Brass butt hinges (light/ordinary) type 125x70x4 mm	10 No	720.00
222	Chromium plated Brass butt hinges(light/ordinary) type 50x40x2.5 mm	10 No	180.00
223	Chromium plated Brass curtain rod 12 mm dia 1.25mm thick	m	120.00
224	Chromium plated Brass curtain rod 20 mm dia 1.25mm thick	m	155.00
225	Chromium plated Brass curtain rod 25 mm dia 1.25mm thick	m	209.00
226	Chromium plated brass handles	No	190.00
227	Chromium plated brass night latch	No	800.00
228	Chromium plated Brass pull bolt lock (locking bolt) of size 85 mmx42 mm with screws,bolts,nuts and washers complete	No	174.00
229	Chromium plated brass screws 35 mm long	100 No	350.00
230	Chromium plated Mortice latch and lock	No	850.00
231	Cinder ballast	m <sup>3</sup>	265.00
232	Circular C.I. Box for ceiling fan internal dia 140 mm, 73 mm height, toplid of 1.5mm thick MS sheet	No	55.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
233	Circular shape 450 mm dia Mirror with Plastic moulded frame	No	400.00
234	Cistern with fittings for Waterless Urinal	No	2200.00
235	Clay tiles 230x75x10mm	No	17.00
236	Cleat angles	No	45.00
237	Coal (steam)	q	465.00
238	Coarse sand	m <sup>3</sup>	1476.00
239	Coarse Sand Gravel 1.5 mm to 2 mm	m <sup>3</sup>	820.00
240	Coarse Sand Gravel 5 mm to 10 mm	m <sup>3</sup>	815.00
241	Coconut Broom stick	No	38.00
242	Coir brushes	No	29.00
243	Coir veneered board 4mm thick Second class teak wood plugs including cutting brick work	m <sup>2</sup>	700.00
244	Colour glazed tiles 15x15 cms 10mm thick	No	11.00
245	Coloured High density polyethylene/ poly propylene 10 lit. (full flush) capacity controlled low level flushing cistern	No	620.00
246	Coloured (other than black) solid P.V.C. seat in European W.C. pan	No	350.00
247	Coloured Pedestal type W.C. pan 580x440 mm (European type)	No	1300.00
248	Coloured Vitreous china 10 L (full flush) capacity controlled low level flushing cistern with all fittings	No	1200.00
249	Coloured Vitreous china 10 L low level cistern	No	775.00
250	Concrete designer tiles	m <sup>2</sup>	323.00
251	Concrete paver block of grade M-30 made of C&D waste (60mm thickness)	m <sup>2</sup>	409.00
252	Connection Block for vision glass panel	No	35.00
253	Copper plate	m <sup>2</sup>	575.00
254	CP Brass Single lever telephonic wall mixer of approved make	No	4500.00
255	Cross tee Prelude 38 24x38x600mm	No	40.00
256	Cross Tee 15x42x1200x0.3mm	No	90.00
257	Cross Tee 15x42x600x0.3mm	No	45.00
258	Cross Tee 24x32x1200x0.33mm	No	72.00
259	Cross Tee 24x32x600x0.33mm	No	36.00
260	Cross tee Prelude 38 24x38x1200mm	No	80.00
261	Cuddapah slab 2.5cms thick	m <sup>2</sup>	462.00
262	Cup lock	No	48.00
263	Curtain wall striker for vision glass panel	No	72.00
264	Dark Color shade pigment	kg	70.00
265	Dash fastner/ chemical fastener	each	15.00
266	Dash hold fastener 12.5 mm dia, 40 mm long with 6 mm dia bolt	No	11.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
267	Debit Pin - 250mm	No	60.00
268	Decorative plywood 4 mm Second class teak wood plugs including cutting brick work	m <sup>2</sup>	538.00
269	Dhoti (worm out soft cotton cloth)	No	25.00
270	Diesel oil	L	92.00
271	Dismantled "P" or "S" trap scrap (app. Wt 2 kg.)	kg	28.00
272	Disposable garbage bags size 0.9m x 1.5m	No	9.00
273	Distemper primer	L	85.00
274	Door lock	No	348.00
275	Door spacer 45x45x5-1135mm Long	No	360.00
276	Door spacer 45x45x5-985 mm Long	No	315.00
277	Double action hydraulic floor spring with brass cover plate	No	2025.00
278	Double action hydraulic floor spring with stainless steel cover plate	No	1875.00
279	Double coupler Clamp coupler for fixing MS tube with scaffolding	No	46.00
280	Double sided tape - 1rnm/m <sup>2</sup>	m	107.00
281	Dry distemper	kg	48.00
282	Eggs (Gallus Gallus Domesticus)	No	6.00
283	Enamel paint	L	206.00
284	EPDM Gasket for uPVC window/door	m	15.00
285	EPDM Gasket in kg (Above 60 g / m)	kg	170.00
286	Epoxy Grout	kg	415.00
287	Epoxy Adhesive	m	550.00
288	Epoxy based bonding adhesive	kg	735.00
289	Epoxy based Primer	L	300.00
290	Epoxy Injection Grout @ 0.50kg/nozzle	kg	799.00
291	Epoxy Paint	L	238.00
292	Epoxy primer	L	450.00
293	Expandable fastner with plastic sleeve and M.S Screws 25 mm long	No	10.00
294	Expandable fastner with plastic sleeve and M.S. screws. 32 mm long	No	11.00
295	Expandable fastner with plastic sleeve and M.S Screws 40 mm long	No	13.00
296	Expandable fastner with plastic sleeve and M.S. screws. 50 mm long	No	14.00
297	Expandable fastener with plastic sleeve	No	14.00
298	Exterior Primer	kg	179.00
299	Exterior grade High Pressure Laminate	m <sup>2</sup>	2850.00
300	External corner 825 mm	No	590.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
301	External corner 2050 mm	No	1400.00
302	Extruded polystyrene (XPS) 25mm thick thermal insulating boards	m <sup>2</sup>	241.00
303	Extruded polystyrene (XPS) 50mm thick thermal insulating boards	m <sup>2</sup>	466.00
304	Extruded polystyrene (XPS) 60mm thick thermal insulating boards	m <sup>2</sup>	480.00
305	Extruded polystyrene (XPS) 70mm thick thermal insulating boards	m <sup>2</sup>	703.00
306	Factory made glass reinforced plastic door frame 90x45 mm	m	480.00
307	Fiber Glass substrate with Fabric Wall Panels 600 x 600	m <sup>2</sup>	3725.00
308	Fibre (reinforced by organic fibres and / or inorganic synthetic fibre) cement corrugated apron piece	m	210.00
309	Fibre (reinforced by organic fibres and / or inorganic synthetic fibre) cement ventilator curves	No	325.00
310	Fibre joint tape 50mm wide (90m) roll	roll	180.00
311	Fibre reinforced by organic and/ or inorganic synthetic fibres cement barge boards 6 mm thick.	m	420.00
312	Fibre reinforced by organic fibres and / or inorganic synthetic fibres cement corrugated sheet 6 mm thick	m <sup>2</sup>	235.00
313	Fibre reinforced by organic fibres and/ or inorganic synthetic fibres cement plain wing adjustable ridge.	m	175.00
314	Fibre reinforced by organic fibres and/ or inorganic synthetic fibres cement ridge finial.	pair	175.00
315	Fibre reinforced by organic fibres and/ or inorganic synthetic fibres cement special north light curves.	No	585.00
316	Fibre reinforced by organic fibres and/ or inorganic synthetic fibres cement eaves filler piece.	No	185.00
317	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement conjugated serrated adjustable ridge.	m	210.00
318	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement north light curves.	m	295.00
319	Fire clay kitchen sink: 600x450x250 mm	No	1500.00
320	First class kail wood in planks	10 cudm	375.00
321	Flame retardent face insulating board: 12 mm thick	m <sup>2</sup>	336.00
322	Flame retardent face insulating, Impregnated fibre board 12 mm thick	m <sup>2</sup>	425.00
323	Flashings	No	225.00
324	Flat pressed 3 layer particle board (medium density) Grade I :12 mm thick	m <sup>2</sup>	303.00
325	Flat Washer Ø16, 3mm thick	No	5.00
326	Flat head bolt for brackets of spider glazing	No	670.00
327	Flats up to 10 mm in thickness	q	6062.00
328	Flats exceeding 10 mm in thickness	q	6187.00
329	Flexible (coil shaped) PVC waste pipe for sink and wash basin 32 mm dia with length not less than 700 mm i/c PVC waste fittings	No	44.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
330	Float glass sheet of nominal thickness 4 mm (weight not less than 10kg/m <sup>2</sup> ).	m <sup>2</sup>	389.00
331	Float glass panes of nominal thickness 8 mm (weight not less than 20.00 kg/m <sup>2</sup> )	m <sup>2</sup>	628.00
332	Float glass panes of nominal thickness 5 mm (weight not less than 12.50 kg/m <sup>2</sup> )	m <sup>2</sup>	529.00
333	Floor enamel paint in all shades except green	L	293.00
334	Floor mounted, white vitreous china single piece, double traps siphonic water closet including integrated white vitreous china cistern of capacity 10 L with dual flushing system including all fittings and fixtures with seat cover, cistern fittings, nuts, bolts and gasket	No	9800.00
335	Flush pipe and spreaders G.I. for single set of one squatting plate urinal	No	238.00
336	Flush pipe and spreaders G.I. for range of two squatting plates urinal	No	344.00
337	Flush pipe and spreaders G.I. for range of three squatting plates urinal	No	410.00
338	Flush pipe and spreaders G.I. for range of four squatting plates urinal	No	563.00
339	Flush pipe with union spreaders and clamps all in C.P. brass for double stall	No	532.00
340	Flush pipe with union spreaders and clamps all in C.P. brass for range of four stall	No	700.00
341	Flush pipe with union spreaders and clamps all in C.P. brass for range of three stall	No	656.00
342	Flush pipe with union spreaders and clamps all in C.P. brass for single stall	No	337.50
343	Flushing Cistern P.V.C. 10 lts capacity (low level) (White) (with fittings, accessories and flush pipe)	No	625.00
344	Flyash Bricks conforming to IS 12894	No	7.00
345	Food grade Epoxy coating	L	225.00
346	FPO Membrane - 1 m/rnm	m	647.00
347	Frame size 65x100mm	m	545.00
348	Frame size 65x125mm	m	595.00
349	Frame size 65x150mm	m	630.00
350	Fuel wood	q	625.00
351	Fully Perforated Lightweight Calcium Silicate Square/Butt edged panel/tiles 595x595mm	m <sup>2</sup>	1010.00
352	G.I Ceiling Section (80 x26mm x26mm x10.5mm No lip x 0.55 mm)	m	46.00
353	G.I. inlet connection	No	87.00
354	G.I. Limpet washer	100 No	21.00
355	G.I. plain washer thick	100 No	35.00
356	G.I. back (jam) nuts 25 mm dia	No	23.00
357	G.I. back (jam) nuts 65 mm dia	No	31.00
358	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Single lipped urinal	No	450.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
359	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of two lipped urinals	No	485.00
360	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of four lipped urinals	No	550.00
361	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of three lipped urinals	No	500.00
362	G.I. pipes 40 mm dia	m	363.00
363	G.I. tees (equal) 25 mm	No	81.00
364	G.I. tees (equal) 65 mm	No	565.00
365	G.I. Union 15 mm nominal bore	No	44.00
366	G.I. Union 20 mm nominal bore	No	68.00
367	G.I. Union 25 mm nominal bore	No	144.00
368	G.I. Union 32 mm nominal bore	No	181.00
369	G.I. Union 40 mm nominal bore	No	288.00
370	G.I. Union 50 mm nominal bore	No	388.00
371	G.I. Union 65 mm nominal bore	No	719.00
372	G.I. Union 80 mm nominal bore	No	750.00
373	Galvanised steel bolts & nuts 6 mm dia and 25 mm long round head with slots	10 No	38.00
374	Galvanised steel bolts & nuts 10 mm dia and 125 mm long round head with slots	No	9.00
375	Galvanised Steel ceiling section (size 80x26x0.50mm)	m	46.00
376	Galvanised Steel connecting clips (2.64mm dia and 230 mm long GI wire)	No	4.00
377	Galvanised steel corrugated sheets	q	5880.00
378	Galvanised Steel intermediate Channel (Size 15x45x15x0.90mm) Strap hanger	m	38.00
379	Galvanised Steel intermediate cross T section Size 24 x 25 x 0.33 mm (1.2 m long)	No	40.00
380	Galvanised Steel intermediate cross T section Size 24 x 25 x 0.33. ( 0.6 m long)	No	20.00
381	Galvanised steel plain sheets	q	5250.00
382	Galvanised Steel soffit cleat (Size 27x37x25x0.60mm)	No	3.00
383	Galvanised steel turn buckles	No	28.00
384	Galvanised M.S sheet 0.5mm thick pressed channel section of size 50x32mm	m	125.00
385	Galvanised M.S sheet 0.5mm thick pressed stud of size 48x34x36mm	m	150.00
386	Galvanised Steel angle hanger (Ceiling angle) (Size 25x10x0.50mm)	m	12.00
387	Galvanised steel barbed wire	q	6500.00
388	Galvanised steel bolts & nuts 10 mm dia and 27 cm long both sides threaded with 4 galvanised steel nuts	No	20.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
389	Galvanised steel bolts 10 mm dia and 7 cm long with nuts	No	6.00
390	Galvanised steel J or L hooks 8 mm dia	10 No	150.00
391	Galvanised Steel main Tee ceiling section Size 24x38x0.33mm (3.00 m long)	No	120.00
392	Galvanised Steel perim Channel (Size 20x27x30x0.50mm)	m	22.00
393	Galvanised Steel perimeter wall Angle Size 24 x 24 x 0.40 mm (3.00 m long)	No	65.00
394	Galvanised wire mesh of average width of aperture 1.4 mm and nominal dia of wire 0.63 mm	m <sup>2</sup>	280.00
395	Geotextile 60 gsm	m <sup>2</sup>	28.00
396	Geotextile 120 gsm	m <sup>2</sup>	32.00
397	GI Anchor Fastner with hanger hole for the wire	No	10.00
398	GI flashing - 1.2 mm Thick	kg	74.00
399	GI Hook clip with J wire Assembly	No	25.00
400	GI Metal Tile Clip in Plain Beveled edge global white colour tiles of size 600x600 mm and 0.5mm thick	m <sup>2</sup>	846.00
401	GI Metal Tile Lay-in Perforated Tegular edge global white color tiles of Size 595x595mm and 0.5 mm thick	m <sup>2</sup>	894.00
402	GI Metal Tile Lay-in Plain Tegular edge global white color tiles of Size 595x595 mm and 0.5 mm thick	m <sup>2</sup>	765.00
403	GI Pre straightened Wire 2.5mm Dia 1.8m Length	No	15.00
404	GI sheet 0.8 mm thick confirming to IS 277:1992	kg	75.00
405	GI Wire mesh 100x100 mm (Specialized)	kg	70.00
406	GI/Aluminium Sheet (0.8 mm thick)	kg	75.00
407	Glass wool of density @ 48 kg /m <sup>3</sup> with black glass tissue (BGT)	m <sup>2</sup>	250.00
408	Glasswool of 50mm thick with density 16 kg/m <sup>3</sup>	m <sup>2</sup>	200.00
409	Glue	kg	94.00
410	Granite of any colour, 18 mm thick (slab area above 0.50 m <sup>2</sup> )	m <sup>2</sup>	1700.00
411	Granite stone slab 100 mm and 150 mm thick (un-dressed)	m <sup>2</sup>	450.00
412	Granitic finish Paint - (Allura Graniza make)	kg	264.00
413	Green or blue medium shade pigment	kg	56.00
414	Gully Trap 10cms x 10cms	No	250.00
415	Gun metal cramp	kg	315.00
416	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No	438.00
417	Gunmetal non-return valve-horizontal (screwed end) 32 mm dia	No	594.00
418	Gunmetal non-return valve-horizontal (screwed end) 40 mm dia	No	719.00
419	Gunmetal non-return valve-horizontal (screwed end) 50 mm dia	No	1050.00
420	Gunmetal non-return valve-horizontal (screwed end) 65 mm dia	No	1906.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
421	Gunmetal non-return valve-horizontal (screwed end) 80 mm dia	No	2875.00
422	Gunmetal non-return valve-vertical (screwed end) 25 mm dia	No	500.00
423	Gunmetal non-return valve-vertical (screwed end) 32 mm dia	No	690.00
424	Gunmetal non-return valve-vertical (screwed end) 40 mm dia	No	938.00
425	Gunmetal non-return valve-vertical (screwed end) 50 mm dia	No	1188.00
426	Gunmetal non-return valve-vertical (screwed end) 65 mm dia	No	1938.00
427	Gunmetal non-return valve-vertical (screwed end) 80 mm dia	No	3250.00
428	Gypsum Tiles Fully Perforated Square edge of Size 595x595 mm and 12.5 mm thick	m <sup>2</sup>	469.00
429	Gypsum panel 666 X 500 X 100 mm size.	m <sup>2</sup>	500.00
430	H.P. or L.P. ball valve with polythene floats: 15 mm dia	No	170.00
431	H.P. or L.P. ball valve with polythene floats: 20 mm dia	No	185.00
432	H.P. or L.P. ball valve with polythene floats: 25 mm dia	No	200.00
433	Handles (pair)	No	60.00
434	Hanger rod 4 mm thick	No	8.00
435	Hard board 6 mm thick 600x450 mm Wooden cleats	m <sup>2</sup>	150.00
436	Hardening compound	L	370.00
437	HDPE membrane	m <sup>2</sup>	300.00
438	Hermetically sealed double glazed unit made with 6 mm thick clear float glass both side having 12 mm air gap	m <sup>2</sup>	2750.00
439	Hessian cloth for using in tiles as reinforcement with 5% wastage	m <sup>2</sup>	35.00
440	High polymer modified quickset tile adhesive.	kg	9.00
441	High Albedo paint having minimum Solar Reflective Index (SRI) 108	kg	375.00
442	High tension coil	No	678.00
443	Hinges	No	38.00
444	Hold fasts	No	50.00
445	Hollock wood in scantling	10 cu dm	357.00
446	Honne Wood	m <sup>3</sup>	98900.00
447	Honne wood beading 10 mm wide	m	25.00
448	Honne wood beading 20x20 mm	m	55.00
449	Horizontal Perforated blocks of size 400x200x200 mm	No	50.00
450	Hose pipe 30m length	No	703.39
451	Hubless centrifugally cast (spun) iron trap with 100 mm inlet and 75 mm outlet as per IS 15905	No	385.00
452	Hubless centrifugally cast (spun) iron trap with 100 mm inlet and 100 mm outlet as per IS 15905	No	540.00
453	Hydraulic door closer	No	850.00
454	Impaler	No	42.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
455	Infrared sensor operated urinal of approx. size 610 x 390 x 370 mm White Vitreous Urinal	No	4500.00
456	Instant leak plug @ 0.20kg/nozzle	kg	108.00
457	Integral Crystalline Admixture	kg	100.00
458	Intermediate cross T-section 24x25x0.3mm (0.6 mtrs long)	No	17.00
459	Intermediate cross T-section 24x25x0.3mm (1.2 mtrs long)	No	35.00
460	Iron pintels including welded pin	No	37.00
461	Ist quality Acrylic distemper(Ready mix) having VOC content less than 50 grams/l	kg	65.00
462	Jaggery	kg	30.00
463	Joint filler	kg	26.00
464	Joint finisher	kg	23.00
465	Joint Tape roll (120mm Roll)	Roll	105.00
466	Jungle wood reepers 50x25 mm	m	30.00
467	Jungle wood scantling	m <sup>3</sup>	29100.00
468	Kadukkai	kg	12.00
469	Kerosene oil	L	73.00
470	L. Bracket	No	35.00
471	Lakared Granite	m <sup>2</sup>	2200.00
472	Laterite	m <sup>3</sup>	1780.00
473	Laterite cladding tiles 230x75x10mm	No	25.00
474	Light house polish	L	190.00
475	Lightweight Calcium Silicate Tegular/Butt edged Ceiling tiles with exposed GI Plain T24 Grid	m <sup>2</sup>	885.00
476	Lightweight Calcium Silicate Tegular/Butt edged Ceiling tiles 595x595 and 15mm thick with exposed GI Plain T15Grid	m <sup>2</sup>	925.00
477	Lightweight Calcium Silicate Tegular/Butt edged Ceiling tiles 595x595 and 15mm thick with exposed GI Silhouette profile	m <sup>2</sup>	925.00
478	Lime	kg	6.00
479	Lime mortar of mix 1:1 (1 lime putty : 1 sand)	m <sup>3</sup>	2650.00
480	Lime mortar of mix 1:2 (1 lime putty : 2 sand)	m <sup>3</sup>	2680.00
481	Lime mortar of mix 1:3 (1 lime putty : 3 sand)	m <sup>3</sup>	2750.00
482	Linolium sheet or tile 30 cmsx30cms	m <sup>2</sup>	538.00
483	Linseed oil (double boiled)	L	200.00
484	Liquid Ammonia 5%	L	160.00
485	Louvered ventilator upvc	m <sup>2</sup>	4500.00
486	M.S Tube 19mm x 19 mm 19 Gauge	m	95.00
487	M.S. bail plug 100 mm dia	No	160.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
488	M.S. bail plug 150 mm dia	No	200.00
489	M.S. bail plug 200 mm dia	No	220.00
490	M.S. cap 100 mm dia	No	135.00
491	M.S. cap 150 mm dia	No	150.00
492	M.S. cap 200 mm dia	No	200.00
493	M.S. flat 30 cmx25mmx3mm	kg	49.00
494	M.S. pipe 100 mm dia casing pipe	No	780.00
495	M.S. pipe 150 mm dia casing pipe	No	1126.00
496	M.S. pipe 200 mm dia casing pipe	No	1400.00
497	M.S. socket 100 mm dia	m <sup>2</sup>	125.00
498	M.S. socket 150 mm dia	m <sup>2</sup>	150.00
499	M.S. socket 200 mm dia	m <sup>2</sup>	180.00
500	Magnetic catcher triple type	No	30.00
501	Main T ceiling sections 24x38x0.3 mm (3 m long)	No	115.00
502	Main C Carrier Size 10x38x10x0.70 mm (3.00 m long)	m	115.00
503	Mangalore tiles first class and special tile for ridges and hips	No	13.00
504	Manually operated Bevel Gear Box for operating rolling shutters	No	2500.00
505	Marking with paint i/c removal of existing markings	m <sup>2</sup>	400.00
506	Masking tape	m	2.00
507	Mathi wood beading 10 mm wide	m	22.00
508	Mathi Wood or Nandi Wood	m <sup>3</sup>	88300.00
509	Mathi Wood beeding 20 X 20 wide	m	50.00
510	MDF panel filling 18/19 mm thick	m <sup>2</sup>	900.00
511	Melamine Matt clear polish	L	300.00
512	Melamine Polish	L	375.00
513	Melamine solvent/thinner	L	120.00
514	Melamine wood filler putty	kg	120.00
515	Melamine wood sealer	L	190.00
516	Metal Primer (U.G.)	L	157.50
517	Methylated spirit	L	80.00
518	Micro Alloyed High Carbon steel	kg	90.00
519	Mild steel ties	q	5900.00
520	Mild steel bolts 6 mm dia and 25 mm long with hexagonal head	10 No	10.00
521	Mild steel hooks	No	32.00
522	Mild steel plates	q	6100.00
523	Mild steel rivets	q	6200.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
524	Mild steel round bar 12 mm dia and below	q	6100.00
525	Mild steel round bar 6 mm dia	q	5900.00
526	Mild steel round bar above 12 mm dia	q	5938.00
527	Mild steel screws	10No	10.00
528	Mild steel sheets of 1.00 mm thickness for tanks	q	5850.00
529	Mild steel sheets with bolts and nuts to rest on pintels	No	120.00
530	Mild steel tubes electric resistant or induction butt welded ERW	kg	50.00
531	Mild steel tubes hot finished seamless type	kg	70.00
532	Mild steel tubes hot finished welded type	kg	61.00
533	Mineral fibre Angled tegular edge ceiling tiles 595 x 595 and 16 mm thick	m <sup>2</sup>	1360.00
534	Mineral fibre ceiling tiles 595 x 595 and 19 mm thick	m <sup>2</sup>	1150.00
535	Mirror of superior make glass 60x45 cm	No	550.00
536	Mirror polished granite (> 0.5m <sup>2</sup> )	m <sup>2</sup>	2200.00
537	Mirror polished granite (upto 0.5m <sup>2</sup> )	m <sup>2</sup>	2000.00
538	Mop stick- aluminium	No	102.00
539	Mosquito proof coupling	No	35.00
540	<i>MS Brackets/Aluminium Alloy Brackets</i>	kg	110.00
541	MS clamps	No	56.00
542	MS handles	No	55.00
543	Multi Floor Trap 10.0 cm X 7.5 cm X 5.0 cm X 4.0 cm	No	167.00
544	Multi purpose cement bonded wood particle board 6 mm thick 200 wide	m <sup>2</sup>	165.00
545	Multi surface paint	L	450.00
546	Multipurpose fibre reinforced by organic and / or inorganic synthetic fibres cement board 6 mm thick	m <sup>2</sup>	220.00
547	Nahani Trap 10cms x 10cms	No	148.00
548	Nails and screws	kg	67.00
549	Nandiwood reepers 50x25 mm	m	59.00
550	Natural colour insulating board: 12 mm	m <sup>2</sup>	220.00
551	Nickel plated mild steel piano hinges 1 mm thick 35 mm wide	m	75.00
552	Nickel plated mild steel piano hinges 1 mm thick 65 mm wide	m	115.00
553	Nickel plated mild steel piano hinges 1 mm thick 50 mm wide	m	90.00
554	Nickle plated M.S. Brackets for curtain rod 20 mm	No	200.00
555	Nickle plated M.S. pipe 20 mm dia.	m	84.00
556	Nickle plated M.S. pipe 25 mm dia.	m	100.00
557	Non - Asbestos multi purpose fibre (high impact poly propylene reinforced) cement board 6mm thick. 200 mm wide	m <sup>2</sup>	175.00
558	Non Asbestos cement roofing sheet	m <sup>2</sup>	435.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
559	Non Power Driven with 0.9mm thickness and 38 No.s of Vanes & turbine doom thickness 1mm and total weight not less than 5.2kg	No	3500.00
560	Non Power Driven with 1.2mm thickness and 38 No.s of Vanes & turbine doom thickness 1mm and total weight not less than 6kg for Industrial use for area upto 50m <sup>2</sup>	No	3600.00
561	Non Power Driven with 1.3mm thickness and 38 No.s of Vanes & turbine doom thickness 1mm and total weight not less than 6kg for Industrial use for area upto 100m <sup>2</sup>	No	3750.00
562	Non staining water resistant Clear silicon	m	65.00
563	Northlight adjustable ridges of 1.22 m	Pair	143.00
564	Nuts and bolts	kg	42.00
565	Office Chair Base Replacement	Unit	240.00
566	Office Chair Base Replacement - PVC Base	Unit	145.00
567	Office Chair Gas Lift Cylinder	Unit	500.00
568	Office Chair seat Replacement - foam Base	Unit	150.00
569	Oil type wood preservative	L	130.00
570	Openable window made out of multi chambered upvc	m <sup>2</sup>	4750.00
571	Openable window made out of multi chambered upvc Maximum possible size – 900mm x 2400mm	m <sup>2</sup>	4900.00
572	Ordinary varnish	L	150.00
573	Oval shape 450x350 mm (outer dimensions) Mirror with Plastic moulded frame	No	330.00
574	Oxidised mild steel double acting spring hinges 100mm	No	160.00
575	Oxidised mild steel double acting spring hinges 125 mm	No	180.00
576	Oxidised mild steel double acting spring hinges 150 mm	No	200.00
577	Oxidised mild steel handles 75 mm	No	20.00
578	Oxidised mild steel handles 100 mm	No	25.00
579	Oxidised mild steel handles 125 mm	No	30.00
580	Oxidised mild steel single acting spring hinges 100 mm	No	130.00
581	Oxidised mild steel single acting spring hinges 125 mm	No	150.00
582	Oxidised mild steel single acting spring hinges 150 mm	No	175.00
583	Oxidised mild steel tower bolt (barrel type) 250x10 mm	No	55.00
584	Oxidised mild steel screws 25mm	100No	50.00
585	Oxidised mild steel screws 30mm	100No	60.00
586	Oxidised mild steel screws 40mm	100No	125.00
587	Oxidised mild steel screws 50mm	100No	150.00
588	Oxidised Mild Steel Door Latch 250 mm	each	60.00
589	P Trap 10cms x 10cms	No	220.00
590	P.T.M.T. Urinal cock 15mm dia	No	115.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
591	P.T.M.T. Bib cock with nozzle 15mm	No	150.00
592	P.T.M.T. extension nipple 15mm	No	22.00
593	P.T.M.T. extension nipple 20mm	No	35.00
594	P.T.M.T. extension nipple 25mm	No	55.00
595	P.T.M.T. Stop cock (concealed) 15mm	No	135.00
596	P.V.C. automatic flushing cistern 5 L capacity	No	450.00
597	PVC sheet 5mm	m <sup>2</sup>	350.00
598	PVC sheet 5 mm (semi finished)	m <sup>2</sup>	300.00
599	Paint remover	L	150.00
600	Panels - 12 mm thick multi-cell polycarbonate panels system	m <sup>2</sup>	2375.00
601	Panels - 16 mm thick multi-cell polycarbonate panels system	m <sup>2</sup>	2600.00
602	Panels - 18 mm thick multi-cell polycarbonate panels system	m <sup>2</sup>	2850.00
603	Panels filled with MDF board 18 mm thick	m <sup>2</sup>	700.00
604	Pea Gravel	m <sup>3</sup>	910.00
605	Perimeter wall angle 24x24x0.3mm (3 m long)	No	80.00
606	Pesticides (Chloropyriphos equivalent)	L	155.00
607	Pigment	kg	50.00
608	Pink primer (for wood)	L	131.00
609	Pivots (pair)	No	466.10
610	Plaster of paris	kg	6.25
611	Plastic acrylic emulsion paint	L	280.00
612	Plastic buckets 20 L capacity	No	102.00
613	Plastic mug	No	25.00
614	Plywood sheet	m <sup>2</sup>	636.00
615	Polished Glazed Vitrified tiles in floor 50x50 cm	m <sup>2</sup>	560.00
616	Polished Glazed Vitrified tiles in floor tile 60x60 cm	m <sup>2</sup>	620.00
617	Polished Glazed Vitrified tiles in floor tile 80x80 cm	m <sup>2</sup>	740.00
618	Polished Glazed Vitrified tiles in floor 60x120 cm	m <sup>2</sup>	1150.00
619	Polished Glazed Vitrified tiles in floor 100x100 cm	m <sup>2</sup>	1200.00
620	Polycarbonate End Cap	No	50.00
621	Polyester powder coating 50 microns on aluminium sections	kg	84.00
622	Polyethylene water storage tank with cover and suitable locking arrangement	L	6.00
623	Polymerized plaster reinforced with glass fibre mesh	m <sup>2</sup>	317.00
624	Polythene Roll - 150mm Long.	No	6.00
625	Polythene Sleeve 90 x 150mm	No	3.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
626	Polyurethane foam (PUF) slab 40mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup>	m <sup>2</sup>	422.50
627	Polyurethane foam (PUF) slab 40mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> for over deck	m <sup>2</sup>	338.98
628	Polyurethane foam (PUF) slab 60mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> for over deck	m <sup>2</sup>	796.00
629	Polyurethane foam (PUF) spray 40mm thick average with PU foam	m <sup>2</sup>	580.00
630	Polyurethane foam (PUF) spray 40mm thick average with PU slab density 35+/-5 kg/m <sup>3</sup>	m <sup>2</sup>	725.00
631	Polyurethane foam (PUF) spray 50mm thick average with PU slab density 35+/-5 kg/m <sup>3</sup>	m <sup>2</sup>	750.00
632	Polyurethane foam (PUF) spray 70mm thick average with PU foam	m <sup>2</sup>	1577.00
633	Powder coated M.S. butt hinges 100mm X58mmX1.9mm	10 No	130.00
634	Powder coating 50 microns on aluminium sections	kg	76.25
635	Precast chequered cement tiles 22 mm thick Dark shade using ordinary cement	m <sup>2</sup>	425.00
636	Precast chequered cement tiles 22 mm thick medium shade using 50% white cement, 50% ordinary cement	m <sup>2</sup>	450.00
637	Precast Cement Concrete Blocks made using C&D Waste	1000 No	25150.00
638	Precast heat resistant terrace tiles (size 300x300 mm)	m <sup>2</sup>	500.00
639	Precast R.C.C. perforated slab	No	875.00
640	Precoated galvanised steel gutter	m	525.00
641	Precoated galvanised steel north light curves	m	285.00
642	Precoated galvanised iron profile sheet 0.50 mm TCT	m <sup>2</sup>	368.00
643	Precoated galvanised steel barge board (upto 300mm )	m	255.00
644	Precoated galvanised steel barge board	m	225.00
645	Precoated galvanised steel gutter 600mm overall girth	m	440.00
646	Precoated galvanised steel plain ridges 0.50 mm TCT and 500 -600 mm wide	m	260.00
647	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS :12823 (exterior grade) 25 mm thick	m <sup>2</sup>	968.00
648	Prelaminated particle board with both sides decorative lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade) 12 mm thick	m <sup>2</sup>	605.00
649	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade) 12 mm thick	m <sup>2</sup>	538.00
650	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS :12823 (exterior grade) 18 mm thick	m <sup>2</sup>	700.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
651	Premium acrylic emulsion of interior grade having VOC content less than 50 grams/l	L	300.00
652	Premium Acrylic exterior paint	L	315.00
653	Premixed super white gypsum plaster	kg	6.00
654	Prepigmented Extruded cement roof tiles of size 420mm x330mm	No	635.00
655	Pressed clay tiles 20 mm thick 250 x 250 mm size	1000 No	9030.00
656	Pressed steel door frames (mild steel sheet 1.60 mm) Profile "B"	m	250.00
657	Pressed steel door frames (mild steel sheet 1.60 mm) Profile "C"	m	275.00
658	Pressed steel door frames (mild steel sheet 1.60 mm) Profile "E"	m	300.00
659	Primer for Waterproofing with SBS Membrane	L	208.00
660	Primer ( for gypsum board)	L	90.00
661	Primer ( for gypsum board// calcium silicate board)	L	85.00
662	Primer for cement paint	l	135.00
663	Protective Tape	m	20.00
664	PTMT Bottle Trap 31/32mm	No	250.00
665	PTMT Bottle Trap 38/40mm	No	260.00
666	PTMT pillar cock	No	170.00
667	PTMT Shelf 450x124x36mm	No	195.00
668	PTMT - Towel Ring 215x200x37mm	No	110.00
669	PTMT Waste Coupling 31/32MM	No	43.00
670	PTMT Waste Coupling 38/40MM	No	45.00
671	PTMT Angle Stop cock with Flange 15mm	No	106.00
672	PTMT Ball Cock 15mm Complete with Epoxy Coated Aluminium rod & H.D. Ball	No	95.00
673	PTMT Ball Cock 20mm Complete with Epoxy Coated Aluminium rod & H.D. Ball	No	130.00
674	PTMT Ball Cock 25mm Complete with Epoxy Coated Aluminium rod & H.D. Ball	No	344.00
675	PTMT Ball Cock 40mm Complete with Epoxy Coated Aluminium rod & H.D. Ball	No	525.00
676	PTMT Ball Cock 50mm Complete with Epoxy Coated Aluminium rod & H.D. Ball	No	1025.00
677	PTMT door catcher	No	25.00
678	PTMT grating 100 mm dia.	No	15.00
679	PTMT Liquid Soap Container	No	119.00
680	PTMT pillar cock	No	170.00
681	PTMT pillar cock (fancy) 15 mm foam flow.	No	210.00
682	PTMT push cock 12 mm dia. 20 mm BSP	No	80.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
683	PTMT Sink Cock Size 15 mm	No	165.00
684	PTMT Soap Dish/Holder 138x102x75mm	No	70.00
685	PTMT Swan Neck Cock Size 15 mm	No	200.00
686	PTMT Swiveling shower 15mm	No	90.00
687	PTMT Towel Rail (450mm)	No	175.00
688	PTMT Towel Rail (600mm)	No	190.00
689	PTMT Urinal Spreader 15mm	No	69.00
690	PU Elastomeric Single component liquid	kg	296.00
691	PU Foam Injection Grout @ 0.40kg/nozzle	kg	932.00
692	PU Plain Injection Grout @ 0.30kg/nozzle	kg	892.00
693	PU Waterproofing Membrane single component - 1st coat	kg	240.00
694	Pulley 25 mm dia	No	35.00
695	Pulley 40 mm dia	No	40.00
696	Punched tape concertina coil 600 mm dia 10 m openable length	Bundle	750.00
697	PVC Laminated Gypsum Tiles (Square edge) of Size 595x595 mm and 12.5 mm thick	m <sup>2</sup>	1100.00
698	PVC Cone	No	5.00
699	PVC Edge beading	m	25.00
700	PVC Pipe Ø20mm - 150mm long	No	5.00
701	PVC slotted pipe 200 mm dia as per IS: 12818	m	810.00
702	Q Trap 10cms x 10cms	No	200.00
703	Rabbit wire mesh(Rabbit wire mesh required for reinforcement	m <sup>2</sup>	42.00
704	Rawl plug 50 mm (designation 10 No)	No	28.00
705	RBT reinforced barbed wire 9 rounds	m	8.00
706	Ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 g/ l	L	158.00
707	Rectangular cover 455x610 mm with frame (low duty) (inside)	No	1400.00
708	Rectangular cover 500x700 mm with frame (low duty)	No	1600.00
709	Rectangular cover 600X850 mm with frame (low duty)	No	1750.00
710	Rectangular shape 1500x450 mm Mirror with Plastic moulded frame	No	720.00
711	Rectangular shape 453x357 mm Mirror with Plastic moulded frame	No	290.00
712	Rectangular type with openable circular lid 150 mm size 18 mm high with 100 mm dia. (110 g)	No	148.00
713	Red oxide	kg	85.00
714	Red oxide Zinc chromate primer	L	180.00
715	Red Salwood	m <sup>3</sup>	69500.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
716	Red, chocolate, orange, buff or yellow (red oxide of iron) light shade pigment	kg	60.00
717	Reeded glass 3mm thick	m <sup>2</sup>	344.00
718	Reeper nails 50 mm long	kg	44.00
719	Reinforcement Coupler 16 mm dia	No	31.00
720	Reinforcement Coupler 20 mm dia	No	41.00
721	Reinforcement Coupler 25 mm dia	No	72.00
722	Reinforcement Coupler 28 mm dia	No	83.00
723	Reinforcement Coupler 32 mm dia	No	114.00
724	Repair mortar - 29 kg/m <sup>2</sup>	kg	22.00
726	Ridges (AC)	Pair	223.00
727	Rolling shutters of 80x0.90 mm laths	m <sup>2</sup>	1225.00
725	Rolling shutters of 80x1.2 mm laths	m <sup>2</sup>	1375.00
728	Rolling shutter made of 80x1.25 mm machine rolled laths	m <sup>2</sup>	1400.00
729	Roofing paint for iron sheets in red colour	L	180.00
730	Rubber beading for shutters beading	m	15.00
731	Rubber Gasket	m	100.00
732	Ruby Red Granite colour, 20 mm thick	m <sup>2</sup>	1150.00
733	S Trap 10cms x 10cms	No	260.00
734	S type louvers	No	275.00
735	S.C.I. gully or nahani grating 100 mm dia	No	32.00
736	S.W. gully trap P type 100x100 mm	No	150.00
737	S.W. gully trap P type 150X150 mm	No	175.00
738	S.W. gully trap P type 180X150 mm	No	250.00
739	Sadarahalli Grey Granite colour, 20 mm thick	m <sup>2</sup>	950.00
740	Sal wood (White)	m <sup>3</sup>	68900.00
741	Salem Stainless steel AISI - 304 (18/8) Round basin 405mm X 355mm	No	1500.00
742	Salem Stainless steel AISI - 304 (18/8) Wash basin 530mm X 345mm	No	2000.00
743	Sand papers of assorted gratings	No	22.00
744	Sanding cloth 150 mm wide	m	60.00
745	SBS(Styrene Butadiene Styrene) Modified Self-Adhesive waterproofing Membrane	m <sup>2</sup>	320.00
746	Sealant tapes	Joint	5.00
747	Seam bolts and nuts 6 mm dia and 25 mm long	10 No	10.00
748	Seat Cloth	m <sup>2</sup>	150.00
749	Seat Foam	m <sup>2</sup>	200.00
750	Second class teak wood in scantling	10 cu dm	970.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
751	Second class deodar wood in planks	10 cu dm	625.00
752	Second class kail wood in planks 10	m <sup>3</sup>	260.00
753	Second class teak wood in planks	10 cu dm	791.00
754	Self Drilling Screws (25mm)	No	18.00
755	Self levelling epoxy compound having low VOC	L	380.00
756	Self Primer - 0.125L/m <sup>2</sup> for 1 coat	L	341.00
757	Self tapping pan head nickle coated mild steel screws of size 13x3.2mm	1000 No	480.00
758	Semi Rigid PVC waste pipe for sink and wash basin 32 mm dia with length not less than 700 mm i/c PVC waste fittings	No	31.00
761	Semi Rigid PVC waste pipe for sink and wash basin 40 mm dia with length not less than 700 mm i/c PVC waste fittings	No	41.00
759	Sewer Type A Solfit pasting / Solvent Cement Type 75 mm dia	m	94.00
760	Sewer Type A Solfit pasting / Solvent Cement Type 110 mm dia	m	165.00
762	Sewer Type A Solfit pasting / Solvent Cement Type 160 mm dia	m	409.00
763	Shear stud	No	50.00
764	Shellac	kg	300.00
765	Shiva Gold Granite colour, 20 mm thick	m <sup>2</sup>	1550.00
766	Shower rose C.Pbrass for 15 to 20 mm inlet 100 mm dia	No	138.00
767	Shower rose C.Pbrass for 15 to 20 mm inlet 150 mm dia	No	156.00
768	Side guides	No	114.41
769	Silhouette Black reveal Cross Tee 15x42x1200x0.4mm	No	142.00
770	Silhouette Black reveal Cross Tee 15x42x600x0.4mm	No	71.00
771	Silhouette Black reveal Main runner 15x42x3600x0.4mm	No	362.00
772	Silicon and acrylic emulsion	L	360.00
773	Silicon Gasket in kg (Above 50 g / m)	kg	465.00
774	Slider/Drawer	Pair	423.73
775	Soap powder	kg	106.00
776	Sodium pentachlorophenate	kg	150.00
777	Soffit cleat (Size 27x37x25x1.60mm)	No	4.00
778	Soldier tie 370mm	No	290.00
779	Solid concrete blocks 400x100x200 mm	No	34.00
780	Solid concrete blocks 400x150x200 mm	No	42.00
781	Solid concrete blocks 400x200x200 mm	No	47.00
782	Solid Concrete Bricks 225x100x75mm	No	9.00
783	Solid Flush Shutter 30 mm thick	m <sup>2</sup>	2800.00
784	Solid Flush Shutter 35 mm thick	m <sup>2</sup>	3250.00
785	Solid foam uPVC sheet 20mm thick prelaminated on both side	m <sup>2</sup>	2153.00

<b>SI No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
786	Solid core board flush doors 40 mm thick one side teak and one side commercial	m <sup>2</sup>	2660.00
787	Solid core board flush doors 30 mm both side commercial	m <sup>2</sup>	1600.00
788	Solid core board flush doors 30 mm one side teak and one side commercial	m <sup>2</sup>	2000.00
789	Solid core board flush doors 30 mm thick both side teak	m <sup>2</sup>	2450.00
790	Solid core board flush doors 35 mm thick both side commercial	m <sup>2</sup>	1860.00
791	Solid core board flush doors 35 mm thick one side teak and one side commercial	m <sup>2</sup>	2330.00
792	Solid core board flush doors 40 mm thick both side commercial	m <sup>2</sup>	2130.00
793	Solid core board flush doors 40 mm thick both side Teak	m <sup>2</sup>	3200.00
794	Solid core board flush doors 35 mm thick both side Teak	m <sup>2</sup>	2850.00
795	Solvent cement adhesive	L	170.00
796	Spacer tape 6.4 mm thick x 6 mm wide	m	12.50
797	Special Nails	kg	100.00
798	Special Primer (C.W.)	L	160.00
799	Special screws	kg	130.00
800	Spigot for standard jointing	kg	43.00
801	Spirit	L	48.00
802	Spring T-connector	No	5.00
803	Spring T-section 24x34x0.45 mm (3.00 m long)	m	190.00
804	SS Screws of sizes for structural glazing /ACP Cladding	No	2.00
805	SS Angle cock light with wall flange - Economy	No	403.00
806	SS Angle cock light with wall flange - Premium	No	744.00
807	SS Angle cock medium with wall flange - Economy	No	750.00
808	SS Angle cock medium with wall flange - Premium	No	1108.00
809	SS Angle cock with wall flange - Economy	No	800.00
810	SS Angle cock with wall flange - Premium	No	1492.00
811	SS Bib cock Two way with wall flange - Economy	No	1500.00
812	SS Bib cock Two way with wall flange - Premium	No	2644.00
813	SS Bib cock with wall flange - Economy	No	830.00
814	SS Bib cock with wall flange - Premium	No	1912.00
815	SS Bidet spray - Economy	No	600.00
816	SS Bidet spray - Premium	No	750.00
817	SS Double Towel rail 600mm length - Economy	No	2000.00
818	SS Double Towel rail 600mm length - Premium	No	3100.00
819	SS Exposed set for concealed stop cock - Economy	No	420.00

<b>SI No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
820	SS Exposed set for concealed stop cock - Premium	No	632.00
821	SS Exposed set for high flow single lever concealed 40mm divertor - Economy	No	1400.00
822	SS Exposed set for high flow single lever concealed 40mm divertor - Premium	No	2752.00
823	SS Exposed set for high flow single lever concealed 45mm divertor - Economy	No	1700.00
824	SS Exposed set for high flow single lever concealed 45mm divertor - Premium	No	2872.00
825	SS Exposed set for concealed divertor - Economy	No	1600.00
826	SS Exposed set for concealed divertor - Premium	No	2944.00
827	SS Exposed set for concealed wall mixer - Economy	No	1300.00
828	SS Exposed set for concealed wall mixer - Premium	No	3052.00
829	SS Exposed set for single concealed stop cock with basin spout - Economy	No	1700.00
830	SS Exposed set for single concealed stop cock with basin spout - Premium	No	2800.00
831	SS Exposed set for single lever concealed basin mixer - Economy	No	2400.00
832	SS Exposed set for single lever concealed basin mixer - Premium	No	3052.00
833	SS Flush valve soft touch - Economy	No	3000.00
834	SS Flush valve soft touch - Premium	No	3350.00
835	SS German Polyamide flexible connection hose with winged nuts 450mm - Economy	No	125.00
836	SS German Polyamide flexible connection hose with winged nuts 450mm - Premium	No	148.00
837	SS Liquid soap dispenser - Economy	No	1350.00
838	SS Liquid soap dispenser - Premium	No	3060.00
839	SS Overhead rain showers - Economy	No	800.00
840	SS Overhead rain showers - Premium	No	4820.00
841	SS Overhead rain showers with LED features - Economy	No	7500.00
842	SS Overhead rain showers with LED features - Premium	No	8712.00
843	SS Pillar Cock - Economy	No	918.00
844	SS Pillar Cock - Premium	No	2068.00
845	SS Pillar cock with high neck with 265mm Extended body - Economy	No	1975.00
846	SS Pillar cock with high neck with 265mm Extended body - Premium	No	3900.00
847	SS Robe hook twin - Economy	No	360.00
848	SS Robe hook twin - Premium	No	1104.00
849	SS Robe hookwith 5 points - Economy	No	850.00
850	SS Robe hookwith 5 points - Premium	No	2136.00
851	SS Side operated Single lever wall mixer with L shaped Tubular bend set for overhead shower - Economy	No	3100.00

<b>SI No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
852	SS Side operated Single lever wall mixer with L shaped Tubular bend set for overhead shower - Premium	No	6624.00
853	SS Single flow hand showers - Economy	No	640.00
854	SS Single flow hand showers - Premium	No	956.00
855	SS Single flow hand showers with adjustable settings & extendable tube - Economy	No	1250.00
856	SS Single flow hand showers with adjustable settings & extendable tube - Premium	No	2284.00
857	SS Single flow hand showers with extendable tube - Economy	No	1000.00
858	SS Single flow hand showers with extendable tube - Premium	No	1668.00
859	SS Single Lever Basin Mixer with 450mm long FC - Economy	No	1950.00
860	SS Single Lever Basin Mixer with 450mm long FC - Premium	No	5228.00
861	SS Single Lever Basin Mixer with high neck & 450mm long FC - Economy	No	2300.00
862	SS Single Lever Basin Mixer with high neck & 450mm long FC - Premium	No	7496.00
863	SS Single lever Bib cock (Lifting type cold water cartridge) - Economy	No	940.00
864	SS Single lever Bib cock (Lifting type cold water cartridge) - Premium	No	1308.00
865	SS Single lever sink cock (Lifting type cold water cartridge) - Economy	No	1355.00
866	SS Single lever sink cock (Lifting type cold water cartridge) - Premium	No	1904.00
867	SS Single lever sink mixer with 450mm long flexible connectors - Economy	No	2870.00
868	SS Single lever sink mixer with 450mm long flexible connectors - Premium	No	4196.00
869	SS Single lever sink mixer with swivel spout top outlet - Economy	No	3020.00
870	SS Single lever sink mixer with swivel spout top outlet - Premium	No	4696.00
871	SS Single lever wall mixer - Economy	No	3000.00
872	SS Single lever wall mixer - Premium	No	6560.00
873	SS Single lever wall mixer with L shaped Tubular bend set for overhead shower - Economy	No	3200.00
874	SS Single lever wall mixer with L shaped Tubular bend set for overhead shower - Premium	No	6888.00
875	SS Sink cock with swivel spout & wall flange - Economy	No	1500.00
876	SS Sink cock with swivel spout & wall flange - Premium	No	2292.00
877	SS Soap dish wired - Economy	No	500.00
878	SS Soap dish wired - Premium	No	1660.00
879	SS StainleSS Steel foldable Towel rack 600mm - Economy	No	1600.00
880	SS StainleSS Steel foldable Towel rack 600mm - Premium	No	3390.00
881	SS StainleSS Steel Grab Bar 600 mm Long - Economy	No	1520.00
882	SS StainleSS Steel Grab Bar 600 mm Long - Premium	No	6650.00
883	SS Toilet paper holder - Economy	No	600.00
884	SS Toilet paper holder - Premium	No	2250.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
885	SS Towel rail (Circular) - Economy	No	290.00
886	SS Towel rail (Circular) - Premium	No	1940.00
887	SS Towel rail (Rectangular) - Economy	No	400.00
888	SS Towel rail (Rectangular) - Premium	No	2144.00
889	SS Towel rail 450mm length - Economy	No	800.00
890	SS Towel rail 450mm length - Premium	No	2150.00
891	SS Towel rail 600mm length - Economy	No	950.00
892	SS Towel rail 600mm length - Premium	No	2400.00
893	SS Towel rail 600mm length with hooks - Economy	No	2500.00
894	SS Towel rail 600mm length with hooks - Premium	No	6100.00
895	SS Wall Mixer Telephonic - Economy	No	3500.00
896	SS Wall Mixer Telephonic - Premium	No	5888.00
897	SS Wall Mixer Telephonic with L Shaped tubular bend set for overhead shower - Economy	No	3600.00
898	SS Wall Mixer Telephonic with L Shaped tubular bend set for overhead shower - Premium	No	6320.00
899	SS Wall Mixer Non Telephonic - Economy	No	2400.00
900	SS Wall Mixer Non Telephonic - Premium	No	4556.00
901	SS Wall spout with Button attachment for shower - Economy	No	1400.00
902	SS Wall spout with Button attachment for shower - Premium	No	2508.00
903	SS Wall spout with wall flange - Economy	No	1000.00
904	SS Wall spout with wall flange - Premium	No	1876.00
905	SS Bolt with washer of sizes for structural glazing / ACP Cladding	No	35.00
906	Stainless steel kitchen sink - with drain board 510 x 1040mm bowl depth 200 mm.	No	3200.00
907	Stainless steel kitchen sink - with drain board 510 x 1040mm bowl depth 225 mm.	No	3500.00
908	Stainless steel cramp	kg	290.00
909	Stainless steel kitchen sink - with drain board 510x1040mm bowl depth 178 mm	No	3000.00
910	Stainless steel kitchen sink - with drain board bowl depth 250 mm.	No	3700.00
911	Stainless steel kitchen sink - without drain board 470x420mm bowl depth 178 mm	No	1200.00
912	Stainless steel kitchen sink - without drain board 610x460mm bowl depth 200 mm.	No	1500.00
913	Stainless steel kitchen sink - without drain board 610x510mm bowl depth 200 mm	No	2200.00
914	Stainless steel (Grade-304)hollow section round/square tubes	kg	250.00
915	Stainless steel (SS 304 grade) adjustable friction window stay 205 x 19 mm	No	200.00

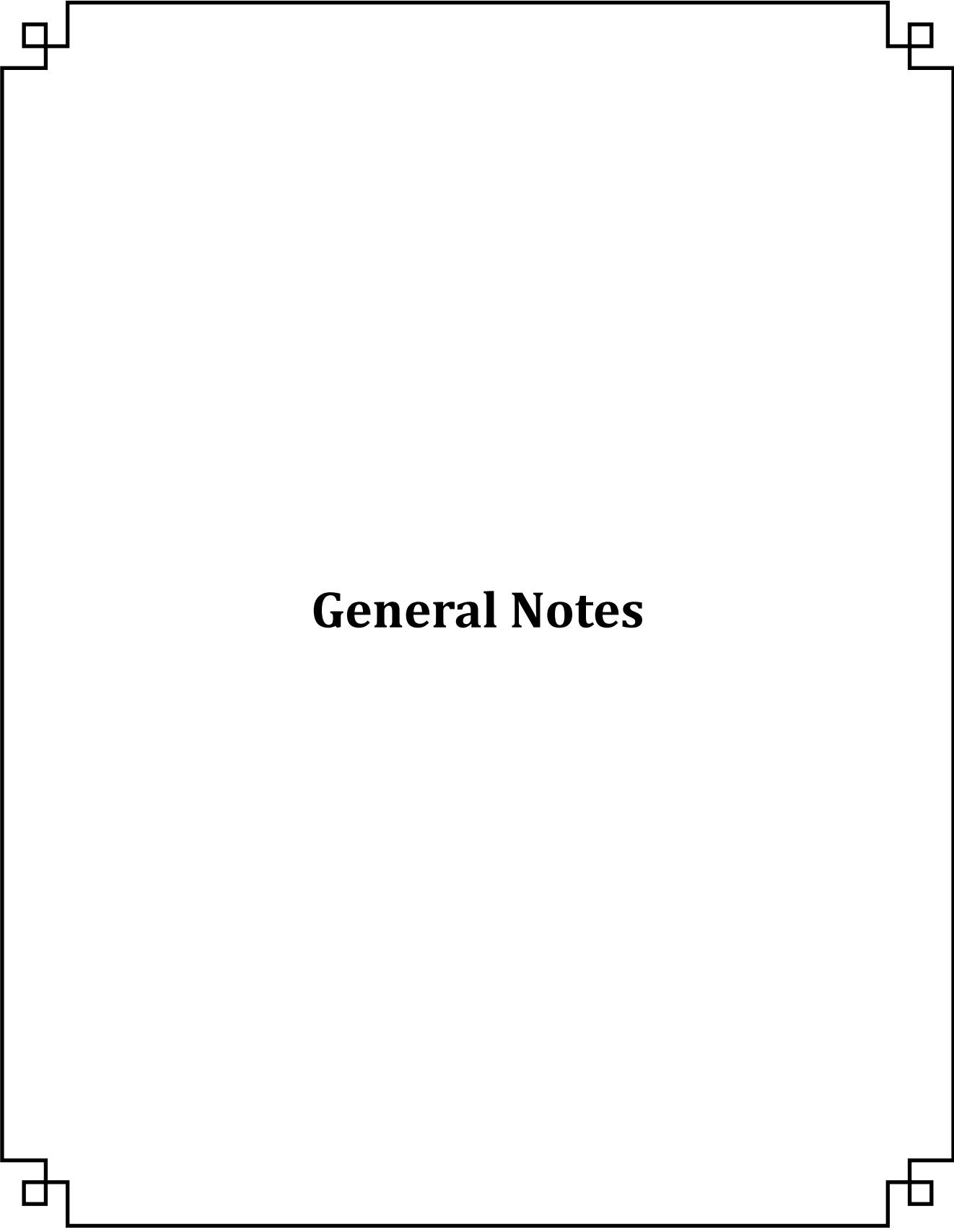
<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
916	Stainless steel (SS 304 grade) adjustable friction window stay 255 x 19 mm	No	225.00
917	Stainless steel (SS 304 grade) adjustable friction window stay 355 x 19 mm	No	350.00
918	Stainless steel (SS 304 grade) adjustable friction window stay 510 x 19 mm	No	540.00
919	Stainless steel (SS 304 grade) adjustable friction window stay 710 x 19 mm	No	925.00
920	Stainless steel bolts/square bar and plates	kg	120.00
921	Stainless steel butt hinges 100x58x1.90mm IS : 12817 marked	10No	350.00
922	Stainless steel butt hinges 125x64x1.9 mm IS : 12817 marked	10No	400.00
923	Stainless steel butt hinges 50x37x1.50mm IS : 12817 marked	10No	200.00
924	Stainless steel butt hinges 75x47x1.80mm IS : 12817 marked	10No	275.00
925	Stainless steel dash fastener of 8 mm dia and 75 mm long bolt	No	17.00
926	Stainless steel roller for sliding arrangement in racks/ cupboards/ cabinets shutter .	No	15.00
927	Stainless steel screws 25 mm x4 mm	100 No	45.00
928	Stainless steel screws 30 mm x4 mm	100 No	50.00
929	Stainless steel U Channel of size (50x25x2mm)	m	190.00
930	Stainless steel wire gauge (Grade-304) aperture 1.4 mm and 0.50mm dia wire	m <sup>2</sup>	413.00
931	Standard quality hard board sheet 3 mm thick	m <sup>2</sup>	142.00
932	Standard quality hard board sheet 4.5 mm thick	m <sup>2</sup>	220.00
933	Steel glazed door, window/ ventilator, all members viz. F7D, F4B, K11 and K12B etc.	kg	65.00
934	Stone surface strengthening chemical approved by ASI	L	295.00
935	Stone cleaning chemical approved by ASI	L	295.00
936	Stone for masonry work	m <sup>3</sup>	1000.00
937	Strips Aluminium fluted 3.15mm thick and 200mm wide m	m	480.00
938	Strips-Aluminium fluted 3.15mm thick and 150mm wide	m	370.00
939	Structural sealant - 6 mm x 12 mm	m	25.00
940	Structural steel such as tees, angles channels and R.S. joists	q	6800.00
941	Super Durable Powder coating 60-80 microns on aluminium sections	kg	61.00
942	Superior class teak wood such as Dandeli planks	10 cudm	1100.00
943	Superior class teak wood such as Dandeli,Balarshah or Malabar in planks	10 cudm	970.00
944	Superior copal varnish	L	144.00
945	Superior spar varnish	L	144.00
946	SWR Type A Single socketed pipe 110 mm dia.	m	140.00
947	SWR Type A Single socketed pipe 75 mm dia	m	81.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
948	SWR Type A Rubber (Seal) Ring 110 mm dia.	No	11.00
949	SWR Type A Rubber (Seal) Ring 150 mm dia.	No	15.00
950	SWR Type A Rubber (Seal) Ring 75 mm dia.	No	8.00
951	SWR Type A Single socketed pipe 150 mm dia.	m	355.00
952	Synthetic enamel paint in all shades except black or chocolate shade	L	206.00
953	Synthetic enamel paint in black or chocolate shade	L	219.00
954	Synthetic ployster triangular fibre	kg	410.00
955	Table rubbed polished stone 18mm thick (75x50cm) Granite stone	m <sup>2</sup>	1500.00
956	Telescopic drawer channels 300mm long .	Set	320.00
957	Terracota clay tiles 12 X 2X 2 inches	No	20.00
958	Terracota clay tiles 12 X 4X 2 inches	No	26.00
959	Textured exterior paint	L	400.00
960	Thermal insulation of roofing with expanded polystyrene (50mm thick) with aluminium strips	m <sup>2</sup>	150.00
961	Thermal insulation of roofing with expanded polystyrene (70mm thick) with aluminium strips	m <sup>2</sup>	227.00
962	Thermal insulation of roofing with expanded polystyrene (90mm thick) with aluminium strips	m <sup>2</sup>	281.00
963	Thermal insulation of roofing with expanded polystyrene (110mm thick) with aluminium strips	m <sup>2</sup>	358.00
964	Thermal insulation of roofing with expanded polystyrene (120mm thick) with aluminium strips	m <sup>2</sup>	398.00
965	Through and bond stone size 24 x24 x39 cm	No	76.00
966	Tie Rod for Bracket - 500mm	No	115.00
967	Top cover of Rolling shutters 0.90 mm thick	m	450.00
968	Top cover of Rolling shutters 1.20 mm thick	m	560.00
969	Top cover for rolling shutters 1.25 mm thick	m	800.00
970	Top wedge Block	No	120.00
971	Toughened glass 12 mm thickness with hole	m <sup>2</sup>	2100.00
972	Turf Paver (500 x 500 x 40 mm)	m <sup>2</sup>	16.00
973	Turn buckle and strengthening bolt	Set	45.00
974	Turpentine oil	L	50.00
975	Twin sided tape	m	107.00
976	Two component Acrylic polymer modified cementitious membrane	kg	80.00
977	U Polycarbonate Connector	m	175.00
978	Unplasticised P.V.C.connection pipe with brass union 30 cm long 15 mm bore	No	38.00
979	Unplasticised P.V.C.connection pipe with brass union 30 cm long 20 mm bore	No	44.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
980	Unplasticised P.V.C.connection pipe with brass union 45 cm long 15 mm bore	No	44.00
981	Unplasticised P.V.C.connection pipe with brass union 45 cm long 20 mm bore	No	60.00
982	uPVC Pipes 15 mm nominal dia	m	38.00
983	uPVC Pipes 20 mm nominal dia.	m	47.00
984	uPVC Pipes 25 mm nominal dia.	m	71.00
985	uPVC Pipes 32 mm nominal dia.	m	101.00
986	uPVC Pipes 40 mm nominal dia.	m	119.00
987	uPVC Pipes 50 mm nominal dia.	m	165.00
988	uPVC Pipes 65 mm nominal dia.	m	259.00
989	uPVC Pipes 80 mm nominal dia.	m	334.00
990	uPVC Pipes 100 mm nominal dia.	m	474.00
991	uPVC Pipes 150 mm nominal dia.	m	831.00
992	UV stabilised 2 mm thick corrugated FRP sheet	$m^2$	510.00
993	UV stabilised 2 mm thick plain FRPsheets	$m^2$	452.00
994	Vertical Perforated blocks of size 400x200x200 mm	No	54.00
995	Vertical Soldier -1100mm	No	365.00
996	Vitreous china flat back wash basin 450x300 mm	No	350.00
997	Vitreous china flat back wash basin 550x400 mm	No	550.00
998	Vitreous china flat back wash basin 630x450 mm	No	725.00
999	Vitreous china foot rests 250x125x25 mm	pair	129.00
1000	Vitreous china foot rests 250x130x30 mm	pair	125.00
1001	Vitreous china orissa type w.c. pan size 580 mm	No	1290.00
1002	Vitreous china pedestal type water closet	No	1250.00
1003	Vitreous china 10 litres low level cistern with fittings	No	1200.00
1004	Vitreous china 10 litres low level cistern without fittings	No	700.00
1005	Vitreous china angle back wash basin 400x400 mm	No	485.00
1006	Vitreous china angle back wash basin 600x480 mm	No	725.00
1007	Vitreous china Indian type W.C. Pan size 580 mm	No	500.00
1008	Vitreous china lipped front urinal	No	485.00
1009	Vitreous china orrisa type W.C. Pan size 580 mm	No	1290.00
1010	Vitreous china squatting plate urinal	No	1100.00
1011	Vitreous china toilet paper holder of standard size	No	150.00
1012	Vitrified floor tile 50x50 cm	$m^2$	500.00
1013	Vitrified floor tile 60X60 cm	$m^2$	550.00
1014	Vitrified floor tile 80X80 cm	$m^2$	640.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
1015	Vitrified floor tile 60 X 120 cm	m <sup>2</sup>	685.00
1016	Vitrified floor tile 100X100 cm	m <sup>2</sup>	1100.00
1017	Vitrous china pedestal for wash basin	No	950.00
1018	Wall angle 15x20x3000x0.4mm	No	130.00
1019	Wall Angle 19x19x3000mm	No	80.00
1020	Wall angle 24x24x3000x0.4mm	No	130.00
1021	Wall Attached Bracket 600x1000mm	No	985.00
1022	Wall mounted water closet	No	5500.00
1023	Wall tie-150 (355 mm )	No	45.00
1024	Water based acrylic primer	L	70.00
1025	Water based acrylic PU dispersion	kg	320.00
1026	Water for jetting / blowback	1000 L	1500.00
1027	Water proofing cement paint	kg	57.00
1028	Water proofing materials	kg	44.00
1029	Water proofing materials (PU based)	kg	35.00
1030	Water repellent chemical approved by ASI	L	1200.00
1031	Water thinnable cement primer for interior wall surface having VOC content less than 50 g/ l	L	75.00
1032	waterproofing coating - Acrylic anti-carbonation	L	341.00
1033	waterproofing coating - high build Acrylate Copolymers -based elastomeric	L	232.00
1034	Waterproofing coating - Acrylic Co Polymer	kg	119.00
1035	Waterproofing coating -Polyurethane based cold applied seamless waterproofing	kg	318.00
1036	Waterproofing Membrane - HDPE	m <sup>2</sup>	585.00
1037	Wax polish (ready made)	kg	230.00
1038	Weather Sealant - DC 789	cartridge	150.00
1039	Weather Sealant - Non Staining (600 ml)	No	265.00
1040	Weather Sealant - Normal (300 ml)	No	47.50
1041	Weather Silicon sealant	cartridge	112.00
1042	Weather/ structural non sag. Elastomeric PU sealant (600ml)	No	600.00
1043	Wedge	No	14.00
1044	Wedge expansion hold fastner 1/2" or 12 mm 58.7mm length	No	38.00
1045	Wedge expansion hold fastner 1/4" or 6 mm, 36.5mm length	No	30.00
1046	Wedge expansion hold fastner 3/8" or 10 mm, 44.5mm length	No	35.00
1047	Welding by electric plant	cm	2.00
1048	Welding by gas plant	cm	2.00

<b>Sl No</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate</b>
1049	Wheel 75 mm dia. 40 mm wide	No	62.00
1050	White Cement	t	20000.00
1051	White cement based polymer modified Self curing compound in powder form	kg	15.00
1052	White face insulating board:12 mm	m <sup>2</sup>	245.00
1053	White plastic seat (solid)with lid C.P.brass hinges and rubber buffers	No	410.00
1054	White vitreous china clay half stall urinal flat back 580x380x350 mm or angle back 450x375x350 mm with waste fittings as per IS : 2556	No	1050.00
1055	White vitreous china laboratory sink 450x300x150 mm	No	1650.00
1056	White vitreous china laboratory sink 600x450x200 mm	No	2600.00
1057	White cement based putty	kg	13.00
1058	White glazed fire clay draining board 600x450x25 mm	No	500.00
1059	White glazed tiles 15x15 cms 6mm thick	No	10.00
1060	White lead	kg	170.00
1061	White Vitreous china 10 L (full flush) capacity controlled low level flushing cistern with all fittings	No	875.00
1062	White vitreous china dual purpose closet (Anglo Indian W.C.) suitable for use as squatting pan or European type water closet as per manufacturer's specifications	No	3000.00
1063	White Vitreous China Waterless Urinal	No	9000.00
1064	Wire Coupling Clip	No	9.00
1065	Wire nails	kg	58.00
1066	Wooden screws with plastic rawl plugs 35x8 mm	No	1.00
1067	Yellow line marking compound	kg	530.00
1068	Z Section [Hold Fast]	kg	61.00
1069	Zinc Coated GI Plaster mesh 100mm wide	m	22.00
1070	Zinc Coated GI Plaster mesh 150mm wide	m	25.00
1071	Zinc Coated GI Plaster mesh 200mm wide	m	30.00



## **General Notes**



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## **Chapter 1 : Earth Work – Refer Volume 1 SR**

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## **Chapter 2 : Concrete Works – Refer Volume 1 SR**

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## **Chapter 3 : Mortar - Refer Volume 1 SR**

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## **Chapter 4 : Anti Termite Treatment**

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Sub-terranean termites are responsible for most of the termite damage in buildings. Typically, they form nests or colonies underground. In the soil near ground level in a stump or other suitable piece of timber in a conical or dome shaped mound. The termites find access to the super-structure of the building either through the timber buried in the ground or by means of mud shelter tubes constructed over unprotected foundations.

Termite control in existing as well as new building structures is very important as the damage likely to be caused by the termites to wooden members of building and other household article like furniture, clothing, stationery etc. is considerable. Anti-termite treatment can be either during the time of construction i.e. pre- constructional chemical treatment or after the building has been constructed i.e. treatment for existing building.

Prevention of the termite from reaching the super-structure of the building and its contents can be achieved by creating a chemical barrier between the ground, from where the termites come and other contents of the building which may form food for the termites. This is achieved by treating the soil beneath the building and around the foundation with a suitable insecticide.

### **Materials**

**Chemicals:** Any one of the following chemicals in water emulsion to achieve the percentage concentration specified against each chemical shall be used:

*Chlorphriphos emulsifiable concentrate of 20%*

*Lindane emulsifiable concentrate of 20%*

Anti-termite treatment chemical is available in concentrated form in the market and concentration is indicated on the sealed containers. To achieve the specified percentage of concentration, Chemical should be diluted with water in required quantity before it is used. Graduated containers shall be used for dilution of chemical with water in the required proportion to achieve the desired percentage of concentration. For example, to dilute chemical of 20% concentration. 19 parts of water shall be added to one part of chemical for achieving 1% concentration.

Engineer -in-Charge shall procure the chemical of required concentration in sealed original containers directly from the reputed and authorized dealers, Chemical shall be kept in the custody of the Engineer-in-Charge or his authorized representatives and issued for use to meet the day's requirements. Empty containers after washing and concentrated chemical left unused at the end of the day's work shall be returned to the Engineer-in-Charge or his authorized representative.

**Measurements:** Concentrated chemical in sealed containers shall be measured in litres. Chemicals of different types and concentration shall be measured separately.

### Safety Precautions

Chemical used for anti-termite treatment are insecticides with a persistent action and are highly poisonous. This chemical can have an adverse effect upon health when absorbed through the skin, inhaled as vapours or spray mists or swallowed.

The containers having emulsifiable concentrates shall be clearly labelled and kept securely closed in stores so that children or pet cannot get at them. Storage and mixing of concentrates shall not be done near any fire source or flame. Persons using these chemical shall be warned that absorption through skin is the most likely source of accidental poisoning. Particular care shall be taken to prevent skin contact with concentrates and prolonged exposure to dilute emulsion shall also be avoided. After handling the concentrates or dilute emulsion, workers shall wash themselves with soap and water and wear clean clothing, especially before eating. In the event of severe contamination, clothing shall be removed at once and the skin washed with soap and water. If chemical has splashed into the eyes, they shall be flushed with plenty of soap and water and immediate medical attention shall be sought.

### Treatment

Once the termites have an ingress into the building, they keep on multiplying and destroy the wooden and cellulosic materials, and as such it becomes essential to take measures for protection against termites. Anti termite measures described below are necessary for the eradication and control of termites in existing building. To facilitate proper penetrations of chemical in to the surface to be treated, hand operated pressure pump shall be used.

To have proper check for uniform penetration of chemical, graduated containers shall be used.

Proper check should be kept so that the specified quantity of chemical is used for the required area during the operation. Chemical treatment for the eradication and control of sub-terranean termites in existing building shall be done as per IS 6313 (Part III). Treatment shall be got done only from the approved specialized agencies using the chemical procured directly by the Executive Engineer from reputed and authorized dealers.

Treatment along outside of foundations: The soil in contact with the external wall of the building shall be treated with chemical emulsion at the rate of 7.5 l/m<sup>2</sup> of vertical surface of the sub-structure to a depth of 300 mm. To facilitate this treatment, a shallow channel shall be excavated along and close to the wall face. The chemical emulsion shall be directed towards the wall at 1.75 L/m of the channel. Rodding with 12 mm diameter mild steel rods at 150 mm apart shall be done in the channel. If necessary, for uniform dispersal of the chemical to 300 mm depth from the ground level. The balance chemical of 0.5 l/m shall then be used to treat the backfill earth as it is returned to the channel directing the spray towards the wall surface.

If there is a concrete or masonry apron around the building, approximately 12 mm diameter holes shall be drilled as close as possible to the plinth wall about 300 mm apart, deep enough to reach the soil below and the chemical emulsion pumped into these holes to soak the soil below at the rate of 2.25 l/m.

In soils which do not allow percolation of chemicals to desired depth, the uniform disposal of the chemical to a depth of 300 mm shall be obtained by suitably modifying the mode of treatment depending on site condition.

In case of RCC foundations the soil (backfill) in contact with the column sides and plinth beams along with external perimeter of the building shall be treated with chemical emulsion at the rate of 7.5 l/m<sup>2</sup>. of the vertical surface of the structure. To facilitate this treatment, trenches shall be excavated equal to the width of the shovel exposing the sides of the column and plinth beams upto a depth of 300 mm or upto the bottom of the plinth beams, if this level is less than 300 mm. The chemical emulsion shall be sprayed on the backfill earth as it is returned into the trench directing the spray against the concrete surface of the beam or column as the case may be.

**Treatment of Soil under Floors :** The points where the termites are likely to seek entry through the floor are the cracks at the following locations:

- At the junction of the floor and walls as result of shrinkage of the concrete;
- On the floor surface owing to construction defects;
- At construction joints in a concrete floor, cracks in sections; and
- Expansion joints in the floor.

Chemical treatment shall be provided in the plinth area of ground floor of the structure, wherever such cracks are noticed by drilling 12 mm holes at the junction of floor and walls along the cracks on the floor and along the construction and expansion joints at the interval of 300 mm to reach the soil below. Chemical emulsion shall be squirted into these holes using a hand operated pressure pump to soak the soil below until refusal or upto a maximum of one litre per hole. The holes shall then be sealed properly with cement mortar 1:2 (1 cement: 2 coarse sand) finished to match the existing floors. The cement mortar applied shall be cured for at least 10 days as per instruction of the Engineer-in-charge.

**Treatment of Voids in Masonry :** The movement of termites through the masonry wall may be arrested by drilling holes in masonry wall at plinth level and squirting chemical emulsions into the holes to soak the masonry. The holes shall be drilled at an angle of 45 degree from both sides of the plinth wall at 300 mm intervals and emulsion squirted through these holes to soak the masonry using a hand operated pump. This treatment shall also be extended to internal walls having foundations in the soil. Holes shall also be drilled at wall corners and where door and window frames are embedded in the masonry or floor at ground. Emulsion shall be squirted through the holes till refusal or to a maximum of one litre per hole. Care shall be taken to seal the holes after the treatment.

**Treatment at Points of Contact of Wood Work :** The wood work which has already been damaged beyond repairs by termites shall be replaced. The new timber shall be dipped or liberally brushed at least twice with chemical in oil or kerosene. All existing wood work in the building which is in contact with the floor or walls and which is infested by termites, shall be treated by spraying at the points of contacts with the adjoining masonry with the chemical emulsion by drilling 6 mm holes at a downward angle of about 45 degree at junction of wood work and masonry and squirting chemical emulsion into these holes till refusal or to a maximum of half a litre per hole. The treated holes shall then be sealed.

Infested wood work in chaukhats, shelves, joints, purlins and other items in contact with the floor or the walls shall be provided with protective treatment by drilling holes of about 3 mm diameter with a downward slant to the core of the wood work on the inconspicuous surface of the frame. These holes should be at least 150 mm centre to centre and should cover in entire frame work. Chemicals shall be liberally infused in these holes. If the wood is not protected by paint or varnish two coats of the chemicals shall be given on all the surfaces and crevices adjoining the masonry.

## **Chapter 5 & 6 : Stone & Brick Masonry**

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The contractor shall provide for all labour, materials, operations, equipments and incidentals necessary and required for the completion of all Stone work in Foundation and up to plinth and for brickwork as per drawings from the Architecture & Designs. As per the recommendations of the Technical Working Group, the Stone masonry work in Superstructure is discouraged and the item is not considered in the SR.

The quality of clay bricks, Fly ash bricks & Solid concrete blocks & other masonry units shall be as per relevant IS standards and approved by the Executive Engineer. The finished rates are inclusive of scaffolding charges and separate charges need not be paid unless specified separately.

## **Chapter : 7 Roofing works**

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The items considered in this chapter includes, GI Sheets, Inorganic fibres, Asbestos sheets, Galvalume sheets, various categories of Truss, False ceilings of Calcium silicate, Mineral Fibres, Gypsum boards and other categories of paneling. The item description is self explanatory for the work to be executed. Relevant IS codes are to be referred for selection of materials and the work to be done with unit of measurement in m, m<sup>2</sup> basis as per design drawings.

## **Chapter : 8 Finishing works**

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### ***Plastering :***

**Materials:** The materials of mortar cement and sand, including water should be of the standard specifications. The materials shall be first dry mixed, by measuring with boxes to have the required proportion (as specified), and then water added slowly and gradually and mixed thoroughly.

**Preparation of Surface:** The surface of the wall shall be washed and cleaned and kept wet for two days before plastering. The surface of the wall shall be brushed, cleaned, washed, watered and wetted with water before plastering. In case of cement plaster on cement concrete the face shall be lightly roughened, cleaned, washed and wetted.

**Laying:** The thickness of plastering shall be minimum 12 mm (1/2") with appropriate rendering as per IS 2402- 1963. To ensure uniform thickness of plaster, patches of 15 cm x 15 cm (6") strips 1 m (3') apart of 10 cm (4") wide plaster shall be applied first at about 2 m (6 ft) apart to act as a guide. First mortar shall be dashed and pressed over the surface and then brought to a true smooth and uniform surface by means of float and trowel. Wall plastering shall be started from top and worked down towards floor. Ceiling plastering shall be completed before starting of wall plaster. The plastered surface shall be kept wet for at least 10 days. The surface should be protected from rain, sun, frost etc. All the edges shall be rounded to minimum diameter so that the edges are not damaged during and after construction. The rounding should be least and need to be approved by the Engineer in charge prior to completion of work.

20 mm (3/4") thick plaster if required, should be applied in two layers, first rough layer of mortar 12 mm (1/2") thick shall be dashed and pressed on the surface and when the rough layer has sufficiently set, not later than 48 hours, another layer 8 mm thick shall be applied and pressed smooth by float and trowel.

RCC structures with vertical & horizontal finishes which requires rendering shall be done to minimum 6mm. Due care shall be taken to fix in line and level with clean surface finish.

If specified, the final surface shall be given special finishing textures, as scaped textures, canvas textures, cork-float finish etc. with required tools by engaging an expert worker in the profession.

Overcoming unsatisfactory appearance shall be the main criteria for Plastering.

### ***Painting :***

Materials: All materials shall be delivered to premises in their original unbroken containers or package and bear the manufacturers name, label and brand. Formula and the mixed proportion need to be provided in writing by the contractor before application. Manufacturers colour charts shall be submitted for colour selection. Colour sample shall be submitted on one 400 mm x 400 mm cement board per sample for each type of paint for approval by the Engineer in charge.

Preparation of Surfaces: All oil, grease, dirt, dust, loose mill scale and any other foreign substance shall be removed from the surface to be painted, polished and white washed by the use of solvent and clean wiping materials. In the event the surfaces become otherwise contaminated in interval between cleaning and painting, re-cleaning will be done by the contractor at no additional cost. All surfaces to be painted with approved quality paints shall be free from dust, dirt, fungus, lichen, algae, etc.

For the coat of primer and the paint works, the contractor need to make sure that all the temporary features and removable items such as power points, mirror, geysers etc are to be mounted down before the application of the paint or primer.

Application: The painting shall be laid on evenly and smoothly by means of crossing and laying-off, the latter in the direction of the grain of wood. The crossing and laying off consists of covering the area with paint, brushing the surface hard for the first time and then brushing alternatively in opposite direction at right angles to the same.

Where so stipulated, the painting shall be carried out using spray machines suited for the nature and location of the work to be carried out. The application of paint, especially on the main gates and other external feature shall be applied with spray machines as mentioned. Only skilled and experienced workmen shall be employed for this class of work.

The painted surfaces shall present a uniform appearance and semi-glass finish free from streaks, blisters etc.

### ***Preparation of Surfaces:***

**i) Wood:** Sand paper to a smooth even surface and then dust off and wipe clean, touch up all knots and pit pockets with shellac on interior wood. After priming coat has been applied thoroughly fill all nail holes, irregularities and cracks. Use plaster wood filler for stained or natural finish and putty, glazier putty or wood for painted work.

**ii) Plaster Work:** Fill all holes, cracks and abrasions with Plaster of Paris, properly prepared and applied and smoothed off to match adjoining surfaces. Do not use sand paper on plaster surfaces. Plaster shall be allowed to dry for at least 4 (twelve) weeks before the application of paint.

**iii) Steel and Iron:** All surfaces shall be washed with mineral spirits to remove any dirt or grease before applying paint. Where rust or scale is present, it shall be wire brushed and sandpapered clean. All clean surfaces shall be given one coat of approved phosphate before prime coat in accordance with the manufacturer's specifications. Shop coats of paint that have become marred shall be cleaned off, wire brushed, and spot primer place over the affected area. Paint shall be applied in a manner extending full protection to all surfaces, by applying one coat of primer to all surfaces in an even and complete coverage, after primer coat has dried (three or more) successive coats of proper enamel colour shall be applied for a complete weather resistant surface.

**iv) Galvanized Metal:** Galvanized metal, when new, shall be thoroughly cleaned with naphtha and treated with a moderate solution prepared by mixing 38 grams of copper acetate in a litre of soft water of 39 gm of copper nitrate and 13 g ammonium chloride in a litre of soft water, prepared in a wooden container and applied with a brush. Allow to dry thoroughly and brush off before applying paint, as per the instruction for steel and iron application.

**v) Protect and Clean:** At all times, the general and liberal use of drop cloths shall be a primary requirements for protection purposes. Place drop cloths to adequately protect all finished work. Remove and replace all items of finish hardware, device plates, accessories, lighting fixtures or other removable items. In no case shall any finish hardware or other specified items already fitted into place be painted, unless otherwise specified. Contractor shall protect not only his work at all times, but shall also protect adjacent work and materials by suitable covering during the progress of his work. Upon completion of his work, he shall remove all paint and varnish spots from floors, glass and other surfaces. Any defaced surfaces shall be cleaned and the original finish restored. He shall remove from the premises all rubbish and accumulated material and shall leave the work in clean, orderly and acceptable conditions.

The finish should be as per satisfaction of the Engineer in charge. The area needs to be well protected until the building is completely taken over.

## **Chapter : 9 Flooring**

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The items considered in this chapter includes, Vitrified tiles of all widely used sizes, Granite flooring, Chequered tiles flooring, Cobble stones & Red oxide. The description provided in the specifications is self explanatory for the work to be executed. Relevant IS codes are to be referred for selection of materials and the work to be done with unit of measurement in m<sup>2</sup> basis. For selection of colour & pattern of tiles, the contractor shall obtain the consent of the Executive Engineer.

The vitrified tiles are preferably to be fixed with Cement mortar and for tile on tile work, special adhesives from reputed manufacturers and BIS certified agencies shall be considered.

The vitrified tiles considered in the rate analysis are of reputed top brands with certified IS specification. The marble items are recommended to be used for valuation purpose only.

## **Chapter : 10 Cladding**

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The items considered in this chapter includes, Tile cladding, Granite cladding, Clay tiles, Kitchen slabs, Laterite cladding of standard sizes as per IS Codes and other standards. The description provided in the specifications is self explanatory for the work to be executed. Relevant IS codes are to be referred for selection of materials and the work to be done with unit of measurement in  $m^2$  basis. The choice of colour & pattern of cladding material , the contractor shall obtain the consent of the Executive Engineer.

The cladding tiles are preferably to be fixed with Cement mortar and for tile on tile work, special adhesives from reputed manufacturers and BIS certified agencies shall be considered.

## **Chapter : 11 Steel & Aluminium**

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*Materials:* Steel tubes used in the truss / ramps shall be hot finished tubes, Channels, Angles conforming to IS 1161-1968 and IS 806-1968.

*Fabrication:* The fabrication of trusses / ramps using steel tubes shall conform to IS 800 and welding shall conform to IS 820 and IS 816-1956. The component parts built up C- Channels, I-Beams, rafters, struts, ties, purlins etc of the structure shall be assembled in such a manner that they are neither twisted nor damaged. The members of the truss shall be welded and assembled according to the drawing. All materials shall be straightened before assembly, if necessary, unless required to be of a curvilinear form and shall be free from twist. Cutting and welding at joints, junctions and corners shall be done to suit requirements. Fabrication joints shall not have gaps exceeding 10mm before welding; at no time will putties or fillers be used to seal holes or gaps in welded areas.

*Laying:* The contractor is required to produce fabrication drawings before fabrication work commences. These drawings need to be verified by the Engineer in charge, for proper installation of the truss. The contractor shall temporarily install the trusses, purlins, I-sections, Channels etc on the ground for the proper verification before installation in the project

*Welding:* The elements of the trusses need to be properly welded on the ground before installing them in their final position. All joints shall be tack welded and dimensions and alignment checked prior to full welding. All welds shall conform to IS codes and shall be of an acceptable workmanship.

*Bolting:* Washers shall be specially shaped where necessary, or other means used, to give the nuts and the heads of bolts a satisfactory bearing. In all cases where the full bearing area of the bolt shall not be within the thickness of the parts bolted together washers of appropriate thickness shall be provided to allow the nut to be completely tightened. Edges should be dressed to a neat and workman like finish free from distortion where parts are to be in contact metal-to metal. No dissimilar metals that will encourage electro-chemical corrosion shall be used.

For hooking the truss, base plates need to be installed in the concrete at the time of casting the concrete. The base plates need to be properly anchored with the J-hooks or U-hooks unless otherwise specified. During casting of the concrete, it needs to be made sure that the heads of the screws are not damaged. During the casting procedure all threaded protrusions shall have a protective covering to eliminate thread damage and fouling of the threads with concrete. Please note that the contractor needs to install expansion bolts wherever necessary, i.e. all the metal sections need to be fixed to the structural elements with the help of the expansion bolt.

Hilti expansion bolts are preferred and the length of the bolts shall be minimum of 10 mm dia. and 300 mm length.

**Flattened Ends:** In tubular construction, the ends of tubes may be flattened or otherwise formed to provide for welded, riveted or bolted connections provided that the methods adopted for such flattening do not injure the material. The change of section shall be gradual. Fabricated sample shall be approved by the Engineer in charge prior to fabrication for the work. Hammering of ends to alter their configuration is "not" an acceptable method of changing the section. Hydraulic or mechanical pressure applied in a steady manner thus not altering the molecular structure of the tubing shall be the acceptable practice.

**Painting:** All tubes shall be painted with two coats of red oxide paint at the workshop before delivery at site. The truss complete in all respects shall be erected at site and fixed in position true to shape and plane. Sample of the workmanship shall be approved prior to work. After erection, re-cleaning and painting with two or more coats of red oxide paint may be required and shall be done at no extra charge by the contractor. A total and complete seal of the metal shall be maintained, to have the work accepted.

#### **Measurement:**

The measurement shall be done in weight of the work done in kg. The rate shall include the cost of all the tubes, base plates, J-hooks or U-hooks, bolts, welding, completely erected in position including labour. The rate also includes the cost for required number of coats over anticorrosive paint of approved quality and brand. The metal sections shall be fixed to the structural elements with the help of expansion bolts only. Nothing extra shall be provided for the expansion bolts.

Nothing extra shall be paid to the contractor for the purlin support and the base plaster unless specified. The metal C-Channels, I-beams, truss, rafters, purlins are also included within the particular rate and nothing extra shall be provided to the contractor unless specified.

#### **Chapter : 12 Wood and PVC Work**

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The chapter consists of all the wood work items operated in the State. The usage of Teak wood is not recommended unless in specific cases, approved by the Government. The items such as Salwood (Red & White) are recommended for all Departmental buildings.

## **Chapter : 13 Water Supply & Plumbing Work**

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For any other items which are not found in SR and which are essential for the successful completion of work shall adopt items of BWSSB SR.

## **Chapter : 14 Sanitary Works & Bath Fittings**

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Necessary Sanitary items of reputed brand specification required for Building works conforming to relevant Indian Standard codes as specified in the Addendum IV with appropriate & mostly used sizes & item rates are considered in this chapter. For any other items which are not found in SR and which are essential for the successful completion of work shall adopt items of BWSSB SR.

## **Chapter : 15 Water Proofing works**

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All waterproofing work shall be carried out by the contractor through a specialized Waterproofing agency as specified in the tender. The work shall be carried out strictly in accordance with the instructions of the manufacturer of the waterproofing materials used in waterproofing treatment and the contractor shall be responsible for the proper production of record of ingredients used and the performance of the waterproofing work done.

The entire work shall be covered by a performance guarantee for waterproofing for the period mentioned in the product description.

*1. Preparation of Surfaces:* The surface on which the water proofing is to be applied shall be thoroughly cleaned. All the unwanted impurities need to be cleaned as far as applicable prior to the application of the materials. The graded roof surface, concrete fillets, and faces of wall shall be thoroughly cleaned with wire brush and all scales, mortar dropping etc. removed. Any cracks shall be cut into "V" section and filled up flush with cement mortar 1:4 or blown up. Cleaning of surface or treating the cracks shall not be paid for separately.

*2. Mixing & Application:* If the waterproofing compound approved has two elements to be mixed, the contractor shall mix in presence of the Engineer in charge or the site representative as per the instruction of the manufacturers' specification. Furthermore, all the mixing procedures and application procedures shall be thoroughly applied as per the manufacturers' specification. Special care need to be taken during mixing. Where the treatment consists of two layers, the second layer shall be laid similar to the first with joints in the two layers properly staggered.

The items of Polyurethane based & Styrene Butadiene Styrene (SBS) to be used generally for all type of concrete structure. Apart from this, the items of waterproofing to be used based on type of structure is also mentioned.

**Measurements:** The rate for the waterproofing work to be carried out under the contract shall include all labours, materials, tools, plants, equipments, transport and all the operations required for carrying out and completing the work, whether spelt out in detail or not, but including removing all loose materials, loose scales, mortar droppings and oil, grease etc. and removing all debris / rubbish outside the site premises, curing where required.

## **Chapter : 16 Energy Conservation Building Code**

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### **The Purpose of Karnataka Energy Conservation Building Code**

Rapid increase in building stock in major cities, coupled with increase in electricity use for space conditioning is resulting in rapid increase in electricity use in building sector. Projection done by NITI Aayog indicates that the electricity consumption for the building sector is expected to increase 6-13 times by 2047, and as indicated by BEE, the energy consumption of overall building sector will raise by more than 600% in the upcoming decade. Data collected from a sample of urban middle-income apartments shows that electricity for providing thermal comfort contribute to 30- 60% of the annual electricity consumption. With the important aspect of thermal comfort into consideration, which is of utmost importance in all kinds of housing, but more so in case of affordable housing, so as to ensure health and well-being of the occupants the Bureau of Energy Efficiency, Government of India envisaged a phased approach for the states for the development of the building energy conservation code.

In connection to this, the Karnataka Energy Conservation Building Code (ECBC) – 2014 was notified in the Gazette on 27th November 2014 by the Government of Karnataka. It came into effect in the State from the date of notification. Further, the Karnataka Renewable Energy Development Limited(KREDL) has updated the existing K ECBC 2014 and the new version of Karnataka ECBC 2018 and ECBC Rules 2018 have been prepared in-line with Bureau of Energy Efficiency ECBC 2017. The updated K ECBC (Code) -2018 and K ECBC Rules-2018 were notified by the Energy Department, Government of Karnataka and which were notified in the Gazette on 28th May 2020.

In pursuance to this, the list of energy efficient building materials (Civil) was prepared by the Karnataka Renewable Energy Development Limited for inclusion in the Public Works Department Schedule of Rates. Accordingly, many of the energy efficient materials were added in the Civil SR of PWD in the year 2018-19.

With the advancement in technologies and need for revision of the Civil SR of PWD, the KREDL with the support of ECBC Cell, Architects and in consultation with the various stakeholders has prepared the updated list of energy efficient building materials.

### **The need for ECBC and the rating systems**

The cooling/heating load of a building has the highest electricity consumption in a building, thus by utilising ECBC or energy efficient materials, the cooling/heating load can be significantly

reduced. This will in turn reduce the total electricity consumption & result in cost savings. This reduction in cooling/heating load can be done by providing insulations to the wall/roof and by providing Energy Efficient glass for windows and a suitable evaluation tool is essential to evaluate the performance of the Energy Efficient Building. The tool comprises a predefined set of criteria relating to the design, construction, and operations of buildings.

In India, there are predominantly three rating systems –

Leadership in Energy and Environmental Design (LEED),

The rating systems from Indian Green Building Council (IGBC) and

The Green Rating for Integrated Habitat Assessment (GRIHA).

These green rating systems aim to quantify the environmental, economic and socio-economic benefits of a building design with an emphasis on sustainable site planning, optimized energy performance, efficient materials, construction practices, water and waste management strategies and indoor environmental quality.

In Karnataka, with the incorporation of items of ECBC materials in SR of 2018-19, various large scale works have been taken by the Public and Private sector. One such example in the Government sector building is the Kumara Krupa Guest house in Bengaluru, which is one of the first ECBC compliant buildings in India. It has used AAC blocks for External wall and Insulation for the roof. Similarly, KREDL building in Nagarbhavi, Karnataka is aiming to become the first Super ECBC compliant Building in Karnataka by adopting measures like very high efficient glass for the façade, AAC blocks for external walls and roof insulation. Apart from the above mentioned buildings, there are various buildings at different stages of construction which have or will adopt energy efficient building materials/equipment in their construction practices.

The materials proposed to be added to the ECBC section of the SR have the significant thermal resistance properties. These properties will reduce heat gain through building envelope (Wall, Roof & Window) by restricting the flow of heat from outside to inside of the building. Thus, the energy required to cool the building will be reduced, which will lead to reduction in electricity consumption. Materials with higher thermal resistance and lower thermal transmittance value will make the building energy efficient. Technically when compared to a conventional building an ECBC building will consume 25-30% less electricity, depending upon the location and climatic conditions. All materials suggested to be incorporated in the ECBC section of the SR have lower thermal transmittance value (U-value) and higher thermal resistance value (R-value), and are called as insulation materials. These materials also aims at limiting heat gains/loss from building envelope. Building envelope consists of the walls, roof, windows and fenestration. Major parts of India have hot and humid climates. Research presented in the National Building Code (NBC) and Handbook on Functional Requirement for Buildings (SP: 41), both published by the Bureau of Indian Standards, has established a direct correlation between the design of building envelop and

the heat gains from the building envelope. Heat gains in turn determine the indoor temperatures, thermal comfort and sensible cooling demand. Current designs of building envelope are often not guided by considerations of heat gain and resultant cooling requirement to achieve indoor thermal comfort. It is seen that current practices of commercial buildings design and construction show a large variation in heat gains and hence in the sensible cooling demand. The ratio between the minimum to maximum sensible cooling demand can vary by as much as 1:4.

Apart from the insulation material, a specific type of roof tile has also been proposed which has a high solar reflective index, i.e. it reflects more than 70% of the solar radiation incident on the surface of the roof. This reduces the cooling load on the building significantly, and simultaneously increasing the thermal comfort for the occupants.

Thus to reduce heat gains/loss from building envelope a set of building materials have been suggested which will reduce the mentioned phenomenon to occur. The suggested materials have low thermal conductivity compared to conventional materials, which is most important requirement for material to reduce heat gain/loss. Below are the materials along with their place of application (whether wall or Roof) and their corresponding thermal conductivity values (K-value).

1. *Providing and fixing polyurethane foam (PUF) slab 40 mm thick average with PU slab density 36+/-2 kg/m<sup>3</sup>*

Polyurethane foam panels/slabs are made of isocyanate and polyether. There are two types of polyurethane foam: soft foam and rigid foam. Soft foam is open-cell structure, hard foam is closed-cell structure.

**For wall insulation, advantages of PUF slab compared to EPS/XPS:** Compared to EPS and XPS for wall insulation, PUF slab has best performance at every aspect like better thermal efficiency, better temperature resistance and better compressive strength, so it's widely used in high energy saving projects.

2. *Epoxy based bonding adhesive*

The adhesive must have high adherence, must be waterproof and water vapor permeable. It can also be acrylic polymer-based adhesive. The adhesive should be applied to the insulation board at a total consumption of 6-7 Kg/m<sup>2</sup>. The adhesive must have class A1 fire rating as per UNE-EN 13501-1, and the diffusion coefficient of water vapor less than or equal to 15 and preferably with CE marking.

3. *Providing and fixing cast in situ polyurethane foam (PUF) spray with PU foam spray.*

Sprayed PU foam is a two-component chemically modified polyurethane foam which achieves superior U-value and air-permeability results.

Spray applied PUF is best suited for varying wall profiles, where installation of prefabricated boards is difficult. Closed cell polyurethane foam provides an extra layer of resilience against the

ingress of wind driven rain and flood water. Since it is completely monolithic, there would not be any gaps in between thereby reducing thermal bridging.

#### *4. Providing Extruded Polystyrene thermal insulating boards*

Extruded polystyrene (XPS) foam is a pre-formed closed cell rigid insulation that's also formed with polystyrene polymer, but manufactured using an extrusion process, and is often manufactured with a distinctive colour to identify product brand. Due to the manufacturing process, XPS insulation is typically available only in standard dimension square or rectangular boards. Advantages of XPS boards it has very good cost performance, good thermal insulation, better compression properties compared to EPS and it is easy to apply.

#### *5. Providing and fixing polyurethane foam (PUF) spray with PU foam spray for Cavity wall insulation*

Sprayed PU foam is a two-component chemically modified polyurethane foam which achieves superior U-value and air-permeability results. Injected PU foam can be used in cavities for a superior performing insulation which also helps to bond the inner and outer leaves providing strength to the building.

**Advantages:** Spray applied PUF is best suited for varying wall profiles, where installation of prefabricated boards is difficult. Closed cell polyurethane foam provides an extra layer of resilience against the ingress of wind driven rain and flood water. Since it is completely monolithic, there would not be any gaps in between thereby reducing thermal bridging.

#### *6. Providing and fixing glass wool slab- resin bonded with density for Cavity wall insulation.*

Glass wool, also known as fibreglass, is made from a mixture of natural and recycled glass which is melted at 1,450°C and is then spun quickly to create fibres. These fibres are then bound together to be used as insulation. The glass fibres create pockets of air which act as barriers to prevent heat loss, because air is a poor conductor of heat.

**Advantages of glass wool insulation are:** It is non-combustible/fire proof and Perfectly suited to seal uneven surfaces, because of its compressibility

**Disadvantages of glass wool insulation:** When processing and installing glass wool insulation, mineral fibers are released. These may cause irritation and inflammations of the eyes, skin, and airways. It is therefore advisable to wear a mask, dust goggles and gloves.

#### *7. Providing and fixing rock wool slab - resin bonded rock wool for Cavity wall*

Mineral wool, also known as rock wool or stone wool, is made from a selection of raw materials, such as stone and glass.

These raw materials are treated in a similar way to glass, in that they are melted at high temperatures until they melt, and then they are spun to form fibres, similar to wool. This wool is then packaged up into batts, rolls or slabs.

Advantages of rockwool insulation are that it provides superior fire resistance properties without fire stops requirements. It is More breathable material compared with EPS. It offers solid support for the render. It provides excellent acoustic insulation and it is completely recyclable.

#### *8. Overdeck insulation with Polyurethane foam*

This is a two component (Polyol and isocyanate based) spray applied polyurethane based insulation system which applied directly over the roof by spraying. This insulation has an advantage of non-interference with internal construction activities/operations of a building, jointless adhesion to roof surfaces due to seamless and monolithic nature of spray and speedy application.

Minimum requirements for Spray applied polyurethane foam as per ASTM D7425: Density – Greater than 40 Kg/m<sup>3</sup>, Thermal conductivity – Less than 0.025 W/mK, Closed cell content – Greater than 90%, Compressive strength – Minimum 276 KPa, Tensile strength – Minimum 276 KPa, Water absorption – Less than 5%. The spray applied PUF should be CFC and HCFC free, in compliance to IS 12432 Part 3, and fire resistance property conforming to Class B2 as per DIN 4102.

**Advantages of spray PUF for over deck insulation:** The thermal conductivity of spray applied polyurethane foam is lesser than EPS/XPS boards. And hence, it has better thermal efficiency. Since it is an in-situ spray application, it is completely jointless and monolithic. It is a fully bonded system to the mother slab with rigid PU foam, thereby ensuring complete dimensional stability. All joints, corner, terminations and pipe penetrations can be treated effectively through system as it is spray applied.

#### *9. Under deck insulation with Polyurethane foam*

Under deck insulation is not effective when compared to over deck insulation. As per the NBC 2016, If the thermal barrier is provided under RCC roof, as in under-deck insulation, some heat passes through it and heats up the ambience of the room. This decreases the comfort level of the room and if the building is air conditioned, increases the air conditioning load. Over-deck insulation is, therefore, considered advantageous over under-deck insulation in hot climates.

**Expanded** polystyrene (EPS) foam is a pre-formed closed-cell insulation that's manufactured by "expanding" a polystyrene polymer; the appearance is typically a white foam

Plastic insulation material (the likes of which can be found as merchandise packaging). Expanded polystyrene is very versatile because it can be moulded and cut into different shapes.

**Advantages of EPS Boards** Since these are preformed boards, does not require any trained technician for application.

*10. High Efficient glazing (Double & Triple Glazing):*

Insulating glass (IG) consists of two or more glass window panes separated by a vacuum or gas-filled space to reduce heat transfer across a part of the building envelope. A window with insulating glass is commonly known as **double glazing or a double-paned window, triple glazing or a triple-paned window, or quadruple glazing or a quadruple-paned window**, depending upon how many panes of glass are used in its construction. Solar Heat Gain Co-efficient (SHGC) & Visual Light Transmittance (VLT) are the major properties that account for selection of glazing along with thickness of the glass.

**Advantages of High Efficient Glazing:** It reduces radiative heat transfer into the dwelling units. Thereby reducing overall heat transfer per unit area of the occupied region.

## **Chapter : 17 Rain Water Harvesting**

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**Definition :** Rainwater harvesting is the collection of rainfall. In most cases, a roof is used for this purpose.

The rainwater then flows through the gutters, into a collection tank. The collected water can be used for small scale irrigation (of vegetable gardens etc.), clothes washing, bathing and after treatment also for drinking and food preparation.

Rainwater offers advantages in water quality for both irrigation and domestic use. Rainwater is naturally soft (unlike well water), contains almost no dissolved minerals or salts, is free of chemical treatment, and is a relatively reliable source of water for households

A rooftop rainwater harvesting system consists the following elements:

- (a) Collection area
- (b) Conveyance/piping system,
- (c) Filtration /treatment
- (d) Storage
- (e) Usage/ Recharge

The collection area in most cases is the roof of a house or a building. The effective roof area and the material used in constructing the roof influence the efficiency of collection and the water quality.

A conveyance system usually consists of gutters or pipes that deliver rainwater falling on the roof top to manholes or other storage vessels. Both drain pipes and roof surfaces should be

constructed of chemically inert materials such as wood, plastic or fiberglass, clay tiles etc in order to avoid adverse effects on water quality.

The water ultimately is stored in a storage tank, which should also be constructed of an inert material. Reinforced concrete, Brick masonry, fiberglass, or stainless steel are suitable materials.

Storage tanks may be constructed as part of the building, or may be built as a separate unit located some distance away from the building.

The specifications of various types of piping systems used in RWH, manholes, manhole covers, Open surface drains, road gully chamber, Dispersion trenches, soak pits are provided in the same can be adopted.

The Specifications for Storage tanks/Underground sumps shall be followed as per IS 2470:1986 (Part I & II).

The recharge wells/pits are provided with the bore wells to recharge the ground water table directly draining rainwater through filter media to the aquifer. The recharge wells/pits are also used for drawing water from the aquifer by making deep tube well in the or near the recharge pit.

The specifications for tube well for the withdrawal of underground water are also provided in this chapter with the relevant IS codes to be followed.

For detailed Rain Water Harvesting pit, the manual of Rain Water Harvesting specified by CPWD, DMA, RDPR shall be followed.

## **Chapter 18 : Structural Glazing**

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The technical specification of CPWD & IS Codes specified shall be followed for the material selection, procedure for installation & the testing criteria.

## **Chapter 19 : Dismantling & Demolition**

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**Dismantling** – The term “dismantling” implies carefully taking up or down and removing the building materials without damaging them. The articles dismantled shall be lowered to the ground and not thrown. Dismantling work shall cover complete removal of the existing structure or part of a work including all relevant items as indicated or as directed, clearing the site, sorting out useful materials and stacking them as described and disposing of the unserviceable materials.

**Demolition** – The term “demolition” implies breaking up the components of the structure building and then taking the components materials and rubbish as directed. The removal of overlaying or adjacent materials, if required for demolition of the structure shall be separately indicated.

Unless otherwise specified, the building/structure shall be dismantled/demolished upto 450mm below up or down. This shall consists of demolishing whole or part of work either manually using mechanical force or by implosion using explosion, including all relevant items as indicated or as directed, clearing the site, sorting out useful materials and stacking them as directed and disposing of the unserviceable at ground level.

*Serviceable and unserviceable materials*

Inventory – Before dismantling/demolition operations are undertaken by the contractor, inventory of all materials, fittings and fixtures (except hidden materials) which are considered useful shall be made and signed by the engineer and the contractor, wherever the operations are entrusted to a contractor.

Serviceable materials – Any material which is in the opinion of the engineer could be reused or otherwise useful will be considered as serviceable

Unserviceable materials – Any material declared by the engineer are not serviceable shall be considered as unserviceable.

A register shall be opened at the work site to show day-to-day account of the turnout of salvaged materials. The register shall also indicate whether dismantled materials are properly stacked or wasted.

Unless otherwise specified, the lead for disposal of materials is to the nearest appropriate place. Separate or additional lead shall be given only for extra ordinary conditions.

The contractor shall be reasonable for the safe custody of serviceable materials until handed over to the engineer's representative or incorporated in the work and a written receipt for the same obtained.

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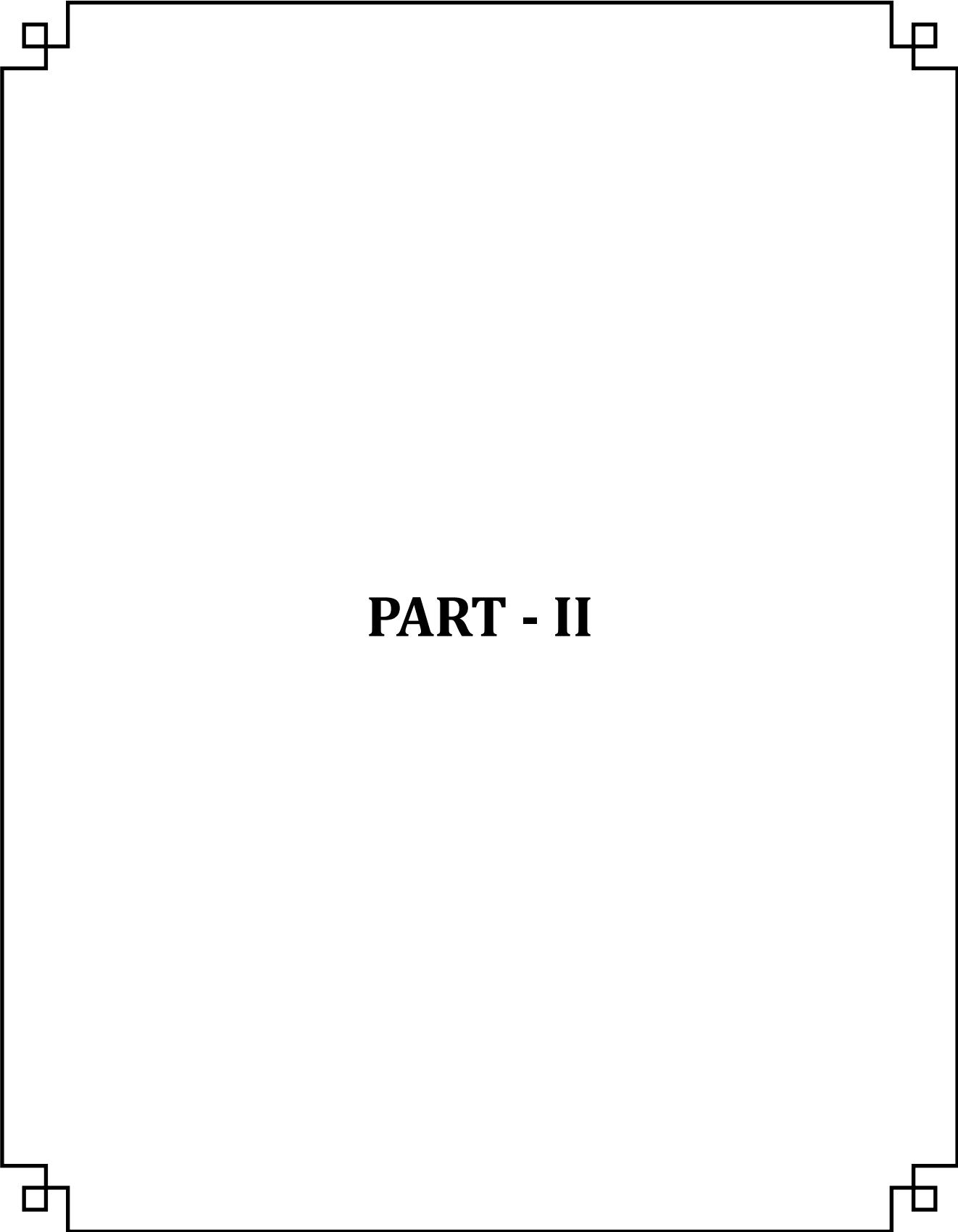
## **Chapter 20 : Repairs to Buildings**

This chapter contains items which are required for immediate action of Repair & items of preventive maintenance.

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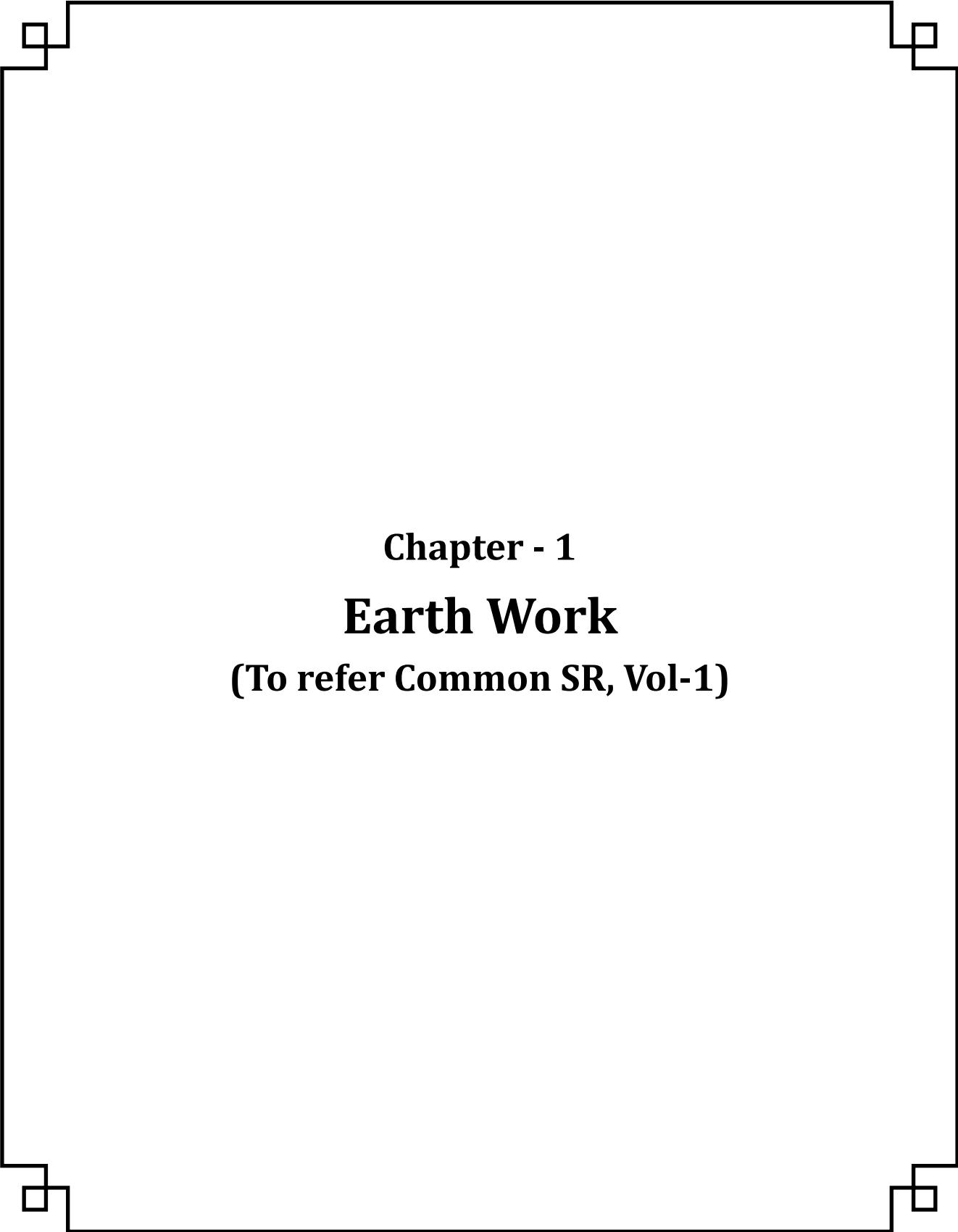
## **Chapter 21 : Conservation of Heritage Structures**

This chapter is prepared with the intention of conservation of Heritage buildings of the state which are affiliated to Archaeological survey of India. The items in this chapter are useful for Engineering departments involved in maintenance of Heritage structures.



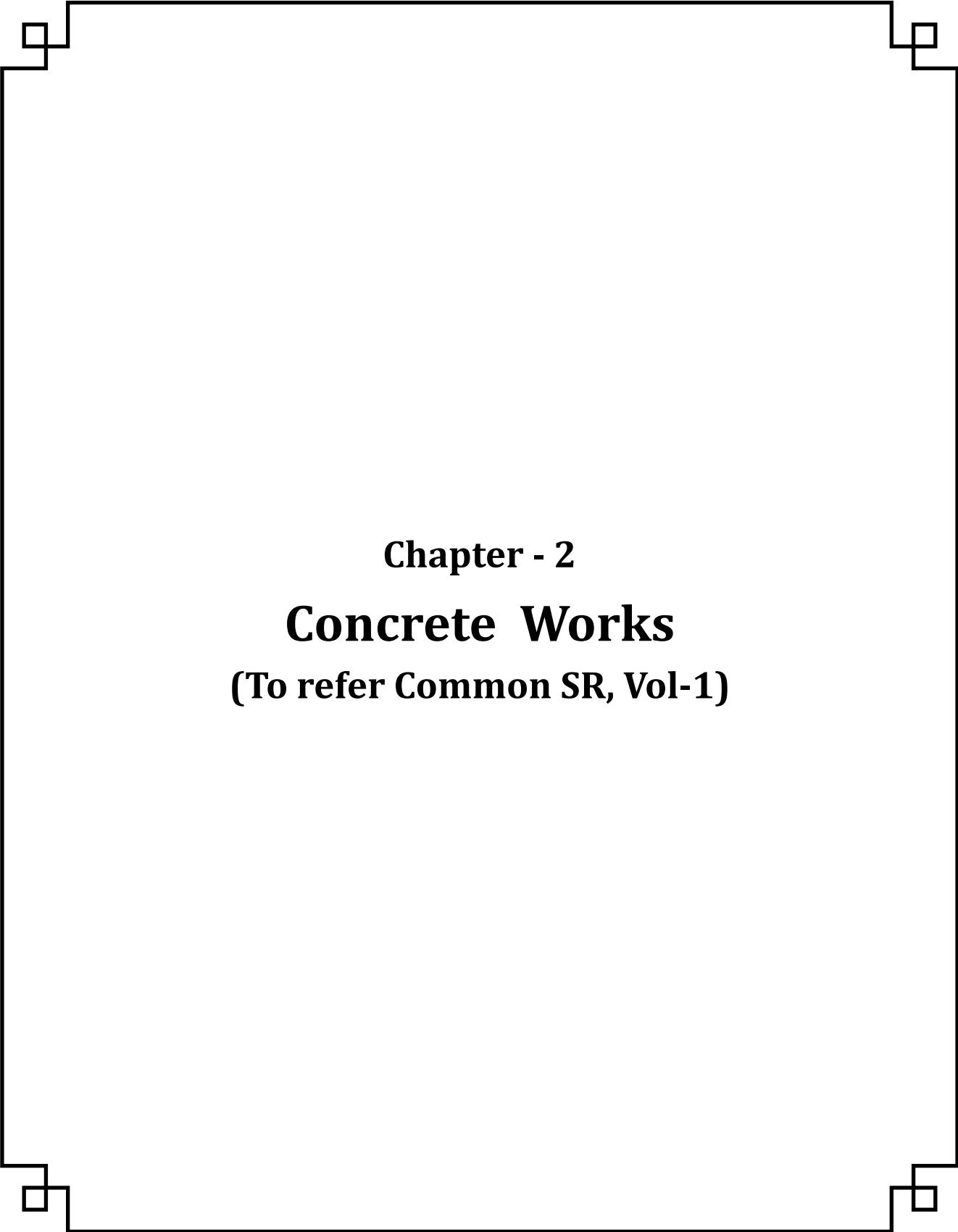
## **PART - II**





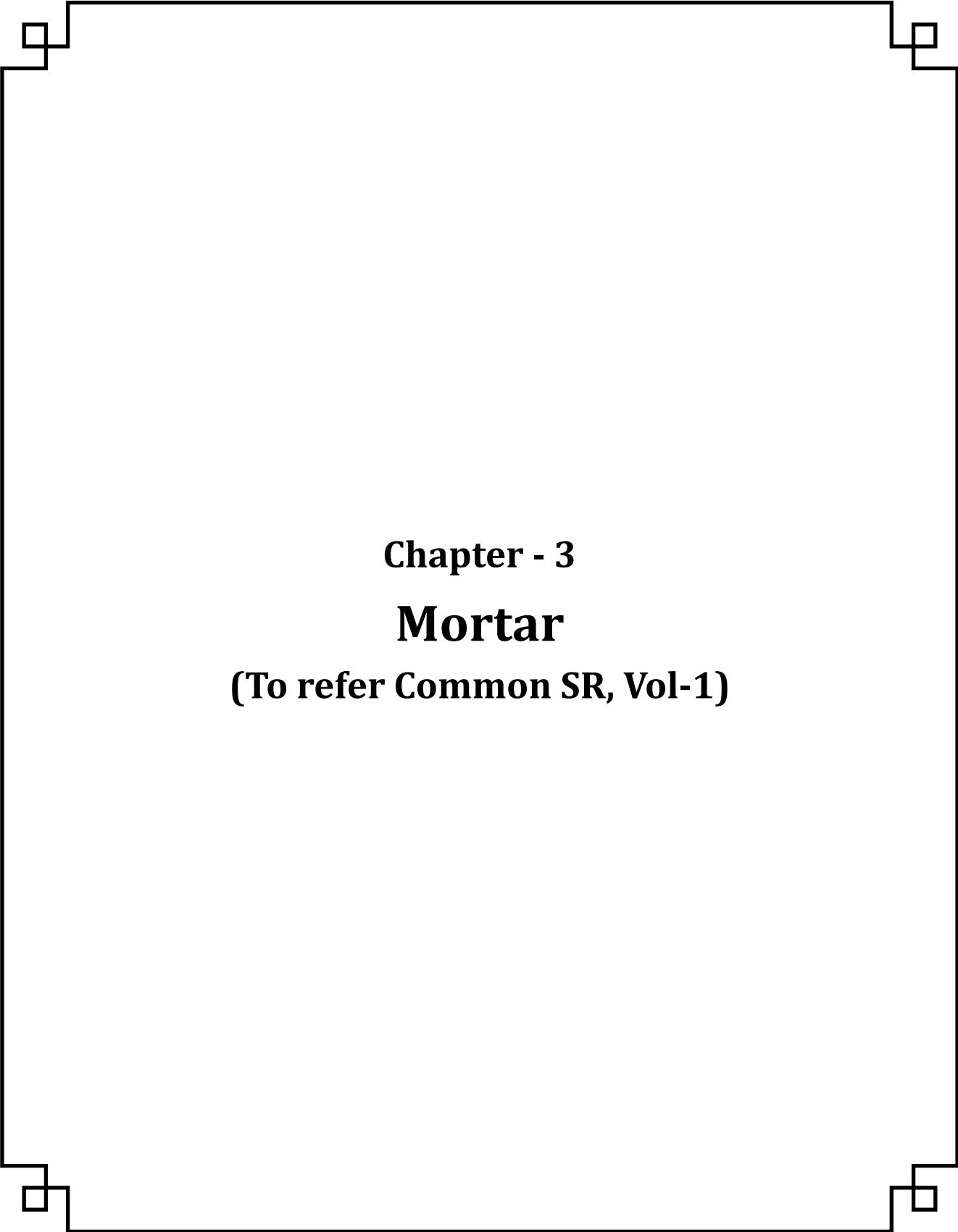
**Chapter - 1**  
**Earth Work**  
**(To refer Common SR, Vol-1)**





**Chapter - 2**  
**Concrete Works**  
**(To refer Common SR, Vol-1)**





**Chapter - 3**  
**Mortar**  
**(To refer Common SR, Vol-1)**



## PART - III



## Chapter - 4

# ANTI-TERMITE TREATMENT



Sl. No.	Specification	Unit	Rate ₹
<b>4.0 ANTI-TERMITE TREATMENT</b>			
4.1	Providing and injecting chemical emulsion for Pre-constructional Anti-Termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits with Chlorpyriphos 20% E.C. / Lindane 20% E.C. @ 3.19 l/m <sup>2</sup> including cost of chemical, diluting in water to one percent concentration, labour, usage charges of machinery, complete as per specifications.	m <sup>2</sup>	<b>118.00</b>
4.2	Providing, diluting and injecting chemical emulsion for Post-constructional antitermite treatment with Chlorpyriphos/ Lindane E.C. 20% with 1% concentration		
4.2.1	Along external wall where the apron is not provided using chemical emulsion @ 7.5 l/m <sup>2</sup> of the vertical surface of the substructure to a depth of 300mm including excavation channel along the wall & rodding etc. complete:	m	<b>112.00</b>
4.2.2	Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 l/m including drilling and plugging holes etc.:	m	<b>55.00</b>
4.3	Treatment of soil with Chloropyriphos/Lindane E.C. 20% with 1% concentration under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1:2 (1 cement : 2 Coarse sand) to match the existing floor:	m <sup>2</sup>	<b>348.00</b>
4.4	Treatment of existing masonry using chemical emulsion with Chlorpyriphos/ Lindane E.C. 20% with 1% concentration@ one litre per hole at 300 mm interval including drilling holes at 45 degree and plugging them with cement mortar 1:2 (1 cement : 2 coarse sand) to the full depth of the hole :	m	<b>93.00</b>
4.5	Treatment at points of contact of wood work by chemical emulsion Chlorpyriphos/ Lindane (in oil or kerosene based solution) @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	m	<b>350.00</b>
4.6	Providing general disinfection services, spraying of insecticide and pesticide inside and outside the building (flies, bedbugs,lizards, cockroaches, spiders caterpillars etc., including cost of materials labour lead, usage charges of equipments etc., complete.	m <sup>2</sup>	<b>39.00</b>



**Chapter - 5**

**STONE MASONRY WORKS**



Sl. No.	Specification	Unit	Rate ₹
<b>5.0 STONE MASONRY WORKS</b>			
5.1	Providing Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with :		
5.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	m <sup>3</sup>	5,611.00
5.2	Providing Coursed rubble masonry (first sort) with hard stone in foundation and plinth with Cement mortar 1:6 (1 cement : 6 coarse sand)	m <sup>3</sup>	6,618.00
5.3	Providing Coursed rubble masonry (second sort) with hard stone in foundation & plinth with Cement mortar 1:6 (1 cement : 6 coarse sand)	m <sup>3</sup>	6,205.00
5.4	Providing Size Stone masonry with hard stone in foundation & plinth with Cement mortar 1:6 (1 cement : 6 coarse sand)	m <sup>3</sup>	6,389.00
5.5	Providing and constructing laterite size stone masonry including cost and conveyance of all materials curing etc complete as per specification I.S. 3620/1979 having compressive strength not less than 3.5 N/mm <sup>2</sup> for saturated dry samples - For Foundation in CM 1:6.	m <sup>3</sup>	6,374.00
5.6	Providing and constructing laterite size stone masonry including cost and conveyance of all materials curing etc complete as per specification I.S. 3620/1979 having compressive strength not less than 3.5 N/mm <sup>2</sup> for saturated dry samples - For Basement in CM 1:6.	m <sup>3</sup>	6,448.00
5.7	Providing and constructing laterite size stone masonry including cost and conveyance of all materials curing etc complete as per specification I.S. 3620/1979 having compressive strength not less than 3.5 N/mm <sup>2</sup> for saturated dry samples - For Super structure in CM 1:6.	m <sup>3</sup>	6,755.00
5.8	Providing and constructing laterite size stone masonry in CM 1:6 using available Laterite Stone including cost and conveyance of materials (except Laterite), curing etc complete as per specification I.S. 3620/1979 having compressive strength not less than 3.5 N/mm <sup>2</sup> for saturated dry samples - For Basement in CM 1:6.	m <sup>3</sup>	3,627.00
5.9	Providing and constructing laterite size stone masonry in CM 1:6 using available Laterite Stone including cost and conveyance of materials (except Laterite), curing etc complete as per specification I.S. 3620/1979 having compressive strength not less than 3.5 N/mm <sup>2</sup> for saturated dry samples - For Super structure in CM 1:6.	m <sup>3</sup>	3,957.00



**Chapter - 6**  
**MASONRY WORKS**



Sl. No.	Specification	Unit	Rate ₹
<b>6.0 MASONRY WORKS</b>			
6.1	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>8,220.00</b>
6.2	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>7,978.00</b>
6.3	Providing Brick work with common burnt clay modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>8,874.00</b>
6.4	Providing Brick work with common burnt clay modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>8,661.00</b>
6.5	Providing Brick work with common burnt clay machine moulded perforated bricks of class designation 5.0 conforming to IS: 2222 in superstructure above plinth level in cement mortar 1:6 (1 cement : 6 coarse sand) With Non modular bricks including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>10,977.00</b>
6.6	Providing Brick work with common burnt clay machine moulded perforated bricks of class designation 5.0 conforming to IS: 2222 in superstructure above plinth level in cement mortar 1:6 (1 cement : 6 coarse sand) With Modular bricks including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>11,624.00</b>
6.7	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level in all shapes and sizes in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	<b>8,211.00</b>

Sl. No.	Specification	Unit	Rate ₹
6.8	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level in all shapes and sizes in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	7,969.00
6.9	Extra for forming cavity 5 cm to 11.5 cm wide in cavity walls with necessary weep and vent holes including use of cores and cost of providing and fixing bitumastic coated M.S. ties 300 mm long of 25x3 mm section at not less than 3 ties per m <sup>2</sup> as per approved design.	m <sup>2</sup>	164.00
6.10	Providing half brick masonry with common burnt clay Non Modular bricks of class designation 3.5 in cement mortar 1:3 (1 Cement : 3 coarse sand) in superstructure for closing cavity 5 to 7.5 cm wide in cavity wall complete with 10cm / 11.4 cm wide bitumen felt type 3 grade 1 including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m	343.00
6.11	Providing Brick work 7 cm thick with common burnt clay Non Modular brick of class designation 3.5 in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth level including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>2</sup>	776.00
6.12	Providing Halfbrick masonry with common burnt clay Non Modular bricks of class designation 3.5 in foundations and plinth in Cement mortar 1:3 (1 cement : 3 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>2</sup>	1,003.00
6.13	Providing Halfbrick masonry with common burnt clay Non Modular bricks of class designation 3.5 in foundations and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>2</sup>	976.00
6.14	Providing Half brick masonry with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level up to floor 1 level cement mortar 1:3 (1 cement : 3 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>2</sup>	1,060.00
6.15	Providing Half brick masonry with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level up to floor 1 level cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>2</sup>	1,033.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
6.16	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	<b>m<sup>2</sup></b>	<b>95.00</b>
6.17	Providing Tile brick masonry with common burnt clay Non Modular tile bricks of class designation 5.0 conforming to IS 2690 (Part I) in foundation and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>12,634.00</b>
6.18	Providing Tile brick masonry with common burnt clay Non Modular tile bricks of class designation 5.0 conforming to IS 2690 (Part I) in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>12,246.00</b>
6.19	Providing Tile brick masonry with common burnt clay machine moulded tile bricks of class designation 5.0 conforming to IS : 2690 (Part I) in foundation and plinth in cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>16,197.00</b>
6.20	Providing Tile brick masonry with common burnt clay Non Modular tile bricks of class designation 5.0 conforming to IS 2690 (Part I) in superstructure above plinth level up to floor I level in cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>16,697.00</b>
6.21	Providing Tile brick masonry work 5 cm thick with common burnt clay Non Modular tile bricks of class designation 5.0 conforming to IS 2690 (Part I) in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth and upto floor I level including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>2</sup></b>	<b>987.00</b>
6.22	Providing Brick work with clay flyash Non Modular brick of class designation 3.5 in superstructure above plinth level up to floor I level in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>8,080.00</b>
6.23	Providing Brick work with clay flyash Non Modular brick of class designation 3.5 in superstructure above plinth level up to floor I level in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>7,770.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
6.24	Providing Brick work with Non Modular fly ash bricks conforming to IS:12894, class designation 5.0 average compressive strength in super structure above plinth level up to floor I level in Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>7,840.00</b>
6.25	Providing Brick work with Non Modular fly ash bricks conforming to IS:12894, class designation 5.0 average compressive strength in super structure above plinth level up to floor I level in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>7,627.00</b>
6.26	Providing and laying Autoclaved Aerated Cement blocks masonry with 100 mm thick AAC blocks as per IS 2185 (Part III) in super structure above plinth level up to floor I level in cement mortar 1:4 (1 cement : 4 coarse sand ) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>3</sup></b>	<b>8,557.00</b>
6.27	Providing and laying Gypsum panel partitions 100 mm thick with water proof Gypsum panels of size 666x500x100 mm, made of calcite phosphor Gypsum fixed with tongue and groove, jointed with bonding plaster as per manufacturer's specifications in superstructure above plinth level up to floor I level. Gypsum blocks will have a minimum compressive strength of 9.3 kg/cm <sup>2</sup> including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>2</sup></b>	<b>819.00</b>
6.28	Providing Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay. Non Modular bricks of class designation 3.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m</b>	<b>66.00</b>
6.29	Half brick masonry with Non Modular fly ash bricks of class designation 5.0, conforming to IS :12894, in super structure above plinth and upto floor I level cement mortar 1 : 3 (1 cement : 3 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>2</sup></b>	<b>988.00</b>
6.30	Half brick masonry with Non Modular fly ash bricks of class designation 5.0, conforming to IS :12894, in super structure above plinth and upto floor I level cement mortar 1 : 4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	<b>m<sup>2</sup></b>	<b>961.00</b>

Sl. No.	Specification	Unit	Rate ₹
6.31	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks as per IS 2185 (Part III) in super structure above plinth level up to floor I level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	7,978.00
6.32	Providing and constructing load bearing wall with Solid Concrete blocks of size 400x200x200mm having block density more than 1800kg/m3 and minimum compressive strength of 4.00 N/mm2 conforming to IS 2185 (Part - I) - 2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials, labour, scaffolding and curing, usage charges of machinery etc complete as per specifications.	m <sup>2</sup>	1,310.00
6.33	Providing and constructing load bearing wall with Solid Concrete blocks of size 400x150x200mm having block density more than 1800kg/m3 and minimum compressive strength of 4.00 N/mm2 conforming to IS 2185 (Part - I) - 2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials, labour, scaffolding and curing, usage charges of machinery etc complete as per specifications.	m <sup>2</sup>	1,231.00
6.34	Providing and constructing load bearing wall with Solid Concrete blocks of size 400x100x200mm having block density more than 1800kg/m3 and minimum compressive strength of 4.00 N/mm2 conforming to IS 2185 (Part - I) - 2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials, labour, scaffolding and curing, usage charges of machinery etc complete as per specifications.	m <sup>2</sup>	1,104.00
6.35	Providing Solid Concrete Bricks of size 225x100x75mm having strength 5Mpa & above for superstructure above plinth level in all shapes and sizes with Cement mortar 1:4 (1 cement : 4 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machineries & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	9,193.00
6.36	Providing and laying factory made Precast concrete solid blocks of 200 mm thickness of grade M10 made of C&D waste including cost of all materials, labour, scaffolding and usage charges of machineries & other incidental charges complete as per the direction of engineer incharge of work.	m <sup>3</sup>	6,309.00
6.37	Fabrication & Manufacturing of Prestressed Hollow Core slab (Hollow area 25 to 30%) of different thickness & modular width 1200 mm in Controlled Factory Environment with approved methodology conforming to IS : 10297:1982 by using long line casting method having arrangement of proper steel bed. Concreting should be done by batch mixing plant capable of producing zero slump concrete, transported through automatic shuttles of standard make & layed on bed with the help of extruder/ Slipformer, finishing, curing and also provision of steam curing. Cutting,		

Sl. No.	Specification	Unit	Rate ₹
	making necessary cutout/holes of required sizes for services in slab element after achieving required strength, yard handling & stacking all complete as per approved shop drawings & design mix as per the direction of the Engineer-in-charge.		
6.37.1	100mm thick	m	<b>916.00</b>
6.37.2	120mm thick	m	<b>1,084.00</b>
6.37.3	150mm thick	m	<b>1,337.00</b>
6.37.4	200mm thick	m	<b>1,646.00</b>
6.37.5	250mm thick	m	<b>2,039.00</b>
6.38	Fabrication and manufacturing of M35 Grade solid precast concrete element with provisions of shear keys, connecting loops, dowel tubes and proper lifting accessories for walls, beams, slabs, stairs, column etc, of various thickness, shape and size of different concrete grades manufactured in controlled factory environment with approved methodology including moulds (Pallet system, Tilts form, table moulds, battery moulds, vertical moulds, beam moulds, column moulds, staircase moulds, Facade mould, etc.), mixing, transporting and placing of concrete, vibrating, curing, finishing, making necessary cutout/holes of required sizes for services, yard handling & stacking all complete as per IS : 11447:1985 and as per approved shop drawings and design mix as per the direction of Engineer-in-Charge (Cost of reinforcement, Mechanical, Electrical and Plumbing inserts will be paid separately).	m <sup>3</sup>	<b>17,028.00</b>
	<b>Note :</b> 1) 1. Cost of strands should be paid separately @ Rs. 160.00/kg 2) Erection & Installation of Precast/Prestressed Concrete elements in correct & final position with proper line level and plumb at site making all arrangements (i.e cranes, push-pull jacks & all another T & P for lifting Placing & Alignment of elements, within erection tolerance as per IS : 15916 as per approved shop drawings and all complete as per the direction of Engineer-in-Charge but excluding the cost of sim pads, non shrink grout and steel works @ Rs. 250.00/m <sup>2</sup>		
6.39	Providing & Laying of levelling sim pads required sizes (5x5 cm to 10x10 cm) of PVC / Rubber to adjust level of bearing surface of supporting members as per the direction of Engineer in charge		
6.39.1	2mm thick	No	<b>22.00</b>
6.39.2	5mm thick	No	<b>29.00</b>
6.39.3	10mm thick	No	<b>42.00</b>

**Chapter - 7**  
**ROOFING**



Sl. No.	Specification	Unit	Rate ₹
<b>7.0 ROOFING</b>			
7.1	Providing & fixing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete as per design drawings (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required as per the direction of Engineer in charge.		
7.1.1	0.63 mm thick with zinc coating not less than 275 g/ m <sup>2</sup>	m <sup>2</sup>	<b>879.00</b>
7.2	Extra for straight cutting in C.G.S. sheet roofing for making opening of area exceeding 40 sq. decimeter for sky light, chimney stacks etc.:		
7.2.1	0.63 mm thick	m	<b>59.00</b>
7.3	Extra for circular cutting in C.G.S. sheet roofing for making opening of area exceeding 40 sq. decimeter:		
7.3.1	0.63 mm thick	m	<b>350.00</b>
7.4	Providing & fixing ridges or hips of width 60 cm overall width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete as per design drawings.		
7.4.1	0.63 mm thick with zinc coating not less than 275 g/m <sup>2</sup>	m	<b>639.00</b>
7.5	Providing & fixing valleys of 90 cm wide overall in plain G.S. sheet fixed with polymer coated J, or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete as per design drawings.		
7.5.1	1.60 mm thick with zinc coating not less than 350 g/m <sup>2</sup>	m	<b>2,063.00</b>
7.6	Providing and fixing 15 cm wide, 45 cm overall semi-circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc., including making necessary connections with rain water pipes complete. (0.63 mm thick with zinc coating not less than 275 g/m <sup>2</sup> )	m	<b>645.00</b>
7.7	Providing & fixing reinforced by organic fibres and/or inorganic synthetic fibres cement 6 mm thick corrugated sheets (as per IS: 14871) roofing up to any pitch and fixing with polymer coated J, or L hooks, bolts and nuts 8 mm dia. G.I. plain and bitumen washers or with self drilling fastener and EPDM washers etc. complete (excluding the cost of purlins, rafters and trusses), including cutting sheets to size and shape wherever required as per design drawings.	m <sup>2</sup>	<b>429.00</b>
7.8	Extra for straight cutting in reinforced by organic fibres and/or inorganic synthetic fibres cement corrugated, semi corrugated 6 mm thick sheet roofing for making openings of area exceeding 40 square decimeter for skylights, chimney stacks etc.	m	<b>59.00</b>

Sl. No.	Specification	Unit	Rate ₹
7.9	Extra for circular cutting in reinforced by organic fibres and/or inorganic synthetic fibres cement corrugated/ semi corrugated 6 mm thick sheet roofing for making openings of area exceeding 40 square decimeter.	m	<b>493.00</b>
7.10	Extra for providing and fixing wind ties of 40x 6 mm flat iron section.	m	<b>174.00</b>
7.11	Providing and fixing ridges and hips in fibre cement reinforced by organic fibres and/or inorganic synthetic fibres roofing with suitable fixing accessories or self drilling fastener and EPDM washer etc. complete as per design drawings.		
7.11.1	Corrugated serrated adjustable ridges	m	<b>396.00</b>
7.11.2	Plain wing adjustable ridges	m	<b>344.00</b>
7.11.3	Close fitting adjustable ridges	m	<b>459.00</b>
7.11.4	Unserrated adjustable hips	m	<b>411.00</b>
7.12	Providing and fixing fibre cement reinforced by organic fibres and/or inorganic synthetic fibres roofing accessories in all colours with polymer coated J or L hooks, bolts and nuts and or G.I. seam bolts and nuts, G.I. plain and bitumen washers or with self drilling fastener and EPDM washer etc. complete as per design drawings.		
7.12.1	Corrugated apron pieces	m	<b>344.00</b>
7.12.2	Eave's filler pieces	m	<b>44.00</b>
7.12.3	North light curves	m	<b>473.00</b>
7.12.4	Ventilator curves	m	<b>512.00</b>
7.12.5	Barge boards	m	<b>288.00</b>
7.12.6	Ridge finials	pair	<b>225.00</b>
7.12.7	Special north light curves	No	<b>847.00</b>
7.12.8	S type louvers	m	<b>407.00</b>
7.13	Providing & fixing flat iron brackets 50x3 mm size with necessary bolts, nuts and washers etc. for fixing G.S. sheets gutters with purlins.	m	<b>74.00</b>
7.14	Painting top of roofs with bitumen of approved quality @ 17kg per 10 m <sup>2</sup> impregnated with a coat of coarse sand at 60 cudm per 10 m <sup>2</sup> , including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil complete :		
7.14.1	With residual type petroleum bitumen of grade VG -10	m <sup>2</sup>	<b>160.00</b>
7.15	Providing & fixing and laying brick tiles over mumty roofs, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat: With common burnt clay Non Modular brick tiles of class designation 5.0	m <sup>2</sup>	<b>652.00</b>

Sl. No.	Specification	Unit	Rate ₹
7.16	Providing & fixing and laying pressed clay tiles (as per approved pattern 20 mm nominal thickness of approved size) on roofs jointed with cement mortar 1:4 (1 cement: 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and finished neat complete.	m <sup>2</sup>	565.00
7.17	Providing and laying to required line and slope roofing with corrugated asbestos cement sheet 6mm. thick fixed with galvanised iron J or L hooks, bolts and nuts 8mm. dia C.I plain and bitumen washers over the existing purlins, rafters and trusses including cost of materials, labour, complete as per specifications	m <sup>2</sup>	332.00
7.18	Providing and laying cinder concrete in cement 1:15 ( 1 cement : 15 cinder of 12.5mm nominal gauge) on terraced roof or sunken slabs, laid to slope compacting, including cost of materials, labour, curing complete as per specifications.	m <sup>3</sup>	2017.00
7.19	Providing and laying to required line and slope roofing with semi-corrugated ( Trafford ) asbestos cement sheet 6mm. thick fixed with galvanised iron J or L hooks, bolts and nuts 8mm. dia C.I plain and bitumen washers, over the existing purlins, rafters and trusses including cost of materials, labour, complete as per specifications.	m <sup>2</sup>	374.00
7.20	Extra for A.C. sheet corrugated / semi-corrugated sheet roofing with vertical sheeting to a pitch exceeding 60 degrees	m <sup>2</sup>	16.00
7.21	Providing and fixing ridges, hips with asbestos cement sheet roofing with G.I. J or L hooks, bolts and nuts 8mm. dia G.I.plain and bitumen washers, serrated or plain wings, adjustable ridges, including cost of materials, labour, complete as per specifications.	m	299.00
7.22	Providing and fixing northlight adjustable ridges, hips with asbestos cement sheet roofing with G.I. J or L hooks, bolts and nuts 8mm. dia G.I.plain and bitumen washers, serrated or plain wings, adjustable ridges, including cost of materials, labour, complete as per specifications.	m	211.00
7.23	Providing and fixing insulating board ceiling of approved quality with necessary nails etc. complete (frame work to be paid separately) :		
7.23.1	Natural colour insulating board		
7.23.1.1	12 mm thick	m <sup>2</sup>	638.00
7.23.2	White face insulating board		
7.23.2.1	12 mm thick	m <sup>2</sup>	673.00
7.23.3	Flame retardant face insulating board		
7.23.3.1	12 mm thick	m <sup>2</sup>	793.00

Sl. No.	Specification	Unit	Rate ₹
7.24	Providing and fixing 12 m thick flat pressed 3 layer medium density particle board or graded particle board (Grade I) IS: 3087 marked, in ceiling with necessary nails etc. complete.	<b>m<sup>2</sup></b>	<b>748.00</b>
7.25	Providing and fixing plain multipurpose cement board(Hight pressure steam cured) with suitable screws for cement particle board in ceiling etc. complete.		
7.25.1	6 mm thick Cement fiber board as per IS: 14862	<b>m<sup>2</sup></b>	<b>635.00</b>
7.25.2	6 mm thick Cement bonded wood particle board as per IS:14276	<b>m<sup>2</sup></b>	<b>615.00</b>
7.26	Extra for Circular cutting including wastages in ceiling with		
7.26.1	2nd class teak wood planks 20 mm thick	<b>m</b>	<b>537.00</b>
7.26.2	Natural colour insulating board		
7.26.2.1	12 mm thick	<b>m</b>	<b>317.00</b>
7.26.3	White face insulating board:		
7.26.3.1	12 mm thick	<b>m</b>	<b>321.00</b>
7.26.4	Flame retardant face insulating board:		
7.26.4.1	12 mm thick	<b>m</b>	<b>336.00</b>
7.26.5	Standard quality hard board sheet:		
7.26.5.1	3 mm thick	<b>m</b>	<b>303.00</b>
7.26.5.2	4.5 mm thick	<b>m</b>	<b>317.00</b>
7.27	Extra for providing and fixing ceiling to curved surfaces in narrow widths	<b>m<sup>2</sup></b>	<b>293.00</b>
7.28	Providing & fixing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level, over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame.		
7.28.1	Flat surfaces	<b>m<sup>2</sup></b>	<b>1,274.00</b>
7.28.2	Curved surfaces	<b>m<sup>2</sup></b>	<b>1,498.00</b>
7.29	Extra for sunk or raised mouldings in the plaster of Paris (Gypsum anhydrous) ceiling.	<b>m<sup>2</sup></b>	<b>454.00</b>
7.30	Extra for providing plaster of Paris (Gypsum anhydrous) ceiling above 5 m height from floor level.	<b>m<sup>2</sup></b>	<b>167.00</b>

Sl. No.	Specification	Unit	Rate ₹
7.31	Providing and fixing in position 12mm thick plaster of paris (Gypsum anhydrous) for ceiling reinforced with hessian cloth flat surface with ceiling tiles up to a height of 5 m above floor level over aluminium strips 25mm x 6mm and rendered smooth with plaster of paris including cost of materials, labour, curing complete as per specifications.	m <sup>2</sup>	1,171.00
7.32	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 g/m <sup>2</sup> (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound, jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :		
7.32.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) : 2011 (Board with BIS Certification marks only)	m <sup>2</sup>	983.00
7.32.2	12.5 mm thick tapered edge Glass Reinforced Gypsum (GRG) board conforming to IS: 2095- (Part 3) : 1996 (Board with BIS Certification marks only)	m <sup>2</sup>	1,099.00
7.32.3	12.5 mm thick tapered edge gypsum moisture resistant board	m <sup>2</sup>	1,146.00
7.32.4	Fully Perforated Gypsum Plaster Board of size 1200 x 2400x12.5 mm having approx. 15 % perforated area with perforation size and pattern as approved by the Engineer- in-charge and as per manufacturer's specification, with all 4 side tapered and backed by acoustical tissue with NRC value not less than 0.60	m <sup>2</sup>	1,321.00

Sl. No.	Specification	Unit	Rate ₹
7.33.1	2 mm thick corrugated (2.5"" or 4.2"" or 6"") or step-down (2"" or 3"" or 6"") as specified	m <sup>2</sup>	1,058.00
7.33.2	2 mm thick flat	m <sup>2</sup>	965.00
7.34	Providing and fixing 6mm Clear/opal white/solar bronze/blue/green tinted Multi wall poly carbonate sheet for Tubular structure. The work including cost of all materials, labour charges and usage charges of machinery for cutting, welding, grinding and erection equipments, with all lead, transportation, loading and unloading and all other incidental charges etc. complete as per specification and directions of the Engineer in charge of the work.	m <sup>2</sup>	3,125.00
7.35	Providing & fixing on roof pressed clay tile (Mangalore tile) of 20 mm nominal thickness and of approved size and as per approved pattern on steel frame work complete.	m <sup>2</sup>	294.00
7.36	Providing & laying on roof pressed clay tile ridge (Mangalore tile) of 20mm thickness and of approved pattern on steel frame work complete.	m	65.00
7.37	Providing and fixing Mangalore tile roofing using first class tiles with necessary special tiles for ridges and hips, wood reepers and pointed with cement mortar 1:4 over the existing rafters including cost of materials, labour, curing complete as per specifications.		
7.37.1	Nandi wood reepers of size 50x25mm	m <sup>2</sup>	806.00
7.37.2	Jungle wood reepers of size 50x25mm	m <sup>2</sup>	673.00
7.38	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 g/m <sup>2</sup> as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 m or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling/self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	m <sup>2</sup>	568.00
7.39	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+0.05 %) total coated thickness, Zinc coating 120 g/m <sup>2</sup> as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :		
7.39.1	Ridges plain (500 - 600mm)	m	451.00
7.39.2	Flashings/ Aprons ( Upto 600 mm)	m	413.00
7.39.3	North light curves	m	458.00

Sl. No.	Specification	Unit	Rate ₹
7.39.4	Barge board (Upto 300 mm)	m	376.00
7.39.5	Crimp curve	m <sup>2</sup>	425.00
7.39.6	Gutter (600 mm over all girth)	m	1,074.00
7.40	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections ( galvanized @ 120 g/m <sup>2</sup> , both side inclusive) consisting of main ""T"" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross ""T"" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main ""T"" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross ""T"" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main ""T"" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T- sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.		
7.40.1	GI Metal Ceiling Lay in plain Tegular edge Global white color tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 g/m <sup>2</sup> (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	m <sup>2</sup>	1,544.00
7.40.2	GI Metal Ceiling Lay in perforated Tegular edge global white color tiles of size 595x595 mm and 0.5 mm thick with 8 mm drop; made of GI sheet having galvanizing of 100 gms/m <sup>2</sup> (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC (Noise Reduction Coefficient ) of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation, and backed with a black Glass fiber acoustical fleece.	m <sup>2</sup>	1,710.00
7.40.3	12.5 mm thick square edge PVC Laminated Gypsum Tile of size 595x595 mm, made of Gypsum plasterboard, manufactured from natural gypsum as per IS 2095 part I and laminated with white 0.16mm thick fire retardant PVC film on the face side and 12micron metalized polyester on the back side with all edges sealed with the face side PVC film which goes around and wraps the edges and is bonded to the edges and the back side metalized polyester film so as to make the tile a completely sealed unit.	m <sup>2</sup>	1,978.00

Sl. No.	Specification	Unit	Rate ₹
7.40.4	12.5 mm thick fully Perforated Gypsum Board tile made from plasterboard having glass fibre conforming to IS: 2095 part I, of size 595x595 mm, having perforation of 9.7x9.7 mm at 19.4 mm c/c with center borders of 48 mm and the side borders of 30 mm, backed with non woven tissue on the back side, having an NRC (Noise Reduction Coefficient) of 0.79, with 50 mm resin bonded glass wool backing.	m <sup>2</sup>	1,171.00
7.41	Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per m <sup>2</sup> including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main 'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calicum silicate ceiling tiles of approved texture in the grid, including, cutting/making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all T sections shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.	m <sup>2</sup>	1,693.00
7.42	Providing and fixing Gl Clip in Metal Ceiling System of 600x600 mm module which includes providing and fixing 'C' wall angle of size 20x30x20 mm made of 0.5 mm thick pre painted steel along the perimeter of the room with help of nylon sleeves and wooden screws at 300 mm center to centre, suspending the main C carrier of size 10x38x10 mm made of G.I steel 0.7 mm thick from the soffit with help of soffit cleat 37x27x25x1.6 mm, rawl plugs of size 38x12 mm and C carrier suspension clip and main carrier bracket at 1000 mm c/c. Inverted triangle shaped Spring Tee having height of 24 mm and width of 34 mm made of Gl steel 0.45 mm thick is then fixed to the main C carrier and in direction perpendicular to it at 600 mm centers with help of suspension brackets. Wherever the main C carrier and spring T have to join, C carrier and spring T connectors have to be used. All sections to be galvanized @ 120 gms/ m <sup>2</sup> (both side inclusive), fixing with clip in tiles into spring T with :		

Sl. No.	Specification	Unit	Rate ₹
7.42.1	GI Metal Ceiling Clip in plain Beveled edge global white color tiles of size 600x600 and 0.5 mm thick with 25 mm height, made of G I sheet having galvanizing of 100 g/m <sup>2</sup> (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	m <sup>2</sup>	1,794.00
7.42.2	GI Metal Ceiling Clip in plain Beveled edge global white color tiles of size 600x600 and 0.5 mm thick with 25 mm height, made of G I sheet having galvanizing of 100 g/m <sup>2</sup> (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation.	m <sup>2</sup>	1,856.00
7.43	Providing and fixing of prepigmented extruded orange cement roof tiles of size 420mmx330mm with necessary specials such as Ridges , barges and nails etc including cost of providing PVC (6.00 kg/cm <sup>2</sup> ) gutters of min 6" radius and down water pipes of 4" dia as per the roof design on Existing Ms/Wooden Roof or Truss. Including cost of materials, scaffoldings, labour etc., complete as per specifications.	m <sup>2</sup>	731.00
7.44	Providing and fixing of prepigmented extruded orange cement roof tiles of size 420mmx330mm with necessary specials such as Ridges , barges and nails etc including cost of providing PVC (6.00 kg/cm <sup>2</sup> ) gutters of min 6" radius and down water pipes of 4" dia as per roof design on Existing Concrete Sloping Roof Slab. Including cost of mortar band, all materials labour as per specifications.	m <sup>2</sup>	699.00
7.45	Providing and laying non-asbestos high impact polypropylene reinforced corrugated cement roofing sheet reinforced with a blend of strong factory made fibers as per IS:14871 and ISO:9933:1995(E) roofing upto any pitch and fixing with polymer coated J or L hooks,bolts and nuts 8mm dia,G.I plain and bitumen washers or with self drilling fastener and EPDM washers etc. complete but excluding the cost of purlins, rafters and trusses. Including cutting to size and shape of corrugated sheets wherever required.and cost of materials, labour, complete as per specifications		
7.45.1	-do- with Natural Grey colour	m <sup>2</sup>	707.00
7.45.2	With other colours	m <sup>2</sup>	727.00
7.46	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150 mm height along the parapet walls in the same manner as per direction of incharge.	m <sup>2</sup>	1,405.00

Sl. No.	Specification	Unit	Rate ₹
7.47	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on interlocking metal grid of hot dipped galvanized steel sections (galvanized @ 120 g/m <sup>2</sup> , both side inclusive) consisting of main ""T"" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross ""T"" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main ""T"" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross ""T"" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main ""T"" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x 1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanized butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.		
7.47.1	8 mm thick fully perforated calcium silicate board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process to give stable crystalline structure with minimum compressive strength 225 kg/cm <sup>2</sup> , bending strength 100 kg/cm <sup>2</sup> , of size 595x595 mm, having perforation of dia. 10 mm with minimum perforated area 18 % with non woven tissue on the back side, having an NRC ( Noise Reduction Coefficient) of 0.85, with 50 mm thick rockwool of 48 kg/m <sup>3</sup> backing.	<b>m<sup>2</sup></b>	<b>2,191.00</b>
7.48	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ m <sup>2</sup> (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter		

Sl. No.	Specification	Unit	Rate ₹
	channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specifacaton and direction of the Engineer in charge but excluding the cost of painting with:		
7.48.1	8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process.	m <sup>2</sup>	1,210.00
7.49	Supply and Installation of Multicell Standing Seam polycarbonate panels having flux 7.0 as per EN 16153 & EN ISO 10077-2. For min joints, panel shall be 1000 - 1200 mm wide with standing seam on both sides. Panels shall have minimum six-seven layers with truss bridge design for higher flexibility and strength. The system shall be secured using suitable connectors with double tooth grip lock locking mechanism and fixed on purlin(to be paid separately) having a pull out load of min 7000N tested as per ISO 6892-1998 and IS 1608-2005. Panels must satisfy impact test as per IS 14443-97 shall show no sign of breakage which have been exposed to UV for 500 Hours (min) as per ASTM G 155. Panels shall have Yellowness Index of not more than 15 units as per ASTM D 1925 when tested on a sample exposed to UV for 500 Hours as per ASTM G 155. Panel shall be closed at the end with additional Aluminium U profile as required. All aluminium should be factory finished / mill finished. Panel shall be fixed over MS structural steel / MS purlin (to be paid separately) conforming to the details in the specifications as per direction of Engineer in charge of work.		
7.49.1	18mm Thick Multicell Polycarbonate Panels having U value of 1.9 W/m <sup>2</sup> K (max)	m <sup>2</sup>	3,890.00
7.49.2	16mm Thick Multicell Polycarbonate Panel having U value of 2.1 W/m <sup>2</sup> K (max)	m <sup>2</sup>	3,582.00
7.49.3	12mm Thick Multicell Polycarbonate Panel having U value of 2.5 W/m <sup>2</sup> K (max)	m <sup>2</sup>	3,304.00
7.50	Providing & Fixing of Mineral Fibre Suspended Ceiling System in the module size of 600x600x19mm with Exposed grid for Hospitals, Shopping malls, Commercial establishments and office complexes. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance 87%, Thermal Conductivity k = 0.052 - 0.057 w/m K, NRC -0.7,Colour White, Fire Performance UK A2 S1, d0, with Anti Microbial coating on the face of the tile, suitable for zone 4 area according to NF S 90-35:2003 with cleanroom class of ISO 5 (Class 100), Decontamination Class of CP10and Bacteriological Cleanliness Class B1 for specific strains	m <sup>2</sup>	2,242.00

Sl. No.	Specification	Unit	Rate ₹
	and reduction in colony size. Washability properties of 500 wash cycles as per ASTM D-4828 and suitable for Green Building application with Recycled content of 37%. The tile shall be laid on 24mm wide T - section flanges colour white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 38mm and a load carrying capacity of 15 kg/m <sup>2</sup> & pull out strength of minimum 100 kg The T Sections should have a Galvanizing of 90 grams per m <sup>2</sup> and need to be installed with suspension system of approved make.		
7.51	Providing and supplying 'Acoustical Wall Paneling' with square edges made of fibre glass substrate 25mm thick and wrapped on the front side with an acoustically transparent and classified for Fire reaction Class A, as per ASTM E-84, fabric with option of colors - as per the choice of the Architect/Engineer incharge of the size 600x600mm, 600x1200mm & 600x1800mm providing a minimum sound absorption level of 0.85 NRC to be affixed to wall using Wall panel Impaler sand construction adhesives as per the instructions laid down by the certified manufacturer.	m <sup>2</sup>	5,727.00
7.52	Providing & Fixing of Mineral Fibre Acoustical Suspended Ceiling System in module size of 600 x 600 x 16mm with Exposed Grid for Hospitals, Shopping malls, Commercial establishments and office complexes. The tiles should have Humidity Resistance (RH) of 99%, NRC 0.5, Light Reflectance <0.87%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Colour White, Fire Performance UK Class 0 I Class 1 (BS 476 pt- 6 & 7) and suitable for Green Building application with Recycled content of 30%. The tile shall be laid on 24 mm wide T - section flanges colour white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 38mm and a load carrying capacity of 15 kg/m <sup>2</sup> & pull out strength of minimum 100 kg The T Sections should have a Galvanizing of 90 g/m <sup>2</sup> and need to be installed with Suspension system.	m <sup>2</sup>	2,429.00
7.53	Providing & Fixing of Mineral Fibre Acoustical Suspended Ceiling System in module size of 600 x 600 x 20mm with Exposed Grid for Hospitals, Shopping malls, Commercial establishments and office complexes. The tiles should have Humidity Resistance (RH) of 99%, NRC 0.7, Light Reflectance 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Colour White, Fire Performance UK Class 0 I Class 1 (BS 476 pt- 6 & 7) with sand texture finish and suitable for Green Building application with Recycled content of 47%. The tile shall be laid on 24 mm wide T-section flanges colour white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 38mm and a load carrying capacity of 15 kg/m <sup>2</sup> & pull out strength of minimum 100 kg The T Sections should have a Galvanizing of 90 g/m <sup>2</sup> and need to be installed with Suspension system.	m <sup>2</sup>	2,690.00

Sl. No.	Specification	Unit	Rate ₹
7.54	<p>Providing &amp; Fixing of Integral Densified Tegular/Butt edged Eco Friendly Lightweight Calcium Silicate Suspended Ceiling System in Module Size of 600x600x15mm with Exposed GI Plain T24 Grid for Offices, Hospitals, Institutions, Airports, Banking Sector, Auditoriums, Community halls, laboratories, Factories and All buildings in high humidity or coastal Areas. The Eco Friendly Lightweight Calcium Silicate Ceiling tiles shall be made from Non Cementitious Hydrated Calcium Silicate Slurry/Mixture, Reinforced recycled material with fibers and natural fillers. Free from Formaldehyde and other harmful materials. Doesn't contain any toxic ingredients. The Tiles should have Humidity Resistance (RH) of 100%, Water Resistance, Non Combustible: as per BS:476 Part-4, Fire Performance: as per BS:476 Part-6 for Fire Propagation, as per BS:476 Part-7 for Surface Spread of Flame, As per UK standards Fire Performace A1-S1-d0, Thermal Conductivity K= 0.048 to 0.050 w/m K as per ECBC code 2007, NRC (Noise Reductions Coefficient) 0.5 to 0.75 (Semi Perforated &amp; Fully Perforated Tiles) as per IS 8225:1987, Sound Attenuation (STA) 30-32dB, Thickness of tile should be 15mm thick with 450 kg/m<sup>3</sup> density all around on edge resting portion with Integral Densified edge and 10mm thick with 350 kg/m<sup>3</sup> density in the center of the body, Light Reflectance &gt; 85%, Weight of material is 5-5.5 kg/m<sup>2</sup> and Suitable for Green Building application with InOrganic Recycled content of 46- 50% out of which 18-20% should be FLYASH and meets the GRIHA &amp; SVAGRIHA norms under the categories: GRIHA V.2015 criterion:11&amp;12, GRIHA V.3 criterion: 17&amp;29 and SVAGRIHA criterion:12 The tiles Shall be laid on 24mm Wide T-Sections Flanges colour white having rotary stitching on all T sections i.e. the Main runner with a web height of 38mm and 1200mm &amp; 600mm Cross Tees with a web height of 32mm having thickness of 0.33mm and Wall angle of 24*24mm with 0.4 mm thickness , having load carrying capacity of 15 kg/m<sup>2</sup>. The T sections should have Galvanizing of 120 g/m<sup>2</sup> and need to be installed with Suspension system.</p>	<b>m<sup>2</sup></b>	<b>1,887.00</b>
7.55	<p>Providing &amp; Fixing of Anti Microbial Bio-Safe Coated Intergral Densified Tegular/Butt edged Eco Friendly Lightweight Calcium Silicate Suspended Ceiling System without perforation Plain/Designer ceiling Tiles in Module Size of 600x600x15mm with Exposed T24 mm Grid for Hospitals, Institutions, Laboratories, Health Care Units, Offices. The Anti Microbial Bio-Safe lightweight calcium Silicate ceiling tiles shall be made from Non Cementitious Hydrated Calcium Silicate Slurry/Mixture, Reinforced recycled material with fibers and natural fillers. Free from Formaldehyde and other harmful materials. Doesn't contain any toxic ingredients.</p> <p>The Tiles should have Anti Microbial Bio-Safe Coating on front and back sides of tiles confirming to JIS-Z2801 and ASTM G-21 standard by NABL accredited Labs and found to be completely protected from Bacteria, Fungi, Yeast and Mould when exposed to these organisms both room temperature and AC temperature. Tiles should be protected and is free from colony-forming units.</p>	<b>m<sup>2</sup></b>	<b>2,036.00</b>

Sl. No.	Specification	Unit	Rate ₹
	<p>The Tiles should have Humidity Resistance (RH) of 100%, Water Resistance, Non Combustible: as per BS:476 Part-4, Fire Performance: as per BS:476 Part-6 for Fire Propagation, as per BS:476 Part-7 for Surface Spread of Flame, As per UK standards Fire Performace A1-S1-d0, Thermal Conductivity K= 0.048 to 0.050 w/m K as per ECBC code 2007, NRC(Noise Reduction Coefficient ) 0.1 to 0.15 (Plain and Designer tiles) as per IS 8225:1987, Sound Attenuation (STA) 30-32dB, Thickness of tile should be 15mm thick with 450 kg/m3 density all around on edge resting portion with Integral Densified edge and 10mm thick with 350 kg/m3 density in the center portion of the body, Light Reflectance &gt; 85%, Weight of material is 5-5.5 kg/m2 and Suitable for Green Building application with InOrganic Recycled content of 46- 50% out of which 18-20% should be FLYASH and meets the GRIHA &amp; SVAGRIHA norms under the categories: GRIHA V.2015 criterion:11&amp;12, GRIHA V.3 criterion: 17&amp;29 and SVAGRIHA criterion:12.</p> <p>The tiles Shall be laid on 24mm Wide T-Sections Flanges colour white having rotary stitching on all T sections i.e. the Main runner with a web height of 38mm and 1200mm &amp; 600mm Cross Tees with a web height of 32mm having thickness of 0.33mm and Wall angle of 24*24mm with 0.4 mm thickness , having load carrying capacity of 15 kg/m2. The T sections should have Galvanizing of 120 g/m<sup>2</sup> and need to be installed with Suspension system.</p>		
7.56	<p>Providing &amp; Fixing of Intergral Densified Micro Look edged Eco Friendly Lightweight Calcium Silicate Suspended Ceiling System in Module Size of 600x600x15mm Suitable with Exposed GI Plain T 15 Grid for Offices, Hospitals, Institutions, Airports, Banking Sector, Auditoriums, Community halls, laboratories, Factories and All buildings in high humidity or coastal Areas.The Lightweight Calcium Silicate Ceiling tiles shall be made from Non Cementitious Hydrated Calcium Silicate Slurry/Mixture, Reinforced recycled material with fibers and natural fillers.</p> <p>Free from Formaldehyde and other harmful materials. Doesn't contain any toxic ingredients. The Tiles should have Humidity Resistance (RH) of 100%, Water Resistance, Non Combustible: as per BS:476 Part-4, Fire Performance: as per BS:476 Part-6 for Fire Propagation, as per BS:476 Part-7 for Surface Spread of Flame, As per UK standards Fire Performace A1-S1-d0, Thermal Conductivity K= 0.048 to 0.050 w/m K as per ECBC code 2007, NRC (Noise Reduction Coefficient) 0.5 to 0.75 (Semi Perforated and Fully Perforated tiles) as per IS 8225:1987, Sound Attenuation (STA) 30-32dB, Thickness of tile should be 15mm thick with 450 kg/m3 density all around on edge resting portion with Integral Densified edge and 10mm thick with 350 kg/m3 density in the center of the body, Light Reflectance &gt; 85%, Weight of material is 5-5.5 kg/m2 and Suitable for Green Building application with InOrganic Recycled content of 46- 50% out of which 18-20% should be FLYASH and meets the GRIHA &amp; SVAGRIHA norms under the categories: GRIHA V.2015 criterion:11&amp;12, GRIHA V.3 criterion: 17&amp;29 and SVAGRIHA criterion:12</p>	<b>m<sup>2</sup></b>	<b>1,994.00</b>

Sl. No.	Specification	Unit	Rate ₹
	The tiles Shall be laid on 15mm Wide T-Sections Flanges colour white having rotary stitching webbed on all T sections i.e. the Main runner with a web height of 42mm and 1200mm & 600mm Cross Tees with a web height of 42mm having thickness of 0.3mm and Wall angle of 15*20mm with 0.4 mm thickness , having load carrying capacity of 15 kg/m2. The T sections should have Galvanizing of 120 g/m <sup>2</sup> and need to be installed with Suspension system.		
7.57	<p>Providing &amp; Fixing of Intergral Densified Micro Look edged Eco Friendly Lightweight Calcium Silicate Suspended Ceiling System in Module Size of 600x600x15mm Suitable with Exposed GI Silhouette Profile Black Reveal T 15 Grid for Offices, Hospitals, Institutions, Airports, Banking Sector, Auditoriums, Community halls, laboratories, Factories and All buildings in high humidity or coastal Areas.The Lightweight Calcium Silicate Ceiling tiles shall be made from Non Cementitious Hydrated Calcium Silicate Slurry/Mixture, Reinforced recycled material with fibers and natural fillers. Free from Formaldehyde and other harmful materials. Doesn't contain any toxic ingrediants. The Tiles should have Humidity Resistance (RH) of 100%, Water Resistance, Non Combustible: as per BS:476 Part-4, Fire Performance: as per BS:476 Part-6 for Fire Propagation, as per BS:476 Part-7 for Surface Spread of Flame, As per UK standards Fire Performace A1-S1-d0, Thermal Conductivity K= 0.048 to 0.050 w/m K as per ECBC code 2007, NRC (Noise Reduction Coefficient) 0.5 to 0.75 (Semi Perforated and Fully Perforated tiles) as per IS 8225:1987, Sound Attenuation (STA) 30-32dB,Thickness of tile should be 15mm thick with 450 kg/m<sup>3</sup> density all around on edge resting portion with Integral Densified edge and 10mm thick with 350kg/m<sup>3</sup> density in the center of the body,Light Reflectance &gt; 85%, Weight of material is 5-5.5 kg/m<sup>2</sup> and Suitable for Green Building application with InOrganic Recycled content of 46- 50% out of which 18-20% should be FLYASH and meets the GRIHA &amp; SVAGRIHA norms under the categories: GRIHA V.2015 criterion:11&amp;12, GRIHA V.3 criterion: 17&amp;29 and SVAGRIHA criterion:12.</p> <p>The tiles Shall be laid on 15mm Wide Silhouette Profile Black reveal T-Sections Flanges colour white having rotary stitching double webbed on all T sections i.e. the Main runner with a web height of 42mm and 1200mm &amp; 600mm Cross Tees with a web height of 42mm having thickness of 0.4mm and Wall angle of 15*20mm with 0.4 mm thickness , having load carrying capacity of 22 to 25 kg/m<sup>2</sup>. The T sections should have Galvanizing of 120 grams per m<sup>2</sup> and need to be installed with Suspension system.</p>	<b>m<sup>2</sup></b>	<b>2,180.00</b>
7.58	Providing & Fixing in position Acoustical wall panelling with Integral Densified Square/Butt edged Fully Perforated Eco Friendly Lightweight Calcium Silicate panels/tiles with fabricated galvanised mild steel frame work for Auditoriums, Community halls, Offices, Institutions, Airports, Meeting halls, Indoor Stadiums and Studios. The Eco Friendly Lightweight Calcium Silicate wall panels/tiles shall be made from Non Cementitious Hydrated Calcium Silicate Slurry/Mixture, Reinforced recycled material with fibers and natural fillers. Free from Formaldehyde and other harmful materials.	<b>m<sup>2</sup></b>	<b>2,925.00</b>

Sl. No.	Specification	Unit	Rate ₹
	Doesn't contain any toxic ingredients. The wall panels/tiles size of 595x595mm and 15mm thick should have Humidity Resistance (RH) of 100%, Water Resistance, Non Combustible: as per BS:476 Part-4, Fire Performance: as per BS:476 Part-6 for Fire Propagation, as per BS:476 Part-7 for Surface Spread of Flame, As per UK standards Fire Performace A1-S1-d0, Thermal Conductivity K= 0.048 to 0.050 w/m K as per ECBC code 2007, NRC (Noise Reductions Coefficient) 0.65 to 0.85 (Fully Perforated wall panels/Tiles) as per IS 8225:1987, Sound Attenuation (STA) 30-32dB, Thickness of tile should be 15mm thick with 450 kg/m <sup>3</sup> density all around on edge resting portion with Integral Densified edge and 10mm thick with 350 kg/m <sup>3</sup> density in the center of the body, Light Reflectance > 85%, Weight of material is 5-5.5 kg/m <sup>2</sup> and Suitable for Green Building application with InOrganic Recycled content of 46- 50% out of which 18-20% should be FLYASH and meets the GRIHA & SVAGRIHA norms under the categories: GRIHA V.2015 criterion:11&12, GRIHA V.3 criterion: 17&29 and SVAGRIHA criterion:12. The frame work comprising of a frame made especially fabricated galvanised mild steel sheet of 0.50 mm thick pressed section (galvanizing @ 120 grams per m <sup>2</sup> including both sides) i.e. vertical studs of size 48x34x36mm are placed at 600mm centre to centre in a floor and ceiling channel section of size 50x32mm fixed to the floor and soffit at 600mm centres using 12mm dia, 40mm long wedge type expanded zinc alloy dash fastner with 10mm bolt. This same channel is then to be fixed in horizontal direction at 600mm centre to centre so as to form a grid of 600x600mm. Glass wool of 50mm thickness with density of 16 kg/m <sup>3</sup> is then to be inserted in the slots and finally Lightweight calcium silicate wall panels/tiles are to be screw fixed with self-tapping pan head nickle coated mild steel screws of size 13x3.2mm on to this grid leaving an even groove of 1 mm between the panels. The joints between the panels are to be duly jointed and finished using recommended jointing calcium silicate based compound and fibre joint tape roll 50mm wide (90metre) roll and two coats of premier suitable for panelling as per manfacturer's specification as per direction of Engineer-in-charge all complete.		
7.59	Providing and fixing in position copper plate as per design for expansion joints.	kg	<b>727.00</b>
7.60	Providing and filling in position, blown bitumen in expansion joints.	m <sup>3</sup>	<b>1,08,197.00</b>
7.61	Providing and filling in position bitumen mix filler of Proportion 80 kg. of hot bitumen, 1 kg. of cement and 0.25 m <sup>3</sup> of coarse sand for expansion joints.	m <sup>3</sup>	<b>25,844.00</b>
7.62	Providing and fixing in position 12mm thick bitumen impregnated fiber board conforming to IS: 1838, including cost of primer, sealing compound Grade-A in expansion joints.	m <sup>2</sup>	<b>548.00</b>
7.63	Providing and fixing sheet covering over expansion joints with iron screws as per design.		
7.63.1	Non-asbestos fibre cement board 6 mm thick as per IS: 14862.		
7.63.1.1	150 mm wide	m	<b>172.00</b>
7.63.1.2	200 mm wide	m	<b>239.00</b>

Sl. No.	Specification	Unit	Rate ₹
7.64	Providing and fixing sheet covering over expansion joints with iron screws as per design.		
7.64.1	Aluminium fluted strips 3.15 mm thick.		
7.64.1.1	150 mm wide	m	<b>557.00</b>
7.64.1.2	200 mm wide	m	<b>725.00</b>
7.65	Providing and fixing sheet covering over expansion joints with iron screws as per design.		
7.65.1	Cement bonded wood particle board 6mm thick as per IS : 14276		
7.65.1.1	150 mm wide	m	<b>163.00</b>
7.65.1.2	200 mm wide	m	<b>214.00</b>
7.66	<p>Providing &amp; Fixing of High Acoustical False Ceiling having NRC (Noise Reduction Coefficient) 0.90 (minimum) using Integral Densified edged Eco Friendly Fully Perforated Lightweight Calcium Silicate False Ceiling Tiles with Suitable to Modular Grid Size of 600x600mm with PPGI Slimline profile Balck/White reveal T 15 Grid system for Auditoriums, Community halls, Lecture Halls, Airports, Offices, Factories and All other High Acoustics required buildings.</p> <p>The Fully Perforated Lightweight Calcium Silicate False Ceiling tiles shall be made from Non Cementitious Hydrated Calcium Silicate Slurry/Mixture, Reinforced recycled material with fibers and natural fillers. Free from Formaldehyde and other harmful materials. Doesn't contain any toxic ingrediants. The thickness of tiles should be 15mm at all around the edge resting portion with integral densified edge and 10mm thick at the quadrant. The tiles should have fiber glass fleece on rear side along with backing of 50mm thick rockwool slabs of density 48kg/m<sup>3</sup> to achieve NRC 0.90 (Minimum).</p> <p>The tiles should have Humidity Resistance (RH) of 100%, Water Resistance, Non Combustible as per BS:476 Part-4, Fire Performance: Fire Propagation as per BS:476 Part-6, Class-1 for Surface Spread of Flame as per BS:476 Part-7, Class A or Class 1 as per ASTM E 84, Thermal Conductivity K= 0.048 to 0.052 w/m K as per ECBC code 2007, Size of the tile is 595x595mm, Density of tile should be 450 kg/m<sup>3</sup> density all around on edge resting portion and 350kg/m<sup>3</sup> density at the Quadrant, Light Reflectance &gt; 85%, Weight of the tile is 5-5.5 kg/m<sup>2</sup> and Suitable for Green Building application with InOrganic Recycled content of 50% and meets the GRIHA norms under the categories: GRIHA V.2015 criterion:11&amp;12, GRIHA V.3 criterion: 17&amp;29 and SVAGRIHA criterion:12.</p> <p>The tiles Shall be laid on 15mm wide Polyester Powder Coated Galvanized Iron (PPGI) Slimline Profile Black/White reveal T-Sections Flanges colour white having rotary stitching double webbed on all T sections. The framework shall comprise of Main T runner with a web height of 38mm and 1200mm &amp; 600mm Cross Tees with a web height of 38mm having sheet thickness of 0.4mm.</p>	m <sup>2</sup>	<b>2,421.00</b>

Sl. No.	Specification	Unit	Rate ₹
	The T sections should have Galvanizing of 120 g/m <sup>2</sup> and need to be installed with Suspension system consisting of 12x50mm long dash fastners, Z cleat 25x37x25x1.6mm with pre cut hole on both 25mm flange to accomdate the 6mm dia bolt of the fasterner on one flange and 6mm fully threaded hanger rod upto 1000mm length on the other. L-shape level adjuster of size 76x25x1.6mm to be fixed with T grid main runner. The entire grid rests on the periphery on a pre coated GI wall angle of size 15x20mm of sheet thickness 0.40mm of length 3000mm to be fixed on periphery wall/partition with the help of plastic rawl plugs at 450mm center to center and 40mm long s.s screws. The work shall be carried out as per specifications, drawings and as per direction of Engineer in Charge.		
7.67	Providing,fabricating and fixing Profiled Poly Urethane insulated Roof(PUF Sheet) having modular density 40kg/m <sup>2</sup> and size 1.06m width and 7.60m length sheets roof having external sheet of 0.5mm steel, bottom sheet of 0.40mm steel with powder coated finish. The precoated sheet shall be of minimum 240MPa steel conforming to IS 14246 : 1995 and shall have zinc coating with minimum 120gsm as per IS 277:1992. The roofing system shall have suitable water proof over lapping arrangements and GRIHA ceritified. The fastening shall be of self tapping screws of required length with PVC head along with washer pre-painted aluminium cap unit with build in seal arrangements. The entire roof shall be firmly fastened to the existing frame including all lead and lifts, loading & unloading ,usage charges of machinery and equipments, transportation charges,labour charges and all other incidental charges etc.,complete as per standard technical detailed specifications and as directed by the Engineer in charge of the work.		
7.67.1	30 mm thickness	m <sup>2</sup>	2,198.00
7.67.2	50mm thickness	m <sup>2</sup>	2,595.00
7.68	Providing and fixing roofing consist of 0.8 mm thick Galvanized steel Deck Sheet confirming to IS 277:1992 used as permanent shuttering over which MS wire mesh 3mm laid at 100x100 mm grid including edge trim covered with concrete. This metal deck will be supported on structural steel beam with shear studs. (Structural steel like Beam, column, joists etc. & concrete of different grade as per design will be paid separately).	m <sup>2</sup>	1,163.00
7.69	Providing and fixing Aluminium Turbo ventilator complete as per technical specifications		
7.69.1	Non Power Driven with 0.9mm thickness and 38 No.s of Vanes & turbine doom thickness 1mm and total weight not less than 5.2kg for Industrial use.	No	5,220.00
7.69.2	Non Power Driven with 1.2mm thickness and 38 No.s of Vanes & turbine doom thickness 1mm and total weight not less than 6kg for Industrial use for area upto 50m <sup>2</sup> for Industrial use.	No	5,380.00
7.69.3	Non Power Driven with 1.3mm thickness and 38 No.s of Vanes & turbine doom thickness 1mm and total weight not less than 6kg for Industrial use for area upto 100m <sup>2</sup> for Industrial use	No	5,600.00

**Chapter - 8**  
**FINISHING**



<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
<b>8.0 FINISHING</b>			
8.1.1	Providing 12 mm cement plaster with cement mortar 1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>255.00</b>
8.1.2	Providing 12 mm cement plaster with cement mortar 1:6 (1 cement: 6 fine sand) including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>241.00</b>
8.2.1	Providing 15 mm cement plaster on the rough side of single or half brick wall of mix 1:4 (1 cement: 4 fine sand) including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>295.00</b>
8.2.2	Providing 15 mm cement plaster on the rough side of single or half brick wall of mix :1:6 (1 cement: 6 fine sand) including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>279.00</b>
8.3.1	Providing 20 mm cement plaster of mix :1:4 (1 cement: 4 fine sand) to brick/stone masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>354.00</b>
8.3.2	Providing 20 mm cement plaster of mix :1:6 (1 cement: 6 fine sand) to brick/stone masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>333.00</b>
8.4.1	Providing 12 mm cement plaster finished with a floating coat of neat cement of mix :1:3 (1 cement: 3 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>323.00</b>
8.4.2	Providing 12 mm cement plaster finished with a floating coat of neat cement of mix :1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>312.00</b>

Sl. No.	Specification	Unit	Rate ₹
8.5.1	Providing 15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix 1:3 (1 cement: 3 fine sand) including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	366.00
8.5.2	Providing 15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix: 1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	349.00
8.6.1	Providing 12 mm cement plaster with Cement mortar 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	323.00
8.6.2	Providing 20 mm cement plaster with cement mortar 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement to brick/stone masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	429.00
8.7	Providing 15 mm cement plaster with cement mortar 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	366.00
8.8	Providing 18 mm cement plaster in two coats under layer 12 mm thick cement plaster with cement mortar 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster with cement mortar 1:6 (1 cement : 6 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	371.00
8.9	Providing 18 mm cement plaster in two coats under layer 12 mm thick cement plaster with cement mortar 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster with cement mortar 1:3 (1 cement : 3 coarse sand) finished rough with sponge to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	385.00

Sl. No.	Specification	Unit	Rate ₹
8.10	Providing 6 mm cement plaster with cement mortar 1:3 (1 cement : 3 fine sand) on concrete surface / ceilings including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	211.00
	<b>Note :</b> For dry areas, External plastering shall be 15 mm thick & Internal plastering shall be 12 mm.  For heavy rainfall areas, External plastering shall be 18 mm thick & Internal plastering shall be 15 mm.		
8.11	Providing Neat cement punning to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	57.00
8.12	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers including cost of material etc as per specifications and as per directions of the Engineer-in-Charge.	kg	64.00
8.13	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof including cost of material, labour, scaffolding etc as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	58.00
8.14.1	Extra for plastering on circular work not exceeding 6 m in radius: In one coat including cost of material, labour, scaffolding etc as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	31.00
8.14.2	Extra for plastering on circular work not exceeding 6 m in radius: In two coats including cost of material, labour, scaffolding etc as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	47.00
8.15	Extra for plastering: Spherical ceiling including cost of material, labour, scaffolding etc as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	115.00
8.16	Providing and fixing suitable plaster mesh 100mm wide manufactured out of hot dipped galvanised iron of nominal thickness 0.35mm with a zinc coating of 120g/m <sup>2</sup> width, along route of walls chipped for services, junction between RCC and brick walls including cost of materials, labour for fixing complete as per specifications. ( length of mesh only be measured for payment		
8.16.1	Plaster mesh	m	34.00
8.16.2	Plaster mesh 150mm wide	m	38.00
8.16.3	Plaster mesh 100mm wide	m	44.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.16 a	Providing lath plaster with cement mortar 1:3, 5cms thick with 6mm dia mild steel bars at 20 cms. c to c both horizontally and vertically fixed with chicken mesh for drop chajja,facia, backing to cup boards including cost of all materials, labour, providing and removing form work usage charges, curing, complete as per specifications.	<b>m<sup>2</sup></b>	<b>1,238.00</b>
8.17.1	Providing Flush / Ruled/ Struck or weathered pointing Pointing on brick work or brick flooring with cement mortar 1:3 (1 cement : 3 fine sand) after raking joints to depth nicely lining, including cost of materials, labour, curing as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>172.00</b>
8.17.2	Providing Raised and cut pointing: Pointing on brick work or brick flooring with cement mortar 1:3 (1 cement : 3 fine sand) after raking joints to depth nicely lining, including cost of materials, labour, curing as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>280.00</b>
8.18	Providing Flush/ Ruled/ Struck or weathered pointing: Pointing on tile brickwork with cement mortar 1:3(1 cement:3 fine sand) after raking joints to depth nicely lining, including cost of materials, labour, curing as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>236.00</b>
8.19.1	Providing Flush/ Ruled pointing: Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) after raking joints to depth nicely lining, including cost of materials, labour, curing as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>255.00</b>
8.19.2	Providing Raised and cut pointing: Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) after raking joints to depth nicely lining, including cost of materials, labour, curing as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>463.00</b>
8.20	Providing Flush/ Ruled pointing on stone slab ceiling with cement mortar 1:2 (1 cement : 2 fine sand) after raking joints to depth nicely lining, including cost of materials, labour, curing as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>142.00</b>
8.21	Providing White washing with lime to give an even shade :New work (three coats) with lime of approved quality, including cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>26.00</b>
8.22	Providing lime wash on walls with one coat with lime of approved quality to give an even shade, including cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>10.00</b>
8.23.1	Providing Colour washing such as green, blue or buff to give an even shade :New work (two coats) with a base coat of white washing with lime with colour of approved quality, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>34.00</b>

Sl. No.	Specification	Unit	Rate ₹
8.23.2	Providing Colour washing such as green, blue or buff to give an even shade :New work (two coats) with a base coat of whiting with colour of approved quality, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	33.00
8.24	Distempering with dry distemper of approved brand and manufacture (two coats) of required shade on new work, over and including water thinnable priming coat to give an even shade after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	108.00
8.25	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :New work (two coats) over and including water thinnable priming coat with cement primer after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	137.00
8.26	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 g/l, of approved manufacturer, of required shade and colour complete, as per manufacturer's specification. Two coats on new work to give an even shade after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	80.00
8.27	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface :Water thinnable cement primer to give an even shade after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	53.00
8.28	Finishing walls with water proofing cement paint of required shade :New work (Two coats applied @ 4.84 kg/10 m <sup>2</sup> ) to give an even shade after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	89.00
8.29	Finishing walls with textured exterior paint of required shade :New work (Two coats applied @ 3.28 L/10 m <sup>2</sup> ) over and including priming coat of exterior primer applied @ 2.20kg/10 m <sup>2</sup> to give an even shade after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	283.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.30	Finishing walls with Acrylic Smooth exterior paint of required shade :New work (Two coat applied @ 1.67L/10 m <sup>2</sup> over and including priming coat of exterior primer applied @ 2.20 kg/10 m <sup>2</sup> ) with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>174.00</b>
8.31	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives with pure Acrylic Resin, UV resistant, dirt & pick up resistant, Alkali & Water resistant of required shade: New work (Two coats applied @ 1.43 L/10 m <sup>2</sup> over and including priming coat of exterior primer applied @ 2.20 kg/10 m <sup>2</sup> ) with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>178.00</b>
8.32	Finishing walls with 100% Premium acrylic emulsion paint having VOC less than 50 g/L and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade (Company Depot Tinted) with silicon additives, New work (Two coats applied @ 1.43 L/ 10 m <sup>2</sup> . Over and including priming coat of exterior primer applied @ 0.90 L/10 m <sup>2</sup> with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>156.00</b>
8.33.1	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications: Two coats applied on walls @ 1.25 L/10 m <sup>2</sup> over and including one coat of Special primer applied @ 0.75 L/10 m <sup>2</sup> with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge. (The gloss should be 50% @ 60 degree angle with 10 years life)	m <sup>2</sup>	<b>158.00</b>
8.33.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two coat applied @ 0.90L/10 m <sup>2</sup> over an under coat of primer applied @0.75 L/10 m <sup>2</sup> of approved brand and manufacture to give an even shade including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering and knotting , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>138.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.33.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two coat applied @ 0.90L/10 m <sup>2</sup> over an under coat of primer applied @ 0.80 L/10 m <sup>2</sup> of approved brand and manufacture including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>139.00</b>
8.34.1	Applying priming coat: With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood) including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>53.00</b>
8.34.2	Applying priming coat: With ready mixed aluminium primer of approved brand and manufacture on resinous wood and plywood including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>58.00</b>
8.34.3	Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>50.00</b>
8.35.1	Painting with Silicon & Acrylic emulsion based water thinnable sealer of approved brand and manufacture on wet or patchy portion of plastered surfaces :One coat with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>124.00</b>
8.35.2	Painting with Silicon & Acrylic emulsion based water thinnable sealer of approved brand and manufacture on wet or patchy portion of plastered surfaces :Two coats with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>198.00</b>
8.36.1	Finishing with Epoxy paint (two coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On steel work including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>176.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.36.2	Finishing with Epoxy paint (two coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>172.00</b>
8.37	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :New work (two coats) including a coat of approved steel primer but excluding a coat of mordant solution including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>131.00</b>
8.38	Painting with oil type wood preservative of approved brand and manufacture :New work (two coats) to give an even shade including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering and knotting, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>40.00</b>
8.39	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade :Two coats on new work after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>127.00</b>
8.40	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :Two coats on new work after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>115.00</b>
8.41	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :Two coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>167.00</b>
8.42	Painting with aluminium paint of approved brand and manufacture to give an even shade. Two coats on new work including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>108.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.43	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :Two coats on new work including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>94.00</b>
8.44	Floor painting with floor enamel paint of approved brand and manufacture of required colour to give an even shade :Two coats on new work after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>138.00</b>
8.45.1	Varnishing with varnish of approved brand and manufacture :Two coats of glue sizing with copal varnish over an under coat of flatting varnish to give an even shade and produce a smooth dry and mat surface including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign mattersand papering and knotting , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>172.00</b>
8.45.2	Varnishing with varnish of approved brand and manufacture :Two coats glue sizing with spar varnish or an under coat of flatting varnish to give an even shade and produce a smooth dry and mat surface including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign mattersand papering and knotting , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>173.00</b>
8.46	French spirit polishing :Two coats on new works including a coat of wood filler to give an even surface including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>295.00</b>
8.47	Polishing on wood work with ready mixed wax polish of approved brand and manufacture : New work to give an even surface including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>135.00</b>
8.48	Floor polishing on masonry or concrete floors with wax polish of approved brand and manufacture to give an even surface including preparing the surface after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>63.00</b>
8.49	Lettering with black Japan paint of approved brand and manufacture to give an even shade including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	<b>per letter per cm height</b>	<b>4.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.50	Extra for addition of synthetic Polyester triangular fibre of length 6 mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement plaster/ mortar by using 125 g. of synthetic Polyester triangular fibre for 50 kg cement used in cement mortar as per directions of Engineer-in-Charge.	<b>per bag of 50 kg of cement</b>	<b>63.00</b>
8.51	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>100.00</b>
8.52.1	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 g/L, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. One coat as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>43.00</b>
8.52.2	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 g/L, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. Two coats as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>76.00</b>
8.53.1	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 g/L, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. One coat as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>66.00</b>
8.53.2	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 g/L, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. Two coats as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>99.00</b>
8.54.1	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound ) content less than 50 g/L of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour. One coat as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>73.00</b>
8.54.2	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound ) content less than 50 g/L of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour. Two coats as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>110.00</b>
8.55.1	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content. With ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 g/L as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>56.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.55.2	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content. With water thinnable cement primer on wall surface having VOC content less than 50 g/L as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>53.00</b>
8.56.1	White washing with lime to give an even shade :Old work (two coats) as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>15.00</b>
8.56.2	White washing with lime to give an even shade :Old work (one coats) as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>9.00</b>
8.57	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>13.00</b>
8.58	Distempering with dry distemper of approved brand and manufacture (one coats) and of required shade on old work to give an even shade. as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>45.00</b>
8.59	Distempering with 1st quality acrylic distemper (Ready mix) having VOC content less than 50 g/L of approved brand and manufacture to give an even shade :Old work (one coats) as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>47.00</b>
8.60	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete. as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>17.00</b>
8.61	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :Old work (one coats) as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>67.00</b>
8.62	Painting with oil type wood preservative of approved brand and manufacture: Old work (one coats) as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>31.00</b>
8.63	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade: One coats on old work as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>82.00</b>
8.64	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :One coats on old work as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>76.00</b>
8.65	Painting with aluminium paint of approved brand and manufacture to give an even shade: One coats on old work as per specifications and as per directions of Engineer in charge.	<b>m<sup>2</sup></b>	<b>70.00</b>

Sl. No.	Specification	Unit	Rate ₹
8.66	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :One coats on old work as per specifications and as per directions of Engineer in charge.	m <sup>2</sup>	<b>63.00</b>
8.67	French spirit polishing :One coats on old work to give an even surface including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering smooth , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>149.00</b>
8.68	Polishing on wood work with readymade wax polish of approved brand and manufacture : Old work to give an even surface including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering smooth , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>68.00</b>
8.69	Re-lettering with black Japan paint of approved brand and manufacture. to give an even shade including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	per letter per cm height	<b>2.50</b>
8.70	Painting (one coats) with black Japan paint of approved brand and manufacture to give an even shade. including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>68.00</b>
8.71	Distempering with 1st quality acrylic distemper (ready made) having VOC content less than 50 g/l of approved manufacturer and of required shade and colour complete. as per manufacturer's specification. One coats on old work including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>42.00</b>
8.72.1	Finishing walls with water proofing cement paint of required shade :Old work (one coats applied @ 2.20 kg/10 m <sup>2</sup> ) over priming coat of primer applied @ 0.80 l/10 m <sup>2</sup> complete including cost of Priming coat including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>87.00</b>
8.72.2	Finishing walls with water proofing cement paint of required shade : Old work (one coats @ 2.20 kg/10 m <sup>2</sup> ) complete. including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>56.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
8.73.1	Finishing walls with textured exterior paint of required shade :Old work (Two coats on existing cement paint surface applied @ 3.28 l/10 m <sup>2</sup> including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>216.00</b>
8.73.2	Finishing walls with textured exterior paint of required shade :Old work (One coats) applied @ 1.82 l/10 m <sup>2</sup> including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>130.00</b>
8.74.1	Finishing walls with Acrylic Smooth exterior paint of required shade : Old work (Two coat applied @ 1.67 l/ 10 m <sup>2</sup> ) on existing cement paint surface including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>105.00</b>
8.74.2	Finishing walls with Acrylic Smooth exterior paint of required shade :Old work (One coat applied @ 0.90 l/10 m <sup>2</sup> ) including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>69.00</b>
8.75.1	Finishing walls with Premium Acrylic Smooth exterior paint of required shade : Old work (Two coats applied @ 1.43 l/ 10 m <sup>2</sup> ) over existing cement paint surface including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>111.00</b>
8.75.2	Finishing walls with Premium Acrylic Smooth exterior paint of required shade : Old work (one coats applied @ 0.83 l/10 m <sup>2</sup> ) including preparing the surface after thoroughly cleaning the surface to remove all dirt,dust and foreign matter ,cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>73.00</b>
8.76.1	Varnishing with varnish of approved brand and manufacture: One coats with copal varnish including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>68.00</b>
8.76.2	Varnishing with varnish of approved brand and manufacture: One coats with spar varnish including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>69.00</b>

Sl. No.	Specification	Unit	Rate ₹
8.77	Melamine polishing on wood work (one coat) including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>106.00</b>
8.78	Varnishing with flatting varnish of approved brand and manufacture one coats on old work including preparing the surface after thoroughly cleaning the surface to remove all dirt, dust and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.	m <sup>2</sup>	<b>73.00</b>
8.79	Forming groove of uniform size in the top layer of plaster as per approved pattern including repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge: 10mm to 15 mm wide and 8 mm deep groove.	m	<b>52.00</b>
8.80	Forming groove of uniform size in the top layer of plaster as per approved pattern including repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge: 20 mm to 25 mm wide to required depth.	m	<b>66.00</b>
8.81	Providing and applying two coats of High Albedo paint having minimum Solar Reflective Index (SRI) 108 (with solar reflectance & thermal remittance tested as per ASTM C 1549 and ASTM C 1371 respectively), VOC less than 10 cc/g. The coating thickness and the methodology of application shall strictly as per manufacturer's specifications and as approved by Engineer-in-Charge. Surface preparation includes cleaning with metal wire brush to remove all dust, fungus etc., washing with water all complete. The contractor shall give guarantee for the performance of SRI and also the durability of coating, all complete as per direction of Engineer-in-Charge.	m <sup>2</sup>	<b>407.00</b>
8.82	Polishing in high gloss/matt finish melamine clear polish on wood work in required color/wooden shade texture with following process in the sequence as detailed below: <ol style="list-style-type: none"><li>1. The surface to be polished is rubbed with sand paper 80/120 no. and then with sand paper of 160/180 no.</li><li>2. Applying two coats of sealer with spray gun and allowing sufficient drying time for 1st coat and 2nd coat is allowed to dry for 8 to 12 hrs.</li><li>3. On drying of sealer coat, wet rubbing with emery cloth of finer grading with ample water to remove excess sealer layer and make the surface further smooth after this wet rubbing, then surface is applied with special grade melamine fillers to fill all the small and big holes/grooves etc. Filler coat to be allowed to dry for 4 to 6 hrs on which again a light wet rubbing is done this surface is further allowed to dry for 12 hrs.</li></ol>	m <sup>2</sup>	<b>677.00</b>

Sl. No.	Specification	Unit	Rate ₹
	4. On this, 1st coat of melamine polish is applied with spray gun using melamine clear polish and melamine thinner in required proportion. This 1st coat is allowed to dry for 24 hrs then this dry surface is again fine wet rubbed smooth, which is further allowed to dry for 12 hrs. The final melamine polish is applied with compressor pressure spray gun using melamine clear polish and melamine thinner mixed in required proportion complete as per direction of Engineer-in-Charge. (Final coat to be done in 1 or 2 layers without gap of time.)		
8.83	Finishing External walls with Granitic finish with architect recommended shade on prepared Masonry surfaces. Two coats of Granitic finish @ 2.7 kg/10m <sup>2</sup> of reputed make applied over priming coat @ 2.20kg/10m <sup>2</sup> of approved quality to give appropriate shade. The granitic finish shall also be applied with protective Tile guard layer in two coats @ 10 m <sup>2</sup> /L. The cost includes thoroughly brooming the surface to remove all dirt,dust,mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials,labour complete as per specifications.	m <sup>2</sup>	246.00
8.84	Providing wall black boards in 12mm thick with CM 1:3 and applied with primer & two coats of acrylic emulsion black paint including finishing etc.,complete.	m <sup>2</sup>	475.00



**Chapter - 9**  
**FLOORING**



Sl. No.	Specification	Unit	Rate ₹
<b>9.0 FLOORING</b>			
9.1	Providing and laying Cement concrete flooring 40 mm thick with 20 mm nominal size stone aggregate using 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry complete.	m <sup>2</sup>	<b>451.00</b>
9.2	Providing and laying 52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 L per 50 kg of cement or as per direction of Engineer incharge.	m <sup>2</sup>	<b>800.00</b>
9.3	Providing Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.		
9.3.1	18mm thick	m <sup>2</sup>	<b>482.00</b>
9.3.2	15 mm thick	m <sup>2</sup>	<b>459.00</b>
9.4	Providing and laying Cement concrete pavement with 1:2:4 for commercial & residential building floors, hardpaths, footpaths using 1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size, including finishing complete as per Engineer incharge.	m <sup>3</sup>	<b>6,666.00</b>
9.5	Extra for making chequers of approved pattern on 1:2:4 cement concrete floors, steps, landing, pavements etc.	m <sup>2</sup>	<b>55.00</b>
9.6	Providing and laying Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand)		
9.6.1	Light shade pigment using white cement	m <sup>2</sup>	<b>1,269.00</b>
9.6.2	Medium shade pigment using 50% white cement 50% Grey cement	m <sup>2</sup>	<b>1,192.00</b>
9.6.3	Dark shade pigment using ordinary cement	m <sup>2</sup>	<b>1,122.00</b>
9.6.4	Ordinary cement without any pigment	m <sup>2</sup>	<b>1,050.00</b>
9.7	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding for Bathrooms: Toilet: Chemically exposed areas and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge.		
9.7.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand) with Acid and alkali resistant tile	m <sup>2</sup>	<b>1,246.00</b>

Sl. No.	Specification	Unit	Rate ₹
9.7.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand) with Acid and alkali resistant tile	$\text{m}^2$	1,260.00
9.8	Providing and fixing M.S. angle 50x50x5 mm to act as nosing with lugs of M.S. flat 10x5 mm, 10 cm long, forked at end 60cm apart (minimum three lugs to be provided), including necessary welding and applying a priming coat of approved primer on exposed surface etc. complete.	kg	140.00
9.9	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/m <sup>2</sup> including pointing the joints with white cement and matching pigment etc., complete.	$\text{m}^2$	1,076.00
9.10	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS : 15622 (thickness to be specified by the manufacturer ) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per m <sup>2</sup> including pointing in white cement mixed with pigment of matching shade complete.	$\text{m}^2$	1,106.00
9.11	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ m <sup>2</sup> including pointing the joints with white cement and matching pigments etc., complete.	$\text{m}^2$	889.00
9.12	Providing and laying vitrified floor tiles with thickness 9-10 mm in different sizes with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ m <sup>2</sup> including grouting the joints with white cement and matching pigments etc., complete.		
9.12.1	Size of Tile 500x500 mm	$\text{m}^2$	1,082.00
9.12.2	Size of Tile 600x600 mm	$\text{m}^2$	1,145.00
9.12.3	Size of Tile 800x800 mm	$\text{m}^2$	1,257.00
9.12.4	Size of Tile 1000x1000 mm	$\text{m}^2$	1,834.00
9.12.5	Size of Tile 600x1200 mm	$\text{m}^2$	1,314.00
9.13	Deduct for not using 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles and jointing with grey cement slurry @ 3.3 kg/ m <sup>2</sup> .	$\text{m}^2$	456.00

Sl. No.	Specification	Unit	Rate ₹
9.14	Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness.	m <sup>2</sup>	353.00
9.15	Crazy ceramic tile flooring, with under layer 12 mm thick cement mortar 1:4 (1cement: 4 coarse sand), with joints not exceeding 5 mm, including filling the gaps with ordinary cement mixture & mixing with synthetic polyester fibre, triangular in shape having specific gravity of 1.34 to 1.40, cross section size ranging from 10 to 40 micron & length upto 6 mm , mixing fibre @ 125 g per 50 kg of cement in cement mortar, including providing and mixing water proofing material in mortar @ 1 kg per 50 kg of cement, all complete as per direction of Engineer-in-charge.	m <sup>2</sup>	679.00
9.16	Providing and laying 500x500x40 mm thick Turf paver on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick fine sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.	m <sup>2</sup>	720.00
9.17	Providing and laying Vitrified tiles with thickness 9-10 mm in different sizes with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ m <sup>2</sup> including grouting the joint with white cement & matching pigments etc. complete.		
9.17.1	Size of Tile 500x500 mm	m <sup>2</sup>	1,112.00
9.17.2	Size of Tile 600x600 mm	m <sup>2</sup>	1,175.00
9.17.3	Size of Tile 800x800 mm	m <sup>2</sup>	1,287.00
9.17.4	Size of Tile 1000x1000 mm	m <sup>2</sup>	1,864.00
9.17.5	Size of Tile 600x1200 mm	m <sup>2</sup>	1,344.00
9.18	Providing and fixing glazed screen printed border tile 75mm wide having thickness 5mm, of approved quality & make, in all shades, design and prints, in dado, over 12mm thick bed of cement mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 kg/m <sup>2</sup> including pointing with white cement mixed with pigment of matching shade, all complete as approved by Engineer - in - Charge	m	136.00
9.19	Providing and laying Vitrified tiles with thickness 9-10 mm in different sizes with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours and shade, in skirting, riser, treads of steps, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS: 15477, in average 6 mm thickness, including grouting of joints as per direction of Engineer in charge.	m <sup>2</sup>	1,173.00

Sl. No.	Specification	Unit	Rate ₹
9.20	Grouting the joints of flooring tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge.		
9.20.1	Size of Tile 500x500 mm	m <sup>2</sup>	<b>254.00</b>
9.20.2	Size of Tile 600x600 mm	m <sup>2</sup>	<b>209.00</b>
9.20.3	Size of Tile 800x800 mm	m <sup>2</sup>	<b>165.00</b>
9.20.4	Size of Tile 1000x1000 mm	m <sup>2</sup>	<b>115.00</b>
9.20.5	Size of Tile 600x1200 mm	m <sup>2</sup>	<b>105.00</b>
9.21	Providing and laying Vitrified tiles with thickness 9-10 mm in floor with different sizes with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS : 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately).		
9.21.1	Size of Tile 500x500 mm	m <sup>2</sup>	<b>1,176.00</b>
9.21.2	Size of Tile 600x600 mm	m <sup>2</sup>	<b>1,238.00</b>
9.21.3	Size of Tile 800x800 mm	m <sup>2</sup>	<b>1,351.00</b>
9.21.4	Size of Tile 1000x1000 mm	m <sup>2</sup>	<b>1,927.00</b>
9.21.5	Size of Tile 600x1200mm	m <sup>2</sup>	<b>1,802.00</b>
9.22	Providing and laying Polished Glazed Vitrified tiles with thickness 10 mm in floor with different sizes with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS : 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately).		
9.22.1	Size of Tile 500x500 mm	m <sup>2</sup>	<b>1,251.00</b>
9.22.2	Size of Tile 600x600 mm	m <sup>2</sup>	<b>1,326.00</b>
9.22.3	Size of Tile 800x800 mm	m <sup>2</sup>	<b>1,476.00</b>
9.22.4	Size of Tile 1000x1000 mm	m <sup>2</sup>	<b>2,053.00</b>
9.22.5	Size of Tile 600x1200 mm	m <sup>2</sup>	<b>1,990.00</b>

Sl. No.	Specification	Unit	Rate ₹
9.23	<p>Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :</p> <p>** Flamed finish granite stone slab Black, Cat Eye, River Pink or equivalent.</p>	$\text{m}^2$	2,466.00
9.24	<p>Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.</p> <p>** Polished Granite stone slab Black, Cat Eye, River Pink or equivalent.</p>	$\text{m}^2$	2,852.00
9.25	Providing and laying 60mm thick factory made cement concrete paver block of approved shape and colour of M -30 grade made of C&D waste by block making machine with vibratory compaction laid in required pattern and including over 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	$\text{m}^2$	800.00
9.26	Providing and laying flooring with burnt stone slabs 10 cms thick, rough chistle dressed on sand bed 7.5 cms to 8 cms thick and pointed with cement mortar 1:3, , including cost of materials, sand, labour, curing complete as per specifications.	$\text{m}^2$	2,370.00
9.27	Providing and laying flooring with burnt stone slabs 10 cms thick rough chistle dressed on cement mortar bed 1:6, 25 mm thick, and pointed with cement mortar 1:3, , including cost of materials, mortar, labour, curing complete as per specifications.	$\text{m}^2$	2,388.00
9.28	Providing and laying flooring and steps machine cut granite slabs 40 mm thick on cement mortar bed 1:6, 25 mm thick, and pointed with cement mortar 1:3 over existing cement concrete bed , including cost of materials, mortar labour, curing complete as per specifications.	$\text{m}^2$	4,279.00
9.29	Providing and laying flooring and steps fine dressed granite stone slabs 40 mm thick on cement mortar bed 1:6, 25 mm thick, and pointed with cement mortar 1:3 over existing cement concrete bed , including cost of materials, mortar, labour, curing complete as per specifications.	$\text{m}^2$	4,306.00

Sl. No.	Specification	Unit	Rate ₹
9.30	Providing and laying flooring and steps fine machine polished granite stone slabs 20 mm thick on cement mortar bed 1:6, 20 mm thick, and joints finished with cement mortar 1:3 over existing cement concrete bed , including cost of materials, mortar, labour, curing complete as per specifications.	m <sup>2</sup>	5,328.00
9.31	Providing and laying Polished Sadarahalli Grey Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 20 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.	m <sup>2</sup>	2,085.00
9.32	Providing and laying Black Lapotra Granite stone flooring in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.	m <sup>2</sup>	2,582.00
9.33	Providing and laying linoleum plain flooring or coloured 3.2mm thick sheet / tiles laid with an approved adhesive on sub floor stretching, cutting and fixing complete , including cost of materials, labour, complete as per specifications.	m <sup>2</sup>	904.00
9.34	Flooring with 25mm thick polished tandur blue stone slabs using cement mortar 1:6, 25mm thick over existing cement concrete bed or top of roof laid to line and level and jointed with cement slurry mixed with pigment to match the shade of the slab , including cost of materials, labour, curing, polishing complete as per specifications.	m <sup>2</sup>	1,545.00
9.35	Flooring with 25mm thick polished shahabad slabs using cement mortar 1:6, 25mm thick over existing cement concrete bed or top of roof laid to line and level and jointed with cement slurry mixed with pigment to match the shade of the slab , including cost of materials, labour, curing, polishing complete as per specifications.	m <sup>2</sup>	1,636.00
9.36	Providing flooring with 25mm thick polished Cuddapah slabs using cement mortar 1:6, 25mm thick over existing cement concrete bed or top of roof laid to line and level and jointed with cement slurry mixed with pigment to match the shade of the slab , including cost of materials, labour, curing, polishing complete as per specifications.	m <sup>2</sup>	1,650.00
9.37	Providing and laying red oxide flooring 40 mm thick, with an under layer of 30mm thick M-15 cement concrete and top layer of 10mm thick plaster with 1:3 cement mortar mixed with red oxide finished with floating coat of neat cement mixed with red oxide ( mix of same proportion ) , including cost of materials, labour, curing, complete as per specifications.	m <sup>2</sup>	786.00

Sl. No.	Specification	Unit	Rate ₹
9.38	Providing skirting, dadoing, rises of steps with white glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over existing rough plaster surface using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications.	m <sup>2</sup>	1,392.00
9.39	Providing skirting, dadoing, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over existing rough plaster surface using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications.	m <sup>2</sup>	1,449.00
9.40	Providing, laying & fixing cement base, precast, pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring, treads of steps and landing, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of materials, mortar, including cutting, griding the edge to half/full round wherever required, labour, curing complete as per specification.	m <sup>2</sup>	932.00
9.41	Providing and laying 5mm thick Self levelling Epoxy Flooring for Residential, Commercial, Sports & Industrial purpose made of reputed brand applied at 1L/m <sup>2</sup> on existing Concrete substrate of 25Mpa or more. The Concrete shall be free from any defects and cracks. The epoxy compound shall have low VOC (Based on USEPA Method 24 Section 11.2.2 & ASTM D2369-98) and is chemically resistant & antimicrobial. The surface of Concrete shall be cleaned thoroughly and free from laitance and applied with primer cured for 6-8 hours. The mix shall be mixed using Hand mixing rotary machine. The underlay shall be laid with 3mm thickness and overlay at 2mm. The entire operation shall be finished in line with epoxy coving and marked with 100mm thickness yellow marking lines complete as per the direction of Engineer in charge.	m <sup>2</sup>	1,446.00



**Chapter - 10**

**CLADDING WORKS**



Sl. No.	Specification	Unit	Rate ₹
<b>10.0 CLADDING WORKS</b>			
10.1	Providing and fixing 18 mm thick gang saw cut granite of any color and shade, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch up, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.		
10.1.1	Area of the slab upto 0.50 m <sup>2</sup>	m <sup>2</sup>	<b>4,006.00</b>
10.1.2	Area of slab over 0.50 m <sup>2</sup>	m <sup>2</sup>	<b>3,937.00</b>
10.2	Providing edge moulding to 18mm thick Granite stone counters, vanities etc including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-charge.	m	<b>328.00</b>
10.3	Extra for fixing granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	m	<b>314.00</b>
10.4	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in Granite, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	each	<b>591.00</b>
10.5	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 ( 1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).		
10.5.1	Gunmetal cramps	kg	<b>580.00</b>
10.5.2	Stainless steel cramps	kg	<b>529.00</b>
10.6	Providing and fixing expansion hold fasteners on C.C. /R.C.C./Brick masonry surface backing including drilling necessary holes and the cost of bolt etc complete.		
10.6.1	Wedge expansion type		
10.6.1	Fastener with threaded dia 6 mm	each	<b>49.00</b>
10.6.2	Fastener with threaded dia 10 mm	each	<b>55.00</b>
10.6.3	Fastener with threaded dia 12 mm	each	<b>60.00</b>
10.7	Stone tile (polished) of 8mm thickness granite stone of any color and shade work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/m <sup>2</sup> including pointing in white cement complete.	m <sup>2</sup>	<b>2,596.00</b>

Sl. No.	Specification	Unit	Rate ₹
10.8	Providing and fixing granite stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in- charge and finished smooth.	m <sup>2</sup>	2,789.00
10.9	Providing and fixing expandable fasteners of specified size with necessary plastic sleeves and galvanised M.S. screws including drilling holes in masonry work / CC/ R.C.C. and making good etc. complete.		
10.9.1	25 mm long	No	26.00
10.9.2	32 mm long	No	28.00
10.9.3	40 mm long	No	30.00
10.9.4	50 mm long	No	31.00
10.10	Providing and fixing in wall lining flat pressed three layer (medium density) particle board or graded wood Pre-laminated one side decorative lamination and other side balancing lamination Grade I, Type II, IS : 12823 marked, including priming coat on unexposed arrangement and screws etc. complete :		
10.10.1	12 mm thick	m <sup>2</sup>	1,109.00
10.10.2	18 mm thick	m <sup>2</sup>	1,327.00
10.10.3	25 mm thick	m <sup>2</sup>	1,687.00
10.11	Providing and fixing plywood 4 mm thick, one side decorative veneer conforming to IS: 1328 (type-1), for plain lining / cladding with necessary screws, including priming coat on unexposed surface with Decorative veneer facings of approved manufacture	m <sup>2</sup>	1,480.00
10.12	Providing and fixing 4mm thick coir veneer board, ISI marked IS : 14842, plain lining with necessary screws, priming coat on unexposed surface etc., complete.	m <sup>2</sup>	1,363.00
10.13	Providing and fixing skirting with teak shade pre-laminated (one side decorative and other side balancing lamination) flat pressed 3 layer or graded particle board (medium density) Grade I, Type II, IS :12823 marked, with necessary fixing arrangements and screws, including drilling necessary holes for rawl plugs etc. and priming coat on unexposed surface complete :		
10.13.1	18 mm thick	m <sup>2</sup>	1,637.00
10.13.2	25 mm thick	m <sup>2</sup>	1,997.00

Sl. No.	Specification	Unit	Rate ₹
10.14	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer- in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg/m <sup>2</sup> , including pointing in white cement mixed with pigment of matching shade complete.	m <sup>2</sup>	1,106.00
10.15	Providing and fixing of Aluminium composite panel of approved make and colour for wall cladding for Brick/Rcc/stone walls & coloumnns/beams with necessary aluminium frame works at required level made out of 50x25x4mm C section or equivalent. The panel should consist of 3mm thick non-halogenated FR grade mineral based polymer ( 2 hrs fire resistance as per ASTM E119-12 and clause B, S1, do as per ENT 13501-1sandwiched between 0.50 skins thick aluminium sheet making a total panel thickness of 4mm. The surfaces will be finished with PVDF based coating on topsides and service coating on reverse sides would be in polyester paint. The system shall be fixed using GI brackets, aluminium L cleats and stainless steel bolts and nuts complete with spring washer and cap nuts and all other necessary accessories, sealing shall be done with necessary rods etc., complete		
10.15.1	For Straight Portion	m <sup>2</sup>	3,989.00
10.15.2	For Curved Portion	m <sup>2</sup>	4,744.00
10.16	Providing and fixing factory made solid Foam uPVC profile for kitchen cabinet frame (45 x 20 mm) of approved shade, quality and make. The profile shall be laminated on both sides, made from rigid foam sheets (Single extruded) having density 600 kg/m <sup>3</sup> and the exposed edges sealed with PVC edge beading of same shade and colour. The frame shall be fire retardent with necessary screw holding capacity. Frame shall be fixed to wall using Expendable Fastner with necesary stainless steel screws, all complete as per direction of Engineer-incharge.	m	404.00
10.17	Providing and fixing factory made Kitchen Cabinet Shutter/Partition 20 mm nominal thickness of approved shade, quality and make, made from rigid foam sheets (Single extruded) having density 600 kg/m <sup>3</sup> and laminated on both side by laminate Sheet/PVC foil lamination. The exposed edges shall be sealed with PVC edge beading of same shade and colour. The shutter shall be fire retardent having necessary screw holding capacity. Shutter shall be fixed to frame using approved hinges with necessary stainless steel screws, all complete as per direction of Engineer-in-charge.	m <sup>2</sup>	4,146.00
10.18	Providing and fixing of wall cladding using 20mm thick gang saw water cut Shiva gold granite, grey granite in CM 1:3 (1 cement : 3 coarse sand) proportion cut to required shape, pattern with paper joints, finished with cement mortal using white cement and colour pigments to match the colour of slab making through jointing with sealant, making holes 25mmx12mm grooves in joints including cost of all materials, mortar, labour, curing etc., complete.	m <sup>2</sup>	3,359.00

Sl. No.	Specification	Unit	Rate ₹
10.19	Providing and fixing 20mm thick gang saw water cut Lakared granite for cladding in CM 1:3 (1 cement : 3 coarse sand) proportion with a coat of rough plastering using CM 1:4 (1 cement : 4 fine sand), cut to required shape, pattern with paper joints, finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant, grooves in joints including cost of curing etc., complete including cost and conveyance of all materials, mortar, labour for all items of work, usage charges of machinery etc., complete as per specification.	m <sup>2</sup>	3,607.00
10.20	Providing and fixing of clay tiles for cladding tiles of size 230x75x10mm thick on 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) & jointed with Adhesive/cement slurry over rough plaster surface excluding cost of rough plastered surface and the surface is painted with red apex paint and black apex paint into the grooves. The work includes cost of all materials, labour charges for all items of work, usage charges for equipment, etc., complete as per specification.	m <sup>2</sup>	1,902.00
10.21	Providing and fixing of Laterite cladding tiles of size 230x75x10mm thick on 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) & jointed with Adhesive over rough plaster surface excluding cost of rough plastered surface. The work includes cost of all materials, labour charges for all items of work, usage charges for equipment, etc., complete as per specification.	m <sup>2</sup>	2,178.00
10.22	Providing and fixing of premium quality Terracota clay tiles for cladding of size 12x2x2 inches with single hole on 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) & jointed with Adhesive/cement slurry over rough plaster surface excluding cost of rough plastered surface. The work includes cost of all materials, labour charges for all items of work, usage charges for equipment, etc., complete as per specification.	m <sup>2</sup>	1,966.00
10.23	Providing and fixing of premium quality Terracota clay tiles for cladding of size 12x4x2 inches with twin holes on 12mm thick cement mortar 1:3 & jointed with Adhesive/cement slurry over rough plaster surface excluding cost of rough plastered surface. The work includes cost of all materials, labour charges for all items of work, usage charges for equipment, etc., complete as per specification.	m <sup>2</sup>	1,413.00
10.24	Providing and fixing good quality Exterior grade High Pressure Laminate (Single sided Thermosetting synthetic resin bonded sheet-Craft Paper Base) of 6mm thick as per IS 2046 standard with colors as per Architect choice (Brown red, Suede, Sandblast, brown, Matte, Wooden or similar colors) for cladding including fixing with necessary Aluminium frames, fixtures as per direction of Engineer in charge.	m <sup>2</sup>	4,030.00
10.25	Providing, fabricating and fixing of 6 mm thick High Pressure Laminate sheets in standard size of 1200 mm x 2400 mm (Sheets can be supplied in customized length depending on requirement). Sheets shall be manufactured involving a series of mechanical process in a state-of-the-art facility shall comprise of 0.25 mm Aluminium skins on both sides sandwiching		

Sl. No.	Specification	Unit	Rate ₹
	an LDPE (Low Density Poly Ethylene) core having a density of 0.92 g/cm3 giving the overall weight of HPL at 7.8 kg/m2. Aluminium skins to have a desired lacquer in Lumiflon coated on one side/Both side. The supplied panels shall have a dexterity to be formed in convex and concave shapes as also the ability to bend in 90 degrees under a mechanical process. Panel will be installed on Aluminium tubes at 500 mm c/c distance with special L brackets. There will be special fixing treatment on all the corner sections. Aluminium tube size will be 25 mm x 50 mm. Boards will be fixed on the Aluminium channels with colour matched rivets/ MS polymer Adhesives and brackets through 8 mm drill hole in boards and 5 mm dia drill holes in aluminium box. Rivets will be installed by automatic rivet guns / adhesive should be used with proper silicone extrusion gun and properly laid over panel and aluminium tube on every 500mm gap as per direction of Engineer in charge.		
10.25a	Wooden textured Colored sheets-Single sided	m <sup>2</sup>	3,122.00
10.25b	Solid/Dark textured Colored sheets-Single sided	m <sup>2</sup>	2,798.00
10.25c	Wooden textured Colored sheets-Double sided	m <sup>2</sup>	3,641.00
10.25d	Solid/Dark textured Colored sheets-Double sided	m <sup>2</sup>	3,447.00
	<b>Note : HPL sheets are exterior grade sheets for use in Wall cladding, Front elevation, Outdoor facades &amp; Gate coverings</b>		
10.26	Providing, fabricating and fixing of 10 mm thick Decorative Grooved Bamboo Wood Wall cladding with panel size 1220mmx2440mm, thermal insulation value 2.2 J/g oC & having density 1300kg/m3. The base material shall be of MDF and the surface of Bamboo shall be coated with Graphene based PU Coating. The material shall possess special properties such as Fire resistant, Thermal insulation, Sound absorbent and UV & Water resistant. The panel shall be fixed on walls using Mild steel screws or by using special adhesives as per direction of Engineer in charge.	m <sup>2</sup>	2,025.00



## Chapter - 11

# **STEEL AND ALUMINIUM WORK**



Sl. No.	Specification	Unit	Rate ₹
<b>11.0 STEEL AND ALUMINIUM WORK</b>			
11.1	Providing and fixing Structural Steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	<b>106.00</b>
11.2	Providing and fixing Structural Steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	<b>113.00</b>
11.3	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2 mm and braced with flat iron diagonals 20x5 mm size, with top and bottom rail of T-iron 40x40x6 mm, with 40 mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer including cost of materials ,labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>8,276.00</b>
11.4	Providing and fixing 1 mm thick M.S. sheet sliding-shutters, with frame and diagonal braces of 40x40x6 mm angle iron, 3 mm M.S. gusset plates at the junctions and corners, 25 mm dia pulley, 40x40x6 mm angle and T- iron guide at the top and bottom respectively, including applying a priming coat of approved steel primer including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>5,221.00</b>
11.5.1	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer. Using M.S. angels 40x40x6 mm for diagonal braces including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>4,478.00</b>
11.5.2	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer. Using flats 30x6mm for diagonal braces and central cross piece including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>4,242.00</b>

Sl. No.	Specification	Unit	Rate ₹
11.6.1	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x1.25 mm M.S. laths with 1.25 mm thick top cover including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	2,633.00
11.6.2	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x1.20 mm M.S. laths with 1.20 mm thick top cover including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	2,503.00
11.6.3	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x0.90 mm M.S. laths with 0.90 mm thick top cover including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	2,275.00
11.7	Providing and fixing ball bearing for rolling shutters including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	403.00
11.8.1	Extra for providing mechanical device chain and crank operation for operating rolling shutters: Exceeding 10.00 m <sup>2</sup> and upto 16.80 m <sup>2</sup> in the area including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	987.00
11.8.2	Extra for providing mechanical device chain and crank operation for operating rolling shutters: Exceeding 16.80 m <sup>2</sup> in area including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	1,000.00

Sl. No.	Specification	Unit	Rate ₹
11.8.3	Extra for providing Manually operated Bevel Gear Box for operating rolling shutters including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	each	<b>3,086.00</b>
11.8.4	Extra for providing 2 HP Mild Steel Auto Reverse Shutter Gearbox for operating rolling shutters including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	each	<b>24,686.00</b>
11.9	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer- in- charge, (area of grill to be measured) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>617.00</b>
11.10.1	Fixing standard steel glazed doors, windows and ventilators in walls, including fixing of float glass panes with glazing clips and special metal-sash putty of approved make, or metal beading with screws, (only steel windows, glass panes cut to size and glazing clips or metal beading with screws, shall be supplied by department free of cost: Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	<b>44.00</b>
11.10.2	Fixing standard steel glazed doors, windows and ventilators in walls, including fixing of float glass panes with glazing clips and special metal-sash putty of approved make, or metal beading with screws, (only steel windows, glass panes cut to size and glazing clips or metal beading with screws, shall be supplied by department free of cost: Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	<b>17.00</b>
11.11.1	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side /top /centre hung, with beading and all members such as F7D,F4B, K11 B and K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment).  Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	<b>148.00</b>

Sl. No.	Specification	Unit	Rate ₹
11.11.2	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side /top /centre hung, with beading and all members such as F7D,F4B, K11 B and K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment). Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	107.00
11.12	Extra for providing and fixing steel beading of size 10 x 10 x 1.6 mm (box type), approved shape and section with screws instead of glazing clips and metal sash putty, in steel doors, windows, ventilators and composite units including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m	50.00
11.13.1	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer: Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	124.00
11.13.2	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer: Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	120.00
11.14.1.1	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer- in-charge: Profile B Fixing with adjustable lugs with split end tail to each jamb including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m	470.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.14.1.2	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile B Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>m</b>	<b>460.00</b>
11.14.2.1	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile C Fixing with adjustable lugs with split end tail to each jamb including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>m</b>	<b>501.00</b>
11.14.2.2	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile C Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>m</b>	<b>491.00</b>
11.14.3.1	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile E Fixing with adjustable lugs with split end tail to each jamb including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>m</b>	<b>531.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.14.3.2	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile E Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>m</b>	<b>521.00</b>
11.15.1	Providing and fixing M.S. Tubular frames for doors, windows, ventilators and cupboard with rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and grinded finish, with profiles of required size, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer: Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>128.00</b>
11.15.2	Providing and fixing M.S. Tubular frames for doors, windows, ventilators and cupboard with rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and grinded finish, with profiles of required size, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer: Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>118.00</b>
11.16.1	Providing and fixing Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>136.00</b>
11.16.2	Providing and fixing Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished seamless type tubes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>147.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.16.3	Providing and fixing Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Electric resistance or induction butt welded tubes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>122.00</b>
11.17	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>No</b>	<b>183.00</b>
11.18	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>No</b>	<b>172.00</b>
11.19	Providing and fixing mild steel round holding down bolts with nuts and washer plates complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>83.00</b>
11.20	Providing and fixing bolts including nuts and washers complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>125.00</b>
11.21	Providing and fixing M.S. rivets of sizes in position including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>201.00</b>
11.22	Welding by gas or electric plant including transportation of plant at site etc. complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>10 cm</b>	<b>22.00</b>
11.25.1	Providing and fixing Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	<b>kg</b>	<b>113.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.25.2	Providing and fixing Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	136.00
11.26.1	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. M.S. tube including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	138.00
11.26.2	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. E.R.W. tubes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	130.00
11.26.3	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I. pipes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	183.00
11.27.1	Providing and fixing carbon steel galvanised ( minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm <sup>2</sup> ), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in- charge. 10 x 60 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	92.00
11.27.2	Providing and fixing carbon steel galvanised ( minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm <sup>2</sup> ), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in- charge. 10 x 80 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	97.00
11.27.3	Providing and fixing carbon steel galvanised ( minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm <sup>2</sup> ), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in- charge. 10 x 120 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	120.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.27.4	Providing and fixing carbon steel galvanised ( minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm <sup>2</sup> ), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in- charge. 10 x 140 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	130.00
11.27.5	Providing and fixing carbon steel galvanised ( minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm <sup>2</sup> ), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in- charge. 10 x 160 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	161.00
11.28	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in- charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	565.00
11.29.1	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete. Galvanised M.S. Wire gauze with 0.63 mm dia wire and 1.4 mm aperture on both sides including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	687.00
11.29.2	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete. Stainless steel (grade 304) wire gauze of 0.5 mm dia wire and 1.4 mm aperture on both sides including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	862.00
11.30.1	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with : 4.0 mm thick glass panes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	912.00
11.30.2	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with : 5.5 mm thick glass panes including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	1,258.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.31	Providing and fixing angle iron frames for doors, windows and ventilators of mild steel Angle sections of size 35x35x5 mm, joints mitred and welded by angle iron 35x35x5 mm or 35x 5 mm flat pieces to the existing T-iron frame or to the wall with dash fastener, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge including cost of materials, labour, usage charges of machinery complete as per specifications.	<b>kg</b>	<b>115.00</b>
11.34A	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to steel windows by welding	<b>kg</b>	<b>168.00</b>
11.34B	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to openings /wooden frames with rawl plugs screws etc.	<b>kg</b>	<b>183.00</b>
11.34.1	Providing and fixing parallel threaded couplers conforming to IS 16172 "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement barsand related operations as required to complete the works per direction of Engineer-in-Charge.- Coupler 16 mm dia.	<b>each</b>	<b>89.00</b>
11.34.2	Providing and fixing parallel threaded couplers conforming to IS 16172 "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement barsand related operations as required to complete the works per direction of Engineer-in-Charge.- Coupler 20 mm dia.	<b>each</b>	<b>109.00</b>
11.34.3	Providing and fixing parallel threaded couplers conforming to IS 16172 "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement barsand related operations as required to complete the works per direction of Engineer-in-Charge.- Coupler 25 mm dia.	<b>each</b>	<b>166.00</b>
11.34.4	Providing and fixing parallel threaded couplers conforming to IS 16172 "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement barsand related operations as required to complete the works per direction of Engineer-in-Charge.- Coupler 28 mm dia.	<b>each</b>	<b>187.00</b>
11.34.5	Providing and fixing parallel threaded couplers conforming to IS 16172 "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement barsand related operations as required to complete the works per direction of Engineer-in-Charge.- Coupler 32 mm dia.	<b>each</b>	<b>243.00</b>

Sl. No.	Specification	Unit	Rate ₹
11.35.1.1	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate sections and other sections of approved make conforming to IS: 733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For Fixed Portion : Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) including cost of materials, labour, usage charges of machinery complete as per specifications.</p>	kg	<b>452.00</b>
11.35.1.2	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate sections and other sections of approved make conforming to IS: 733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For Fixed Portion: Powder coated aluminium (minimum thickness of powder coating 50 micron) including cost of materials, labour, usage charges of machinery complete as per specifications.</p>	kg	<b>489.00</b>
11.35.1.3	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate sections and other sections of approved make conforming to IS: 733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For Fixed Portion :Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron) including cost of materials, labour, usage charges of machinery complete as per specifications.</p>	kg	<b>499.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.35.2.1	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate sections and other sections of approved make conforming to IS: 733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For shutters of doors, windows &amp; ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) including cost of materials,labour,usage charges of machinery complete as per specifications.</p>	<b>kg</b>	<b>534.00</b>
11.35.2.2	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate sections and other sections of approved make conforming to IS: 733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For shutters of doors, windows &amp; ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Powder coated aluminium (minimum thickness of powder coating 50 micron) including cost of materials, labour, usage charges of machinery complete as per specifications.</p>	<b>kg</b>	<b>571.00</b>
11.35.2.3	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate sections and other sections of approved make conforming to IS: 733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For shutters of doors, windows &amp; ventilators including providing and</p>	<b>kg</b>	<b>582.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
	fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron) including cost of materials, labour, usage charges of machinery complete as per specifications.		
11.36.1	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge: Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side including cost of materials, labour, usage charges of machinery complete as per specifications.	m <sup>2</sup>	<b>897.00</b>
11.36.2	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer- in-charge: Pre-laminated particle board with decorative lamination on both sides including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>983.00</b>
11.37.1	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):With float glass panes of 4.0 mm thickness (weight not less than 10kg/ m <sup>2</sup> ) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	<b>988.00</b>
11.37.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):With float glass panes of 5 mm thickness (weight not less than 12.50 kg/m <sup>2</sup> ) including cost of materials, labour, usage charges of machinery complete as per specifications.	m <sup>2</sup>	<b>1,171.00</b>
11.37.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge .(Cost of aluminium snap beading shall be paid in basic item):With float glass panes of 8 mm thickness (weight not less than 20 kg/ m <sup>2</sup> ) including cost of materials, labour, usage charges of machinery complete as per specifications.	m <sup>2</sup>	<b>1,305.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.38.1	Providing and fixing double action hydraulic floor spring of approved brand manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge: With stainless steel cover plate minimum 1.25 mm thickness including cost of materials, labour, usage charges of machinery complete as per specifications.	each	2,619.00
11.38.2	Providing and fixing double action hydraulic floor spring of approved brand manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge: With brass cover plate minimum 1.25 mm thickness including cost of materials, labour, usage charges of machinery complete as per specifications.	each	2,804.00
11.39	Providing and fixing powder coated aluminium work (minimum thickness of powder coating 50 micron) consisting of tee/ angle sections, of approved make conforming to IS : 733 in frames of false ceiling including aluminium angle cleats with necessary C.P. brass/ stainless steel sunk screws, aluminium perimeter angles fixed to wall with stainless steel rawl plugs @ 450 mm centre to centre and fixing the frame work to G.I. level adjusting hangers 6 mm dia. with necessary cadmium plated machine screws all complete as per approved architectural drawings and direction of the Engineer- in-charge (level adjusting hangers, ceiling cleats and expansion hold fasteners to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications.	kg	691.00
11.40	Providing and fixing 6 mm dia. G.I. level adjusting hangers (upto 1200mm length), fixed to roof slabs by means of ceiling cleats made out of G.I. flat 40x3mm size 60 mm long and stainless steel expandable dash fastener of 12.5 mm dia and 50 mm long, complete as per direction of Engineer-in-charge including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	63.00
11.41.1	Providing and fixing machine moulded aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick	kg	627.00

Sl. No.	Specification	Unit	Rate ₹
	& 15 mm dia , at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer-in-charge: Anodised aluminium sheet 2.5mm thick (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) including cost of materials, labour, usage charges of machinery complete as per specifications.		
11.41.2	Providing and fixing machine moulded aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick & 15 mm dia , at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer-in-charge: Powder coated aluminium sheet 2.5mm thick (minimum thickness of powder coating 50 micron) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	661.00
11.42.1	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete: Upto 5mm depth and 5 mm width including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m	62.00
11.43.1	Extra for applying additional anodic coating AC 25 instead of AC 15 to aluminium extruded sections: For fixed portion including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	15.00
11.43.2	Extra for applying additional anodic coating AC 25 instead of AC 15 to aluminium extruded sections: For Shutters of Doors, Windows & ventilators including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	kg	15.00
11.44	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	4,345.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.45.1	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.:205 X 19 mm including cost of materials, labour, usage charges of machinery complete as per specifications.	No	<b>270.00</b>
11.45.2	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.:255 X 19 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	<b>301.00</b>
11.45.3	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.:355 X 19 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	<b>455.00</b>
11.45.4	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.:510 X 19 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	<b>689.00</b>
11.45.5	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.:710 X 19 mm including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	<b>1,165.00</b>
11.46.1	Providing and fixing aluminium tubular handle bar 32 mm outer dia,3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.: Anodized (AC 15 ) aluminium tubular handle bar including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	<b>586.00</b>
11.46.2	Providing and fixing aluminium tubular handle bar 32 mm outer dia,3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.: Powder coated minimum thickness 50 micron aluminium tubular handle bar including cost of materials, labour, usage charges of machinery complete as per specifications.	No	<b>644.00</b>
11.46.3	Providing and fixing aluminium tubular handle bar 32 mm outer dia,3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.: Polyester powder coated minimum thickness 50 micron aluminium tubular handle bar including cost of materials, labour, usage charges of machinery complete as per specifications.	No	<b>659.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
11.47	Providing and fixing Brass 100mm mortice latch and lock with 6 levers without pair of handles (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete including cost of materials, labour, usage charges of machinery complete as per specifications.	No	437.00
11.48	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS: 1285, fixed with dash fastener of required dia and size (Dash fastener to be paid for separately) including cost of materials, labour, usage charges of machinery complete as per specifications.	kg	395.00
11.49.1	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete. Anodized (AC 15) aluminium including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	66.00
11.49.2	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete. Powder coated minimum thickness 50 micron aluminium including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	72.00
11.49.3	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete. Polyester powder coated minimum thickness 50 micron aluminium including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	70.00
11.50.1	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in- charge: Anodized (AC 15 ) aluminium including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	81.00
11.50.2	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in- charge: Powder coated minimum thickness 50 micron aluminium including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	81.00
11.50.3	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in- charge: Polyester powder coated minimum thickness 50 micron aluminium including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	No	83.00

Sl. No.	Specification	Unit	Rate ₹
11.51	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P.brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment) including cost of materials, labour, usage charges of machinery complete as per specifications.	kg	524.00
11.52	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double acting hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc. to be paid separately) including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.	m <sup>2</sup>	4,722.00
11.53.1	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920, DIN 18540- F & ISO 11600 Upto 5 mm depth and 5 mm width including cost of materials, labour, usage charges of machinery complete as per specifications.	m	115.00
11.53.2	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920, DIN 18540-F & ISO 11600 Upto 10 mm depth and 10 mm width including cost of materials, labour, usage charges of machinery complete as per specifications.	m	159.00
11.53.3	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920, DIN 18540- F & ISO 11600 Upto 20 mm depth and 20 mm width including cost of materials, labour, usage charges of machinery complete as per specifications.	m	296.00
11.54	Providing and fixing of customized Aluminium formwork for monolithic construction RCC members with a repetitive usage of 100 times using grade 5052 aluminium for panel sheets of minimum 4 mm thick and grade 6061 (Type-6) aluminium for extruded sections. The form work includes of beam components i.e.beam side panel,prop head for soffit beam,beams soffit panel,beam soffit bulk head and deck componets i.e. deck panel,	m <sup>2</sup>	189.00

Sl. No.	Specification	Unit	Rate ₹
	deck prop, prop length, deck mid, soffit length, deck beam bar and wall components i.e. wall panel, rocker, kiker and internal soffit corner, external soffit corner, external corner, internal corner etc., The panels are held in position by a simple pin and wedge system that passes through holes in the out side rib of each panel. The tolerance of finished panels to be (-1 mm), and shall conform to IS 14687-1999. Pins and wedges to be made of high grade mild steel, all complete as per direction of Engineer-incharge. (Cost of RCC work shall be paid separately)		
11.55	Supplying and fixing turn buckles and straining bolts for barbed wire fencing.	1 set	217.00
11.56	Fencing with G.I. barbed wire R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post (cost of R.C.C. posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used.	m	12.00
11.57	Fencing with G.I. barbed wire Angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used.		
11.57.1	With G.I. barbed wire	m	18.00
11.57.2	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.	kg	113.00
11.58	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. (Made of G.I. wire of dia 4 mm)	m <sup>2</sup>	803.00
11.59	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. (Made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade)	m <sup>2</sup>	841.00

Sl. No.	Specification	Unit	Rate ₹
11.60	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 25x25 mm made of G.I. wire of dia 3 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge.	m <sup>2</sup>	<b>893.00</b>
11.61	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 m openable length ( total length 90 m), having 50 nos rounds per 6 m length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/mm <sup>2</sup> with tape (0.52 mm thick) and weight 43.478 g/m (cost of M.S. angle, C.C. blocks shall be paid separately)	m	<b>316.00</b>
11.62	Providing and fixing RCC precast fencing pole of size 0.15mx0.15mx2.0m casted in M 20 with 20mm down size aggregates making holes for drawing barbed wire at 30 cm c/c using 8 mm dia vertical 4 TMT steel rods and 6 mm dia stirups at 15 cm c/c fixed 1.5 m above Ground level using steel moulding, curing, transportation to work spot including excavation in all types of soil, fixing in plain cement concrete M15 using 20 mm downsize aggregate including aligning to plumb and line providing including cost of all materials, labour, usage charges of machinery complete.	each	<b>1,085.00</b>

**Chapter - 12**

**WOOD & PVC WORKS**



Sl. No.	Specification	Unit	Rate ₹
<b>12.0 WOOD &amp; PVC WORKS</b>			
12.1	Labour for providing Teak wood wrought and putup for purlins, common rafters and similar work including cost of labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>7,052.00</b>
12.2	Providing Honne wood wrought and putup for purlins, common rafters and similar work including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>1,36,270.00</b>
12.3	Providing Mathi / Nandi wood wrought and putup for purlins, common rafters and similar work including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>1,22,399.00</b>
12.4	Providing Sal wood wrought and putup for purlins, common rafters and similar work including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>97,012.00</b>
12.5	Providing Jungle wood such as Nerale, Neem wrought and putup for purlins, common rafters and similar work including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>44,929.00</b>
12.7	Providing Honne wood frames for false ceiling, partitions etc., main battens of size 50x12.5mm at 600mm c/c and cross battens 38mmx50mm at 600 mm c/c sawn and putup including cost of materials, labour complete as per specifications.	m <sup>3</sup>	<b>1,38,488.00</b>
12.8	Providing Mathi or Nandi wood frames for false ceiling, partitions etc., main battens of size 50x12.5mm at 600 mm c/c and cross battens 38mmx50mm at 600mm c/c sawn and putup including cost of materials, labour complete as per specifications.	m <sup>3</sup>	<b>1,24,625.00</b>
12.9	Providing Sal wood frames for false ceiling, partitions etc., main battens of size 50x12.5mm at 600 mm c/c and cross battens 38mmx50mm at 600mm c/c sawn and putup including cost of materials, labour complete as per specifications.	m <sup>3</sup>	<b>99,253.00</b>
12.11	Providing Honne wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps), but including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>1,38,074.00</b>
12.12	Providing Mathi/Nandi wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps ), but including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	<b>1,24,202.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.13.1	Providing Salwood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps), but including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	98,815.00
12.13.2	Providing Red Salwood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps), but including cost of materials, labour, usage charges complete as per specifications.	m <sup>3</sup>	99,600.00
12.15	Providing and fixing in position fully panelled Honne wood shutters for doors with stiles and rails of 40mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. ( excluding cost of fixtures )	m <sup>2</sup>	7,444.00
12.15	Providing and fixing in position fully panelled Mathi/Nandi wood shutters for doors with stiles and rails of 40mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,897.00
12.17	Providing and fixing in position fully panelled Honne wood shutters for doors with , stiles and rails of 35mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	7,085.00
12.18	Providing and fixing in position fully panelled Matti/Nandi wood shutters for doors with, stiles and rails of 35mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. (excluding cost of fixtures )	m <sup>2</sup>	6,576.00
12.20	Providing and fixing in position fully panelled Honne wood shutters for doors with , stiles and rails of 30mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. (excluding cost of fixtures )	m <sup>2</sup>	6,150.00
12.21	Providing and fixing in position fully panelled Matti/Nandi wood shutters for doors with , stiles and rails of 30mm. thick with bottom and lock rails 180mm wide top rail and stiles 100mm wide as per drawing and panels of 25mm thick including cost of materials, labour, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,742.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.23	Providing and fixing in position Honnewood fully panelled shutters for windows with stiles and rails of 35mm. thick, 75mm wide in two halves with panels of 25mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	7,574.00
12.24	Providing and fixing in position Mathi/Nandi wood fully panelled shutters for windows with stiles and rails of 35mm. thick, 75mm wide in two halves with panels of 25mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	7,013.00
12.25	Providing and fixing in position fully panelled shutters for windows with Honne wood stiles and rails of 35mm. thick, 75mm wide in two halves with panels provided with MDF of 25mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,201.00
12.27	Providing and fixing in position fully panelled shutters of Honne wood for windows with stiles and rails of 30mm thick, 75mm wide in two halves with panels of 20mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,700.00
12.28	Providing and fixing in position fully panelled shutters of Mathi/Nandi wood for windows with stiles and rails of 30mm thick, 75mm wide in two halves with panels of 20mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,232.00
12.29	Providing and fixing in position fully panelled shutters for windows with Honne wood stiles and rails of 30mm. thick, 75mm wide in two halves with panels provided with MDF of 18mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,640.00
12.31	Providing and fixing in position Honne wood fully panelled shutters for windows with stiles and rails of 25mm. thick, 75mm wide in two halves with panels of 20mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,263.00
12.32	Providing and fixing in position Mathi / Nandi wood fully panelled shutters for windows with stiles and rails of 25mm. thick, 75mm wide in two halves with panels of 20mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,842.00

Sl. No.	Specification	Unit	Rate ₹
12.33	Providing and fixing in position fully panelled shutters for windows with Honne wood stiles and rails of 25mm. thick, 75mm wide in two halves with panels provided with MDF of 18mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	4,975.00
12.34	Providing and fixing in position fully panelled shutters for windows with Honne wood stiles and rails of 25mm. thick, 75mm wide in two halves with panels provided with MDF of 12mm thick including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	4,727.00
12.36	Providing and fixing in position Honne wood half panelled shutters at bottom and half glazed at top for window shutters with stiles and rails of 35mm. thick, 75mm wide in two halves with panels of 25mm thick, 3mm thick reeded glass for top panels fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,919.00
12.37	Providing and fixing in position Mathi/Nandi wood half panelled shutters at bottom and half glazed at top for window shutters with stiles and rails of 35mm thick, 75mm wide in two halves with panels of 25mm thick, 3mm thick reeded glass for top panels fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,456.00
12.38	Providing and fixing in position windows half paneled shutters at bottom and half glazed at top for window shutters with Honne wood stiles and rails of 35mm. thick, 75mm wide in two halves with panels filled with MDF of 18mm thick, 3mm thick reeded glass for top panels fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,898.00
12.40	Providing and fixing in position Honne wood half panelled shutters at bottom and half glazed at top for window shutters with stiles and rails of 30mm. thick, 75mm wide in two halves with panels of 20mm thick, 3mm thick reeded glass for top panels fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,373.00
12.41	Providing and fixing in position Mathi/Nandi wood half panelled shutters at bottom and half glazed at top for window shutters with stiles and rails of 30mm. thick, 75mm wide in two halves with panels of 20mm thick, 3mm thick reeded glass for top panels fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,968 .00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.42	Providing and fixing in position windows half paneled shutters at bottom and half glazed at top for window shutters with Honne wood stiles and rails of 30mm. thick, 75mm wide in two halves with panels filled with MDF of 18mm thick, 3mm thick reeded glass for top panels fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,114.00
12.43	Providing and fixing in position fully glazed for windows shutters with Teak wood stiles and rails of 35mm. thick 75mm wide in single shutters with 4mm thick plain glass fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	10,783.00
12.44	Providing and fixing in position fully glazed for windows shutters with Honne wood stiles and rails of 35mm. thick 75mm wide in single shutters with 4mm thick plain glass fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,486.00
12.45	Providing and fixing in position fully glazed for windows shutters with Teak wood stiles and rails of 30mm. thick, 75mm wide in single shutters with 4mm thick plain glass fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	9,788.00
12.46	Providing and fixing in position fully glazed for windows shutters with Honne wood stiles and rails of 30mm. thick, 75mm wide in single shutters with 4mm thick plain glass fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	5,158.00
12.48	Providing and fixing in position fully glazed for windows shutters with Honne wood stiles and rails of 25mm. thick, 75mm wide in single shutters with 4mm thick plain glass fixed with wooden beading including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	4,831.00
12.49	Providing and fixing in position fully glazed shutters for ventilators side hung or central pivoted with Honne wood stiles and rails of 30mm thick 50mm wide and central divider of 30mm. wide, 3mm thick reeded glass fixed with wooden beading of size 10mm wide flushed to the thickness of the frame including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,523.00
12.50	Providing and fixing in position fully glazed shutters for ventilators side hung or central pivoted with Mathi/Nandi wood stiles and rails of 30mm thick 50mm wide and central divider of 30mm. wide, 3mm thick reeded glass fixed with wooden beading of size 10mm wide flushed to the thickness of the frame including cost of materials, labour charges, usage charges complete as per specifications. (excluding cost of fixtures)	m <sup>2</sup>	6,134.00

Sl. No.	Specification	Unit	Rate ₹
12.51	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications.	No.	1,016.00
12.52	Fixing of window frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debries with lead upto 50 m. including cost of materials, labour charges, complete as per specifications.	No.	773.00
12.53	Providing & fixing 30mm thick factory made rigid foam Panelled Door Shutters made from M.S. tube of 19 gauge thickness, size 19x19mm for stiles and 15x15mm for top & bottom rails, covered with heat moulded PVC C channel of 5mm thick sheet & 30 x 50mm wide to form stiles & 5mm thick & 75mm wide PVC Sheets for top rail, lock rail & bottom rail on either side & 5mm thick 20mm wide PVC sheet as gap insert for top rail & bottom rail, Panelling of 5mm thick PVC sheet fitted in the M.S. Frame, Sealed to the stiles & rails with 5x30mm PVC sheet beading on either side & joined together with solvent cement adhesive etc., Complete as per manufacturers specification & direction of Engineer-in-charge fixed to frames with 3 nos of 75 mm Aluminium hinges.	m <sup>2</sup>	1,588.00
12.54	Providing & fixing factory made PVC Door frame of size 50x47mm with a wall thickness of 5mm, made out of extruded 5mm rigid PVC foam sheet metered cut at corners & jointed 2 Nos of 150mm long brackets of 15x15mm M.S Square tube, the entire door frame to be reinforced with 19x19mm M.S Square tube of 19 gauge. The door frame to be fixed to the wall using M.S. Screws of 65/80mm size complete as per manufacturers specification & direction of Engineer-in-charge.	m	318.00
12.55	Providing & fixing 30mm thick factory made rigid foam Prelam Panelled Door Shutters made from M.S. tube of 19x19mm, 19 gauge for stiles and 15x15mm for top & bottom rails, covered with heat moulded Prelaminated PVC C Channel of 5mm thick sheet & 30x50mm wide to form stiles & 5mm thick & 75mm wide Prelaminated PVC Sheets for top rail, lock rail & bottom rail on either side & 5mm thick, 20mm wide cross PVC sheet as gap insert for top rail & bottom rail, Panelling of 5mm thick PVC sheet Prelaminated on either side fitted in the M.S. frame, Sealed to the stiles & rails with PVC Designer beading on either side & joined together with solvent cement adhesive etc., Complete as per manufacturers specification & direction of Engineer-in-charge fixed to frames with 3 nos of 75mm Aluminium hinges.		
12.55.1	-do- with both side prelam	m <sup>2</sup>	2,366.00
12.55.2	-do- with one side prelam	m <sup>2</sup>	2,040.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.57	Providing and fixing flush door shutter made out of solid core block board type, well seasoned , chemically treated hard wood battens and internal frame with minimum 45 mm wide wooden frame arround door shutters covered with cross bonded wooden sheets (core veneer) hot pressed and fastened on both sides of the door useing liquid phenol formaldehyde resin as per IS specifications 2202 (part-I) 1991. from manufacturer complete as per spcification.		
12.57.1	-do- 30 mm thick Both side teak	m <sup>2</sup>	4,043.00
12.57.2	-do- 30 mm thick one side teak and one side commercial	m <sup>2</sup>	3,493.00
12.57.3	-do- 30 mm thick both side commercial	m <sup>2</sup>	3,005.00
12.57.4	-do- 35 mm thick both side Teak	m <sup>2</sup>	4,532.00
12.57.5	-do- 35 mm thick one side teak and one side commercial	m <sup>2</sup>	3,897.00
12.57.6	-do- 35 mm thick both side commercial	m <sup>2</sup>	3,322.00
12.57.7	-do- 40 mm thick both side Teak	m <sup>2</sup>	4,960.00
12.57.8	-do- 40 mm thick one side teak and one side commercial	m <sup>2</sup>	4,300.00
12.57.9	-do- 40 mm thick both side commercial	m <sup>2</sup>	3,652.00
12.58	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.	No.	120.00
12.59	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 35 kg and door width upto 700 mm), with necessary accessories and screws etc. complete.	No.	1,114.00
12.60	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.	No.	1,052.00
12.61	Providing and fixing chromium plated brass night latch of approved quality including necessary screws etc. complete.	No.	990.00
12.62	Providing and fixing chromium plated brass handles of 100/125 mm with necessary screws etc. complete	No.	237.00
12.63	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868 ) transparent or dyed to required colour or shade, with necessary screws etc. complete	No.	130.00
12.64	Providing and fixing PTMT door catcher of length 72 mm and dia. of 42 mm with suitable washers weighing not less than 33 gms	No.	55.00
12.65	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete.	No.	59.00

Sl. No.	Specification	Unit	Rate ₹
12.66	Providing and fixing chromium plated brass curtain rod with ISI mark having wall thickness of 1.25mm with two chromium plated brass brackets fixed with C.P. brass screws and PVC sleeves etc., wherever necessary complete		
12.66.1	12mm dia	m	<b>561.00</b>
12.66.2	20mm dia	m	<b>653.00</b>
12.66.3	25mm dia	m	<b>767.00</b>
12.67	Providing and fixing nickel plated M.S. pipe curtain rods with nickel plated brackets		
12.67.1	20mm dia heavy pipe	m	<b>421.00</b>
12.67.2	25mm dia heavy pipe	m	<b>441.00</b>
12.68	Providing and fixing ISI marked M.S. pressed butt hinges bright finished with necessary screws etc.		
12.68.1	125x65x2.12mm	No.	<b>55.00</b>
12.68.2	100x58x1.9mm	No.	<b>43.00</b>
12.68.3	75x47x1.7mm	No.	<b>38.00</b>
12.68.4	50x37x1.50mm	No.	<b>32.00</b>
12.69	Providing and fixing ISI marked oxidised M.S. single acting spring hinges with necessary screws etc.		
12.69.1	150mm	No.	<b>274.00</b>
12.69.2	125mm	No.	<b>243.00</b>
12.69.3	100mm	No.	<b>216.00</b>
12.70	Providing and fixing oxidised M.S. double acting spring hinges with necessary screws etc. complete.		
12.70.1	150mm	each	<b>304.00</b>
12.70.2	125mm	each	<b>280.00</b>
12.70.3	100mm	each	<b>253.00</b>
12.71	Providing M.S. Piano hinges ISI marked IS : 3818 finished with nickel plating and fixing with necessary screws etc., complete.		
12.71.1	Nickel plated mild steel piano hinges 1 mm thick 35 mm wide	m	<b>298.00</b>
12.71.2	Nickel plated mild steel piano hinges 1 mm thick 50 mm wide	m	<b>316.00</b>
12.71.3	Nickel plated mild steel piano hinges 1 mm thick 65 mm wide	m	<b>346.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.72	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws etc. complete :	each	82.00
12.73	Providing and fixing ISI marked oxidised M.S. handles conforming to IS:4992 with necessary screws etc. complete :		
12.73.1	125mm	each	44.00
12.73.2	100mm	each	37.00
12.73.3	75mm	each	31.00
12.74	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :		
12.74.1	125x64x1.90mm	No.	102.00
12.74.2	100x58x1.90mm	No.	91.00
12.74.3	75x47x1.80mm	No.	72.00
12.74.4	50x37x1.50mm	No.	45.00
12.75	Providing and fixing bright finished brass butt hinges with necessary screws etc. complete :		
12.75.1	125x85x5.5 mm (heavy type)	No.	275.00
12.75.2	125x70x4 mm (ordinary type)	No.	184.00
12.75.3	100x85x5.5 mm (heavy type)	No.	205.00
12.75.4	100x70x4 mm (ordinary type)	No.	140.00
12.75.5	75x65x4 mm (heavy type)	No.	169.00
12.75.6	75x40x2.5 mm (ordinary type)	No.	102.00
12.75.7	50x40x2.5 mm (ordinary type)	No.	52.00
12.76	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete :		
12.76.1	250x10mm	each	435.00
12.76.2	200x10mm	each	350.00
12.76.3	150x10mm	each	289.00
12.76.4	100x10mm	each	197.00
12.77	Providing and fixing special quality bright finished brass cupboard or ward robe locks with four levers of approved quality including necessary screws etc. complete.		
12.77.1	40mm	each	311.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.77.2	50mm	each	<b>348.00</b>
12.77.3	65mm	each	<b>360.00</b>
12.77.4	75mm	each	<b>384.00</b>
12.78	Providing and fixing 50 mm bright finished brass cup board or wardrobe knob of approved quality with necessary screws.	each	<b>72.00</b>
12.79	Providing and fixing bright finished brass handles with screws etc. complete:		
12.79.1	Brass handles 125 mm with plate 175x32 mm	each	<b>249.00</b>
12.79.2	Brass handles 100 mm with plate 150x32 mm	each	<b>231.00</b>
12.79.3	Brass handles 75 mm with plate 125x32 mm	each	<b>182.00</b>
12.80	Providing and fixing door latch with necessary screws etc complete.		
12.80.1	Bright finished brass latch	each	<b>285.00</b>
12.80.2	Oxidised mild steel door latch	each	<b>79.00</b>
12.81	Providing and fixing powder coated telescopic drawer channels 300 mm long with necessary screws etc complete as per directions of Engineer-in-charge	set	<b>414.00</b>
12.82	Providing and fixing sliding arrangement in racks/ cupboards/cabinets shutter by with stainless steel rollers to run inside C or E aluminium channel section (The payment of C or E channel shall be made separately)	No.	<b>22.00</b>
12.83	Providing and fixing factory made uPVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance $\pm 1$ mm), with wall thickness 2.0 mm ( $\pm 0.2$ mm), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and Plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19 mm and 1mm ( $\pm 0.1$ mm) wall thickness and 3 nos. stainless steel hinges fixed to the frame complete as per manufacturer's specification and direction of Engineer- in-charge		
12.83.1	48x40 mm PVC Extruded section	m	<b>198.00</b>
12.83.2	42x50 mm PVC Extruded section	m	<b>239.00</b>
12.84	Providing & fixing of 2-track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO <sub>2</sub> (Titanium Dioxide) at 6 PHR with TPE (Thermo Plastic Elastomer) and lead free, gaskets -grey color having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 44mm width x 40mmheight with reinforcement of 1mm thickness and Sash with overall size of 27mm X 53mm with UPVC	m <sup>2</sup>	<b>5,023.00</b>

Sl. No.	Specification	Unit	Rate ₹
	honeycomb structure inside in lieu of GI reinforcement. Coextruded Glazing bead for fixing of glass shall be of size 9.5mm x 21.5mm. Windows shall be provided with 5mm plain float glass, standard hardware& single point locking system with Crescent Locks. Wall thickness of frame & sash shall be of 2 mm. Maximum possible size – 1219mm x 1219mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)		
12.85	Providing & fixing of louvered ventilator made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free with gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the ventilator frame. The frame having overall size of 39mm x 39mm with GI reinforcement of 1mm thickness. Louver clip in Aluminium (powder coated in white) will be used on the frame along with plastic parts for fixing the 4 mm pin head glass. Wall thickness of frame shall be 2mm. Maximum possible size – 1000mm x 1000mm.(The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	5,719.00
12.86	Providing & fixing of 2-track x 2-panel sliding windows made out of multi chambered UPVC (Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 50mm width x 42mmheight with reinforcement of 1mm thickness and Sash with overall size of 31mm X 57mm with Gi reinforcement of 1mm for the frame and 1.5 mm for the sash. Coextruded Glazing bead for fixing of glass shall be of size 21.5mm x 9.5 mm. Windows shall be provided with 5mm plain float glass, standard hardware& single point locking system with touch lock. Wall thickness of frame & sash shall be of 1.8+-0.2 mm. Maximum possible size – 1519mm x 1519mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	5,390.00
12.87	Providing & fixing of 2.5 track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 81mm width x 42mmheight with reinforcement of 1mm thickness and Sash with overall size of 31mm x 57mm and mesh sash of size with GI reinforcement of 1.5mm thickness. Coextruded Glazing bead for fixing of glass shall be of size 21.5mm x 9.5mm. Windows shall be provided with 5mm plain float glass, standard hardware& single point locking system with touch lock. Wall thickness of frame & sash shall be of 1.8-2.0mm. Maximum possible size – 1519mm x 1519mm (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	6,551.00

Sl. No.	Specification	Unit	Rate ₹
12.88	Providing & fixing of 2-track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having a overall size of 60mm width x 45mmheight with reinforcement of 1mm thickness and Sash with overall size of 39mm X 58mm with GI reinforcement of 1mm for the frame and 1.5 mm for the sash. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 24mm. Windows shall be provided with 5mm plain float glass, standard hardware& single point locking system with touch lock. Wall thickness of frame & sash shall be of 2-2.5 mm. Maximum possible size – 1819mm x 1819mm (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	5,390.00
12.89	Providing & fixing of 2.5 track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 94mm width x 45mm height with reinforcement of 1mm thickness and Sash with overall size of 39mm x 58mm with GI reinforcement of 1.5mm and mesh sash of size 25mm x 42mm. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 24 mm. Windows shall be provided with 5mm plain float glass, standard hardware& single point locking system with touch lock. Wall thickness of frame & sash shall be of 2mm-2.5mm. Maximum possible size – 1819mm x 1819mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	6,551.00
12.90	Providing & fixing of 3-track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 108mm width x 45mmheight with reinforcement of 1mm thickness and Sash with overall size of 39mm x 75mm with GI reinforcement of 2mm and mesh sash of size 37mm x 58mm. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 24 mm. Windows shall be provided with 6mm plain float glass, standard hardware& Multi point locking system with touch lock. Wall thickness of frame & sash shall be of 2mm-2.5mm. Maximum possible size – 2419mm x 2200mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	6,734.00
12.91	Providing& fixing of Openable window made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPV(Thermo Plastic Vulcanized) and lead free with gaskets -grey colour having isolated drainage and reinforced with	m <sup>2</sup>	6,062.00

Sl. No.	Specification	Unit	Rate ₹
	Galvanized Iron profile through-out the openable frame. The frame having overall size of 60mm x 55mm with GI reinforcement of 1mm thickness and openable sash with overall size of 60mm x 75mm and GI reinforcement of 1.5mm thickness. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 34 mm. Windows shall be provided with 5mm plain float glass, Standard hardware with friction hinge & Multi point locking system with Handle. Wall thickness of frame & sash shall be of 2mm-2.5mm. Maximum possible size - 900mm x 1819mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)		
12.92	Providing & fixing of Openable door made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO <sub>2</sub> (Titanium Dioxide) at 6PHR with TPV(Thermo Plastic Vulcanized) and lead free with gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the openable frame. The frame having overall size of 60mm x 55mm with GI reinforcement of 1mm thickness and openable sash with overall size of 60mm x 102mm and GI reinforcement of 2mm thickness. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 34 mm. Windows shall be provided with 6mm plain float glass, Standard hardware with 2D/3D hinge & Multi point locking system with Handle. Wall thickness of frame & sash shall be of 2mm-2.5mm. Maximum possible size - 900mm x 2400mm. (The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)	m <sup>2</sup>	<b>6,245.00</b>
12.93	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clerestory windows & other Frames/ Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibres (wood powder/rice husk/ wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 g) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 850 kg/m <sup>3</sup> , screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm <sup>2</sup> , modulus of elasticity 900 N/mm <sup>2</sup> and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-InCharge. (Fixtures shall be paid for separately)		
12.93.1	Size 62 x 100mm	m	<b>702.00</b>
12.93.2	Size 62 x 125mm	m	<b>764.00</b>
12.93.3	Size 62 x 150mm	m	<b>807.00</b>
12.94	Providing and fixing factory made Green certified, Anti Termite, UV resistant, high water absorbant single extruded WPC (Wood PolymerComposite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/rice husk/wheat husk) and non toxic additives (maximum		

Sl. No.	Specification	Unit	Rate ₹
	toxicity index of 12 for 100 g) having minimum density of 650 kg/m3 and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength of 50 N/mm2 , modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws The cost includes cost of materials, transportation, labour and fixing charges.(Cost of Fixtures to be paid separately)		
12.94.1	30 mm thickness	m <sup>2</sup>	<b>3,485.00</b>
12.94.2	35 mm thickness	m <sup>2</sup>	<b>4,041.00</b>
12.95	Providing and fixing factory made 18 mm thick single extruded WPC (Wood Polymer Composite) solid plain white colour board Jali, CNC (Computer Numeric Control) routed of approved design by Engineer-incharge which are machine cut for duct/shaft covering, partitions and facades comprising of virgin Polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 g) having minimum density of 650 kg/m3 and screw withdrawal strength of 1800 N (Face) minimum compressive strength 50 N/mm2 , modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with properties of being termite/borer proof, water/moisture proof and fire retardant and fixing as per requirement at site with necessary stainless steel fasteners and SS screws etc., all complete as per direction of Engineer-In-Charge. (Note: M.S framework required with priming coat shall be paid separately).	m <sup>2</sup>	<b>4,411.00</b>
12.96	Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross- section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiber glass from all sides. M.S. stay shall be provided at the bottom to steady the frame	m	<b>643.00</b>
12.97	Providing and fixing to existing door frames Glass Fibre Reinforced Plastic (FRP) panelled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5 mm thick FRP laminate for panels conforming to IS: 14856, including fixing to frames.		
12.97.1	30 mm thickness	m <sup>2</sup>	<b>3,204.00</b>
12.97.2	35 mm thickness	m <sup>2</sup>	<b>3,635.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
12.98	Providing and fixing factory made pre fabricated non-monolithic Premium R.C.C. Door Frames factory manufactured in separate parts and assembled at bolts nuts system with mechanical table vibrating as per IS 6523-1983 with using M25 concrete as per IS 456 and reinforced with 1.70 kg of TMT steel reinforced with 3 No. of 6 mm dia Main TMT bars and 6 mm Dia TMT stirrups welded at 40 cm c/c in triangle shape per meter length of door frames, including cost of steel and fabrication charges having 4 No. of 304 Grade Stainless Steel hinges plate attachment made of 165 mm x 25 mm x 2.5 mm Stainless Steel Flat welded with required iron rods and flats with drilling for fixing flat CSK Head Machine screws made out of 304 grade stainless steel screws and MS square nuts of size 8 x 8 square and length 10 mm and making necessary provision in concrete for fixing aldrops, tower bolts and hold fasts etc., complete including two coats of oil based enamel primer providing without cill for shutter thickness upto 32 mm, 21 days tank immersed curing including cost of labour, materials, usage charge of machinery complete excluding the cost of door fixtures as per the direction of Engineer.		
12.98.1	Cross section of 60 mm x 100 mm	m	<b>860.00</b>
12.98.2	Cross section of 65 mm x 125 mm	m	<b>910.00</b>



**Chapter - 13**

**WATER SUPPLY &**

**PLUMBING WORK**



Sl. No.	Specification	Unit	Rate ₹
<b>13.0 WATER SUPPLY &amp; PLUMBING WORK</b>			
13.1	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :		
13.1.1	25 to 40 mm nominal bore	No.	608.00
13.1.2	50 to 80 mm nominal bore	No.	1,380.00
13.2	Providing and fixing brass bib cock of approved quality :		
13.2.1	15 mm nominal bore	No.	286.00
13.2.2	20 mm nominal bore	No.	305.00
13.3	Providing and fixing brass stop cock of approved quality :		
13.3.1	15 mm nominal bore	No.	299.00
13.3.2	20 mm nominal bore	No.	305.00
13.4	Providing and fixing Brass full way valve gate with C.I. wheel of approved quality (screwed end) :		
13.4.1	25 mm nominal bore	No.	549.00
13.4.2	32 mm nominal bore	No.	598.00
13.4.3	40 mm nominal bore	No.	702.00
13.4.4	50 mm nominal bore	No.	855.00
13.4.5	65 mm nominal bore	No.	1,411.00
13.4.6	80 mm nominal bore	No.	2,077.00
13.5	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :		
13.5.1	15 mm nominal bore	No.	296.00
13.5.2	20 mm nominal bore	No.	314.00
13.5.3	25 mm nominal bore	No.	332.00
13.6	Providing and fixing gun metal non- return valve of approved quality (screwed end) :		
13.6.1	25 mm nominal bore		
13.6.1.1	Horizontal	No.	620.00
13.6.1.2	Vertical	No.	695.00
13.6.2	32 mm nominal bore		

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
13.6.2.1	Horizontal	No.	809.00
13.6.2.2	Vertical	No.	925.00
13.6.3	40 mm nominal bore		
13.6.3.1	Horizontal	No.	960.00
13.6.3.2	Vertical	No.	1,225.00
13.6.4	50 mm nominal bore		
13.6.4.1	Horizontal	No.	1,361.00
13.6.4.2	Vertical	No.	1,528.00
13.6.5	65 mm nominal bore		
13.6.5.1	Horizontal	No.	2,396.00
13.6.5.2	Vertical	No.	2,435.00
13.6.6	80 mm nominal bore		
13.6.6.1	Horizontal	No.	3,569.00
13.6.6.2	Vertical	No.	4,023.00
13.7	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main :		
13.7.1	15 mm nominal bore	No.	302.00
13.7.2	20 mm nominal bore	No.	332.00
13.7.3	25 mm nominal bore	No.	430.00
13.8	Providing and fixing unplasticised PVC connection pipe with brass unions :		
13.8.1	30 cm length		
13.8.1.1	15 mm nominal bore	No.	83.00
13.8.1.2	20 mm nominal bore	No.	91.00
13.8.2	45 cm length		
13.8.2.1	15 mm nominal bore	No.	91.00
13.8.2.2	20 mm nominal bore	No.	110.00
13.9	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet :		
13.9.1	100 mm diameter	No.	257.00
13.9.2	150 mm diameter	No.	279.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
13.10	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :		
13.10.1	15 mm nominal bore	No.	214.00
13.10.2	20mm nominal bore	No.	243.00
13.10.3	25 mm nominal bore	No.	335.00
13.10.4	32 mm nominal bore	No.	380.00
13.10.5	40 mm nominal bore	No.	509.00
13.10.6	50 mm nominal bore	No.	689.00
13.10.7	65 mm nominal bore	No.	1,013.00
13.10.8	80 mm nominal bore	No.	1,089.00
13.11	Providing and fixing G.I. Union in existing G.I. pipe line, cutting and threading the pipe and making long screws, including excavation, refilling the earth or cutting of wall and making good the same complete wherever required :		
13.11.1	15 mm nominal bore	No.	536.00
13.11.2	20 mm nominal bore	No.	565.00
13.11.3	25 mm nominal bore	No.	657.00
13.11.4	32 mm nominal bore	No.	702.00
13.11.5	40mm nominal bore	No.	831.00
13.11.6	50 mm nominal bore	No.	1,128.00
13.11.7	65 mm nominal bore	No.	1,528.00
13.11.8	80 mm nominal bore	No.	1,566.00
13.12	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931	No.	635.00
13.13	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 g.	No.	846.00
13.14	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 g.	No.	846.00
13.15	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.	No.	725.00
13.16	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931	No.	620.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
13.17	Providing and fixing PTMT bib cock of approved quality and colour.		
13.17.1	15mm nominal bore, 86 mm long, weighing not less than 88 g	No.	<b>158.00</b>
13.17.2	15 mm nominal bore, 122mm long, weighing not less than 99 g	No.	<b>211.00</b>
13.17.3	15 mm nominal bore, 165 mm long, weighing not less than 110 g	No.	<b>223.00</b>
13.17.4	15 mm nominal bore, 90 mm long, weighing not less than 93 g	No.	<b>242.00</b>
13.18	Providing and fixing PTMT stop cock of approved quality and colour		
13.18.1	15 mm nominal bore, 86 mm long, weighing not less than 88 g	No.	<b>131.00</b>
13.18.2	20 mm nominal bore, 89 mm long, weighing not less than 88 g	No.	<b>144.00</b>
13.19	Concealed stop cock, 15 mm nominal bore, 108 mm long, weighing not less than 108 g	No.	<b>201.00</b>
13.20	Providing and fixing PTMT pillar cock of approved quality and colour.		
13.20.1	15 mm nominal bore, 107 mm long, weighing not less than 110 g	No.	<b>266.00</b>
13.20.2	15 mm nominal bore, 125 mm long foam flow, weighing not less than 120 g	No.	<b>314.00</b>
13.20 a	Providing and fixing PTMT Sink cock of approved quality and colour 15 mm nominal bore, weighing not less than 130 g.	No.	<b>260.00</b>
13.20 b	Providing and fixing PTMT Swan neck cock of approved quality and colour.	No.	<b>302.00</b>
13.21	Providing and fixing PTMT, push cock of approved quality and colour.		
13.21.1	15 mm nominal bore, 98 mm long, weighing not less than 75 g	No.	<b>128.00</b>
13.21.2	15 mm nominal bore, 80 mm long, weighing not less than 46 g	No.	<b>134.00</b>
13.22	Providing and fixing PTMT grating of approved quality and colour.		
13.22.1	Circular type		
13.22.1.1	100 mm nominal dia	No.	<b>41.00</b>
13.22.1.2	125 mm nominal dia	No.	<b>44.00</b>
13.22.2	Rectangular type with openable circular lid	No.	<b>202.00</b>
13.23	Providing and fixing PTMT Ball cock of approved quality, colour and make complete with Epoxy coated aluminium rod with L.P./ H.P.H.D. plastic ball.		
13.23.1	15 mm nominal bore, 105 mm long, weighing not less than 138 g	No.	<b>205.00</b>
13.23.2	20 mm nominal bore, 120 mm long, weighing not less than 198 g	No.	<b>247.00</b>
13.23.3	25 mm nominal bore, 152mm long, weighing not less than 440 g	No.	<b>506.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
13.23.4	40 mm nominal bore, 206mm long, weighing not less than 690 g	No.	725.00
13.23.5	50 mm nominal bore, 242mm long, weighing not less than 1240 g	No.	1,344.00
13.24	Providing and fixing PTMT angle stop cock 15 mm nominal bore, weighing not less than 85 g	No.	166.00
13.25	Providing and fixing PTMT swivelling shower, 15 mm nominal bore, weighing not less than 40 gms	No.	146.00
13.26	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 g.	No.	100.00
13.27	Providing and fixing unplasticised P.V.C. connection pipe with PTMT Nuts, collar and bush of approved quality and colour.		
13.27.1	15 mm nominal bore with 300 mm length	No.	96.00
13.27.2	15 mm nominal bore with 450 mm length	No.	116.00
13.28	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.		
13.28.1	15 mm nominal bore, weighing not less than 32 g	No.	64.00
13.28.2	20 mm nominal bore, weighing not less than 40 g	No.	81.00
13.28.3	25mm nominal bore, weighing not less than 62 g	No.	105.00
13.29	Dismantling old C.I. pipes including excavation and refilling trenches after taking out the pipes, breaking lead caulked joints, melting of lead and making into blocks, including stacking of pipes at site lead up to 50 m:		
13.29.1	80 mm dia C.I. pipe	m	251.00
13.29.2	100 mm dia C.I. pipe	m	263.00
13.29.3	125 mm dia C.I. pipe	m	274.00
13.29.4	150 mm dia C.I. pipe	m	285.00
13.29.5	200 mm dia C.I. pipe	m	319.00
13.29.6	250 mm dia C.I. pipe	m	352.00
13.29.7	300 mm dia C.I. pipe	m	382.00
13.29.8	350 mm dia C.I. pipe	m	409.00
13.29.9	400 mm dia C.I. pipe	m	435.00
13.30	Providing & fixing chrome plated brass battery based infrared sensor operated pillar cock, having foam flow technology.	No.	9,225.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
13.31	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall		
13.31.1	15 mm nominal dia Pipes	m	<b>182.00</b>
13.31.2	20 mm nominal dia Pipes	m	<b>242.00</b>
13.31.3	25 mm nominal dia Pipes	m	<b>318.00</b>
13.31.4	32 mm nominal dia Pipes	m	<b>400.00</b>
13.31.5	40 mm nominal dia Pipes	m	<b>536.00</b>
13.31.6	50 mm nominal dia Pipes	m	<b>781.00</b>
13.32	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.		
13.32.1	15 mm nominal dia pipes	m	<b>309.00</b>
13.32.2	20 mm nominal dia pipes	m	<b>379.00</b>
13.32.3	25 mm nominal dia pipes	m	<b>477.00</b>
13.32.4	32 mm nominal dia pipes	m	<b>557.00</b>
13.33	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work		
13.33.1	15 mm nominal dia Pipes	m	<b>166.00</b>
13.33.2	20 mm nominal dia Pipes	m	<b>217.00</b>
13.33.3	25 mm nominal dia Pipes	m	<b>296.00</b>
13.33.4	32 mm nominal dia Pipes	m	<b>372.00</b>

Sl. No.	Specification	Unit	Rate ₹
13.33.5	40 mm nominal dia Pipes	m	477.00
13.33.6	50 mm nominal dia Pipes	m	721.00
13.33.7	65 mm nominal dia Pipes	m	1,400.00
13.33.8	80 mm nominal dia Pipes	m	1,793.00
13.33.9	100 mm nominal dia Pipes	m	2,524.00
13.33.10	150 mm nominal dia Pipes	m	5,306.00
13.34	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	L	9.00
13.34A	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support i/c fittings & fixtures for tank shall be paid separately.	L	9.00
13.34B	Providing and fixing Duplex grade / 316 grade Stainless Steel water storage loft tank of 1000 L capacity applicable for 500ppm & below TDS built with 6 internal layers of SS 304 grade with cover as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support i/c fittings & fixtures for tank shall be paid separately.	L	58.00
13.35	Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.	m	133.00
13.36	Cutting holes up to 30x30 cm in walls including making good the same: With common burnt clay F.P.S. (non modular) bricks	each	323.00
13.37	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.	m	313.00
13.38	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber 100mm x 100mm size P type with Non Modular common burnt clay bricks of designation 3.5& water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:	each	2,532.00

Sl. No.	Specification	Unit	Rate ₹
13.39	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber 150 x 100 mm size P type With Non Modular common burnt clay bricks of designation 3.5 & with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:	each	2,581.00
13.40	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover 180 x 150 mm size P type & With Non Modular common burnt clay bricks of designation 3.5 & frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:	each	2,686.00
13.41	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : * 100 mm inlet and 100 mm outlet * Sand cast iron S&S as per IS: 3989	each	1,392.00
13.42	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : * 100 mm inlet and 100 mm outlet * Sand Cast Iron S&S as per IS: 1729	each	1,145.00
13.43	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : * 100 mm inlet and 100 mm outlet * Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	667.00
13.44	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : * 100 mm inlet and 75 mm outlet * Sand cast iron S&S as per IS - 3989	each	1,330.00
13.45	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : * 100 mm inlet and 75 mm outlet * Sand Cast Iron S&S as per IS- 1729	each	1,046.00
13.46	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : * 100 mm inlet and 75 mm outlet * Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	475.00

Sl. No.	Specification	Unit	Rate ₹
13.47	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes 75 mm diameter	m	197.00
13.48	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes 100 mm diameter	m	291.00
13.49	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes of 150mm dia conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.	m	568.00
13.50	Providing and fixing Unplasticised Polyvinyl Chloride (uPVC) pipes, for cold water supply including all uPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step uPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. <b>External work</b>		
13.50.1	15 mm nominal dia Pipes	m	140.00
13.50.2	20 mm nominal dia Pipes	m	172.00
13.50.3	25 mm nominal dia Pipes	m	224.00
13.50.4	32 mm nominal dia Pipes	m	272.00
13.50.5	40 mm nominal dia Pipes	m	304.00
13.50.6	50 mm nominal dia Pipes	m	386.00
13.50.7	65 mm nominal dia Pipes	m	543.00
13.50.8	80 mm nominal dia Pipes	m	674.00
13.50.9	100 mm nominal dia Pipes	m	930.00
13.50.10	150 mm nominal dia Pipes	m	1,593.00
13.51	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 ( 1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size ) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per standard design : With common burnt clay (non modular) bricks of class designation 3.5	1 chamber	1,706.00

Sl. No.	Specification	Unit	Rate ₹
13.52	Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 coarse sand ) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) With common burnt clay (non modular) bricks of class designation 3.5	Machine Hole	10,566.00
13.52.1	Extra for depth for manholes : Size 90x80 cm With common burnt clay (non modular) bricks of class designation	Machine Hole	9,236.00
13.53	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 fine sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: Inside dimensions 455x610 mm and 45 cm deep for single pipe line : With common burnt clay (non modular) bricks of class designation 3.5	1 chamber	5,642.00
13.54	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 500X700 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 fine sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: Inside dimensions 500x700 mm and 45 cm deep for pipe line with one or two inlets :With common burnt clay (non modular) bricks of class designation 3.5	1 chamber	6,278.00

Sl. No.	Specification	Unit	Rate ₹
13.55	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 600X850 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 fine sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc.	1 chamber	7,401.00
	complete as per standard design: Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets : With common burnt clay (non modular) bricks of class designation 3.5		
13.55.1	Extra for depth beyond 45 cm of brick masonry chamber : For 455x610 mm size With common burnt clay (non modular) bricks of class designation 3.5	1 chamber / m	6,442.00
13.55.2	Extra for depth beyond 45 cm of brick masonry chamber : For 500x700 mm size With common burnt clay (non modular) bricks of class designation 3.5	1 chamber / m	7,022.00
13.55.3	Extra for depth beyond 45 cm of brick masonry chamber : For 600x850 mm size With common burnt clay (non modular) bricks of class designation 3.5	1 chamber / m	8,170.00
13.56	Making soak pit 2.5 m diameter 3.0 m deep with 45 x 45 cm dry brick honey comb shaft with bricks and PVC S.W.R drain pipe 100 mm diameter, 1.8 m long complete as per standard design. With common burnt clay (non modular) bricks of class designation 3.5	1 soat pit	23,024.00
13.57	Constructing soak pit 1.20x1.20x1.20 m filled with brickbats including PVC (S.W.R) drain pipe 100 mm diameter and 1.20 m long complete as per standard design.	1 soat pit	2,823.00
13.58	Providing and fixing PVC (S.W.R) Gully Trap 10cms x 10cms with all fitting arrangements & all necessary accessories complete	1 Gully trap	346.00
13.59	Providing and fixing PVC (S.W.R) Nahani Trap 10cms x 10cms with all fitting arrangements & all necessary accessories complete	1 Nahani trap	220.00
13.6	Providing and fixing PVC (S.W.R) P Trap 10cms x 10cms with all fitting arrangements & all necessary accessories complete	1 P trap	309.00
13.61	Providing and fixing PVC (S.W.R) Q Trap 10cms x 10cms with all fitting arrangements & all necessary accessories complete	1 Q trap	284.00
13.62	Providing and fixing PVC (S.W.R) S Trap 10cms x 10cms with all fitting arrangements & all necessary accessories complete	1 S trap	358.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
13.63	Providing and fixing PVC (S.W.R) Multi Floor Trap 10.0 cm X 7.5 cm X 5.0 cm X 4.0 cm with all fitting arrangements & all necessary accessories complete	<b>1 Multifloor trap</b>	<b>244.00</b>
13.64	Providing and fixing Sewer (SWR) pipes, including all fittings, This includes jointing of pipes & fittings with one step solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.		
13.64.1	75mm nominal dia pipes	<b>m</b>	<b>289.00</b>
13.64.2	110mm nominal dia pipes	<b>m</b>	<b>385.00</b>
13.64.2	150mm nominal dia pipes	<b>m</b>	<b>768.00</b>
13.65	Installation & commissioning of energy efficient Air Source Heat Pump (ASHP) unit of reputed make with 5 years warranty for Domestic Purpose made of Enamel coated Steel with Mg Anode and having maximum water heating capacity of 60 degrees temperature, Ingress Protection Level IPX4, Noise level <48db & approved Hydrofluorocarbons (HFC) refrigerants. The working temperatures shall be -15 to +43 degrees & Power input shall be 2400W upto 3400W, rated power 810W & current 3.7A including cost of necessary plumbing fixtures upto 30m length complete as per technical specifications.		
13.65.1	ASHP with Tank Volume 160L & Production Capacity 70LPH & Net weight 25kg	<b>No.</b>	<b>1,35,700.00</b>
13.65.2	ASHP with Tank Volume 210L & Production Capacity 70LPH & Net weight 25kg	<b>No.</b>	<b>1,50,400.00</b>
13.65.3	ASHP with Tank Volume 320L & Production Capacity 70LPH & Net weight 25kg	<b>No.</b>	<b>1,54,000.00</b>

**Chapter - 14**

**SANITARY & BATH FITTINGS**



Sl. No.	Specification	Unit	Rate ₹
<b>14.0 SANITARY &amp; BATH FITTINGS</b>			
14.1	Providing and fixing water closet squatting pan (Indian type W.C. pan ) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:		
14.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	each	4,884.00
14.1.2	Stainless Steel AISI-304(18/8) Orissa pattern W.C. pan of size 585x480 mm with flush pipe and integrated type foot rests	each	8,806.00
14.2	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :		
14.2.1	W.C. pan with ISI marked white solid plastic seat and lid	each	4,838.00
14.2.2	W.C. pan with ISI marked black solid plastic seat and lid	each	4,835.00
14.3	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :		
14.3.1	W.C. pan with ISI marked white solid plastic seat and lid	each	5,977.00
14.3.2	W.C. pan with ISI marked black solid plastic seat and lid	each	5,805.00
14.4	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :		
14.4.1	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	each	4,454.00
14.4.2	Range of two urinal basins with 5 litre white P.V.C. automatic flushing cistern	each	6,784.00
14.4.3	Range of three urinal basins with 10litre white P.V.C. automatic flushing cistern	each	9,455.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.4.4	Range of four urinal basins with 10 litre white P.V.C. automatic flushing cistern	each	13,070.00
14.5	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required :		
14.5.1	Single half stall urinal with 5 litre P.V.C. automatic flushing cistern	each	8,642.00
14.5.2	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern	each	12,943.00
14.5.3	Range of three half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	16,140.00
14.5.4	Range of four half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	18,968.00
14.6	Providing and fixing one piece construction white vitreous china squatting plate with an integral longitudinal flushing pipe, white P.V.C. automatic flushing cistern, with fittings, standard size G.I. / PVC flush pipe for back and front flush with standard spreader pipes with fittings, G.I clamps and C.P. brass coupling complete, including painting of fittings and cutting and making good the walls and floors etc. wherever required :		
14.6.1	Single squatting plate with 5 litre P.V.C. automatic flushing cistern	each	6,620.00
14.6.2	Range of two squatting plates with 5 litre P.V.C. automatic flushing cistern	each	9,407.00
14.6.3	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	each	12,539.00
14.6.4	Range of four squatting plates with 10 litre P.V.C. automatic flushing cistern	each	15,014.00
14.7	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:		
14.7.1	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	each	3,082.00
14.7.2	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	each	2,561.00
14.7.3	White Vitreous China Wash basin size 550x400 mm with a pair of 15 mm C.P. brass pillar taps	each	2,866.00
14.7.4	White Vitreous China Flat back wash basin size 550x 400 mm with single 15 mm C.P. brass pillar tap	each	2,345.00
14.7.5	White Vitreous China Angle back wash basin size 600 x 480 mm with single 15mm C.P. brass pillar tap	each	2,561.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.7.6	White Vitreous China Angle back wash basin size 400 x 400 mm with single 15 mm C.P. brass pillar tap	each	2,265.00
14.7.7	White Vitreous China Flat back wash basin size 450x 300 mm with single 15mm C.P. brass pillar tap	each	2,099.00
14.7.8	White Vitreous China Surgeon type wash basin of size 660x460 mm with a pair of 15 mm C.P. brass pillar taps with elbow including operated levers	each	4,113.00
14.7.9	White Vitreous China Surgeon type wash basin of size 660x460 mm with single 15 mm C.P. brass pillar taps with elbow operated levers ISI Marked	each	3,444.00
14.7.10	Stainless Steel AISI-304(18/8) Round basin 405x355 mm with single 15 mm C.P. brass pillar tap	each	3,518.00
14.7.11	Stainless Steel AISI-304(18/8) Wash basin 530x345 mm with single 15 mm C.P. brass pillar tap	each	4,135.00
14.7A	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required: using White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	each	4,121.00
14.7B	Providing and fixing wash basin with C.I. brackets, 15 mm PTMT pillar cock, 32 mm PTMT waste coupling of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required. White Vitreous China Flat back wash basin size 550x400 mm with single 15 mm PTMT pillar cock.	each	2,296.00
14.8	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings.	each	1,423.00
14.9	Providing and fixing kitchen sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P. brass waste complete, including painting the fittings and brackets, cutting and making good the walls wherever required:		
14.9.1	White glazed fire clay kitchen sink of size 600x450x 250 mm	each	2,981.00
14.10	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :		
14.10.1	Kitchen sink with drain board		
14.10.1.1	510x1040 mm bowl depth 250 mm	each	5,618.00
14.10.1.2	510x1040 mm bowl depth 225 mm	each	5,393.00
14.10.1.3	510x1040 mm bowl depth 200 mm	each	4,939.00
14.10.1.4	510x1040 mm bowl depth 178 mm	each	4,832.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.10.2	Kitchen sink without drain board		
14.10.2.1	610x510 mm bowl depth 200 mm	each	3,625.00
14.10.2.2	610x460 mm bowl depth 200 mm	each	2,840.00
14.10.2.3	470x420 mm bowl depth 178 mm	each	2,503.00
14.11	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :		
14.11.1	Size 450x300x150 mm	each	3,909.00
14.11.2	Size 600x450x200 mm	each	5,082.00
14.12	Providing and fixing draining board with C.I. brackets including painting of brackets, cutting and making good the walls wherever required with White glazed fire clay draining board of size 600x450x 25 mm	each	1,170.00
14.13	Providing and fixing white vitreous china water closet squatting pan (Indian type) :		
14.13.1	Long pattern W.C. pan of size 580 mm	each	1,428.00
14.13.2	Orissa pattern W.C. pan of size 580x440 mm	each	2,331.00
14.14	Extra for using coloured W.C. pan instead of white W.C. pan with Orissa pattern W.C. pan 580x440 mm	each	379.00
14.15	Providing and fixing white vitreous china pedestal type (European type/ wash down type) water closet pan.	each	2,282.00
14.16	Extra for using coloured pedestal type W.C pan (European type) with low level cistern of same colour instead of white vitreous china W.C pan and cistern.	each	153.00
14.16A	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to European type W.C. of quality and make as approved by Engineer - in - charge.	each	272.00
14.17	Providing and fixing a pair of white vitreous china foot rests of standard pattern for squatting pan water closet :		
14.17.1	250x130x30 mm	each	200.00
14.17.2	250x125x25 mm	each	205.00
14.18	Providing and fixing P.V.C. low level flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete.		
14.18.1	10 litre capacity - coloured	each	949.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.18.2	10 litre capacity - White	each	942.00
14.19	Providing and fixing controlled flush, low level cistern made of vitreous china with all fittings complete.		
14.19.1	10 litre (full flush) capacity-white	each	1,808.00
14.19.2	10 litre (full flush) capacity-coloured	each	2,205.00
14.20	Providing and fixing solid plastic seat with lid for pedestal type W.C. pan complete :		
14.20.1	White solid plastic seat with lid	each	544.00
14.20.2	Black solid plastic seat with lid	each	540.00
14.20.3	Coloured (other than black & white) solid plastic seat with lid	each	470.00
14.22	Providing and fixing G.I. inlet connection for flush pipe connecting with W.C. pan.	each	115.00
14.22A	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	each	810.00
14.22B	Providing and fixing CP Brass 15 mm nominal dia Single lever telephonic wall mixer of quality & make as approved by Engineer in charge.	each	5,562.00
14.23	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm or 340x410x265 mm sizes respectively.	each	1,154.00
14.24	Providing and fixing white vitreous china squatting plate urinal with integral rim longitudinal flush pipe.	each	2,835.00
14.25	Providing and fixing white vitreous china wash basin including making all connections but including the cost of fittings :		
14.25.1	Flat back wash basin of size 630x450 mm	each	986.00
14.25.2	Flat back wash basin of size 550x400 mm	each	770.00
14.25.3	Angle back wash basin of size 600x480 mm	each	933.00
14.25.4	Angle back wash basin of size 400x400 mm	each	637.00
14.25.5	Flat back wash basin of size 450x300 mm	each	447.00
14.25.6	Surgeon type wash basin of size 660x460 mm	each	1,637.00
14.26	Providing and fixing kitchen sink including making all connections including cost of fittings with White glazed fire clay sink of size 600x450x250 mm	each	1,965.00

Sl. No.	Specification	Unit	Rate ₹
14.27	Providing and fixing white vitreous china laboratory sink including making all connections including cost of fittings :		
14.27.1	Size 450x300x150 mm	each	2,150.00
14.27.2	Size 600x450x200 mm	each	3,323.00
14.28	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.		
14.28.1	Semi rigid pipe		
14.28.1.1	32 mm dia	each	76.00
14.28.1.2	40 mm dia	each	88.00
14.28.2	Flexible pipe		
14.28.2.1	32 mm dia	each	92.00
14.28.2.2	40 mm dia	each	92.00
14.29	Providing and fixing 100 mm sand cast Iron grating for gully trap.	each	47.00
14.30	Providing and fixing in position 25 mm diameter mosquito proof coupling of approved municipal design.	each	47.00
14.31	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	each	1,220.00
14.32	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :		
14.32.1	Circular shape 450 mm dia	each	1,088.00
14.32.2	Rectangular shape 453x357 mm	each	1,018.00
14.32.3	Oval shape 450x350 mm (outer dimensions)	each	1,066.00
14.32.4	Rectangular shape 1500x450 mm	each	1,726.00
14.33	Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	each	906.00
14.34	Providing and fixing toilet paper holder :		
14.34.1	C.P. brass	each	608.00
14.34.2	Vitreous china	each	374.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.35	Providing and fixing vitreous china dual purpose closet suitable for use as squatting pan or European type water closet (Anglo Indian W.C pan) with seat & lid fixed with C.P. brass hinges and rubber buffers, 10 litre low level flushing cistern with fitting and brackets, 40 mm flush bend, 20 mm over flow pipe, with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required:		
14.35.1	White vitreous china dual purpose WC pan with white solid plastic seat and lid with white vitreous china flushing cistern and C.P. flush bend.	each	8,632.00
14.36	Providing and fixing PTMT Waste Coupling for wash basin and sink, of approved quality and colour.		
14.36.1	Waste coupling 31 mm dia of 79 mm length and 62mm breadth weighing not less than 45 g	each	90.00
14.36.2	Waste coupling 38 mm dia of 83 mm length and 77mm breadth, weighing not less than 60 g	each	93.00
14.37	Providing and fixing PTMT Bottle Trap for Wash basin and sink.		
14.37.1	Bottle trap 31mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 260 g	each	306.00
14.37.2	Bottle trap 38 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 263 g	each	318.00
14.38	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 g	each	145.00
14.39	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 g.	each	195.00
14.40	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.		
14.40.1	450 mm long towel rail with total length of 495 mm, 78 mm wide and effective height of 88 mm, weighing not less than 170 g.	each	478.00
14.40.2	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 g.	each	496.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.41	Providing and fixing PTMT shelf 440 mm long, 124 mm width and 36 mm height of approved quality and colour, weighing not less than 300 g.	each	502.00
14.42	Providing and fixing PTMT 15 mm Urinal spreader size 95x69x100 mm with 1/2" BSP thread and shapes, weighing not less than 60 g.	each	92.00
14.43	Providing and fixing PTMT urinal cock of approved quality and colour using 15 mm nominal bore, 80 mm long, 42 mm high and 30mm wide with BSP female threads weighing not less than 48 g.	each	163.00
14.44	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.	each	11,224.00
14.45	Providing & fixing white vitreous china water less urinal of size 600 x 330 x 315 mm having antibacterial /germs free ceramic surface, fixed with cartridge having debris catcher and hygiene seal.	each	14,426.00
14.46	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	each	6,238.00
14.47	Providing and fixing floor mounted, white vitreous china single piece, double traps siphonic water closet of approved brand/make, shape, size and pattern including integrated white vitreous china cistern of capacity 10 litres with dual flushing system, including all fittings and fixtures with seat cover, cistern fittings, nuts, bolts and gasket etc including making connection with the existing P/S trap, complete in all respect as per directions of Engineer-in-Charge.	each	14,212.00
14.48	Providing and fixing Pillar Cock made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,223.00
b	Premium	No.	2,615.00
14.49	Providing and fixing Single Lever Basin Mixer with 450mm long flexible connectors made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	2,472.00
b	Premium	No.	6,438.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.50	Providing and fixing Single Lever Basin Mixer with high neck with 265mm Extended body & 450mm long flexible connectors made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>2,896.00</b>
b	Premium	No.	<b>9,183.00</b>
14.51	Providing and fixing Pillar cock with high neck with 265mm Extended body made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>2,502.00</b>
b	Premium	No.	<b>4,832.00</b>
14.52	Providing and fixing Angle cock light with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>600.00</b>
b	Premium	No.	<b>1,013.00</b>
14.53	Providing and fixing Angle cock medium with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,020.00</b>
b	Premium	No.	<b>1,453.00</b>
14.54	Providing and fixing Angle cock with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,081.00</b>
b	Premium	No.	<b>1,918.00</b>
14.55	Providing and fixing Bib cock with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,117.00</b>
b	Premium	No.	<b>2,426.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.56	Providing and fixing Bib cock Two way with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,928.00
b	Premium	No.	3,312.00
14.57	Providing and fixing Wall spout with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,323.00
b	Premium	No.	2,382.00
14.58	Providing and fixing Wall spout with Button attachment for shower with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,807.00
b	Premium	No.	3,147.00
14.59	Providing and fixing Single lever wall mixer made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,743.00
b	Premium	No.	8,050.00
14.60	Providing and fixing Single lever wall mixer with L shaped Tubular bend set for overhead shower made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,985.00
b	Premium	No.	8,447.00
14.61	Providing and fixing Side operated Single lever wall mixer with L shaped Tubular bend set for overhead shower made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,864.00
b	Premium	No.	8,128.00
14.62	Providing and fixing Sink cock with swivel spout & wall flange, wall mountable made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,928.00
b	Premium	No.	2,886.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.63	Providing and fixing Single lever sink mixer with swivel spout top outlet wall mountable made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,767.00
b	Premium	No.	5,795.00
14.64	Providing and fixing Single lever sink mixer with 450mm long flexible connectors & deck mounted made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,585.00
b	Premium	No.	5,190.00
14.65	Providing and fixing Exposed set for single lever concealed basin mixer Single lever sink mixer made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,686.00
b	Premium	No.	3,805.00
14.66	Providing and fixing Exposed set for single concealed stop cock with basin spout made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	2,170.00
b	Premium	No.	3,501.00
14.67	Providing and fixing Exposed set for concealed stop cock made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	602.00
b	Premium	No.	858.00
14.68	Providing and fixing Exposed set for high flow single lever concealed diverter with cartridge made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
14.68.1	40mm cartridge		
a	Economy	No.	1,788.00
b	Premium	No.	3,424.00
14.68.2	45mm cartridge		
a	Economy	No.	2,151.00
b	Premium	No.	3,569.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.69	Providing and fixing Exposed set for 3 inlet single lever concealed diverter made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	2,049.00
b	Premium	No.	3,675.00
14.70	Providing and fixing Exposed set for side operated concealed wall mixer made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,686.00
b	Premium	No.	3,805.00
14.71	Providing and fixing wall spout with button attachment for shower with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	2,721.00
b	Premium	No.	3,041.00
14.72	Providing and fixing German Polyamide flexible connection hose with winged nuts 450mm with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	264.00
b	Premium	No.	292.00
14.73	Providing and fixing Single lever sink cock (Lifting type cold water cartridge) with swivel spout and wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,752.00
b	Premium	No.	2,416.00
14.74	Providing and fixing Single lever Bib cock Long Nose (Lifting type cold water cartridge) with wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,250.00
b	Premium	No.	1,695.00
14.75	Providing and fixing Wall Mixer Non Telephonic made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,054.00
b	Premium	No.	5,663.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.76	Providing and fixing Wall Mixer Telephonic with crutch only made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	4,385.00
b	Premium	No.	7,275.00
14.77	Providing and fixing Wall Mixer Telephonic with L Shaped tubular bend set for overhead shower made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	4,506.00
b	Premium	No.	7,797.00
14.78	Providing and fixing Single flow hand showers with Anti lime jets with 1.5m PVC tube and holder made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	887.00
b	Premium	No.	1,269.00
14.79	Providing and fixing Single flow hand showers with Anti lime jets with 1.5m Extendable flexible tube, holder & wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,323.00
b	Premium	No.	2,131.00
14.80	Providing and fixing Single flow hand showers with Anti lime jets with Rain, Mist & Massage settings having 1.5m Extendable flexible tube and holder & wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,625.00
b	Premium	No.	2,876.00
14.81	Providing and fixing Overhead rain showers of minimum dimension 225x225mm & wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,081.00
b	Premium	No.	5,945.00
14.82	Providing and fixing Temperature controlled Overhead rain showers with LED of minimum dimension 225x225mm & wall flange made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	9,225.00
b	Premium	No.	10,692.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.83	Providing and fixing Robe hook twin made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>548.00</b>
b	Premium	No.	<b>1,448.00</b>
14.84	Providing and fixing Robe hook with 5 points made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,141.00</b>
b	Premium	No.	<b>2,697.00</b>
14.85	Providing and fixing Liquid soap dispenser made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,746.00</b>
b	Premium	No.	<b>3,815.00</b>
14.86	Providing and fixing Towel rail (Circular) made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>463.00</b>
b	Premium	No.	<b>2,460.00</b>
14.87	Providing and fixing Towel rail (Rectangular) made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>597.00</b>
b	Premium	No.	<b>2,707.00</b>
14.88	Providing and fixing Towel rail 450mm length made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,081.00</b>
b	Premium	No.	<b>2,714.00</b>
14.89	Providing and fixing Towel rail 600mm length made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>1,262.00</b>
b	Premium	No.	<b>3,017.00</b>
14.90	Providing and fixing Double Towel rail 600mm length made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	<b>2,533.00</b>
b	Premium	No.	<b>3,864.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
14.91	Providing and fixing Towel rail 600mm length with hooks made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,138.00
b	Premium	No.	7,494.00
14.92	Providing and fixing Soap dish wired with 200mm width made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	718.00
b	Premium	No.	2,121.00
14.93	Providing and fixing Toilet paper holder made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	839.00
b	Premium	No.	2,835.00
14.94	Providing and fixing Flush valve soft touch made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	3,743.00
b	Premium	No.	4,166.00
14.95	Providing and fixing Bidet spray made of Stainless steel with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	839.00
b	Premium	No.	1,020.00
14.96	Providing and fixing Stainless Steel Grab Bar 600 mm Long with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	1,952.00
b	Premium	No.	8,159.00
14.97	Providing and fixing Stainless Steel Foldable Towel Rack 600 mm Long with all concealed fitting arrangements & all necessary accessories complete - Class		
a	Economy	No.	2,049.00
b	Premium	No.	4,214.00

- NOTE :**
1. Items of Premium class are of SS 304 grade and are to be operated only for VVIP & VIP rooms/halls in Buildings.
  2. The cost of Minor Tools & Tackles and Mortar/Adhesives/Grout necessary of fixing are included in the above rates.



**Chapter - 15**

**WATER PROOFING**



Sl. No.	Specification	Unit	Rate ₹
<b>15.0 WATER PROOFING</b>			
15.1	<b>Polyurethane based Single Component for New Surface</b>		
	Providing and laying water proofing treatment to the Roof with PU based single component elastomeric pure polyurethane based coating on New terrace/Chajjas/Sunken portion of WC:Bathroom, cold applied PU waterproofing membrane that is highly elastic with elongation greater than 400% and tensile strength greater than 2MPa as per ASTM D412. The waterproofing membrane to be applied in 2coats @ 1.6 kg/m <sup>2</sup> to achieve final DFT (Dry Film Thickness) of 1mm including prime coat of epoxy primer @150 g/m <sup>2</sup> and protection with 120gsm Geo-textile over the waterproofing membrane. The finished cost to include surface preparation, making coving at Junction, Bore Packing, treatment of construction joints completely as per specification.	m <sup>2</sup>	<b>817.00</b>
15.2	<b>Polyurethane based Single Component for Existing Surface</b>		
	Providing and Applying PU based Elastomeric Liquid Applied PU Waterproofing Membrane single component, cold applied, water based acrylic PU dispersion with highly elastic and UV resistant water proofing treatment to the Existing Roof surface/Chajjas/Sunken portion of WC:Bathroom applied @ 1.2 l/per m <sup>2</sup> , having tensile strength greater than 1.5N/mm <sup>2</sup> , elongation greater than 300% with solid content not less than 60% in 2 coats including surface preparation, priming the surface with water based acrylic primer @0.1 l/m <sup>2</sup> , and spreading 60 gsm geotextile between two top coats completely as per specification. The finished cost to include surface preparation, making coving at Junction, Bore Packing, treatment of construction joints completely as per specification.	m <sup>2</sup>	<b>737.00</b>
15.3	<b>Styrene Butadiene Styrene (SBS) based</b>		
	Providing and laying of 1.5 mm thick SBS modified self adhesive single stick waterproofing membrane, with minimum elongation of 300% and puncture resistance of >200 N (as per ASTM E154), with an overlap of 100mm on the side and 100mm in vertical lapping over a coat bituminous primer @ 0.25 l/m <sup>2</sup> , complete including surface preparation as per the methodology and site condition & placing the dimple board over the SBS membrane. The cost is inclusive of surface preparation, crack filling, repair of loose mortar etc. completely as per specification.	m <sup>2</sup>	<b>761.00</b>
15.4	<b>Polyurethane based water proofing for Retaining Wall</b>		
	Providing and laying water proofing treatment to the Retaining wall area with PU Elastomeric Single component liquid applied, cold applied, moisture cured high tensile elastomeric PU waterproofing membrane having elongation of more than 400% and having solid content of above 90% @ 1.6kg/m <sup>2</sup> in 2 coats to achieve final DFT (Dry Film Thickness) of 1mm including prime coat of epoxy primer @150 g/m <sup>2</sup> . The cost is inclusive of surface preparation, crack filling, repair of loose mortar etc. completely as per specification.	m <sup>2</sup>	<b>888.00</b>

Sl. No.	Specification	Unit	Rate ₹
15.5	<b>High Density Polyethylene Membrane water proofing</b>		
	Providing and laying water proofing treatment to the Rafts, Below grade slab, Lift pits, water retaining structures with fully bonded High Density Polyethylene Membrane (HDPE) of 1.2mm composite thickness and having tensile strength of >25 MPa (as per ASTM D 412), elongation of >500% (as per ASTM D 412), puncture resistance of >1000N (as per ASTM E 154), peel adhesion to concrete >1200N/m (as per ASTM D 903), hydrostatic head resistance >70m (as per ASTM D 5385). The system should be fully bonded to the RCC thereby conforming to IS 16471:2017 requirements of UG waterproofing structures. The membrane should be minimum 2.4m wide to reduce the number of joints with minimum 75mm factory made selvedge's and comprising of an HDPE layer and a pressure sensitive adhesive layer which is covered by a weather proof protective and trafficable granular layer to protect self-adhesive polymer layer, etc, including surface preparation completely as per specification.	m <sup>2</sup>	605.00
15.6	<b>Food Graded Water Proofing Membrane</b>		
	Providing and laying water proofing treatment to the Water tanks & Liquid Retaining structures with two component acrylic polymer modified cementitious waterproofing membrane with minimum elongation of 50% applied @ 1.5 kg/m <sup>2</sup> for internal side waterproofing in two layers with waiting period of 4-6 hrs per layer and food grade epoxy coating in two coats certified by CFTRI Mysuru, including surface preparation completely as per specification.	m <sup>2</sup>	507.00
15.7	<b>Integral Crystalline Water Proofing Admixture</b>		
	Providing and supplying crystalline integral concrete waterproofing admixture that waterproofs concrete by forming crystals deep in the pores, capillaries and microcracks of the concrete, self-seal waterproofing compound to bridge shrinkage cracks upto 0.5mm in width & resist hydro-static pressure upto 16bar for both positive & negative pressure confirming to DIN 1048 part 5 for 56% reduction in depth of penetration against control, resistance to chloride penetration confirming to ASTM C 1202 with 64% improvement against control & protecting steel reinforcement against corrosion mixed @ 1% by weight of cementitious content in concrete. ie., integral crystalline waterproofing admix @ 0.5 kg/bag of cement. (For calculation purpose 320 kg of Cement for M-20 grade of Concrete is considered in the analysis)	m <sup>3</sup>	615.00
15.8	<b>Old Terrace Screed Repair with UV Resistant Waterproof coating</b>		
	Providing and Applying high elastic & resilient Acrylic polymer Waterproofing coating which is single component, cold applied, water based acrylic and UV resistant water proofing treatment to the Existing Roof screed surface applied @ 1.5 l/m <sup>2</sup> in 3 coats to achieve 1mm DFT, having tensile strength 1.2 N/mm <sup>2</sup> confirming to ASTM D 412; Elongation at break ≥ 100% and Crack bridging ability up to 2 mm, including surface	m <sup>2</sup>	690.00

Sl. No.	Specification	Unit	Rate ₹
	preparation, priming the surface with 1 coat of Efflorescence resistant penetrating primer dilute with water in the ratio 2:1 spreading at the rate of 0.125 l/m <sup>2</sup> in the SSD condition and spreading 45 gsm glass fibre mesh of 2.5 mm x 2.5 mm sandwiched between the first and second coat completely as per specification. The finished cost to include surface preparation, making coving at Junction, treatment of cracks completely as per specification.		
15.9	<b>Old Terrace tile surface repair with UV Resistant hybrid waterproofing coating</b>		
15.10	Providing and Applying Polyurethane hybrid liquid applied GRIHA certified Waterproofing coating with flutyne protection technology, single component, cold applied, water based acrylic and UV resistant water proofing treatment to the Existing Roof having Tile or any non-porous surface applied @ 1.5 l/m <sup>2</sup> in 2 coats to achieve 1mm DFT, having tensile strength with 45 gsm glass fibre mesh 4N/mm <sup>2</sup> confirming to ASTM D 412; Elongation at break ≥ 300% and Crack bridging ability up to 3mm, SRI Index 106 as per ASTM E 1980-01, Water permeability @5 bar – Nil as per EN12390 - 8:2019, including surface preparation, priming the surface with single component high-performance waterborne tile primer which is suitable for non - porous surface at a rate of 0.083 L/m <sup>2</sup> and spreading 45 gsm glass fibre mesh of 2.5 mm x 2.5 mm sandwiched between the first and second coat completely as per specification. The finished cost to include surface preparation, making coving at Junction, treatment of cracks completely as per specification.	m <sup>2</sup>	961.00
15.10	<b>Newly Constructed Bathroom/toilet/balcony/utility with Cementatious Waterproof coating - Below 300 m<sup>2</sup></b>		
15.11	Providing and Applying CFTRI approved two component flexible polymer modified acrylic cementitious waterproofing coating with a mix ratio of (1 Liquid: 2 Powder), to the RCC surface like bathroom, toilet, balcony & utility area applied @ 1.7kg/m <sup>2</sup> in 2 coats to achieve 1mm DFT, having Elongation at break >50% as per ASTM D 412, Tensile strength >1N/mm <sup>2</sup> as per ASTM D 4541, Adhesion strength: 0.80 N/mm <sup>2</sup> as per ASTM D 4541, crack bridging upto 1mm as per ASTM C 836, Water penetration (5 bar pressure) as per BS EN 12390. The finished cost to include surface preparation, making coving of 50 mm X 50mm at all right angles of wall Junction with Polymer Repair Mortar and lay 45 gsm glass fibre mesh over the angle fillet when the first coat is still wet, treatment of cracks completely as per specification.	m <sup>2</sup>	367.00
15.11	<b>Newly Constructed Roof/Bathroom/Toilet/balcony/utility with Cementatious Waterproof coating - Below 500 m<sup>2</sup></b>		
	Providing and Applying CFTRI approved two component flexible polymer modified acrylic cementitious waterproofing coating with a mix ratio of (5 Liquid :7 Powder) to the RCC surface like Roof, bathroom, toilet, balcony & utility area applied @ 2.2kg/m <sup>2</sup> in 2 coats to achieve 1.2mm DFT, having Elongation at break >120% as per ASTM D 412, Tensile strength >1N/	m <sup>2</sup>	525.00

Sl. No.	Specification	Unit	Rate ₹
	mm <sup>2</sup> as per ASTM D 412, Adhesion strength: 0.80N/mm <sup>2</sup> as per ASTM D 4541, crack bridging upto 2mm as per ASTM C 836. The finished cost to include surface preparation, making coving of 50 mm X 50mm at all right angles of wall Junction with Polymer Repair Mortar and lay 45 gsm glass fibre mesh over the angle fillet when the first coat is still wet, treatment of cracks completely as per specification.		
15.12	<b>Newly Constructed Roof/Podium with PU Waterproof coating - Above 500 m<sup>2</sup></b>		
	Providing and Applying single component Polyurethane based cold applied seamless waterproofing coating to the RCC surface like Roof & Podium area applied @ 2.4kg/m <sup>2</sup> in 3 coats to achieve 1.5mm DFT, including a prime coat of solvent free, medium viscous, epoxy primer @0.2L/m <sup>2</sup> and protection with 120gsm Geo-textile over the 7 days cured waterproofing membrane. The Waterproofing material shall have Solids > 85%, Tensile strength >2 Mpa as per ASTM D 412, Elongation at break >400% confirms to ASTM C 1305 for crack bridging ability (no cracks up to 3.2mm) Shore A Hardness >55 as per ASTM D 2240, Adhesion to peel after water immersion as per ASTM C 794 at 5.2N. Resistance to root penetration as per UNE CN/ TS 14416. The finished cost to include surface preparation, making coving of 50 mm X 50mm at all right angles of wall Junction with Polymer Repair Mortar and lay 60gsm Geo-textile over the angle fillet when the first coat is still wet, treatment of cracks completely as per specification.	m <sup>2</sup>	<b>1,165.00</b>
15.13	<b>STP (inside) waterproofing with Anticorrosive &amp; Protective Coating</b>		
	Providing and Applying two component coal tar epoxy-based coating on inside surface of Sewage & Effluent treatment tank @ 0.30 kg/m <sup>2</sup> in 2 coats to achieve a DFT of 200 microns when fully cured. Ensure that this coating is applied over the protective plaster and that Item No. 4 is completed across the entire surface prior to applying the protective plaster. The Waterproofing material shall have Scratch resistance, for 7kg load as per ASTM : D 7027 - 05, Chemical resistance, immersion in dilute acid alkali & salt solutions - 7 days confirms to ASTM : C 868, Salt Spray resistance confirms to ASTM : B 117. The finished cost to include surface preparation completely as per specification.	m <sup>2</sup>	<b>1,665.00</b>
15.14	<b>UGT/OHT (inside) waterproofing with Anti-microbial Coating</b>		
	Providing and Applying two component, water-based food grade epoxy resin coating on inside surface of Potable water tank having anti-algae, antifungal, Non-toxic, hygiene cum damp-proof coating Certified by CFTRI as per 21 CFR 175 – 300 of US – FDA, having mixing Ratio (Base: Hardener: Water) – 1:1:1 to be applied @ 0.35 Kg/m <sup>2</sup> in 2 coats. Ensure that this coating is applied over the protective plaster, and that Item No. 4 is completed across the entire surface prior to applying the protective plaster. The Waterproofing material shall have Specific Gravity: 1.2, Water vapor permeance: 244.48 g/m <sup>2</sup> /24 hrs, as per IS 7809/Pt 2/1977, Adhesion strength: 2 N/mm <sup>2</sup> as per ASTM D 4541: 02. The finished cost to include surface preparation completely as per specification.	m <sup>2</sup>	<b>1,673.00</b>

Sl. No.	Specification	Unit	Rate ₹
15.15	<b>Exterior Wall Waterproof Coating</b>		
	Providing and Applying high build Acrylate Copolymers -based elastomeric waterproof coating for external wall, parapet & Chajja, which is single component, cold applied, acrylic emulsion polymer. Apply coat 1st coat with 10% dilution water and 2nd coat without dilution @ 0.27L/m <sup>2</sup> in 2 coats to achieve DFT of 110 microns, The material having followed technical properties: Attains hairline crack bridging up to 1 mm, Elongation of >120 % as per ASTMD 412; Tensile strength 1.50 Mpa per ASTM D 412, Pull off adhesion, 1.5Mpa as per ASTM D4541, including priming the surface with 1 coat diluted with water in the ratio 2:1 spreading @ 0.125 L/m <sup>2</sup> as self-priming coat. The finished cost to include surface preparation, making coving at Junction, treatment of cracks completely as per specification.	m <sup>2</sup>	256.00
15.16	<b>Treating mild Dampness in Interior Walls</b>		
	Providing and Applying Acrylic Co Polymer single component specially designed waterproof protective coating that prevents damp patches on walls without any dilution at rate of 0.25kg/m <sup>2</sup> in 2 coats to achieve total dry film thickness of 170 microns DFT. The material having followed technical properties: crack bridging ability up to 1mm as per EN 1062, Tensile strength ≥ 2N/mm <sup>2</sup> as per ASTM D 412, adhesion strength 1.5N/mm <sup>2</sup> as per ASTM D4541. The finished cost including surface preparation completely as per specification.	m <sup>2</sup>	304.00
15.17	<b>Treating Severe Dampness &amp; Rising dampness in Walls</b>		
	Providing and Applying 15 mm thick dimensionally stable fibrous reinforced cementitious structural grade dual shrinkage Polymer Repair Mortar on internal wall damp patches @ 29kg/m <sup>2</sup> . The material having Compressive strength of 38 MPa at 28 days as per EN 12190, Adhesive Bond Test, >1.5 Mpa as per EN 1542, followed by Water curing by sprinkling water for 3 times a day for 5- 7 days. Ensure that removing internal wall plaster up to the brick level. Extend up to minimum 2 feet in wide in excess to the damp patches. clean the effected surface followed by Item No. 4 should be applied across the entire surface and apply a coat of spatter dash bond coat over cured coating. The dashing shall consist of (1-part SBR : 1 Part cement: 2 part wash sand) mixed to thick slurry and kept well stirred prior to applying the Polymer Repair Mortar. The finished cost to include surface preparation completely as per specification.	m <sup>2</sup>	1,736.00
15.18	<b>Treating Active leakage from Concrete walls</b>		
	Providing and grouting with single component Polyurethane Foam injection grout at dripping leakage locations, grout mixed at ratio of 10:1 (10 parts of Resin: 1 part accelerator) at the rate of 0.40kg/nozzle which will foam after reaction with water/ moisture, cream time <20 seconds, rise time <30 seconds, foam expansion more than 30 times. It has a mixed viscosity of <350 cP as per ASTM D 2196. Allow the PU foam grout to cure	Nozzle	1,989.00

Sl. No.	Specification	Unit	Rate ₹
	for 5 -10 mins. Providing and grouting with two component Polyurethane based nonfoam injection grout mixed at ratio of 2:1 (2 parts of Base: 1 part Hardener) which will injected through same nozzle at the rate of 0.30kg/nozzel which gives Adhesion strength >2.5 MPa, Adhesion in wet concrete >1.5MPa, Elongation >80%. It has a mixed viscosity of <350 cP as per ASTM D 2196. The finished cost to include surface preparation, fixing of non-return valve injection packers at dripping leakage locations and damp patch locations, seal the nozzles with polyester resin anchor grout Instant leak plug 0.2kg/nozzle. All the application procedure shall be as per the direction of the Engineer In charge.		
15.19	<b>Structural Strengthening with Epoxy Injection Grout</b>		
	Providing and grouting with two component low viscous Moisture Insensitive Epoxy Injection Grout to strengthen the structure at concrete cracks. The material having mixing ratio - (Base : Hardener) - 100:60 (by weight) compressive strength of 70N/mm <sup>2</sup> in 7days as per BS6319:part 2, Flexural strength of 30N/mm <sup>2</sup> in 7days as per BS6319:part 3, Tensile strength of 15N/mm <sup>2</sup> in 7days as per BS6319:part 7, epoxy resin based injection grout meets the requirement of BS 6319 & ASTM C 881. The finished cost to include surface preparation, fixing of non-return valve injection packers at concrete cracks, seal the nozzles with polyester resin anchor grout Instant leak plug 0.2kg/nozzle. All the application procedure shall be as per the direction of the Engineer In charge.	Nozzle	1,548.00
15.20	<b>Retaining wall/ UG tank wall (outside) Waterproofing with SBS Membrane</b>		
	Providing and laying water proofing treatment to the Retaining wall, water retaining structures outside with fully bonded 1.6mm Thick SBS modified self-adhesive, cross laminated HDPE Valero lining waterproofing membrane, conforming to IS 16471:2017 Type A, requirements of UG waterproofing structures, The SBS membrane shall have Mass per Unit Area > 1.8 Kg/m <sup>2</sup> as per ASTM D 5147, Puncture resistance > 200 N as per ASTM E 154, Elongation > 180% as per ASTM D 412-06, Tensile Strength > 4 Mpa as per ASTM D 412- 06, Tear resistance > 20 N/mm as per ASTM D 4073, Hydrostatic pressure > 50M as per DIN 1048. The lap with HDPE membrane shall be 100mm treated with TS tape. followed by the installation of 8-10mm THK polyethylene dimpled drain board having compressive strength > 400kN/m <sup>2</sup> (as per ISO 25619-2). The finished cost includes surface preparation, making coving and a coat of solvent based bituminous primer @ 0.25l/m <sup>2</sup> on entire surface before laying membrane completely as per specification.	m <sup>2</sup>	927.00
15.21	<b>Underground structures waterproofing with HDPE membrane</b>		
	Providing and laying water proofing treatment to the Rafts, Below grade slab, Lift pits, water retaining structures with fully bonded 1.5 mm thick HDPE waterproofing pressure sensitive adhesive membrane over PCC before laying raft concrete having higher puncture resistance of 1000N as per ASTM E 154, confirming to BS 8102 & IS 16471:2017, requirements of	m <sup>2</sup>	1,081.00

Sl. No.	Specification	Unit	Rate ₹
	UG waterproofing structures. Laying adjacent sheets by keeping overlap of 75mm, end overlaps to be treated using double sided tape. The membrane shall have Tensile strength >25 Mpa as per ASTM D 412, Elongation > 500% as per ASTM D 412, Hydrostatic head resistance >70m head of water as per ASTM D 5385, Low Temperature Flexibility: -25 deg C, Peel Adhesion to Concrete >880 N/m as per ASTM D 903 Modified, UV Exposure > 45 Days. The finished cost including surface preparation completely as per specification.		
15.22	<b>Expansion Joint Treatment with Seal Tape</b>		
	Providing and laying with 1.0 mm thick FPO membrane to seal the expansion joint. The tape having mechanical properties like, Elongation >500%, Tensile Strength >12N/mm <sup>2</sup> , Tear Strength >200N, Water tightness 400 kPa/72hrs confirming to DIN EN 1928-B. Ensure that apply Two part Epoxy Adhesive @ 1.4kg/m to get 1-2mm thick on the prepared surface before placing the tape and after placing seal with same epoxy adhesive which having Bond Strength with concrete 1.5N/mm <sup>2</sup> , Compressive Strength @ 7 days, ≥45N/mm <sup>2</sup> as per BS 6319 Part 2, Tensile Strength @ 7 days, ≥18N/mm <sup>2</sup> as per BS 6319 Part 7, Shear Strength @ 7 days, ≥8N/mm <sup>2</sup> as per BS 6319 Part 4, Flexural Strength @ 7 days, N/mm <sup>2</sup> as per BS 6319 Part 3. The finished cost including surface preparation, filling foam backer rod, applying masking tape on both sides of the joint & polysulphide sealant filling on gap completely as per specification.	m	2,039.00
	<b>Water Proofing Systems</b>		
15.23	<b>Retaining Wall (Inside) / OHT / UG Sump Tanks</b>		
	Providing & Applying Crystalline waterproofing slurry coat RCC structure like Retaining wall, Underground tank. The material having chemical resistance properties, seals shrinkage cracks up to 0.4 mm width, capable of preventing water dampness & seepages, Water permeability is Nil confirms to BS EN 12390 Part 8: 2000. Powder to water mixed at a ratio (5:2) 5 parts powder and 2 parts water, applied @ 1.5kg/m <sup>2</sup> in 2 coats to achieve 1.0mm DFT on a cleaned surface free from all loose materials etc., complete. The finished cost to include surface preparation completely as per specification.	m <sup>2</sup>	2,450.00
15.24	<b>Corrugated Sheets (Repairs)</b>		
	Providing and applying heat reflective environmental friendly, 100% Pure Acrylic elastomeric waterproof coating on metal sheets. Replace roof fasteners, as required and needed. Sealing up of all lapping joints, gaps, flashing and capping with 40 gsm Non-Woven Geotextile Fleece and waterproof Coating at a 10 cm wide strip. Preparing the surface by cleaning with brush and remove the rust by chloride free chemical and apply one coat of Anti corrosive primer @ 0.13L/m <sup>2</sup> . Apply 2 coats of 100% Pure Acrylic waterproofing coating @ 0.6L/m <sup>2</sup> having Elongation 190% as per ASTM D 412, tensile strength 1.5 N/mm <sup>2</sup> , SRI Index 108 as per ASTM E 1980-01. The finished cost to include surface preparation completely as per specification.	m <sup>2</sup>	1,250.00

Sl. No.	Specification	Unit	Rate ₹
15.25	<b>Crackfilling</b>		
	Providing Waterproof treatment to the cracks using 1 coat of bondcoat of SBR latex and Cement at the ratio 1:1 and then preparing Cement Mortar of 1:3 admixed with SBR latex at a dosage of 15% of Cement. SBR latex confirming to BS 6319 part 2:1983 & ASTM C 190-85. Cure for 5 days. Apply singlecomponent, cold applied, water based acrylic and UV resistant water proofing & protector conforming to ASTM D 412-1992 & ASTM E 1980-01. The surface shall be prepared free of dust, fungus, loose & hard particles etc.. The cracks are sealed with crack x-shrink free sealing paste as per direction of Engineer in charge.	<b>m</b>	<b>700.00</b>
15.26	<b>Expansion Joints</b>		
	Providing waterproof treatment to Expansion joints using 2 coats of acrylic co-polymer elastomeric sealer and protector. The surface shall be prepared free of tar, dust, fungus, loose particles etc. The surface shall be applied with base coat of healer sealer crystallization liquid and then Acrylic co-polymer elastomeric sealer & protector, wetting agent and liquid (1:1:1:6) over the prepared surface. In addition to port fixing & injection grouting using acrylic polymer & waterproofing slurry, polyester fibrewool will be laid upon membrane by using epoxy Adhesive having Compressive Strength @ 7 days, 45N/mm <sup>2</sup> as per BS 6319 Part 2. Over this 1 layer of TPO membrane will be laid as reinforcing material. One primer coat of Acrylic co-polymer elastomeric sealer & protector and a second coat of Acrylic co-polymer elastomeric sealer & protector liquid will be given over the primer coat - conforming to DIN EN 1928-B. The work shall be carried out as per the directions of the Engineer in charge	<b>m</b>	<b>2,000.00</b>
15.27	<b>Retaining Wall (Outside)</b>		
	Providing Waterproof treatment to Retaining Wall using 2 coats of Acrylic co-polymer elastomeric sealer & protector. The surface shall be prepared free of tar, dust, fungus, loose particles etc., The surface shall be applied with basecoat of healer sealer crystallization liquid and wetting agent, acrylic polymer and water in proportion 1:1:1:8 over the prepared surface. In addition, making haunch at junction of wall and Slab, all construction joints will be opened and plugged using High Alumina Cement followed by port fixing & injection grouting using acrylic polymer & waterproofing slurry. Over this 1 layer of SBS membrane will be laid as reinforcing material followed by antidampness coating using. one coat of Acrylic co-polymer elastomeric sealer & protector liquid will be applied over this - conforming to IS 16471:2017 Type A, requirements of UG waterproofing structures. The work shall be carried out as per the directions of the Engineer in charge.	<b>m<sup>2</sup></b>	<b>1,500.00</b>

Sl. No.	Specification	Unit	Rate ₹
15.28	<b>Toilets Tile Joints (Repair)</b>	<b>m<sup>2</sup></b>	<b>850.00</b>
15.29	<b>Terrace/ Raft &amp; Sunken Slab Waterproofing</b>	<b>m<sup>2</sup></b>	<b>1,050.00</b>
	Providing waterproof treatment to Raft Slab using 2 coats of acrylic co polymer elastomeric Acrylic co-polymer elastomeric sealer & protector. The surface shall be prepared free of tar, dust, fungus, loose particles etc., The surface shall be applied with basecoat of healer sealer crystallization liquid and then Acrylic co-polymer elastomeric sealer & protector, wetting agent and liquid (1:1:6) over the prepared surface. In addition, making haunch at junction of Wall and Slab visible cracks are opened and sealed with flexicrack paste. Over this one coat of flexible cementations membrane (FCM), Spreading one layer of HDPE membrane as reinforcing material (over FCM) with one primer coat of Acrylic co-polymer elastomeric sealer & protector & applying second coat of Acrylic co-polymer elastomeric sealer & protector liquid over the primer coat - conforming to ASTM C 1202, DIN 1048 part 5, The work shall be carried out as per the directions of the Engineer in charge.		
	<b>Note :</b> The Water Proofing System rates are inclusive of surface preparation and cleaning.		



**Chapter - 16**

**ENERGY CONSERVATION**

**BUILDING CODE**



Sl. No.	Specification	Unit	Rate ₹
<b>16.0 ENERGY CONSERVATION BUILDING CODE</b>			
16.1	<i>External wall insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing polyurethane foam (PUF) slab 40mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> for external wall insulation including necessary polymerized plaster reinforced with glass fibre mesh, epoxy based bonding adhesive etc., complete.	m <sup>2</sup>	1,462.00
16.2	<i>External wall insulation with Polyurethane Foam (PUF) Spray</i>		
	Providing and fixing cast in situ polyurethane foam (PUF) spray 40mm thick average with PU foam spray density 35+/-5 kg/m <sup>3</sup> for external wall insulation including necessary adhesive etc., complete.	m <sup>2</sup>	1,239.00
16.3	<i>External wall insulation with Polyurethane Foam (PUF) Spray</i>		
	Providing and fixing cast in situ polyurethane foam (PUF) spray 50mm thick average with PU foam spray density 35+/-5 kg/m <sup>3</sup> for external wall insulation including necessary adhesive etc., complete.	m <sup>2</sup>	1,270.00
16.4	<i>External wall insulation with Extruded Polystyrene (XPS) thermal insulating boards</i>		
	Providing and fixing Extruded Polystyrene (XPS) thermal insulating boards 25mm thick average for external wall insulation including necessary fasteners etc., complete.	m <sup>2</sup>	526.00
16.5	<i>External wall insulation with Extruded Polystyrene (XPS) thermal insulating boards</i>		
	Providing and fixing Extruded Polystyrene (XPS) thermal insulating boards 50mm thick average for external wall insulation including necessary fasteners etc., complete.	m <sup>2</sup>	806.00
16.6	<i>External wall insulation with Extruded Polystyrene (XPS) thermal insulating boards</i>		
	Providing and fixing Extruded Polystyrene (XPS) thermal insulating boards 75mm thick average for external wall insulation including necessary fasteners etc., complete.	m <sup>2</sup>	1,123.00
16.7	<i>External wall insulation with Extruded Polystyrene (xps) thermal insulating boards</i>		
	Providing and fixing Extruded Polystyrene (XPS) thermal insulating boards 100mm thick average for external wall insulation including necessary fasteners etc., complete.	m <sup>2</sup>	1,440.00
16.8	<i>Cavity wall insulation with Polyurethane Foam (PUF) (40mm)</i>		
	Providing and fixing polyurethane foam (PUF) spray 40mm thick average PU foam spray having density 35+/-5 kg/m <sup>3</sup> density for insulation of cavity wall with including necessary fasteners etc., complete.	m <sup>2</sup>	647.00

Sl. No.	Specification	Unit	Rate ₹
16.9	<i>Cavity wall insulation with Polyurethane Foam (PUF) (50mm)</i>		
	Providing and fixing polyurethane foam (PUF) spray 50mm thick average PU foam spray having density 35+/-5 kg/m3 density for insulation of cavity wall with including necessary fasteners etc.,	m <sup>2</sup>	<b>922.00</b>
16.10	<i>Cavity wall insulation with Glass Wool Slab</i>		
	Providing and fixing glass wool slab 12mm thick resin bonded slab with density 48kg/m3 for insulation of cavity wall, fixed using GI wire 200 SWG, GI chicken mesh 12.50mm x 24 SWG including necessary criss-cross GI wire mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>593.00</b>
16.11	<i>Thermal insulation with Resin Bonded Fiber Glass Wool</i>		
	Providing and fixing glass wool slab 25mm thick resin bonded slab with density 48kg/m3 for insulation of cavity wall, fixed using GI wire 200 SWG, GI chicken mesh 12.50mm x 24 SWG including necessary criss-cross GI wire mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>725.00</b>
16.12	<i>Thermal insulation with Resin Bonded Fiber Glass Wool</i>		
	Providing and fixing glass wool slab 50mm thick resin bonded slab with density 48kg/m3 for insulation of cavity wall, fixed using GI wire 200 SWG, GI chicken mesh 12.50mm x 24 SWG including necessary criss-cross GI wire mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>840.00</b>
16.13	<i>Cavity wall insulation with Rock Wool Slab (25mm)</i>		
	Providing and fixing rock wool slab 25mm thick resin bonded rock wool slab having density 36+/-5 kg/m3 for insulation of cavity wall with including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>512.00</b>
16.14	<i>Cavity wall insulation with Rock Wool Slab (40mm)</i>		
	Providing and fixing rock wool slab 40mm thick resin bonded rock wool slab having density 36+/-5 kg/m3, for insulation of cavity wall with including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>541.00</b>
16.15	<i>Cavity wall insulation with Rock Wool Slab (50mm)</i>		
	Providing and fixing rock wool slab 50mm thick resin bonded rock wool slab having density 36+/-5 kg/m3 for insulation of cavity wall with including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>559.00</b>
16.16	<i>Cavity wall insulation with Rock Wool Slab (65mm)</i>		
	Providing and fixing rock wool slab 65mm thick resin bonded rock wool slab having density 36+/-5 kg/m3 for insulation of cavity wall with including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>591.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.17	<i>Cavity wall insulation with Rock Wool Slab (75mm)</i>		
	Providing and fixing rock wool slab 75mm thick resin bonded rock wool slab having density 36+/-5 kg/m3 for insulation of cavity wall with including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>611.00</b>
16.18	<i>Cavity wall insulation with Rock Wool Slab (100mm)</i>		
	Providing and fixing rock wool slab 100mm thick resin bonded rock wool slab having density 36+/-5 kg/m3 for insulation of cavity wall with including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>879.00</b>
16.19	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (50mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 50mm thick thermal insulating boards having density 36+/-5 kg/m3 for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>1,066.00</b>
16.20	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (60mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 60mm thick thermal insulating boards having density 36+/-5 kg/m3 for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>1,084.00</b>
16.21	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (70mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 70mm thick thermal insulating boards having density 36+/-5 kg/m3 for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>1,384.00</b>
16.22	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (25mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 25mm thick thermal insulating boards having density 32kg/m3 for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>763.00</b>
16.23	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (50mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 50mm thick thermal insulating boards having density 32kg/m3 for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>1,066.00</b>
16.24	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (75mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 75mm thick thermal insulating boards having density 32kg/m3 for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>1,407.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.25	<i>Cavity wall insulation with Extruded Polystyrene (XPS) (100mm)</i>		
	Providing and fixing extruded polystyrene (XPS) 100mm thick thermal insulating boards having density 32kg/m <sup>3</sup> for insulation of cavity wall including necessary criss-cross GI wire, mesh, raw plugs, adhesive etc., complete.	m <sup>2</sup>	<b>1,749.00</b>
16.26	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing polyurethane foam (PUF) slab 40mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> insulation for over deck covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	<b>1,333.00</b>
16.27	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing polyurethane foam (PUF) slab 50mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> insulation for over deck covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	<b>1,635.00</b>
16.28	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing polyurethane foam (PUF) slab 60mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> insulation for over deck covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	<b>1,928.00</b>
16.29	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing polyurethane foam (PUF) slab 70mm thick average with PU slab density 36+/-2 kg/m <sup>3</sup> insulation for over deck covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	<b>2,214.00</b>
16.30	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing Over deck insulation with cast insitu polyurethane foam (PUF) spray 40mm thick average with PU foam spray including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	<b>1,222.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.31	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing Over deck insulation with cast insitu polyurethane foam (PUF) spray 50mm thick average with PU foam spray including necessary fasteners etc, complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	1,401.00
16.32	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing Over deck insulation with cast insitu polyurethane foam (PUF) spray 60mm thick average with PU foam spray including necessary fasteners etc, complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete	m <sup>2</sup>	2,064.00
16.33	<i>Over deck insulation with Polyurethane Foam (PUF) slab</i>		
	Providing and fixing Over deck insulation with cast insitu polyurethane foam (PUF) spray 70mm thick average with PU foam spray including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy bases bonding adhesive etc., complete (The cost of concrete to be paid separately)	m <sup>2</sup>	2,453.00
16.34	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 50mm thick average for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid seperately)	m <sup>2</sup>	862.00
16.35	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 70mm thick average for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid seperately)	m <sup>2</sup>	940.00
16.36	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 90mm thick average for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid seperately)	m <sup>2</sup>	1,015.00

Sl. No.	Specification	Unit	Rate ₹
16.37	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 110mm thick average for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>1,089.00</b>
16.38	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 120mm thick average for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>1,127.00</b>
16.39	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 30mm thick with density 20kg/m <sup>3</sup> for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>850.00</b>
16.40	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 40mm thick with density 20kg/m <sup>3</sup> for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>860.00</b>
16.41	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 50mm thick with density 20kg/m <sup>3</sup> for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>865.00</b>
16.42	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 75mm thick with density 20kg/m <sup>3</sup> for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>940.00</b>
16.43	<i>Under deck insulation with Expanded Polystyrene (EPS)</i>		
	Providing and fixing expanded polystyrene (EPS) 100mm thick with density 20kg/m <sup>3</sup> for under deck thermal insulation including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>1,037.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.44	<i>Thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (50mm thick) with aluminium strips at every 600mm c/c over existing false ceiling for thermal insulation of roofing including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>648.00</b>
16.45	<i>Thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (70mm thick) with aluminium strips at every 600mm c/c over existing false ceiling for thermal insulation of roofing including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>745.00</b>
16.46	<i>Thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (90mm thick) with aluminium strips at every 600mm c/c over existing false ceiling for thermal insulation of roofing including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>813.00</b>
16.47	<i>Thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (110mm thick) with aluminium strips at every 600mm c/c over existing false ceiling for thermal insulation of roofing including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>910.00</b>
16.48	<i>Thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (120mm thick) with aluminium strips at every 600mm c/c over existing false ceiling for thermal insulation of roofing including necessary fasteners etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>961.00</b>
16.49	<i>Over deck thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (50mm thick) for over deck thermal insulation of roofing including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy based bonding adhesive etc., complete.	m <sup>2</sup>	<b>685.00</b>
16.50	<i>Over deck thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (70mm thick) for over deck thermal insulation of roofing including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy based bonding adhesive etc., complete.	m <sup>2</sup>	<b>781.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.51	<i>Over deck thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (90mm thick) for over deck thermal insulation of roofing including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy based bonding adhesive etc., complete.	m <sup>2</sup>	<b>847.00</b>
16.52	<i>Over deck thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (110mm thick) for over deck thermal insulation of roofing including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy based bonding adhesive etc., complete.	m <sup>2</sup>	<b>944.00</b>
16.53	<i>Over deck thermal insulation of roof with Expanded Polystyrene</i>		
	Providing and fixing expanded polystyrene (120mm thick) for over deck thermal insulation of roofing including necessary fasteners etc., complete covered with two layers of 40mm thick cement concrete screed with mix proportion 1:1.5:3 (M20grade) smooth finished with floating coat of neat cement, including necessary polymerized plaster reinforced with glass fibre mesh for PUF slab, epoxy based bonding adhesive etc., complete.	m <sup>2</sup>	<b>994.00</b>
16.54	<i>Over deck with Glass Wool</i>		
	Providing and fixing 12mm resin bonded glass wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing with glass wool including necessary fasteners, GI wire & mesh etc., complete.	m <sup>2</sup>	<b>1,059.00</b>
16.55	<i>Over deck with Glass Wool</i>		
	Providing and fixing 25mm resin bonded glass wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing with glass wool including necessary fasteners, GI wire & mesh etc., complete.	m <sup>2</sup>	<b>1,191.00</b>
16.56	<i>Over deck with Glass Wool</i>		
	Providing and fixing 50mm resin bonded glass wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing with glass wool including necessary fasteners, GI wire & mesh etc., complete.	m <sup>2</sup>	<b>1,306.00</b>
16.57	<i>Over deck with Rock Wool</i>		
	Providing and fixing Rock wool 25mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>738.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.58	<i>Over deck with Rock Wool</i>		
	Providing and fixing Rock wool 40mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>766.00</b>
16.59	<i>Over deck with Rock Wool</i>		
	Providing and fixing Rock wool 50mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>783.00</b>
16.60	<i>Over deck with Rock Wool</i>		
	Providing and fixing Rock wool 60mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>813.00</b>
16.61	<i>Over deck with Rock Wool</i>		
	Providing and fixing Rock wool 75mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>833.00</b>
16.62	<i>Over deck with Rock Wool</i>		
	Providing and fixing Rock wool 100mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for over deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>884.00</b>
16.63	<i>Under deck insulation with Glass Wool</i>		
	Providing and fixing glass wool 25mm resin bonded glass wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>1,248.00</b>
16.64	<i>Under deck insulation with Glass Wool</i>		
	Providing and fixing glass wool 50mm resin bonded glass wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners,GI wire & mesh etc., complete (excluding cost of screed concrete which is to be measured and paid separately)	m <sup>2</sup>	<b>1,359.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.65	<i>Under deck with Rock Wool</i>		
	Providing and fixing Rock wool 25mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete.	m <sup>2</sup>	<b>736.00</b>
16.66	<i>Under deck with Rock Wool</i>		
	Providing and fixing Rock wool 40mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete.	m <sup>2</sup>	<b>764.00</b>
16.67	<i>Under deck with Rock Wool</i>		
	Providing and fixing Rock wool 50mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete.	m <sup>2</sup>	<b>780.00</b>
16.68	<i>Under deck with Rock Wool</i>		
	Providing and fixing Rock wool 65mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete with all lead and lift, transportation charges, loading unloading charges, all taxes, cost of all materials, labour, Usage Charges of machinery, scaffolding etc., complete.	m <sup>2</sup>	<b>810.00</b>
16.69	<i>Under deck with Rock Wool</i>		
	Providing and fixing Rock wool 75mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete with all lead and lift, transportation charges, loading unloading charges, all taxes, cost of all materials, labour, Usage Charges of machinery, scaffolding etc., complete.	m <sup>2</sup>	<b>829.00</b>
16.70	<i>Under deck with Rock Wool</i>		
	Providing and fixing Rock wool 100mm resin bonded rock wool slab having density 48 kg/m <sup>3</sup> for under deck insulation of roofing including necessary fasteners, GI wire & mesh etc., complete with all lead and lift, transportation charges, loading unloading charges, all taxes, cost of all materials, labour, Usage Charges of machinery, scaffolding etc., complete.	m <sup>2</sup>	<b>880.00</b>
16.71	<i>Ceramic Cool Tiles for Roof</i>		
	Providing and fixing Ceramic Cool tiles of size 254x254x15mm thickness thermal insulation properties as per GRIHA guidelines with satisfactory SRI > 70% & R value laid on 12mm insulated Mortar mix using heat proof sand complete.	m <sup>2</sup>	<b>1,146.00</b>

Sl. No.	Specification	Unit	Rate ₹
16.72	<i>Horizontal perforated light weight clay bricks</i>		
	Providing and supplying Non load bearing bricks of size 200/150/100 mm thickness for infill masonry with excellent thermal and sound insulation with density 700-800kg/m <sup>3</sup> and compressive strength > 3.5 N/mm <sup>2</sup> & water absorption not greater than 15% & U value 1.00 W/m <sup>2</sup> K laid with Cement Mortar 1:6 conforming to Building envelope as per GRIHA certification etc complete.	m <sup>2</sup>	<b>742.00</b>
16.73	<i>Vertical perforated light weight clay bricks</i>		
	Providing and supplying Non load bearing bricks of size 200/150/100 mm thickness for infill masonry with excellent thermal and sound insulation with density 750-850kg/m <sup>3</sup> and compressive strength > 7.0 N/mm <sup>2</sup> & water absorption not greater than 15% & U value 1.30 W/m <sup>2</sup> K laid with Cement Mortar 1:6 conforming to Building envelope as per GRIHA certification etc complete.	m <sup>2</sup>	<b>793.00</b>



## Chapter - 17

# RAIN WATER HARVESTING



Sl. No.	Specification	Unit	Rate ₹
<b>17.0 RAIN WATER HARVESTING</b>			
17.1	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	m <sup>3</sup>	1,002.00
17.2	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	m <sup>3</sup>	1,186.00
17.3	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.	m <sup>3</sup>	1,192.00
17.4	Gravel packing in tube well construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	m <sup>3</sup>	1,339.00
17.5	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge.	each	1,123.00
17.6	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge.		
17.6.1	100 mm nominal size dia having minimum wall thickness 5.00 mm	m	1,068.00
17.6.2	150 mm nominal size dia having minimum wall thickness 5.00 mm	m	1,517.00
17.6.3	200 mm nominal size dia having minimum wall thickness 5.40 mm	m	1,877.00
17.7	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.613.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of antlcorrosive bltumastlc paint of approved brand and manufacture, Including usage & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge.		
17.7.1	100 mm nominal size dia	m	1,117.00

Sl. No.	Specification	Unit	Rate ₹
17.7.2	150 mm nominal size dia	m	1,614.00
17.7.3	200 mm nominal size dia	m	1,982.00
17.8	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	hr	926.00
17.9	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:		
17.9.1	100 mm dia	each	174.00
17.9.2	150 mm dia	each	192.00
17.9.3	200 mm dia	each	254.00
17.10	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.		
17.10.1	100 mm clamp	kg	1,777.00
17.10.2	150 mm clamp	kg	1,863.00
17.10.3	200 mm clamp	kg	2,118.00
17.11	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).		
17.11.1	100 mm dia	each	212.00
17.11.2	150 mm dia	each	261.00
17.11.3	200 mm dia	each	286.00
17.12	Providing and laying 100mm thick pre-cast cover slabs over drains & Rain pit of width not exceeding 800 mm using M20 concrete reinforced with Micro Alloyed High carbon steel with 3mm - 3ply wired steel @ 2.00 kg/m <sup>2</sup> , slabs jointed in CM 1:3 proportion and nicely finished Including providing holes in the Cover slabs wherever necessary for easy drainage of surface water including of labour, materials, scaffolding, usage of machinery, curing, lead and lift charges etc, Complete.	m <sup>2</sup>	928.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
17.13	Providing and laying 100mm thick side wall & bottom slab of 600mm width for drain with opening using M20 concrete reinforced with Micro Alloyed High carbon steel with 3mm - 3ply wired steel @ 150mm spacing jointed in CM 1:3 proportion and nicely finished Including providing holes in the walls wherever necessary including of labour, materials, scaffolding, usage of machinery, curing, lead and lift charges etc, Complete.	<b>m</b>	<b>5,612.00</b>
17.14	Providing and laying 100mm thick pre-cast cover slabs over Road side drains / utility ducts / Rain water harvesting pit of width not exceeding 1000 mm using M20 concrete reinforced with TMT bars Fe 550 @ 6kg/m <sup>2</sup> , slabs jointed in CM 1:3 proportion and nicely finished Including providing holes in the Cover slabs wherever necessary for easy drainage of surface water including of labour, materials, scaffolding, usage of machinery, curing, lead and lift charges etc, Complete.	<b>m<sup>2</sup></b>	<b>1,170.00</b>



**Chapter - 18**

**STRUCTURAL GLAZING**



Sl. No.	Specification	Unit	Rate ₹
<b>18.0 STRUCTURAL GLAZING</b>			
18.1	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved drawings of Chief Architect, GoK. The aluminium quality shall be as per grade 6063 T5 or T6 as per BS 1474, including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. ( The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account).The weight of aluminium extruded section shall be taken for purpose of payment.	kg	407.00
18.2	Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including:(a) Structural analysis & design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must pass the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminum sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)-cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation & drainage and protection against fire hazard including:(b) Fabricating and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimentional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/ structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon separator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers.(c)Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory / work shop environment, including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass.(d)Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it watertight.(e) Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete.	m <sup>2</sup>	2,685.00

Sl. No.	Specification	Unit	Rate ₹
	<p>This item includes cost of all inputs of designing, labour for fabricating and installation of aluminium grid, installation of glazed units, T&amp;P, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified. The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, duly approved by Engineer-in-charge. The item also includes the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer- in-Charge.</p>		
	<p>Note:- 1. The cost of providing extruded aluminium frames, shadow boxes, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this sub- head. However, for the purpose of payment, only the actual area of structural glazing (including width of grooves) on the external face shall be measured in m<sup>2</sup>. up to two decimal places.</p>		
	<p>Note:-2. The following performance test are to be conducted on structural glazing system if area of structural glazing exceeds 2500 m<sup>2</sup> from the certified laboratories accredited by NABL(National Accreditation Board for Testing and Calibration Laboratories), Department of Science &amp; Technologies, India. Cost of testing is payable separately.</p>		
	<p>The NIT approving authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work. Performance Testing of Structural glazing system Tests to be conducted in the NABL accredited lab or by any other accreditation body which operates in accordance with ISO / IEC 17011 and accredits labs as per ISO/ IEC 17025.</p>		
	<p>1. Performance Laboratory Test for Air Leakage Test (-50pa to - 300pa) &amp; (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1 to 200 mVhr</p>		
	<p>2. Static Water Penetration Test. (50pa to 1500p) as per ASTME- 331-09 testing method for a range up to 2000 ml.</p>		
	<p>3. Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01- 05 testing method for a range upto 2000 ml</p>		
	<p>4. Structural Performance Deflection and deformation by static air pressure test (1.5 times design wind pressure without any failure) as per ASTME-330-10 testing method for a range upto 50 mm</p>		

Sl. No.	Specification	Unit	Rate ₹
	5. Seismic Movement Test (upto 30 mm) as per AAMA 501.4-09 testing method for Qualitative test, Tests to be conducted on site.		
	6. Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) upto 2000 ml		
18.3	Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 6-12- 6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified, comprising of an outer heat strengthened float glass 6mm thick, of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade, an inner Heat strengthned clear float glass 6mm thick, spacer tube 12mm wide, dessicants, including primary seal and secondary seal (structural silicone sealant) etc. all complete for the required performances, as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge. The IGUs shall be assembled in the factory/ workshop of the glass processor. (Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.18.2)For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, shall be measured in m2.(i) Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, + 12mm Airgap + 6mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25-0.28) and U value of 3.0 to 3.3 W/m <sup>2</sup> degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	m <sup>2</sup>	3,043.00
18.4	Extra for openable side / top hung vision glass panels (IGUs) including providing and supplying at site all accessories and hardwares for the openable panels as specified and of the approved make such as heavy duty stainless steel friction hinges, min 4-point cremone locking sets with stainless steel plates, handles, buffers etc. including necessary stainless steel screws/ fasteners, nuts, bolts, washers etc. all complete as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer- in-Charge.	m <sup>2</sup>	4,158.00
18.5	Providing, fabricating and supplying shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing semi -rigid, inorganic, non-combustible fibre glass wool insulation 50 mm thick, conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5 mm and nominal mass not less than 60 g/m <sup>2</sup> ,made of randomly oriented glass fibres distributed in a binder by a wet-lay process including fixing 1.5 mm thick solid aluminum sheet backing using, 6 mm thick cement board including SS rivets, nuts, bolts, washers etc complete.	m <sup>2</sup>	1,939.00

Sl. No.	Specification	Unit	Rate ₹
18.6	Providing and supplying Spandrel Glass Panels comprising of 6 mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. ,all complete for the required performances as specified, as per the Architectural drawings, as per the approved shop drawings, as specified, and as directed by the Engineer- in- Charge. For payment, only the actual area of glass on face # 1 of the glass panels (but excluding the area of grooves and weather silicone sealant) provided and fixed in position, shall be measured in m2. (Payment for fixing of Spandrel Glass Panels in the curtain glazing is included in cost of relevant Item*). "(i) Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 K etc.. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	m <sup>2</sup>	1,980.00
18.7	Design supply & installation of suspended Spider Glazing system designed to withstand the wind pressure as per IS 875 (Part-III). The Suspended System held with Spider Fittings of SS-316 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass held together with SS- 316 Grade Stainless steel Spider & bolt assembly with laminated glass fins 21 mm thick. The Glass fins and glass panel assembly shall be connected to Slab/beams by means of SS- 316 Grade stainless steel brackets & Anchor bolts and at the bottom using SS channel of 50x25x2mm using fastener & anchor bolts, non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per specification and approved drawings. The complete system to be designed to accommodate thermal expansion & seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter & in U channel of the assembly to be filled with non staining weather sealant, so as to make the entire system fully water proof & dust proof. The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, T&P, scaffolding, other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured.	m <sup>2</sup>	7,952.00

**Chapter - 19**

**DISMANTLING & DEMOLITION**



Sl. No.	Specification	Unit	Rate ₹
<b>19.0 DISMANTLING &amp; DEMOLITION</b>			
19.1	Demolishing lime concrete manually/ by mechanical means and disposal of material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	583.00
19.2.1	Demolishing cement concrete manually/ by mechanical means including disposal of material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	1,663.00
19.2.2	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	m <sup>3</sup>	1,029.00
19.3	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	2,426.00
19.4	Demolishing R.B. work manually/by mechanical means including stacking of steel bars and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	2,174.00
19.5	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.	m <sup>3</sup>	727.00
19.6	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.	m <sup>3</sup>	727.00
19.7.1	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	482.00
19.7.2	In lime mortar	m <sup>3</sup>	583.00
19.7.3	In cement mortar	m <sup>3</sup>	1,029.00
19.8	Removing mortar from bricks and cleaning bricks including stacking to the appropriate disposal area as per direction of Engineer-in-charge. (stacks of cleaned bricks shall be measured):		
19.8.1	From brick work in mud mortar	1000 Nos	2,879.00
19.8.2	From brick work in lime mortar	1000 Nos	3,611.00
19.8.3	From brick work in cement mortar	1000 Nos	4,510.00
19.9	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.		
19.9.1	In lime mortar	m <sup>3</sup>	792.00
19.9.2	In cement mortar	m <sup>3</sup>	1,684.00

Sl. No.	Specification	Unit	Rate ₹
19.10.1	Dismantling dressed stone work ashlar face stone work, marble work or precast concrete work manually/ by mechanical means including stacking of serviceable and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	$m^3$	1,001.00
19.10.2	In cement mortar	$m^3$	1,001.00
19.11	Removing mortar from and cleaning stones and concrete articles (net quantity of stacks of cleaned materials will be measured):		
19.11.1	In lime mortar	$m^3$	325.00
19.11.2	In cement mortar	$m^3$	469.00
19.12	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking to the appropriate disposal area as per direction of Engineer-in-charge.		
19.12.1	Of area 3 $m^2$ and below	$m^3$	240.00
19.12.2	Of area beyond 3 $m^2$	$m^2$	262.00
19.13	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking to the appropriate disposal area as per direction of Engineer-in-charge.		
19.13.1	Of area 3 $m^2$ and below	$m^2$	94.00
19.13.2	Of area beyond 3 $m^2$	$m^2$	123.00
19.14	Dismantling wood work in frames, trusses, purlins and rafters upto 10 metres span and 5 metres height including stacking to the appropriate disposal area as per direction of Engineer-in-charge.		
19.14.1	Of sectional area 40 $cm^2$ and above	$m^3$	2,909.00
19.14.2	Of sectional area below 40 $cm^2$	$m$	12.00
19.15	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional span of one metre or part thereof beyond 10 m :		
19.15.1	Of sectional area 40 $cm^2$ and above	$m^3$	363.00
19.15.2	Of sectional area below 40 $cm^2$	$m$ per $m$ span	1.00
19.16	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional height of one metre or part thereof beyond 5 m		
19.16.1	Of sectional area 40 $cm^2$ and above	$m^2$	544.00
19.16.2	Of sectional area below 40 $cm^2$	$m$ per $m$ span	2.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
19.17	Dismantling steel work in single sections including dismembering and stacking within to the appropriate disposal area as per direction of Engineer-in-charge.		
19.17.1	R.S. Joists	<b>kg</b>	<b>2.00</b>
19.17.2	Channels, angles, tees and flats	<b>kg</b>	<b>1.00</b>
19.18	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking to the appropriate disposal area as per direction of Engineer-in-charge.	<b>kg</b>	<b>4.00</b>
19.19	Dismantling steel work manually/ by mechanical means in built up sections without dismembering and stacking to the appropriate disposal area as per direction of Engineer-in-charge.	<b>kg</b>	<b>3.00</b>
19.20	Extra for dismantling trusses, rafters, purlins etc. of steel work for every additional span of 1m or part thereof beyond 10 m	<b>100 kg/m span</b>	<b>58.00</b>
19.21	Extra for dismantling trusses, rafters, purlins etc. of steel work for every additional height of one metre or part thereof beyond 5 metres.	<b>100 kg/m span</b>	<b>58.00</b>
19.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material to the appropriate disposal area as per direction of Engineer-in-charge.		
19.22.1	For thickness of tiles 10 mm to 25 mm	<b>m<sup>2</sup></b>	<b>48.00</b>
19.22.2	For thickness of tiles above 25 mm and up to 40 mm	<b>m<sup>2</sup></b>	<b>74.00</b>
19.23	Demolishing dry brick pitching in floors, drains etc. including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	<b>m<sup>3</sup></b>	<b>900.00</b>
19.24	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>181.00</b>
19.25	Demolishing brick tile covering in terracing including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>68.00</b>
19.26	Demolishing mud phaska in terracing and disposal of material to the appropriate disposal area as per direction of Engineer-in-charge.	<b>m<sup>3</sup></b>	<b>626.00</b>
19.27	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material to the appropriate disposal area as per direction of Engineer-in-charge.		
19.27.1	G.S. Sheet	<b>m<sup>2</sup></b>	<b>109.00</b>
19.27.2	Asbestos cement sheet	<b>m<sup>2</sup></b>	<b>51.00</b>

Sl. No.	Specification	Unit	Rate ₹
19.28	Dismantling stone slab roofing over wooden karries or R.C.C. battens (dismantling karries and battens to be paid for separately), including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	1,814.00
19.29	Dismantling jack arch roofing and floors including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	173.00
19.30	Dismantling tiled roofing with battens, boarding etc. complete including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	143.00
19.31	Demolishing thatch roofing including mats, bamboo, jaffari etc. complete including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	42.00
19.32	Dismantling wooden ballies in posts and struts including stacking to the appropriate disposal area as per direction of Engineer-in-charge	m	14.00
19.33	Dismantling and stacking to the appropriate disposal area as per direction of Engineer-in-charge, fencing posts or struts including all earth work and dismantling of concrete etc. in base of:		
19.33.1	T' or 'L' iron or pipe	each	161.00
19.33.2	R.C.C.	each	171.00
19.34	Cutting ballies or wooden posts of fencing at the point of projection above the concrete or ground and stacking the same to the appropriate disposal area as per direction of Engineer-in-charge.	each	11.00
19.35	Dismantling barbed wire or flexible wire rope in fencing including making rolls and stacking to the appropriate disposal area as per direction of Engineer-in-charge.	kg	25.00
19.36	Dismantling wooden trellis work excluding frames but including stacking the serviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	43.00
19.37	Dismantling expanded metal or I.R.C. fabrics with necessary battens and beading including stacking the serviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	51.00
19.38	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking to the appropriate disposal area as per direction of Engineer-in-charge.		
19.38.1	Up to 10 mm thick	m <sup>2</sup>	40.00
19.38.2	Thickness above 10 mm up to 25 mm	m <sup>2</sup>	51.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
19.38.3	Thickness above 25 mm up to 40 mm	<b>m<sup>2</sup></b>	<b>58.00</b>
19.39	Dismantling precast concrete or stone slabs in walls, partition walls etc. including stacking to the appropriate disposal area as per direction of Engineer-in-charge.		
19.39.1	Thickness up to 40 mm	<b>m<sup>2</sup></b>	<b>195.00</b>
19.39.2	Thickness above 40 mm up to 75 mm	<b>m<sup>2</sup></b>	<b>292.00</b>
19.40	Dismantling cement asbestos or other hard board ceiling or partition walls including stacking of serviceable materials and disposal of unserviceable materials to the appropriate disposal area as per direction of Engineer-in-charge.	<b>m<sup>2</sup></b>	<b>36.00</b>
19.41	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material to the appropriate disposal area as per direction of Engineer-in-charge.		
19.41.1	75 to 80 mm dia pipe	<b>m</b>	<b>52.00</b>
19.41.2	100 mm dia pipe	<b>m</b>	<b>53.00</b>
19.42	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineer-in-charge.		
19.42.1	Water Bound Macadam	<b>m<sup>2</sup></b>	<b>151.00</b>
19.42.2	Bituminous road	<b>m<sup>2</sup></b>	<b>296.00</b>
19.43	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means including stacking of pipes to the appropriate disposal area as per direction of Engineer-in-charge.		
19.43.1	15 mm to 40 mm nominal bore	<b>m</b>	<b>104.00</b>
19.43.2	Above 40 mm nominal bore	<b>m</b>	<b>114.00</b>
19.44	Dismantling C.I. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site to the appropriate disposal area as per direction of Engineer-in-charge.		
19.44.1	Up to 150 mm diameter	<b>m</b>	<b>288.00</b>
19.44.2	Above 150 mm dia up to 300 mm dia	<b>m</b>	<b>370.00</b>
19.44.3	Above 300 mm diameter	<b>m</b>	<b>475.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
19.45	Dismantling steel cylinder R.C. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site to the appropriate disposal area as per direction of Engineer-in-charge.		
19.45.1	Up to 600 mm dia materials.	<b>m</b>	<b>453.00</b>
19.45.2	Above 600 mm diameter	<b>m</b>	<b>1,129.00</b>
19.46	Dismantling asbestos cement pressure pipes including excavation and refilling trenches after taking out the pipes manually/ by mechanical means and stacking the pipes to the appropriate disposal area as per direction of Engineer-in-charge.		
19.46.1	Up to 150 mm diameter	<b>m</b>	<b>233.00</b>
19.46.2	Above 150 mm diameter	<b>m</b>	<b>276.00</b>
19.47	Taking out C.I. cover with frame from R.C.C. top slab of manholes of various sizes including demolishing of R.C.C. work manually/ by mechanical means and stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead as per direction of Engineer-in-charge	<b>unit</b>	<b>461.00</b>
19.48	Taking out C.I. cover with frame from R.C.C. top slab of inspection chambers of various sizes including demolishing of R.C.C. work manually/ by mechanical means and stacking of useful materials near the site and disposal of unserviceable materials to the appropriate disposal area as per direction of Engineer-in-charge.	<b>unit</b>	<b>266.00</b>
19.49	Dismantling of R.C.C. spun vent shaft including excavating the cement concrete pit completely, taking out the shaft, refilling the excavated gap, stacking the useful materials near the site and disposal of unserviceable materials to the appropriate disposal area as per direction of Engineer-in-charge.	<b>unit</b>	<b>2,952.00</b>
19.50	Dismantling of road gully chamber of various sizes including C.I. grating with frame including stacking of useful materials near the site and disposal of unserviceable materials to the appropriate disposal area as per direction of Engineer-in-charge.	<b>unit</b>	<b>669.00</b>
19.51	Dismantling of flushing cistern of all types (C.I./PVC/Vitreous China) including stacking of useful materials near the site and disposal of unserviceable materials to the appropriate disposal area as per direction of Engineer-in-charge.	<b>unit</b>	<b>549.00</b>
19.52	Dismantling of C.I. sluice valve including stacking of useful materials to the appropriate disposal area as per direction of Engineer-in-charge.		
19.52.1	Up to 150 mm diameter	<b>each</b>	<b>214.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
19.52.2	Above 150 mm diameter	each	779.00
19.53	Dismantling of spindle fire hydrant including stacking of useful materials to the appropriate disposal area as per direction of Engineer-in-charge.	each	475.00
19.54	Dismantling of cement concrete platform along with curtain walls and base concrete etc. including stacking of useful materials near the site and disposal of unserviceable materials to the appropriate disposal area as per direction of Engineer-in-charge.		
19.54.1	120 x 120 cm (outside to outside)	each	756.00
19.54.2	210x120 cm (outside to outside)	each	1,182.00
19.54.3	320 x 120 cm (outside to outside)	each	1,601.00
19.55	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	37.00
19.56	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable material and stacking of serviceable material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>2</sup>	36.00
19.57	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials to the appropriate disposal area stacking serviceable and unserviceable material separately including cutting reinforcement bars.	m <sup>3</sup>	2,349.00
19.58	Dismantling of flexible pavement (bituminous courses) upto 100 mm thickness by mechanical means and disposal of dismantled material to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	529.00
19.59	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge to the appropriate disposal area.	m <sup>3</sup>	364.00
19.60	Dismantling chain link fencing including removing the posts, cement concrete fedestals, foundation and stacking the useful materials safely at a distance to the appropriate disposal area as per direction of Engineer-in-charge.	kg	22.00
19.61	Dismantling weather proof course and removing and conveying the debris to a distance to the appropriate disposal area as per direction of Engineer-in-charge.	m <sup>3</sup>	576.00



**Chapter - 20**

**REPAIRS TO BUILDINGS**



Sl. No.	Specification	Unit	Rate ₹
<b>20.0 REPAIRS TO BUILDINGS</b>			
20.1	Making the opening in brick masonry for door/window/clerestory window including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete, to match existing surface i/c disposal of mulba/ rubbish to the nearest municipal dumping ground, all complete as per direction of Engineer-in-Charge.	m <sup>2</sup>	1,046.00
20.2	Renewing glass panes, with putty and nails wherever necessary including racking out the old putty:		
20.2.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/m <sup>2</sup> )	m <sup>2</sup>	819.00
20.2.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/m <sup>2</sup> )	m <sup>2</sup>	1,107.00
20.3	Renewing glass panes, with wooden fillets wherever necessary:		
20.3.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/m <sup>2</sup> )	m <sup>2</sup>	1,456.00
20.3.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/m <sup>2</sup> )	m <sup>2</sup>	1,468.00
20.4	Renewing glass panes and refixing existing wooden fillets:		
20.4.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/m <sup>2</sup> )	m <sup>2</sup>	919.00
20.4.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/m <sup>2</sup> )	m <sup>2</sup>	1,207.00
20.5	Supplying and fixing new wooden fillets wherever necessary:		
20.5.1	2nd class teak wood fillets	m	52.00
20.5.2	Hollock wood fillets (Jungle/Honne wood)	m	43.00
20.6	Renewal of old putty of glass panes (length)	m	39.00
20.7	Refixing old glass panes with putty and nails	m <sup>2</sup>	511.00
20.8	Fixing old glass panes with wooden fillets (excluding cost of fillets)	m <sup>2</sup>	453.00
20.9	Providing and fixing 16 mm M.S. Fan clamps of standard shape and size in existing R.C.C. slab, including cutting chase, anchoring clamp to reinforcement bar, including cleaning, refilling, making good the chase with matching concrete, plastering and painting the exposed portion of the clamps complete.	each	466.00

Sl. No.	Specification	Unit	Rate ₹
20.10	Replacing granite stone slabs 100mm to 150mm thick in roofing, laid in cement mortar 1:4 (1 cement : 4 coarse sand), including necessary repairs and cement pointing with same mortar complete, including disposal of rubbish to dumping ground, scaffolding and transportation all complete as per direction of Engineer-in-Charge	m <sup>2</sup>	1,172.00
20.11	Renewing wooden beams in roofs including making good the holes in walls and painting with oil type wood preservative of approved brand and manufacture complete, including removal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.		
20.11.1	Not exceeding 4.00 m in length.		
20.11.1.1	Sal wood beams	m <sup>3</sup>	98,907.00
20.11.1.2	Hollock wood beams (Jungle wood)	m <sup>3</sup>	56,271.00
20.11.2	Above 4.00 metres and upto 5.00 metres length.		
20.11.2.1	Sal wood beams	m <sup>3</sup>	99,534.00
20.11.2.2	Hollock wood beams (Jungle wood)	m <sup>3</sup>	60,051.00
20.12	Raking out joints in lime or cement mortar and preparing the surface for re-pointing or replastering, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.	m <sup>2</sup>	50.00
20.13	Flush pointing with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement for flat tile bricks on top of mud phaska :		
20.13.1	With Yelahanka tiles for joint filling	m <sup>2</sup>	91.00
20.13.2	With modular brick tiles	m <sup>2</sup>	92.00
20.14	Taking out wind ties from roof including cutting out rusted bolts, nuts etc. and removing materials to any distance within compound and stacking.	kg	4.00
20.15	Fixing of old wind tie with new fittings including painting two or more coats with anticorrosive paint of approved brand & manufacturer over and including priming coat of ready mixed zinc chromate yellow primer of approved brand.	m	101.00
20.16	Renewing bottom rail and/or top runner of collapsible gate including making good all damages and applying priming coat of zinc chromate yellow primer of approved brand and manufacturer.	kg	228.00
20.17	Renewing Wrought iron or M.S. Wheel or roller of steel door or gate and fitting and fixing the same with necessary clamps, nuts and bolts/welding and erection etc. complete.		
20.17.1	Wheel 50 mm dia and below	No.	150.00
20.17.2	Wheel above 50 mm dia	No.	244.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.18	Pumping out water caused by springs, tidal or river seepage, broken water mains or drains and the like.	kl	<b>161.00</b>
20.19	Providing and laying Brick work with common burnt clay bricks of class designation 5.0 in mud mortar	m <sup>3</sup>	<b>6,844.00</b>
20.20	Providing and fixing 25 mm thick shutters for cup board etc. :		
20.20.1	Panelled or panelled & glazed shutters :		
20.20.1.1	Superior class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	m <sup>2</sup>	<b>4,280.00</b>
20.20.1.2	Ist class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	m <sup>2</sup>	<b>3,631.00</b>
20.20.2	Glazed shutters :		
20.20.2.1	Superior class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	m <sup>2</sup>	<b>4,002.00</b>
20.20.2.2	Ist class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	m <sup>2</sup>	<b>3,711.00</b>
20.21	Providing and fixing Teak wood plain jaffri door and window shutters including bright or/and black enamelled M.S. butt hinges with necessary screws 35x10 mm laths placed 35 mm apart (frames to be paid separately), including fixing 50x12 mm beading complete with :	m <sup>2</sup>	<b>4,115.00</b>
20.22	Providing and fixing brass curtain rods of wall thickness 1.25 mm with two brass brackets fixed with brass screws and wooden plugs etc. wherever necessary complete.		
20.22.1	20 mm diameter.	m	<b>520.00</b>
20.22.2	25 mm diameter.	m	<b>629.00</b>
20.23	Providing and fixing M.S. round or square bars with M.S. flats at required spacing in wooden frames of windows and clerestory windows.	kg	<b>99.00</b>
20.24	Providing joists (karries) including hoisting, fixing in position and applying wood preservative on unexposed surface etc. complete with :		
20.24.1	Sal wood	m <sup>3</sup>	<b>92,816.00</b>
20.24.2	Hollock wood	m <sup>3</sup>	<b>51,520.00</b>
20.25	Providing and fixing bright finished brass single acting spring hinges with necessary brass screws etc. complete :		
20.25.1	150 mm	each	<b>658.00</b>
20.25.2	125 mm	each	<b>471.00</b>
20.25.3	100 mm	each	<b>416.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.26	Providing and fixing bright finished brass double acting spring hinges with necessary brass screws etc. complete :		
20.26.1	150 mm	each	732.00
20.26.2	125 mm	each	625.00
20.26.3	100 mm	each	602.00
20.27	Providing and fixing bright finished brass flush bolts with necessary brass screws etc. complete :		
20.27.1	250 mm	each	245.00
20.27.2	150 mm	each	212.00
20.27.3	100 mm	each	164.00
20.28	Providing and fixing 150 mm bright finished floor brass door stopper with rubber cushion, necessary brass screws etc. to suit shutter thickness complete	each	236.00
20.29	Providing and fixing bright finished brass hard drawn hooks and eyes :		
20.29.1	300 mm	each	84.00
20.29.2	250 mm	each	81.00
20.29.3	200 mm	each	72.00
20.29.4	150 mm	each	58.00
20.29.5	100 mm	each	50.00
20.30	Providing and fixing bright finished brass fan light pivot with necessary brass screws etc. complete.	each	48.00
20.31	Providing and fixing 300 mm long bright finished brass chain with hook for fan light including necessary brass screws etc. complete.	each	67.00
20.32	Providing and fixing bright finished brass quadrant stay 300 mm long with necessary brass screws etc. complete.	each	164.00
20.33	Providing and fixing bright finished brass helical door spring (superior quality).	each	461.00
20.34	Providing and fixing chromium plated brass butt hinges with necessary chromium plated brass screws etc. complete.		
20.34.1	125x70x4 mm (ordinary type)	each	170.00
20.34.2	100x70x4 mm (ordinary type)	each	138.00
20.34.3	75x65x4 mm (heavy type)	each	157.00
20.34.4	75x40x2.5 mm (ordinary type)	each	90.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.34.5	50x40x2.5 mm (ordinary type)	each	40.00
20.35	Providing and fixing 85x42 mm chromium plated brass pull bolt lock with necessary chromium plated brass screws, nuts, bolts and washers etc. complete.	each	229.00
20.36	Providing and fixing bright finished casement window fasteners or peg stays to windows/ ventilators with necessary welding and machine screws etc. complete.	kg	500.00
20.37	Providing and fixing 20 mm bright finished steel spring catch to steel centre hung ventilators with necessary welding and machine screws etc. complete.	each	42.00
20.38	Repair to plaster of thickness 12mm to 20 mm in patches of area 2.5 m <sup>2</sup> and under, including cutting the patch in proper shape, raking out joints and preparing plastering the wall surface with white cement based polymer modified self curing mortar, including disposal of rubbish, all complete as per the direction of Engineer-In-Charge. (For Roof and Water Tanks)	m <sup>2</sup>	518.00
20.39	Cleaning of terrace/loft water storage tank (inside surface area) upto 2000 litre capacity at all heights with coconut brushes, duster etc., removal of silt, rubbish from the tank and cleaning the tank with fresh water disinfecting with bleaching powder @ 0.5gm per litre capacity of tank including marking the date of cleaning on the side of tank body with the help of stencil and paint and disposing of malba all complete as per direction of Engineer-in-Charge. (The old date already written on tank should be removed with paint remover or black paint and if date is not written with the stencil or old date is not removed deduction will be made @ Rs. 0.10 per litre) (if during cleaning any GI fittings or ball cock is damaged that is to be repaired by contractor at his own cost and nothing extra will be paid on this account)	100 L	32.00
20.40	Cleaning and desilting of gully trap chamber, including removal of rubbish mixed with earth etc. and disposal of same, all as per the direction of Engineer-in- charge.	each	78.00
20.41	Cleaning of chocked sewer line by diesel running vehicle mounting hydraulic operated high pressure suction m <sup>3</sup> jetting sewer cleaning machine fitted with pump having 4000 litres suction capacity and 6000 litres water jetting tank capacity including skilled operator, supervising engineer etc. for cleaning and partial desilting of manholes and dechocking of sewer lines. Dechocking and flushing of sewer line from one manhole to another by high pressure jetting system of 2200 PSI for sewer line from 150mm dia upto 300mm	m	291.00
20.42	Cleaning of under ground sump, Over Head R.C.C. Tank ( independent staging) including disposal of slit and rubbish, all as per direction of Engineer-in-Charge. The cleaning shall consist following operations:-	m <sup>2</sup>	67.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
(i)	Tank shall be emptied of water by pumping & bottom shall be cleaned of silt and other deposits.		
(ii)	Entire surface area of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with water.		
(iii)	Chlorination of RCC internal surface by liquid chlorine.		
(iv)	The treated surface shall be dried using air jetting and all loose particles shall be removal from the surface.		
(v)	Finally the surface shall be treated with ultraviolet radiation etc. as per direction of Engineer-in-Charge.		
20.43	Disconnecting damaged overhead/terrace PVC water storage tank of any size from water supply line and removing from the terrace including shifting at ground level as per direction of Engineer-in-charge.	<b>each</b>	<b>295.00</b>
20.44	Providing & fixing White vitreous china water closet squatting pan (Indian type) along with "S" or "P" trap including dismantling of old WC seat and "S" or "P" trap at site complete with all operations including all necessary materials, labour and disposal of dismantled material i/c malba, all complete as per the direction of Engineer-in charge.		
20.44.1	Long pattern W.C Pan of size 580x440 mm	<b>each</b>	<b>2,791.00</b>
20.44.2	Orissa pattern W.C Pan of size 580x440 mm	<b>each</b>	<b>3,547.00</b>
20.45	Cutting holes of required size in brick masonry wall for fixing of exhaust fan including providing and fixing 300 mm dia PVC pipe conforming BIS-12818 and making good the same with CM 1:4 etc. complete as per direction of Engineer-in-charge.	<b>each</b>	<b>221.00</b>
20.46	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	<b>m<sup>2</sup></b>	<b>3.00</b>
20.47	Taking out existing wooden door shutter, repair by cutting, painting etc. and refixing of repaired door shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.	<b>each</b>	<b>301.00</b>
20.48	Providing round the clock security guard without gun for watch & ward of Government premises and its all belongings by deploying neatly dressed security guards in 8 hour's shift including necessary T&P like torch, lathi and uniform etc.complete,as per the direction of Engineer-in-charge. (One job means 8 hour's duty).	<b>1 Job</b>	<b>700.00</b>
20.49	Providing round the clock security guard with gun for watch & ward of Government premises and its all belongings by deploying neatly dressed security guards in 8 hour's shift including necessary T&P like torch, lathi and uniform etc.complete, as per the direction of Engineer-in-charge.(One job means 8 hour's duty).	<b>1 Job</b>	<b>785.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.50	Removing white wash or colour wash by steel brushing and / or scraping, sand papering and preparing wall surface smooth including repairs to scratches including cost of labour, material complete as per specifications.	<b>m<sup>2</sup></b>	<b>13.00</b>
20.51	Extra for removing white wash or colour wash by steel brushing and / or scraping, sand papering the ceiling and / or sloping roof surface smooth including repairs to scratches, cost of material, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>10.00</b>
20.52	Extra for washing the wall surface spoiled by smoke, soot, with clear water before sand papering the A80surface smooth including necessary repairs to scratches including cost of material, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>6.00</b>
20.53	Cleaning and washing of decorated wall surface with soap, soda and water including cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>5.00</b>
20.54	Cleaning and washing the old plastered wall surface with soap, soda, water including cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>6.00</b>
20.55	Cleaning and washing of stone masonry wall surface with nitric acid including cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>7.00</b>
20.56	Removing the old paint or polish from wood and / or wood based surface with paint remover of approved brand / manufacturer and making surface even including cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>95.00</b>
20.57	Removing the old paint or polish from wood and / or wood based surface with caustic soda solution and making surface even including cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>72.00</b>
20.58	Removing the old paint from wood and / or wood based surface with blow lamp and making surface even including cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>136.00</b>
20.59	Removing the old paint from steel and / or other metal surface with hand scraping and making surface even including cost of labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>121.00</b>
20.60	Removing the old paint from steel and / or other metal surface with flame cleaning and making surface even including cost of material, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>136.00</b>
20.61	Removing the old paint from steel and / or other metal surface with paint remover of approved brand / manufacturer cleaning and making surface even including cost of material, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>93.00</b>
20.62	Fixing small pieces ( not exceeding 0.015 m <sup>3</sup> ) for making good wherever hinges etc., have been removed from frames or joinery etc., with teak wood excluding cost of materials but including cost of labour, complete as per specifications.	<b>No.</b>	<b>37.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.63	Providing and fixing small pieces ( not exceeding 0.015 m <sup>3</sup> ) for making good wherever hinges etc., have been removed from frames or joinery etc., with honne wood including cost of materials, labour, complete as per specifications.	No.	271.00
20.64	Providing and fixing small pieces ( not exceeding 0.015 m <sup>3</sup> ) for making good wherever hinges etc., have been removed from frames or joinery etc., with honne wood including cost of materials, labour, complete as per specifications.	No.	245.00
20.65	Providing and fixing small pieces ( not exceeding 0.015 m <sup>3</sup> ) for making good wherever hinges etc., have been removed from frames or joinery etc., with sal wood including cost of materials, labour, complete as per specifications.	No.	198.00
20.66	Renewing bars, stiles and rails, straight for joinery upto 50mm thick including mitres, haunching, mortices etc., and removing the old defective pieces and replacing with Teak wood including cost of materials, labour, complete as per specification	No.	2,046.00
20.67	Renewing bars, stiles and rails, straight for joinery upto 50mm thick including mitres, haunching, mortices etc., and removing the old defective pieces with Matti / Nandi wood including cost of materials, labour, complete as per specification	No.	779.00
20.68	Renewing bars, stiles and rails, straight for joinery upto 50mm thick including mitres, haunching, mortices etc., and removing the old defective pieces, replacing with Honne wood including cost of materials, labour, complete as per specification	No.	711.00
20.69	Rewedging, cramping joinery of any description with new wedges in glue or white lead and repinning including rehanging or refixing of shutters, hinges or pivots, not exceeding one sqm per leaf, removing or dismantling excluding cost of wood but including cost of labour, complete as per specifications.	No.	816.00
20.70	Rewedging, cramping joinery of any description with new wedges in glue or white lead and repinning including rehanging or refixing of shutters, hinges or pivots, exceeding one m <sup>2</sup> but not exceeding two m <sup>2</sup> per leaf, removing or dismantling excluding cost of wood but including cost of labour, complete as per specifications.	No.	1,094.00
20.71	Rewedging, cramping joinery of any description with new wedges in glue or white lead and repinning including rehanging or refixing of shutters, hinges or pivots, exceeding two m <sup>2</sup> removing or dismantling excluding cost of wood but including cost of labour, complete as per specifications.	No.	1,546.00
20.72	Making repairs to joinery at angles with 300mm x 25mm x 3mm length of MS flat forged to shape and let into wood work, counter sunk, drilled and screwed including cost of materials, labour, complete as per specifications.	each	161.00

Sl. No.	Specification	Unit	Rate ₹
20.73	Renewing Honne wood battens in roof including making good the holes in walls, removal of rubbish to the dumping round with a lead upto 50 m including cost of materials, labour, complete as per specifications.	m <sup>3</sup>	1,31,866.00
20.74	Renewing Matti / Nandi wood battens in roof including making good the holes in walls, removal of rubbish to the dumping round with a lead upto 50 m including cost of materials, labour, complete as per specifications.	m <sup>3</sup>	1,18,391.00
20.75	Renewing Sal wood battens in roof including making good the holes in walls, removal of rubbish to the dumping round with a lead upto 50 m including cost of materials, labour, complete as per specifications.	m <sup>3</sup>	93,730.00
20.76	Removal of old broken glass panes ( any thickness of size, quality or description ) from wooden frames, glazed with putty or fixed with beads including cost of labour, complete as per specifications.	m <sup>2</sup>	178.00
20.77	Removal of old broken glass panes ( any thickness of size, quality or description ) from metal frames, glazed with putty or fixed with beads including cost of labour, complete as per specifications.	m <sup>2</sup>	252.00
20.78	Removing serviceable glass of any description from old wood or metal frames ( any thickness or size, quality or description ) hacking out old putty etc., including risk and making good breakages in taking out and handling, stacking within a lead of 50m including cost of labour, complete as per specifications.	m <sup>2</sup>	252.00
20.79	Supplying and fixing new teak wood beads wherever necessary including cost of materials, labour, complete as per specifications.	m	52.00
20.80	Supplying and fixing new Honne wood beads wherever necessary including cost of materials, labour, complete as per specifications.	m	42.00
20.81	Removing the glazed tiles in patches in area exceeding 10 tiles and not exceeding 5 sqm including removing old tiles preparing surfaces and laying or setting new or old tiles complete including cost of materials, ( excluding cost of tiles ) labour, complete as per specifications.	m <sup>2</sup>	1,141.00
20.82	Removing the mosaic tiles in patches in area exceeding 10 tiles and not exceeding 5 sqm including removing old tiles preparing surfaces and laying or setting new or old tiles complete including cost of materials, ( excluding cost of tiles ) labour, complete as per specifications.	m <sup>2</sup>	875.00
20.83	Cutting out cracks of roof terrace to V - section cleaning out, wetting, grouting with cement and sand slurry 1:3 (1 cement, 3 sand) including cost of materials, labour, complete as per specifications.	m	26.00
20.84	Cutting out cracks of roof terrace to V - section cleaning out and filling solidly with a hot mixture of bitumen and clean dry sand 1:1 by weight including cost of materials, labour, complete as per specifications.	m	31.00

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.85	Dubbing out on old irregular walls average 10mm thick and making good the surface with cement mortar 1:3 including curing cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>216.00</b>
20.86	Dubbing out on old irregular walls average 10mm thick and making good the surface with cement mortar 1:4 including curing cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>197.00</b>
20.87	Dubbing out on old irregular walls average 10mm thick and making good the surface with cement mortar 1:6 including curing cost of materials, labour, complete as per specifications.	<b>m<sup>2</sup></b>	<b>178.00</b>
20.88	Repairs to plaster in patches of 2.5 m <sup>2</sup> and less in walls, ceilings 10 to 20mm thick in cement mortar 1:3 including cutting the patches in proper shape and replastering the surface of the wall including disposal of rubbish with a lead of 50m including curing cost of materials, labour, complete as per specification.	<b>m<sup>2</sup></b>	<b>399.00</b>
20.89	Repairs to plaster in patches of 2.5 m <sup>2</sup> and less in walls, ceilings 10 to 20mm thick in cement mortar 1:4 including cutting the patches in proper shape and replastering the surface of the wall including disposal of rubbish with a lead of 50m including curing cost of materials, labour, complete as per specification.	<b>m<sup>2</sup></b>	<b>379.00</b>
20.90	Repairs to plaster in patches of 2.5 m <sup>2</sup> and less in walls, ceilings 10 to 20mm thick in cement mortar 1:6 including cutting the patches in proper shape and replastering the surface of the wall including disposal of rubbish with a lead of 50m including curing cost of materials, labour, complete as per specification.	<b>m<sup>2</sup></b>	<b>360.00</b>
20.91	External sweeping and terrace cleaning - Cleaning of outer periphery like roads footpaths curb stones terrace including removing grass dust etc., to the nearest garbage pit using suitable coconut broomstick,bombay broomstick, squeezers /wipers /rubberbru	<b>m<sup>2</sup></b>	<b>1.00</b>
20.92	Cleaning stone parapets removing of dirt dust etc., using suitable soap powder, coconut broomstick, squeezers / wipers/ rubber brushes, coir brushes, plastic brushjes, mugs, booster pumps with portable arrangement, hose pipe etc., complete including.	<b>m<sup>2</sup></b>	<b>2.00</b>
20.93	Cleaning Quadrangle chajjas including removing of dirt dust etc., using suitable soap powder ,coconut broomstick, squeezers / wipers/ rubber brushes, coir brushes, plastic brushjes, mugs, booster pumps with portable arrangement, hose pipe etc., compl	<b>m<sup>2</sup></b>	<b>15.00</b>
20.94	Cleaning sub surface drains including removing of dirt dust etc., using suitable soap powder ,coconut broomstick, squeezers / wipers/ rubber brushes, coir brushes, plastic brushjes, mugs, booster pumps with portable arrangement, hose pipe etc., comple	<b>m</b>	<b>14.00</b>

Sl. No.	Specification	Unit	Rate ₹
20.95	Cleaning surface drains including removing of dirt dust etc., using suitable soap powder, coconut broomstick, squeezers / wipers/ rubber brushes, coir brushes, plastic brushjes, mugs, booster pumps with portable arrangement, hose pipe etc., complete	m	<b>8.00</b>
20.96	Cleaning of office floors, toilet floors, corridors, lobbies, partitions, storage units, furnitures, electrical & electronic equipments, doors, windows, curtains, blinds etc., including cleaning of dust, etc., using suitable bombay broom stick, squeezers	m <sup>2</sup>	<b>3.00</b>
20.97	Providing corrugated cement asbestos Ridge sheets set in C.M. 1:3 and pointed with C.M. 1:3.	m	<b>464.00</b>
20.98	Providing Mangalore Ridge tiles set in C.M. 1:2 and pointed with C.M. 1:2.	m	<b>249.00</b>
20.99	Engraving letters in hard stone	per letter per cm height	<b>10.00</b>
20.100	Supplying and fixing new Mangalore tiles on existing reepers.	m <sup>2</sup>	<b>476.00</b>
20.101	Removing and fixing old Mangalore ridge tiles including pointing with C.M. 1:3.	m	<b>146.00</b>
20.102	Repairs to roof with available corrugated zinc sheets/ A.C.sheets with new J bolts, screws and washers etc., on existing reeper and rafters.	m <sup>2</sup>	<b>185.00</b>
20.103	Repairing door and window frames with available wood to the required size.	m <sup>2</sup>	<b>975.00</b>
20.104	Repairing and fixing shutters (panelled or glazed) to doors, windows, ventilators and cupboards.	m <sup>2</sup>	<b>975.00</b>
20.105	Fixing old eve board with necessary screws and approved painting two coats.	m	<b>42.00</b>
20.106	Providing and fixing reeded glass 3mm thick with teakwood beading of 10mm thick.	m <sup>2</sup>	<b>1,082.00</b>
20.107	Providing and fixing plain rolled glass 4mm thick with teakwood beading of 10mm thick.	m <sup>2</sup>	<b>1,147.00</b>
20.108	Repairs to existing Aluminium partition, refixing and relocating including cost of material,labour, complete as per specifications.	m <sup>2</sup>	<b>1,679.00</b>
20.109	Repairs to existing aluminium partition including glass,board, lock, handle, beading etc cost of all material,labour, complete as per specifications.	m <sup>2</sup>	<b>2,271.00</b>
20.110	Repairs to Teak wood chair/Table upto 0.005 m <sup>3</sup> of teak wood including cost of all material,labour, complete as per specifications.	No.	<b>1,417.00</b>
20.111	Repairs to Executive chair including cost of materials, labour, complete as per specifications.		
20.111.1	Office Chair Base Replacement - Steel	No.	<b>367.00</b>

<b>Sl. No.</b>	<b>Specification</b>	<b>Unit</b>	<b>Rate ₹</b>
20.111.2	Office Chair Base Replacement - PVC Base	No.	324.00
20.111.3	Office Chair seat Replacement - foam Base	No.	367.00
20.111.4	Office Chair Gas Lift Cylinder Replacement - Universal Size, Heavy Duty Hydraulic And Pneumatic Shock, Fits Most Executive Chairs	No.	978.00
20.112	Repairs to Peacock chair including cost of materials, labour, complete as per specifications.		
20.112.1	Servicing with necessary fixtures like bolts and nuts	No.	257.00
20.112.2	Replacement of back rest /seat with servicing	m <sup>2</sup>	585.00
20.113	Repair to existing ply wood ward-robies with 19mm plywood, beading,laminate and all necessary including cost of materials labour, lead, complete as per specifications.	m <sup>2</sup>	788.00
20.114	Repair of pull and push type rolling shutters of made of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & pull operations the which ever parts unserviceable should be replace (Springs, wheels, Shaft & replace the leafs which corroded) new one with all necessary including cost of materials, labour, complete as per specifications including cost of all materials, with all lead,	m <sup>2</sup>	503.00
20.115	Repairs to existing Modular kitchen with Baskets, hinges, sliders/Drawer, planks including finishing cost of materials, labour, complete as per specifications	No.	4,505.00
20.116	Repairs to steel Almirah with replacement of hinges, lock, handles including finishing and sheet metal work cost of materials, labour, complete as per specifications	No.	2,227.00
20.117	Cleaning of exposed concrete surface from oily sticking material, algae and other wet conditions by sand blasting complete as per direction of Engineer incharge of work.	m <sup>2</sup>	329.00
20.118	Providing & injecting grout of Acrylic Polymer based into honey combs/ cracks for new RCC work / damaged re-work as per direction of Engineer in charge of work.	m <sup>2</sup>	133.00
20.119	Chipping unsound weak concrete material from slabs. Beams, columns & roofs upto 50mm by manual means or by standard power driven percussion type including cleaning reinforcement with wire brush complete as per direction of Engineer incharge of work.	m <sup>2</sup>	144.00

Sl. No.	Specification	Unit	Rate ₹
20.120	Cleaning of reinforcement from rust by Alkaline solution thoroughly as per direction of Engineer in charge of work.	$\text{m}^2$	<b>184.00</b>
20.121	Shotcreting R.C.C. columns, beams and slabs etc. in 50 mm thickness with approved design mix M25 concrete having the specified minimum characteristic compressive strength with OPC / PPC / PSC coarse sand and graded stone aggregate of 10 mm maximum size in proportion as per design criteria] including the cost of centering and shuttering at edges and corners etc. as directed by Engineer- in- Charge.	$\text{m}^2$	<b>1,132.00</b>
	<b>Note:</b> Rates shall include the providing necessary ground wires etc. The levelling gauges, if used, shall be paid for separately. Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/tapping with a blunt metal instrument.		
20.122	Removing and fixing Old Mangalore tiles on existing reepers.	$\text{m}^2$	<b>109.00</b>
20.123	Removing of existing old or broken wash basin / urinals/ Indian Water closet/ European Water closet and disposing it with all cost and conveyance labour for all items of work, HOM with all lead and lift, loading and unloading, transportation charges and all other incidental charges etc., complete as per specification and directions of the Engineer-in-charge of the work.	each	<b>403.00</b>
20.124	Providing, erecting, maintaining and removing temporary protective screens made out of specified fabric with all necessary fixing arrangement to ensure that it remains in position for the work duration as required by the Engineer-in-charge.	$\text{m}^2$	<b>40.00</b>



**Chapter - 21**

**CONSERVATION OF HERITAGE  
STRUCTURES**



Sl. No.	Specification	Unit	Rate ₹
<b>21.0 CONSERVATION OF HERITAGE STRUCTURES</b>			
21.1	Raking out joints of stone masonry surface to the required width and depth, with due care and precaution, by mechanical / manual means, including preparing and cleaning the surface for re-pointing/ refilling of joints, including disposal of rubbish to the dumping ground to nearest area.	m <sup>2</sup>	<b>48.00</b>
21.2	Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, upto 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 metre centre to centre, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc, wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge.	m <sup>2</sup>	<b>304.00</b>
	Note:- The elevational area of the scaffolding shall be measured for payment purpose.		
21.3	Cleaning the sand stone surface and removing dirt, dust, bird dropping, grease, oil, algae, fungus, monkey beats, vegetable growth etc., including providing, applying and washing the surface with liquid Ammonia Chemical of 5% solution and other chemical cleaning agent as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, with the help of required scrubbers and also cleaning with machine operated water jet mixed with desired quantity of fine silica where ever required, without causing any scratching/ damage to the stone surface and finally washing the surface with clean water with the help of pressure jet machine, complete in all respect, including taking all precautions to safeguard ventilators, windows, doors etc. by suitable covering so as to avoid any damage to the building/ structure, all as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding).	m <sup>2</sup>	<b>142.00</b>
21.4	Providing and applying antifungal wash treatment using 3% solution of sodium pentachlorophenate, of reputed brand and manufacturer, on cleaned sand stone surface at desired locations as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding).	m <sup>2</sup>	<b>47.00</b>
21.5	Ruled / Flush pointing on Sand stone masonry surface with lime, surkhi and marble dust mortar in the ratio of 1:1.5:1/2 {One lime: 1.5 surkhi (50% red and 50% light yellow surkhi ) : 1/2 marble dust}. (The rate is inclusive of all materials & labours involved except scaffolding).	m <sup>2</sup>	<b>246.00</b>

Sl. No.	Specification	Unit	Rate ₹
21.6	Ruled/ Flush pointing on White sand stone masonry surface with lime, surkhi and marble dust mortar in the ratio of 1:1.5:1/2 {One lime : 1.5 surkhi (15% dark red and 85% light yellow surkhi) : 1/2 marble dust}. (The rate is inclusive of all materials & labours involved except scaffolding).	m <sup>2</sup>	246.00
21.7	Applying two or more coat of Ethyl Silicate chemical as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, with brush or spray on the existing stone masonry surface till there is no further absorption of chemical by stone surface, including protecting the applied surface from direct sunlight by suitable means during application, all complete as per direction of the Engineer-in-Charge (The rate is inclusive of all materials & labours involved except scaffolding).	m <sup>2</sup>	115.00
21.8	Applying breathable, non-reactive, antifungal, and water repellent Silane/Siloxane chemical as approved by Archaeological Survey of India/ Engineer- in-charge, of approved brand and manufacture, diluted with solvent mineral Turpentine oil in the ratio of 1:12 (One part of approved chemical : 12 Part of Turpentine oil), on the existing sand stone masonry surface with two or more coats to give uniform application of chemical on the surface, all complete as per direction of Engineer-In-charge (The rate is inclusive of all materials & labours involved except scaffolding).	m <sup>2</sup>	81.00
21.9	Providing and constructing burnt brick masonry with approved quality of modular bricks of standard size of class designation 5.00 N/mm <sup>2</sup> table moulded) with lime mortar for basement and superstructure including cost of materials, labour charges, scaffolding, curing complete as per specification - Do- in Lime mortar 1:3 Prop		
21.9.1	In Lime mortar 1:1 Prop	m <sup>3</sup>	3,318.00
21.9.2	In Lime mortar 1:2 Prop	m <sup>3</sup>	3,326.00
21.9.3	In Lime mortar 1:3 Prop	m <sup>3</sup>	3,344.00
21.10	Providing ruled pointing to coursed stone masonry with lime mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost all materials, labour, usage charges of machinery, curing complete as per specification.	m <sup>2</sup>	299.00
21.11	Providing fresh lime plaster to brick masonry of 10mm lime mortar (slaked lime : sand) 1:2 proportion as base coat and finishing coat of 10mm of lime mortar (slaked lime : sand) 1:1 proportion including rounding or chamfering corners, arrises, junctions, etc wherever required smooth rendering, including jute netting, lead charges for lime and sand, lift charges above 3mt height providing and removing scaffolding, grinding machine, cost of materials, labour, curing etc., The dashing of the first coat to be done using a strong whipping motion at right angles to the face of the wall. The plaster shall be trowelled hard and tight forcing it into joints to obtain a good bond and surface rubbed smooth with a plaster's trowel complete as per specification and IS 2394 (1984). Curing shall be started 24 hrs after finishing the plaster. The plaster shall be kept wet for a period of 7 days etc complete as per direction of the Engineer in charge of the work.	m <sup>2</sup>	999.00

**Chapter - 22**

**BUILDING ESSENTIALS**



Sl. No.	Specification	Unit	Rate ₹
<b>22.0 BUILDING ESSENTIALS</b>			
22.1	Providing and supplying 18mm thick both sides Pre-laminated cement bonded wood particle board as per IS : 15786:2008 of approved brand and shade with suitable full threaded steel screws etc. for use in partitions, boxes, side tables, bedside tables, shelves, racks and cupboard, kitchen cabinet under kitchen counter etc. all complete as per direction of Engineer-in-charge	m2	700.00
22.2	Providing and supplying 6mm thick both sides Pre-laminated cement bonded wood particle board as per IS : 15786:2008 of approved brand and shade with suitable full threaded steel screws etc. on the backing of racks, drawer, cupboard, kitchen cabinet under kitchen counter etc. all complete as per direction of Engineer-in-charge.	m2	380.00
22.3	Providing and supplying cupboard shutter with 19mm thick one side Architect recommended decorative laminate (1mm thick) and other side balancing lamination(preferably white) on factory pressed <b>BWP grade marine ply</b> as per IS 710 of approved brand complete as per direction of engineer in-charge.(Payment for providing and fixing auto closing hinges shall be paid separately)	m2	2,960.00
22.4	Providing and supplying Kitchen cabinet with 19mm thick one side Architect recommended decorative Acrylic Glossy or Matt finished laminate (1.5mm thick) and other side balancing lamination(preferably white) on factory pressed <b>BWP grade marine ply</b> as per IS 710 of approved brand . complete as per direction of engineer in-charge. (Payment of providing and fixing auto closing hinges shall be paid separately)	m2	3,100.00
22.5	Providing and supplying cupboard shutter with 18mm thick one side Architect recommended decorative laminate (1mm thick) and other side balancing lamination(preferably white) <b>HDHMR BOARD</b> of approved brand complete as per direction of engineer in-charge.(Payment of providing and fixing auto closing hinges shall be paid separately)	m2	2,690.00
22.6	Providing and supplying 19mm thick both side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand boxes,shelves,racks,almirah,cupboard and drawer etc. including necessary nails,screws etc. complete as per direction of Engineer-in-charge.	m2	1,110.00
22.7	Providing and supplying 16mm thick both side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand boxes,shelves,racks,almirah,cupboard and drawer etc. including necessary nails,screws etc. complete as per direction of Engineer-in-charge.	m2	960.00
	<b>Note:</b> For items (1) to (7) Minor fittings are included in price & Major Fittings to be paid separately. The cost is excluding cost of Labour & installation charges)		

Sl. No.	Specification	Unit	Rate ₹
22.8	Labour & installation charges for BWP ply:BWR ply:HDHMR: MDF & Particle board work of any thickness applicable for all types of work	m <sup>2</sup>	2,000.00
22.9	Providing and fixing stainless steel 304 grade <b>fancy handle</b> of approved make fixed with SS screws etc. complete as per direction of Engineer-in-charge.		
a	200mm length	No	1,500.00
b	150 mm length	No	1,350.00
c	100 mm length	No	1,100.00
22.10	Providing and fixing Stainless Steel 304 grade <b>soft closing spring hinges at 0 degree hinges (hydraulic type)</b> of approved make/brand to cupboard shutters with full threaded steel screws including making necessary recess in board and finished etc. complete as per direction of Engineer-in-charge.	No	400.00
22.11	Providing and fixing stainless steel <b>soft closing heavy type telescopic drawer channels</b> of approved make 500 mm long with screws etc. complete as per directions of Engineer- in-charge.	No	260.00
22.12	Providing and fixing stainless steel 304 grade <b>soft closing hinges</b> with two hole fixing & 165 degrees turning option for Wardrobe, Doors, Kitchen & other utilities of reputed make with screws etc. complete as per directions of Engineer- in-charge.	No	225.00
22.13	Providing and fixing ready made 304 grade stainless steel <b>Modular kitchen basket</b> and accessories such as right angle basket (Plain Cup & Saucer, plant, Partition, Bottle rack, Thali, Cutlery) kitchen utensil basket, Dinner set basket, kitchen grain basket, Multipurpose basket as per site requirement including finishing (wherever required) and fittings. The same shall be fixed with necessary stainless steel nuts & bolts, Stainless Steel screws & telescopic channel etc. as per direction of Engineer-in-charge. (For payment purpose only weight of Stainless steel basket shall be considered excluding weight of all fixing accessories such as nuts, bolts, fasteners telescopic basket channels etc. Payment of providing and fixing telescopic channel shall be paid separately )	Piece	3,500.00
22.14	Providing and fixing 2mm thick 16 to 19mm wide <b>PVC edge binding tape</b> of approved quality for cupboard/wardrobe/kitchen shutters including necessary synthetic resin hot pressed to edges on binding machine etc. complete as per directions of Engineer-in-charge.	m	4.00
22.15	Providing and fixing <b>Stainless Steel Fixtures conforming to 304 graded steel</b> as per direction of engineer in charge		
22.15.1	SS Handles 200mm	No	450.00
22.15.2	SS Handles 300mm	No	550.00
22.15.3	SS Aldrop 16mm dia, 200mm	No	300.00

Sl. No.	Specification	Unit	Rate ₹
22.15.4	SS Aldrop 16mm dia, 300mm	No	375.00
22.15.5	SS Tower Bolts 150x10mm	No	120.00
22.15.6	SS Tower Bolts 200x10mm	No	150.00
22.15.7	SS Tower Bolts 250x10mm	No	200.00
22.15.8	SS hinges 125 mm	No	50.00
22.15.9	SS hinges 100 mm	No	70.00
22.15.10	SS Door stopper 75mm	No	100.00
22.16	Providing and fixing <b>Three seater Sofa</b> with cushion of size 7(L)x2.5(W) X2.75(H) ft made of upholstery fabric with seats fitted with padding, springs, webbing and as per direction of engineer in charge	No	37,500.00
22.17	Providing and fixing <b>Two seater Sofa</b> with cushion of size 5(L)x2.5(W) X2.75(H) ft made of upholstery fabric with seats fitted with padding, springs, webbing and as per direction of engineer in charge	No	24,000.00
22.18	Providing and fixing <b>Single seater Sofa</b> with cushion of size 3(L)x2.5(W) X2.75(H) ft made of upholstery fabric with seats fitted with padding, springs, webbing and as per direction of engineer in charge	No	17,000.00
22.19	Providing and fixing <b>Single seater Recliner</b> with cushion of size 3(L)x2.5(W)X2.75(H) ft made of Polyurethane or High performance upholstery fabric with seats fitted with cushion padding, springs, webbing and as per direction of engineer in charge	No	30,000.00
22.20	Providing & fixing of <b>Tea table 900mm x 750mm 450mm</b> with 12mm thick etched tempered glass with bevelled drawing made out of BWP ply and out faces laminated with 4mm thick veneer or 1mm thick laminate	No	7,500.00
22.21	Providing & fixing <b>foldable ladder</b> 1500mm height with aluminium body and fibre foot steps	No	2,850.00
22.22	Providing & fixing <b>Roller Blinds</b> of reputed make 38mm round Aluminium channel with blackout fabric, telting with chain (Ball) system with all necessary fittings and fixtures as per direction of Engineer in charge	m <sup>2</sup>	1,800.00
22.23	Providing & fixing <b>Vertical Blinds</b> of reputed make of shape 100mm regular fabric with powder coated aluminium channel, telting with PVC Chain system with all necessary fittings and fixtures as per direction of Engineer in charge	m <sup>2</sup>	850.00
22.24	Providing & fixing <b>100% Polyester Curtains</b> with specification of regular wash as per direction of Engineer in charge	m <sup>2</sup>	1,200.00
22.25	Providing & supplying Water resistant No dust <b>Plastic Broom</b> of minimum 2.5 feet height of good quality with flagged Grass bristle for cleaning purpose as per direction of Engineer in charge.	No	160.00

Sl. No.	Specification	Unit	Rate ₹
22.26	Providing & supplying Water resistant No dust <b>Plastic Dust pan</b> of good quality as per direction of Engineer in charge.	No	40.00
22.27	Providing & supplying hands free squeeze <b>Micro fibre Flat spin Mop</b> with 360 degree flexible head and super absorbent fibre of good quality as per direction of Engineer in charge.	No	850.00
22.28	Providing & supplying <b>Carpet/Mat</b> of 800+ gsm with stain proof, flexible and super absorbent fibre of good quality as per direction of Engineer in charge.	m <sup>2</sup>	1,400.00
22.29	Providing and supplying <b>Pillow polyester fibre</b> with good sleeping comfort of size 60cm x 40cm as per direction of engineer in charge	No	150.00
22.30	Providing and supplying <b>Pillow polyester Foam</b> with good sleeping comfort of size 60cm x 40cm as per direction of engineer in charge	No	60.00
22.31	Providing and supplying <b>Pillow Microfibre</b> with deep sleeping comfort of size upto 70cm x 40cm as per direction of engineer in charge	No	120.00
22.32	Providing and supplying <b>Pillow (Memory foam)</b> with deep sleeping comfort of size upto 70cm x 40cm as per direction of engineer in charge	No	900.00
22.33	Providing & supplying 100% Polyester machine wash capable <b>Blanket 66x90inches</b> with calm and light colors as per direction of Engineer in charge of work	No	1,600.00
22.34	Providing & supplying 100% Polyester machine wash capable <b>Blanket 80x90inches</b> with calm and light colors as per direction of Engineer in charge of work	No	1,800.00
22.35	Providing and supplying <b>King Size 6ft x 6ft Soft PU foam 5 inch thick mattress</b> with better enhanced air circulation & breathability & sleeping comfort of size as per direction of engineer in charge	No	12,000.00
22.36	Providing and supplying <b>Queen size 6ft x 5ft Soft PU foam 5 inch thick mattress</b> of reputed make with better enhanced air circulation & breathability & sleeping comfort of size as per direction of engineer in charge	No	10,000.00
22.37	Providing and supplying <b>Single size 6ft x 2.5ft Soft PU foam 5 inch thick mattress</b> of reputed make with better enhanced air circulation & breathability & sleeping comfort of size as per direction of engineer in charge	No	7,000.00
22.38	Providing & supplying <b>Tumbler holder</b> of Stainless steel 304 grade as per direction of Engineer in charge of work	No	415.00
22.39	Providing & supplying Stainless Steel sturdy round <b>food plate</b> of 30cm dia made as per direction of Engineer in charge of work	No	120.00
22.40	Providing & supplying Stainless Steel sturdy <b>oval food plate with two compartments</b> as per direction of Engineer in charge of work	No	65.00

Sl. No.	Specification	Unit	Rate ₹
22.41	Providing & supplying Stainless Steel sturdy 3mm thick <b>Thali set with four compartments</b> round shaped with dia upto 30cm as per direction of Engineer in charge of work	No	400.00
22.42	Providing & supplying <b>Stainless Steel Tumblers</b> with 150ml capacity as per direction of Engineer in charge of work	No	90.00
22.43	Providing & supplying <b>Napkin holder</b> of radius made of Stainless steel 304 grade as per direction of Engineer in charge of work	No	80.00
22.44	Providing & supplying <b>Hand wash</b> dispenser of reputed make capable of wall mounting with all necessary fixtures and essentials as per direction of Engineer in charge of work ( <i>The cost shall be paid proportionately upon usage of size &amp; quantity</i> )	L	112.00
22.45	Providing & supplying <b>Plastic Bucket of 25 L &amp; Mug of 1.5 L</b> capacity in sets as per direction of Engineer in charge of work	Set	95.00
22.46	Providing & supplying <b>Gas (LPG) cylinder holder</b> made of good quality plastic as per direction of Engineer in charge of work	No	50.00
22.47	Providing & supplying <b>Gas (LPG) rubber hose pipe</b> with three layer reinforcement & made of good quality ISI Certified material as per direction of Engineer in charge of work	m	185.00
22.48	Providing & supplying 100% Cotton machine wash capable & high absorbent <b>Towel 70x140cm</b> with minimum 600 gsm thickness as per direction of Engineer in charge of work	No	150.00
22.49	Providing & fixing <b>upvc ventilator with Exhaust Turbo speed fan</b> with 5 blades (300mm x 300 mm & above sized fan) with copper motor having mounting arrangements as per direction of Engineer in charge of work	No	1,950.00
22.50	Providing & supplying <b>Floor &amp; Surface cleaners</b> Non corrosive with chemicals Hydrochloric acid, Butyl oleytamine and others which are water soluble and capable of removing hard and soft stains and dirt as per direction of Engineer in charge of work	L	109.00
22.51	Providing & supplying <b>Toilet cleaner</b> of reputed make capable of killing bacteria, germs as per direction of Engineer in charge of work	L	220.00
22.52	Providing & supplying <b>Hand wash</b> of reputed make containing harmless chemicals and having good fresh fragrance as per direction of Engineer in charge of work	L	160.00
22.53	Providing & supplying disposable & biodegradable <b>Toilet Paper</b> of reputed make as per direction of Engineer in charge of work	100 pulls	180.00
22.54	Providing & supplying <b>Silicone sealant</b> of reputed make for crack & minor opening filling in Masonry & Tile work as per direction of Engineer in charge of work	350 g	290.00
22.55	Providing & supplying <b>Room freshner</b> of reputed make for good fragrance as per direction of Engineer in charge of work	220 ml	120.00



# **ADDENDUM**



## Addendum - I

**CO-EFFICIENTS FOR PAINTING, VARNISHING ETC.,**

**TABLE : 1 EQUIVALENT PLAIN AREAS OF UNEVEN SURFACES (CLAUSE 3.5)**

<b>Sl. No. (1)</b>	<b>Description of Work (2)</b>	<b>How Measured (3)</b>	<b>Multiplying Factor (4)</b>
i)	Panelled or framed and brazed or ledged and battened or ledged, battened and braced joinery	Measured flat (not girthed) including CHOWKAT or frame, Edged, chocks, cleats, etc., shall be deemed to be included in the item	1.30 (for each side)
ii)	Flush joinery	Measured flat (not girthed) including CHOWKAT or frame, edges, chocks, cleats, etc., shall be deemed to be included in the item	1.20 (for each side)
iii)	Flush shutter	Measured flat overall	1.20 (for each side)
iv)	Fully glazed or gauzed joinery	Measured flat (not girthed) including CHOWKAT or frame, Edges, chocks, cleats shall be deemed to be included in the item	0.80 (for each side)
v)	Partly panelled and partly glazed or gauzed joinery	Measured flat (not girthed) including CHOWKAT or frame, edges, chocks, cleats, etc., shall deemed to be included in the item	1 (for each side)
vi)	Fully venetianed or louvred joinery	Measured flat (not girthed) including CHOWKAT or frame, edges, chocks, cleats, etc., shall be deemed to be included in the item	1.80 (for each side)
vii)	Weather boarding	Measured flat (not girthed) supporting frame work shall not be measured separately	1.20 (for each side)
viii)	Wood shingle roofing	Measured flat (not girthed)	1.10 (for each side)
ix)	Boarding with covers fillets and match boarding	Measured flat (not girthed)	1.05 (for each side)
x)	Tile and slate battening	Measured flat overall; no deduction shall be made for open spaces	0.80 (for painting all over)
xi)	Trellis (or JAFFRI) work one-way or two way	Measured overall; no deduction shall be made for open spaces, supporting members shall not be measured separately	2 (for painting all over)
xii)	Guard bars, balus-traders, gates greetings, grills expanded metal and railings	Measured flat overall; no deduction shall be made for open spaces; supporting members shall not be measured separately	1 (for painting all over)

xiii)	Gates and open palisade fencing including standards, braces, rails stays etc.,	Measured flat overall; no deduction shall be made for open spaces; supporting members shall not be measured separately (see Note 1)	1 (for painting all over)
xiv)	Carved or enriched work	Measured flat	2 (for each side)
xv)	Steel roller shutter	Measured flat (size of opening) overall; jam guides, bottom raise and locking arrangement, etc., shall be included in the item (top cover shall be measured separately)	1.10 (for each side)
xvi)	Plain sheet steel doors and windows etc	Measured flat (not girthed) including frame, edges,	1.10 (for each side)
xvii)	Fully glazed or gauzed steel doors and windows	Measured flat (not girthed) including frame, edges	0.50 (for each side)
xviii)	Partly papelled and partly glazed gauged steel door	Measured flat (not girthed) including frame, edges	0.80 (for each side)
xiix)	Collapsible gate	Measured flat (size of opening)	1.50 (for painting all over)

Note 1 : The height shall be taken from bottom of lowest rail, if palisades do not go below it or from lower end of palisades, if they project below lowest rail, up to top of palisades, but not up to top of standards, if they are higher than palisades.

Note 2 : Where doors, windows, etc., are of composite types other than those included in this table, different portions shall be measured separately with their appropriate coefficients, centre line of common rail being taken as the dividing line between the two portions.

Note 3 : Measurements of painting doors, windows, collapsible gates, rolling shutters, etc., as given in this table shall be deemed to include painting, if required, of all iron fittings in the same shade.

Note 4 : When two faces of a door, window, etc., are to be treated with different specified finishes, measurable under separate items, edges of frames and shutters shall be treated with the one or the other type of finish and measurement thereof shall be deemed to be included in the measurement of the face treated with that finish.

Note 5 : In case where shutters are fixed on both faces of a frame, measurement for the door frame and shutter on one face shall be taken in the manner already described, while the additional shutter on the other face shall be measured exclusive of the frame.

Note 6 : Where shutter is provided with clearance exceeding 15 cm at top and / or at bottom, such openings shall be deducted from the overall measurement and relevant coefficient applied.

## Addendum II – Weightages of Components in Building works

(Source : Central Building Research Institute, Roorkee)

The table shall be followed for preparation of Rough cost / Normative cost estimate.

(Load bearing residential building)

Main item	Sub item	Sub item			% weightage Main item		
		Material	Labour	Total	Material	Labour	Total
Foundation and plinth	Excavation	0.03	0.27	0.30	4.35	1.35	6.20
	Concrete	2.24	0.56	2.80			
	Masonry work	1.68	0.82	2.50			
	D.P. Course	0.40	0.20	0.60			
Lobby : Living room etc	Masonry work	8.17	4.03	12.20	9.80	4.90	14.70
	RCC lintels and chajjas etc,	1.63	0.87	2.50			
Roof	Concrete slab	5.22	3.48	8.70	16.83	6.97	23.80
	Steel	7.76	1.94	4.70			
	Water proofing	3.29	1.41	4.70			
	R.W. Pipe	0.56	0.14	0.70			
Flooring	Sub floor	1.58	0.52	2.10	2.84	1.36	4.20
	Top finish	1.26	0.84	2.10			
Joinery	Doors	4.44	2.96	7.40	9.60	6.40	16.00
	Windows	5.16	3.44	8.60			
Finishes	Plaster	3.48	2.32	5.80	4.11	2.89	7.00
	Whitewash	0.30	0.40	0.70			
	Painting	0.33	0.17	0.50			
Fitting and fixtures services	Ward rob	1.98	1.32	3.30	2.18	1.43	3.60
	Kitchen facilities	0.20	0.10	3.30			
<b>External services</b>							
Path	1.20	0.30	1.50	6.45	3.15	9.60	
Sanitary	2.53	1.27	3.80				
Water supply	0.98	0.42	1.40				
Electrification	1.74	1.16	2.90				
<b>Internal services</b>							
Sanitary	3.92	1.68	5.60	9.79	5.11	14.9	
Water supply	2.03	0.87	2.90				
Electrification	3.84	2.56	6.49				

## 2. Percentage cost of various materials and labour (load bearing residential buildings)

Name of items	Percentage of total cost
a) Bricks/Solid Blocks	20
b) Cement	10
c) Steel reinforcement & Steel by products	10
d) Wood work	15
e) M-Sand & aggregate	10
f) Labour	30
g) Miscellaneous	5

## 3. Material required on plinth area basis for single storey load bearing residential buildings.

a) Brick	Approx 500 No., per m <sup>2</sup> , of plinth area
b) Cement	1.5 bags per m <sup>2</sup> , of plinth area
c) Steel bars	12 kg per m <sup>2</sup> , of plinth area (for plain M.S. bars) 8 kg per m <sup>2</sup> , of plinth area (for TMT)

## 4. Material and labour required on plinth area basis for various buildings

(i. For residential buildings (A ⇒ Total plinth area of all storeys)

Materials / La-bour	Unit	Statistical relationships		
		For single storey building	For double storey building	For four storey building
		Load bearing construction (including foundation)		RCC-framed construction (including foundation)
Material				
Bricks	100 Nos	2.26A + 66/8	2.15 A + 63	2.56 A – 0.0096A <sup>2</sup> –26.2
Cement	t	0.153A + 0.57	0.145 A+0.54	0.2024A-0.364
Steel	kg	21.3A-314	21.97A-305	102.46A-0.401A <sup>2</sup> – 1662
Sand	m <sup>3</sup>	0.47A – 7	0.43A – 5.6	397A – 0.76
Coarse aggregate:				
i) 20mm and down	m <sup>3</sup>	0.176A-0.21	0.178A-0.21	0.366A-0.76
ii) 40 mm and down		0.145A+1.5	0.075A+0.78	0.027A+0.0001A <sup>2</sup> + 0.45
Brick aggregate timber for:	m <sup>3</sup>	0.113-0.83	0.0566 – 0.42	0.021A+ 0.01

i) Frames and shutters	$m^3$	$0.019A+0.23$	$0.019A+0.23$	$0.02A + 0.11$
ii) Shuttering Bal-lies for formwork	$m^3$	$0.0042A$	$0.0042A$	$0.0097A-0.03$
Lime	q	$0.145A-0.35$	$0.083A-0.17$	$0.063A-0.08$
Surkhi	$m^3$	$0.052A-0.37$	$0.026A-0.18$	$0.01A$
Bitumen	kg	$1.836A-9$	$0.818A-4$	$0.357A+0.14$
Glass panes	$m^2$	$0.047A$	$0.047A$	$0.047A$
Primer for oil paint	l	$0.048A$	$0.048A$	$0.045A+0.56$
Oil paint	l	$0.08A+0.27$	$0.08A+0.27$	$0.075A+0.83$
Stone rubble	$m^3$	-	-	$0.032A$

Labour				
Mason	Day	$1.335A+28$	$1.355A+6$	$1.593A-2$
Carpenter	Day	$1.184A-9$	$1.194A-9$	$1.66A$
Painter	Day	$0.19A$	$0.19A$	$0.19A$
Blacksmith	Day	$0.269A-4$	$0.274A-1.4$	$1.11A-0.0043A^2-17.6$
Mazdoor	Day	$4.769A+32$	$4.91A+13$	$5.833A-9.2$

Note- I) The above relationships are applicable for plinth areas ranging from 30 to 300  $m^2$  (of one dwelling) in the case of single and double storied buildings and up to 100  $m^2$  for four storied framed building builder's hardware, rainwater goods, water supply, plumbing, drains and electrical wiring etc., will have to be added extra.

## 5. For office buildings

( $A \Rightarrow$  Total plinth area of all stories added up, in  $m^2$ )

Material / labour	Unit	Statistical relationship	Material / la-bour	Unit	Statistical relationship
Cement	t	$0.1925A+18.52$	Steel windows	$m^2$	$0.1117A+93.26$
Fine sand	$m^3$	$0.03A+105.50$	Glass (for glazing)	$m^2$	$0.1407A+55.99$
Coarse sand	$m^3$	$0.2592A-80.84$	Primer for paint-ing	l	$0.0256A+9.7$
			Oil paint	l	$0.0322A+7.24$

<b>Coarse aggregate:</b>					
i) 20mm size	$m^3$	0.2728A-48.50	Lime	q	0.0754A-51.21
ii) 10mm size	$m^3$	0.1164A-20.74	Surkhi	$m^3$	0.0204A-18.39
III) 40 mm size	$m^3$	0.0151A-73.91	Stone chips	q	0.1338A-48.52
Brick ballast	$m^3$	0.0426A-38.37	Stone powder	$m^3$	0.0012A-0.36
<b>Timer for:</b>	$m^3$		<b>Labour</b>		
i) form work	$m^3$	0.0050A+11.19			
ii) Joinery	$m^3$	0.0024A-0.53	Mason	day	1.1314A-07.40
			Carpenter	day	0.7094A+449.09
Ballies (centering)	m	0.5507A+797.75	Glazier	day	0.0122A+10.31
Bricks	100 No.	1.1829A-524.23	Painter	day	0.0905A + 37.26
Steel	t	0.0479A	Blacksmith	day	0.479A
Flush doors	$m^2$	0.0636A-17.07	Mazdoor	day	6.055A-2024.37

Note- The above relationships are applicable for plinth areas ranging from 1600 to 2600 $m^2$  spread over 4 to 10 storey high office buildings, having average storey height of 3.00m. The relationship does not include for builder's hardware, waterproofing at top of roof slab, rain water pipes and services like water supply, plumbing, drains, sanitary fittings, and electrical wiring. Materials required for scaffolding are excluded. Quantity of steel consists of about 80% TMT reinforcement bars, the rest being round mild steel bars for reinforcement and a small negligible quantity of flat iron holdfasts & structural steel.

## Addendum III – General specifications for consideration in Building estimates

The following components of the Schedule of rates shall be adopted in the preparation of Buildings estimate.

<b>Sl No.</b>	<b>Description</b>	<b>Specification</b>	<b>Remarks</b>
1.	<b>Foundation</b>	As per structural requirements	The design shall vary as per soil conditions with suitable documentation from Quality Assurance & Design wing.
2.	<b>Superstructure</b>		
	For multi storey RCC framed structure	RCC Frame & filler walls of AAC, Fly ash, Burnt clay bricks, Solid block masonry	Any other energy efficient suitable locally available material as per Architect & Design drawings.
	For composite structure (partially load bearing & partially RCC structure)	AAC, Fly ash, Burnt clay bricks, Solid block masonry with partial RCC frame	Any other energy efficient suitable locally available material as per Architect & Design drawings.
	Internal partition	Half brick thick masonry in AAC, Fly ash bricks, Burnt Clay Bricks & Solid block masonry.	Any other energy efficient suitable locally available material as per Architect & Design drawings.
	Sunken floors for toilets & DPC	Sunk recess in RCC floors of required size & depth for floor trap & WC trap	
3.	<b>Doors &amp; Windows</b>		
	<b>a) Door</b>	Teakwood completely or Sal/Neem/Honne frames with Teak wood shutter preferably. Otherwise, Chemically treated Hardwood/Seamless MS tubular frame (with hot dipped GI coating) with min. wall thickness 2mm. External entrance door frame will have double rebate or sub frame for double doors i.e main door and safety drill door with SS 304 wire powder coated mesh. For internal doors, single rebate frame.	

	<b>b) Window</b>	Chemically treated Hard wood (Neem/Sal/Honne etc), upvc extruded frames (2, 2.5, 3, 3.5 tracks) with min wall thickness 2mm/ powder coated or colored anodized Aluminum extruded tubular sections/Engineered wood sections along with provision of subframe with suitable material/ Steel windows for school buildings.	
	<b>c) Doors/Windows of WC/Toilet</b>	Chemically treated Hard wood, upvc extruded frames, Wood composite doors, FRP, PVC & with Compatible door shutters.	
4.	<b>Flooring, skirting &amp; Dadooding</b>		
	Flooring – Common areas	Vitrified tiles of varied sizes not less than 300x300mm. (Thickness as specified in the IS with suitable tolerance). Granite in special cases with min thickness of 18mm or Ceramic glazed vitrified tiles.	
	Flooring – Kitchen & Wet areas	Granite flooring of minimum 18mm thickness	
5.	<b>Finishes</b>		
	Internal finishes	All walls & ceilings to be properly rendered with appropriate thickness (One time only) and painted with low VOC acrylic paint. Synthetic enamel paint on all wood works & steel works.	
	External finishes	Quartz reinforced textured acrylic paint finish / premium acrylic smooth water proof exterior finish over cement based putty. Synthetic enamel paint on all wood work & steel work.	In case of large campus, the external finishes of the residences shall match the overall colour and texture finishes. The energy efficient color code shall be followed.
.6	<b>Water proofing</b>	PU based for roofing, external walls / cement based for sunken areas and food grade for water retaining structures of approved brands.	

7.	<b>Railings, Parapets in Balconies</b>	Clear 1m height MS railing made out of MS flats & square bars with 40mm dia MS pipes and handrail on top as per Architect's drawings.	
		200/230mm thick Masonry in AAC, BBM, Solid block duly plastered on both sides and top up to 1m clear height.	
8.	<b>Water supply &amp; drainage</b>	As per water supply line drawings with reputed brands of materials.	
9.	<b>Rain water harvesting</b>	As per Rain water harvesting manual and compulsorily to be operated for the building area of 100 m <sup>2</sup> and above.	
10.	<b>Electrification</b>	As per electrical layout drawings, with materials of reputed brands and durability.	
11.	<b>Fire safety</b>	As per manual of Fire safety & general instructions of Fire department with bare minimum provisions for the building of min area 200m <sup>2</sup> .	

### Aspects of Building Area Measurements

At present different methods for calculating plinth / carpet areas of buildings are followed by various departments. This Indian Standard was formulated in 1966 to provide a basis for uniform method of measurement of such areas of buildings. This revision has been prepared to include rentable area of the building on the basis of recommendations of Central Public Works Department. This standard as per IS: 3861-1975 covers method of measurement of plinth, carpet and rentable areas of old and new buildings.

#### 1. Terminology For the purpose of this standard the following definitions shall apply.

- \* **Plinth area** – Shall mean the build up covered area measured at the floor level of the basement or of any storey
- \* **Carpet area** – Shall mean covered area of the usable rooms at any floor level
- \* **Rentable area** – Shall mean the usable carpet area at any floor level
- \* **Balcony** – A horizontal projection with a hand-rail, balustrade or a parapet, to serve as passage or sitting out place.
- \* **Stair cover** - It is a space having a roof over a staircase and its landing, built to enclose only the stairs for the purpose of providing protection from weather and not used for human habitation.

- \* **Loft** – An intermediate storage area in between two main floors.
- \* **Porch** – It is a covered surface supported on pillars or otherwise for the purpose of pedestrian or vehicular approach to a building.
- \* Linear measurement shall be measured to nearest .01m, and areas shall be worked out to the nearest .01m<sup>2</sup>.
- \* The areas of each of the following categories shall be measured separately :
  - (1) Basement,
  - (2) Floor without cladding (stilted floor),
  - (3) Floors including top floor which may be partly covered,
  - (4) Vitrified floor, and
  - (5) Garage.

### **Measurement of plinth area**

For the purpose of plinth area, following shall be included for the categories

- \* Area of the wall at the floor level excluding plinth offsets, if any; when the building consists of columns projecting beyond cladding, the plinth area shall be taken up to the external face of cladding ( in case of corrugated sheet cladding outer edge of corrugation shall be considered )
- \* Internal shaft for sanitary installations and garbage chute, provided these do not exceed m<sup>2</sup> in area, vertical duct for air-conditioning, lift well including landing; Stair cover; Machine room and Porch.

The following shall not be included in the plinth area

- \* Additional floor for seating in assembly building/theatres and auditorium, etc.,
- \* Cantilevered porch;
- \* Balcony;
- \* Area of loft;
- \* Internal sanitary shaft and garbage chute provided these are more than 2m<sup>2</sup> in area;
- \* Area of architectural band, cornice, etc.; Area of vertical sun breaker or box louver projecting out and other architectural feature,
- \* Open platform;
- \* Terrace at floor one;
- \* Spiral staircase including landing; and
- \* Towers, domes projecting above the terrace level at terrace \*.

### **Measurement of carpet area**

From the plinth area as worked out above, the area of the wall shall be deducted. Thickness of wall shall be inclusive of finishing and dado if the height of such finish is more than 1m from floor finish.

#### **The following shall be included in the wall area:**

- \* Door and other openings in the wall;
- \* Intermediate pillars, supports or any other such obstruction within the plinth area irrespective of their location;
- \* Pilaster along wall exceeding 300 cm<sup>2</sup> in area;
- \* Flues which are within the wall'
- \* Built in cupboard, almirahs and shelf appearing within a height of 2.2m from floor; and
- \* Fire place projecting beyond the face of the wall in living or bed room.

#### **The following shall be excluded from the wall area:**

- \* Pilaster along wall not exceeding 300 cm<sup>2</sup> in area, and
- \* Platform projecting beyond the face of the wall.

The carpet area shall be the plinth area worked out as above excluding the area of the following portion:

- \* Verandah;
- \* Corridor and passage;
- \* Entrance hall and porch;
- \* Staircase and stair-cover
- \* Shaft and machine room for lift;
- \* Bathroom and lavatory '
- \* Kitchen and pantry;
- \* Store;
- \* Canteen;
- \* Air-conditioning duct and plant room; and
- \* Shaft for sanitary piping.

Note-In a hall or basement areas of portion 1 m beyond last step shall be part of the staircase.

## **Measurement of Rentable area**

### **Residential Buildings**

The rentable area shall be the carpet area as worked out in 5 but shall further include the following:

- \* The carpet area of kitchen, pantry, store, lavatory, bath room; and
- \* Fifty percent of carpet area of unglazed and 100 percent of glazed verandah.

#### **It shall, however, exclude the carpet area of the following:**

- \* Covered portion of the building within portion specified such as storage space on top, landings of staircase, under and first landing and waist slab on floor one.
- \* Fifty percent of carpet area of balcony.

While accounting the rentable area for the category mentioned above, one-fourth carpet area shall be accounted for when stilts have height more than 2.4 m.

**Non-residential buildings** – The rentable area shall be the carpet area as worked out above but shall further include the carpet area of the canteen including store, kitchen and pantry attached to it. It shall, however, not include carpet areas of bathroom and lavatory.

## **Addendum - IV : IS Codes - References**

The following codes under various sub heads provides the information regarding the procedures to be followed for procurement of materials, practices and design during the execution of work of various structures.

<b>Earthwork &amp; Anti-Termite Treatment</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1	IS 632	Gamma – BHC (Lindane) emulsifiable concentrates
2	IS 6313 (Part-II)	Anti Termite measures in buildings (pre -constructional)
3	IS 6313(Part-III)	Anti Termite Measures in Buildings for existing buildings
4	IS 6940	Methods of test for pesticides and their formulations
5	IS 8944	Chlorpyrifos emulsifiable concentrates
6	IS 8963	Chlorpyrifos – Technical specifications
7	IS 12138	Earth moving Equipments

<b>Cement Mortar</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1	IS 269	Specification for 33 grade ordinary Portland cement
2	IS 383	Specification for coarse and fine aggregate from natural source for concrete.
3	IS 455	Specification for Portland slag cement.
4	IS 460 (Part I)	Specification for test sieves: wire cloth test sieves.
5	IS 650	Specification for standard sand for testing of cement
6	IS 1269	Specification for 53 grade ordinary Portland cement
7	IS 1344	Specification for calcined clay Pozzolana.
8	IS 1489	Specification for Portland pozzolana cement
9	IS 1542	Specification for sand for plaster
10	IS 1727	Methods of Test for Pozzolanic materials
11	IS 2116	Specification for sand for masonry mortar.
12	IS 2250	Code of practice for preparation and use of masonry Mortar.
13	IS 2386 (Part-I)	Method of test for aggregate for concrete (Particle size and shape)
14	IS 2386 (Part-II)	-Do- Estimation of deleterious materials and organic impurities.
15	IS 2386 (Part-III)	-Do- Specific gravity, density, voids, absorption and bulking.

16	IS 3025	Method of sampling and test for water
17	IS 3406	Specification for masonry cement.
18	IS 3812 (Part I)	Specification for fly ash for use as pozzolana in cement mortar and concrete
19	IS 3812 (Part II)	Specification for flyash for use as admixture in cement mortar and concrete
20	IS 4031 (Part I) to (Part XIII)	Method of Physical test for hydraulic cement
21	IS 4032	Method of chemical analysis of Hydraulic cement.
22	IS 8041	Rapid hardening Portland cement.
23	IS 8042	Specification for white cement
24	IS 8043	Hydrophobic Portland cement
25	IS 8112	Specification for 43 grade ordinary Portland cement
26	IS 11652	Woven HDPE sacks for packing cement
27	IS 11653	Woven polypropylene sacks for packing cement
28	IS 12174	Jute synthetic union bags for packing cement

### **Brick Masonry**

S. No.	IS No.	Subject
1.	IS 269	Specification for Ordinary Portland cement (33 Grade)
2.	IS 383	Specification for coarse and fine aggregate
3.	IS 456	Plain and reinforced concrete - Code of practice
4.	IS 712	Specification for building limes.
5.	IS 1077	Common burnt clay building bricks.
6.	IS 1200 (Part 3)	Method of measurements of brick works
7.	IS 2212	Code of practice for brick work. (1st Revision)
8.	IS 2222	Specification for burnt clay perforated building bricks.
9.	IS 2645	Specification for integral water proofing compounds for cement mortar and concrete
10.	IS 2849	Specification for non load bearing gypsum partition blocks, (Solid and hollow types)
11.	IS 3346:1980	Method of the determination of thermal conductivity of thermal insulation materials
12.	IS 3495	Method of test for burnt clay building bricks.
13.	IS 3812	Specification for fly ash for use as pozzolana and admixture.

14.	IS 4082:1977	Stacking & storage of construction materials and components at site – Recommendations
15.	IS 4139	Specification of calcium silicate bricks
16.	IS 4885	Specification for sewer brick
17.	IS 5454	Methods of sampling of clay building bricks.
18.	IS 6441 (Part-1): 1972	Methods for test for Autoclaved Cellular concrete Products: Determination of unit weight or bulk density and moisture content
19.	IS 6441 (Part-2): 1972	Methods for test for Autoclaved Cellular concrete Products: Determination of dry shrinkage
20.	IS 6441 (Part-5): 1972	Methods for test for Autoclaved Cellular concrete Products: Determination of compressive strength
21.	IS 9103	Specification for concrete admixtures
22.	IS 12894	Pulverized fuel ash lime bricks specification,
23.	IS 13757	Specification of burnt clay fly ash bricks.

<b>Stone Masonry</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1.	IS 737	Specifications for wrought aluminium and aluminium alloy, steel and strip for general engineering purpose.
2.	IS 1121 - (Part. I)	Methods of determination of properties and strengths of natural building stones (Part-I compressive strength).
3.	IS 1122	Methods for determination of specific gravity of natural building stone
4.	IS 1123	Methods of identification of natural building stones.
5.	IS 1124	Methods of test of determination of water absorption, apparent, specific gravity and porosity of natural building stones.
6.	IS 1125	Methods of test of determination of weathering of natural building stone
7.	IS 1126	Methods of test for determination of durability of natural building stone
8.	IS 1128	Specification for Lime stone (Slab & Tiles).
9.	IS 1129	Recommendations for dressing of natural building stones.
10.	IS 1200 (Pt. IV)	Methods of measurements of building and Civil engineering works stone Masonry.
11.	IS 1197 (Pt. I)	Code of practice for construction of Rubble stone masonry
12.	IS 1597 (Pt. II)	Code of practice for construction of Ashlar stone masonry
13.	IS 1805	Glossary of terms relating to stones, quarrying and dressing
14.	IS 3620	Specification for laterite stone block for masonry

15.	IS 3622	Sand stone (Slab & Tiles)
16.	IS 4104 (Part I)	Code of practice for external facings and veneers (Part I-Stone facing).
17.	IS 4101 (Part II)	Code of practice for external facing and veneers: (Part II-Cement Concrete facing).

<b>Roofing</b>		
<b>S. No.</b>	<b>BIS. No.</b>	<b>Subject</b>
1.	IS 73	Specification for paving Bitumen
2.	IS 277	Galvanised steel sheets (plain and corrugated)
3	IS 651	Glazed stoneware pipes and fittings
4.	IS 702	Specification for industrial bitumen
5.	IS 1199	Methods of sampling and analysis of concrete
6.	IS 1200 (PT.IX)	Method of measurements of building and civil engineering works Part - 9 Roof covering ( including cladding)
7.	IS 1200 (PTX)	Method of measurements of building and civil engineering works: Part -10 ceiling and lining
8	IS 1230	Cast iron rain water pipes and fitting
9.	IS 1367 (PT -13)	Technical supply conditions for threaded steel fasteners pt.13 hotdip galvanized coating on threaded fasteners
10	IS 2095 (PT-1)	Gypsum plaster boards (Pt.1) plain Gypsum plaster boards
11.	IS 2115	Code of practice for flat roof finish: mud phuska
12.	IS 2633	Method of testing uniformity of coating on zinc coated articles
13.	IS 2645	Specification for integral water proofing compounds for cement mortar and concrete
14.	IS 3007 (PT.1)	Code of practice for laying of asbestos cement sheets: part- 1 corrugated sheets
15.	IS 3007 (PT.2)	Code of practice for laying of asbestos cement sheets part- 2 semi-corrugated sheets
16.	IS 3087	Particle boards of wood and other lignocellulologic materials (medium density) for general purposes - specifications
17.	IS 3144	Methods of test for mineral wool thermal insulation materials
18.	IS 3346	Method of the determination of thermal conductivity of thermal insulation materials
19.	IS 3348	Specification for fibre insulation boards

20.	IS 3384	Specification for bitumen primer for water proofing and damp proofing
21.	IS 4671	Expanded polystyrene for thermal insulation purposes
22	IS 5382	Specification for rubber sealing rings for gas mains, water mains and sewers
23.	IS 5688	Methods of test of performed block type and pipe covering type thermal insulations
24.	IS 6598	Cellular concrete for thermal insulation
25.	IS 7193	Specification for glass fibre base coal tarpitch & bitumen felts (Amendment I)
26.	IS 8183	Bonded mineral wool
27.	IS 10192	Specifications for synthetic resin bonded glass fibre (SRBGF) for electrical purposes.
28.	IS 13592	Unplasticised polyvinyl chloride (UPVC) pipes for soil and waste discharge system for inside and outside building.
29.	IS 14753	Specifications for polymethyl Methacrylate (PMMA) (Arylic) sheets
30	IS 14862	Fibre cement flat sheets - specifications
31	IS 14871	Specifications for products in fibre reinforced cement - Long corrugated or Asymmetrical section sheets and fittings for roofing and cladding.

### **Flooring**

S. No.	IS No.	Subject
1.	IS 269	Specification for 33 grade Ordinary portland Cement
2.	IS 401	Code of practice for preservation of timber
3.	IS 455	Specification for portland slag cement
4.	IS 661	Code of practice for thermal insulation of cold storages
5.	IS 1124	Method of test for determination of water absorption, apparent specific gravity and porosity of natural building stones
6.	IS 1141	Code of practice for Seasoning of timber
7.	IS 1200-(Part XI )	Method of measurement of Building and Civil Engineering work (Part 11) paving, floor finishes, dado and skirting
8.	IS 1237- Edition 2.3	Specification for cement concrete flooring tiles
9.	IS 1322	Specification for bitumen felts for water proofing and damp-proofing

10.	IS 1443	Code of practice for laying and finishing of cement concrete flooring tiles
11.	IS 1489 (Part-I)	Specification for portland pozzolana cement (Part-I) flyash based & Part - II Calcined Clay Based
12.	IS 1580	Specification for bituminous compounds for water proofing and caulking purpose
13.	IS 2114	Code of practice for laying in-situ terrazzo floor finish
14.	IS 2571	Code of practice for laying in-situ cement concrete flooring
15.	IS 3622	Specification for sand stone (Slab & Tiles)
16.	IS 3670	Code of practice for construction of timber floors
17.	IS 4457	Acid and/or alkali Resistant tiles.
18.	IS 5318	Code of practice for laying of hard wood parquet and wood block floors
19.	IS 5766	Code of practice for laying of burnt clay brick floor
20.	IS 8041	Specification for rapid hardening portland cement
21.	IS 8042	Specification for white portland cement
22.	IS 8112	Specification for 43 grade ordinary portland cement
23.	IS 12330	Specification for sulphate resisting portland cement.
24.	IS: 13630 (Part-1 to 15)	Methods of Testing of ceramic tiles
25.	IS 13712	Specification for ceramic tiles; definition, classification characteristic and marking
26.	IS 15622	Specification for pressed ceramic tile

<b>Cladding</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1.	IS 848	Specification for synthetic resin adhesives for plywood (Phenolic and Aminoplastic)
2.	IS 1122	Method of test for determination of true specific gravity of naturalbuilding stones.
3.	IS 1124	Method of test for determination of water absorption, apparent specific gravity and porosity of natural building stones.
4.	IS 1328	Specification for Veneered decorative plywood
5.	IS 1734 (Part-1)	Methods of test for plywood

6.	IS 2380	Methods of test for wood particle boards and boards from other lignocellulosic materials
7.	IS 3316	Specifications for structural granite
8.	IS 3734 (Part-1)	Rubber – Tolerance for products
9.	IS 4101 (Part 1)	Code of practice for external facing and veneers: Stone facing.
10.	IS 7638	Wood/Lignocellulosic based panel products – Methods of sampling
11.	IS 12049	Dimensions and tolerances relating to wood based panel materials
12.	IS 12823	Wood products – Prelaminated particle boards – Specification
13.	IS 14223 (Part 1)	Polished Building Stones (Part-1) Granite
14.	IS 14842	Coir Veneer board for general purposes – Specification

### **Steel & Aluminium.**

S. No.	IS No.	Subject
1	IS 63	Whiting for paints and putty
2	IS 198	Varnish gold size
3	IS 228	Structural steel (Standard quality)
4	IS 277	Specification for galvanized steel sheets (Plain and corrugated)
5	IS 419	Putty for use on window frames
6	IS 800	Code of practice for use of structural steel in general in steel construction
7.	IS 806	Code of practice for use of steel Tubes in general building construction
8.	IS 808	Dimensions for Hot rolled steel beams, columns, channel and angle sections
9.	IS 812	Glossary of terms relating to welding and cutting metals
10	IS 813	Scheme of symbols for welding
11	IS 814	Covered electrodes for manual metal arc welding of carbon and carbon manganese steel
12	IS 816	Code of practice for use of metal arc welding for general construction in mild steel
13	IS 817	Code of practice for training and testing of metal arc welders
14	IS 818	Code of practice for safety and healthy requirements in electric and gas welding and cutting operations

15	IS 822	Code of procedure for inspection of welds
16	IS 823	Manual for metal arc welding in mild steel
17	IS 1038	Steel doors, windows and ventilators
18	IS 1081	Code of practice for fixing and glazing of metal (Steel and aluminium) doors, windows and ventilators
19	IS 1148	Hot rolled steel rivet bars (upto 40 mm diameters) for structural purposes
20	IS 1161	Steel tubes for structural purposes
21	IS 1182	Recommended practice for radiographic examination of fusion welded butt joints in steel plates
22	IS 1200- (Pt. VIII)	Method of measurements of steel work and iron works
23	IS 1363 Part I	Hexagon head bolts, screws, and nuts of product grade C (Hexagon Head bolt)
24	IS 1363 Part II	Hexagon Head Bolts, screws and nuts of product Grade 'C'
25	IS 1363 Part-III	Hexagon M Head Bolts, screws and Nuts of product grade 'C'
26	IS 1367	Technical supply conditions for threaded steel fasteners

<b>Finishing</b>		
<b>S. No.</b>	<b>BIS. No.</b>	<b>Subject</b>
1.	IS 16 (Pt-I)	Shellac : Part : I - Hand Made Shellac
	IS 16 (Pt-II)	Shellac : Part : II - Machine Made Shellac
2.	IS 75	Linseed Oil Raw and Refined
3.	IS 77	Linseed Oil Boiled For Paints
4.	IS 102	Ready Mixed Paint, Brushing, Red Lead, Nonsetting, Priming
5.	IS 104	Specification for Ready Mixed Paint, Brushing, Zinc Chrome, Priming
6.	IS 109	Ready Mixed Paint, brushing, priming Plaster to Indian Standard Colour No.361, 631 White and off White
7.	IS 117	Ready Mixed Paint, Brushing, Finishing Exterior, Semigloss for General Purposes to Indian Standards Colours.
8.	IS 133	Enamel, Interior (a) Under Coating (b) Finishing
9.	IS 137	Ready Mixed Paint, Brushing, Matt Or Egg Shell Flat, Finishing Interior to Indian Standard Colour as required

10.	IS 158	Ready Mixed Paint, Brushing, Bituminous Black, Lead Free, Acid, Alkali and Heat Resisting
11.	IS 217	Specification for Cut Back Bitumen
12.	IS 218	Specification for Creosote and Anthracene Oil For Use As Wood Preservatives
8.	IS 290	Coal Tar Black Paint
14.	IS 337	Varnish, Finishing Interior
15.	IS 341	Black Japan, Types 'A', 'B' & 'C'
16.	IS 347	Varnish, Shellac for General Purposes
17.	IS 348	French Polish
18.	IS 419	Putty for Use On Window Frames
19.	IS 427	Distemper, Dry Colour as Required
20.	IS 428	Distemper, Oil Emulsion, Colour as Required
21.	IS 524	Varnish, Finishing, Exterior, Synthetic Air Drying
22.	IS 533	Gum Spirit of Turpentine (Oil of Turpentine)
23.	IS 712	Specification For Building Limes
24.	IS 1200 (Pt-XII)	Method of Measurements of Building and Civil Engineering Works : Part : XII - Plastering and Pointing
25.	IS 1200 (Pt-XIII)	Method of Measurements of Building and Civil Engineering Works : Part : XIII - White Washing, Colour Washing Distempering and Painting of Building Surfaces.
26.	IS 1200 (Pt-XV)	Methods of Measurements of Building and Civil Engineering Works : Part : XV - Painting, Polishing, Varnishing etc.
27.	IS 2339	Aluminium Paint For General Purposes, in Dual Container
28.	IS 2547 (Pt-II)	Gypsum Building Plasters Pt.II Premixed Light Weight Plasters
29.	IS 2932	Enamel, Synthetic, Exterior (a) Undercoating, (b) Finishing
30.	IS 2933	Enamel, Exterior (a) Undercoating (b) Finishing
31.	IS 5410	Cement Paint
32.	IS 5411 (Pt-1)	Plastic Emulsion : Paint Part I For Interior Use
33.	IS 6278	Code of Practice For White Washing and Colour Washing
34.	IS 12777	Method for classification of flame spread of products

<b>Sanitary Works</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1.	IS 771 (Pt.1)	Specification for glazed fire clay sanitary appliances: Part 1: General requirements.
2.	IS 771 (Part.-2)	Specification for glazed fire clay sanitary appliances: Part 2: Specific requirements of kitchen and laboratory sink.
3.	IS 772	Specific action for general requirements for enameled cast iron sanitary appliances.
4.	IS 774	Flushing cisterns for water closets and urinals (Other than plastic cistern)-Specifications.
5.	IS 1300	Phenolic moulding materials.- Specifications
6.	IS 13983	Providing and fixing stainless steel sink
7.	IS 1570 (Part-5)	Schedule for Wrought steel (Stainless Steel and heat resisting steels)
8.	IS 1703	Water fittings- copper alloy float valves (horizontal plunger type) - Specification.
9.	IS 1729	Cast iron /Ductile Iron Drainage Pipes and pipe fittings for Over ground non-pressure pipe line Socket and Spigot Series.
10.	IS 1795	Specification for pillar taps for water supply purposes.
11.	IS 1865	Iron casting with spheroidal or nodular graphite
12.	IS 2267	Polystyrene moulding and extrusion materials - Specifications
13.	IS 2326	Specification for Automatic Flushing Cisterns for Urinals (Other than plastic cisterns)
14.	IS 2548 (Part-1)	Plastic seats and covers for water closets Part 1: Thermo set seats and covers - Specifications
15.	IS 2548 (Part-2)	Plastic seats and covers for water closets Part 2: Thermoplastic seats and covers.- Specifications
16.	IS 2556	Vitreous sanitary appliances (vitreous china) -Specifications
17.	IS 2556 (Part-1)	Part-1: General requirements.
18.	IS 2556 (Part-2)	Part-2: Specific requirements of wash-down water closets.
19.	IS 2556 (Part-3)	Part-3: Specific squatting pans.
20.	IS 2556 (Part-4)	Part-4: Specific requirements of wash basins.
21.	IS 2556 (Part-5)	Part-5: Specific requirements of laboratory sinks.
22.	IS 2556 (Part-6)	Part-6: Specific requirements of Urinals & Partition plates
23.	IS 2556 (Part-7)	Part-7: Specific requirements of accessories for sanitary appliances
24.	IS 2556 (Part -14)	Part-14: Specific requirements of integrated squatting pans.

<b>Rain Water Harvesting</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1	IS 226:1975	Structural Steel
2	IS 460:1985 (Part-1)	Code of practice for particle size distribution
3	1239 (Part I):1990	Mild steel tubes, tubulars and other wrought steel fittings: Part I Mild steel tubes (fifth revision)
4	2800 (Part I): 1991	Code of Practice for Construction and Testing of Tubewells/ Borewells
5	3589 :1991	Seamless or electrically welded steel pipes for water, gas and sewage (1683 to 2032 mm outside diameter) (second revision)
6	4097: 1967	Gravel for use as pack in tubewells
7	4270 : 2001	Steel tubes used for water wells(second revisions)
8	8110 : 1985	Well Screens and Slotted Pipes
9	9439 : 1980	Glossary of terms used in water-well drilling technology
10	10500 : 1983	Drinking water
11	10151 : 1982	Polyvinyl chloride (PVC) and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water
12	11189 : 1985	Methods for tubewell development
13	12818 : 2010	Unplasticized PVC ribbed screen casing and plain casing pipes for bore/ tubewells – Specification

<b>Dismantling &amp; Demolition</b>		
<b>S. No.</b>	<b>IS No.</b>	<b>Subject</b>
1	IS 1200 (Pt-XVIII)	Method of Measurements of Building and Civil Engineering Works (Part-XVIII) Demolition and Dismantling
2	IS 4130	Demolition of Buildings
3	3696 (Part 1) : 1987	Safety code of scaffolds and ladders Part 1 Scaffolds
4	4014 (Part2): 1967	Code of practice for steel tubular scaffolding; Part 2 Safety regulations for scaffolding
5	3764 : 1992	Code of safety for excavation work (first revision)
6	7969 : 1975	Safety code for handling and storage of building materials
7	13415 : 1992	Code of safety for protective barriers in and around buildings
8	13416 (Part1) : 1992	Recommendations for preventive measures against hazards at work places; Part 2 Fall prevention
9	13416 (Part 2) : 1982	Recommendations for preventive measures against hazards at work places; Part 2 Fall prevention
10	13430 : 1992	Code of practice for safety during additional construction and alteration to existing buildings

## Addendum - V : Ready Reckoners - Reference for National building

**Code : IS : Green Manual : GRIHA, GST etc**

Sl No.	Code : Reference	Description
1.	www.kpwd.karnataka.gov.in	PWD Official Website, GoK
2.	www.bis.gov.in	Indian Standard Codes
3.	www.bis.gov.in & www.lawresource.org	National Building Code SP 7
4.	www.cpwd.gov.in	Central Public Works Department Official website
5.	www.grihaindia.org	Green Rating for Integrated Habitat Assessment - Manual
6.	www.cbri.res.in	Central Building Research Institute
7.	www.igbc.in	Indian Green Building Council
8.	www.cbic.gov.in	Goods & Services Tax
9.	www.gstcouncil.gov.in	Goods & Services Tax Council
10.	www.ctax.kar.nic.in	Commercial Taxes Department, GoK
11.	www.cgwb.gov.in	Central Ground Water Board Official Website
11.	www.ksfesonline.in	Karnataka State Fire & Emergency Services

## Addendum - VI

### Classification for installation of fire extinguishers

**Note :**

**ANNEX B**  
*(Clause 5.3, IS2190:2010)*

**RECOMMENDATIONS FOR INSTALLATION OF FIRE EXTINGUISHERS**

B-1 occupancies classified according to IS 1641 are given together with nature of fire hazard and type of fire risk along with typical examples. The classifications, groupings etc., given in this Annex are only for general guidance for installation of fire extinguishers and not for other purposes.

<b>Class of Occupancy</b>	<b>Type of Occupancy</b>	<b>Nature of Occupancy</b>	<b>Class of Fire</b>	<b>Typical Examples</b>
Group A	Residential buildings	LH	Class A	Lodging or rooming, one or two family houses, Private dwellings dormitories, apartment houses, flats, upto 4 star hotels, etc
		LH	Class C	Small Kitchens having LPG connection, electrical heaters, etc.
		MH	Class A	Multi-storeyed buildings, multi-risk buildings, five star hotels, etc.
Group B	Educational buildings	LH	Class A	Tutorials, vocational training institutes, evening colleges, commercial institutes
		MH	Class A	Schools, Colleges, etc
Group C	Institutional buildings	MH	Class A	Hospitals, sanatoria, homes for aged, orphanage jails, etc.
Group D	Assembly buildings D-1	HH	Class A	Theatres, Assembly halls, Exhibition halls, Museums, Restaurants, Places of Worship, Club rooms, Dance halls, etc, Having seating capacity of over 100 persons
		MH	Class A	Theatres, Assembly halls, Exhibition halls, Museums, Restaurants, Places of Worship, Club rooms, Dance halls etc. Having seating capacity less than 1000 persons
	D-3	MH	Class A	Theatres, Assembly halls, Exhibition halls, Museums, Restaurants, Places of Worship, Club rooms, Dance halls etc. but having accommodation for more than 300 persons, but less than 1000 persons, with no permanent seating arrangement
	D-4 & D-5	MH	Class A	Theatres, Assembly halls, Exhibition halls, Museums, Restaurants, Places of Worship, Club rooms, Dance halls etc. Having accommodation less than 300 and those not covered under D-1 to D-3
Group E	Business buildings E-1	SH	Class A	Offices, Banks, Record Rooms, Archives, Libraries, data processing centres, etc.
		MH	Class B	Laboratories, research establishment, test houses etc.
		SH	Class A	Computer installations
Group F	Mercantile buildings	MH	Class A	Shops, Stores, Markets, Departmental stores, Underground shopping centres, etc.
Group G	Industrial buildings	LH	Class A	Small industrial units
		MH	Class A	Corrugated carton manufacturing units, Paper cane units, Packing case manufacturing units, cotton waste manufacturing units.
		HH	Class A	Large number yards, saw mills godowns and warehouses storing combustible materials, cold Storages, freight depots, etc.

		LH	Class B	Demonstration chemical plants, small chemical, processing plants, pilot plants, etc.
		MH	Class B	Workshops, painting shops, large kitchens, industrial canteens, generator rooms, heat treatment shops, tread rubber manufacturing units, petrol bunks, tubes & flaps units, etc.,
		HH	Class B	Petroleum processing units, chemical plants, industrial alcohol plants, effluent treatment plants etc.
		LH	Class C	---
		MH	Class C	---
		HH	Class C	Fertiliser plants, petrochemical plants, LPG bottling plants, etc.
		HH	Class D	All processes involving use of combustible highly flammable materials, reactive metals and alloys, including their storage
Group H	Storage buildings	MH	Class B	Flammable liquid stores, storage in drums and cans in open, paints and varnishes godown.
		HH	Class B	Tank farms chemical and petroleum bulk storage depots, large service stations, truck and marine terminals, underground LDO/furnace oil storage yards, etc.
		MH	Class C	LPG distribution godown/office, distribution storage godowns/offices of D, N, H, Argon and other industrial gases
		HH	Class C	Storage and handling of gas cylinders in bulk, gas plant, gas holders (Horton), spheres, etc.
Group J	hazardous	---	---	Buildings used for storage, handling, manufacture and processing of highly combustible explosive materials. (Risks involved in terms of class of fire and intensity of fire has to be assessed on case to case basis and statutory authorities to be consulted, environmental factors and mutual aid facilities to be taken into account before deciding on the fire extinguisher requirements.)

NOTES : 1 LH - Low Hazard, 2 MH - Medium Hazard, 3 HH - High Hazard, 4 SH: Special Hazard.

<b>B-2 RECOMMENDED SCALE OF EQUIPMENT TO BE INSTALLED</b>		
<b>B-2.1 Class A</b>		
LH	Occupancy	One 9 litre water expelling extinguisher or ABC 5kg/6 kg fire extinguisher, for every 200 m <sup>2</sup> of floor area or part thereof with minimum of two extinguishers per compartment or floor of the building. The extinguishers should be so located as to be available within 15 m radius.
MH	Occupancy	Two 9 litre water expelling extinguisher or ABC 5kg/6 kg fire extinguisher, for every 200 m <sup>2</sup> with minimum of 4 extinguishers per compartment or floor .The extinguishers should be so located as to be available within 15 m radius.
HH	Occupancy	Provision as per MH occupancy, in addition to one 50 litre water CO <sub>2</sub> / 25 kg ABC fire extinguisher for every 100 m <sup>2</sup> of floor area or part thereof.
Special Hazard		One 4.5 kg capacity carbon dioxide or one 2/3 kg capacity clean agent extinguisher for every 100 m <sup>2</sup> of floor area or part thereof with minimum of two extinguishers so located as to be available within 10 m radius.

B-2.2 Class B		
LH	Occupancy	One 9 litre foam extinguisher, mechanical or BC or ABC, 5 kg / 6 kg fire extinguisher, for every 200 m <sup>2</sup> of floor area or part thereof with minimum of two extinguishers per compartment or floor. The extinguishers located as to be available within 15m radius.
MH	Occupancy	Two 9 litre foam extinguisher, mechanical type, or 5/6 kg dry powder extinguisher (or one of each type) for every 200 m <sup>2</sup> area with minimum of four extinguisher per compartment. Extinguisher should be available within 15 m radius.
HH	Occupancy	Provision as per MH, and in addition to one 50 litre mechanical foam type extinguisher or 25 kg BC fire extinguisher for every 100 m <sup>2</sup> or part thereof one 135 litre foam mechanical extinguisher for every 300 m <sup>2</sup> of floor area or part thereof.
B-2.3 Class C		
LH	Occupancy	One 2/3kg dry powder of clean agent extinguisher for every 20 m <sup>2</sup> of floor area or part thereof; extinguisher available within 15 m radius.
MH	Occupancy	One 10kg dry powder extinguisher(stored pressure) or 6.5kg carbon dioxide extinguisher or 5kg clean agent for 100 m <sup>2</sup> of floor area or part thereof, with minimum of one extinguisher of the same type for every compartment; extinguisher should be available within a radius of 15m, the same type for every compartment; extinguisher.
HH	Occupancy	Dry powder extinguisher (stored pressure) of 10 kg or 6.5 Kg CO <sub>2</sub> extinguisher, or 5 kg clean agent extinguisher for every 100 m <sup>2</sup> of floor area or part thereof, subject to a minimum of two extinguishers of same type per room or compartment. Extinguishers should be available within a radius of 10 m.
B-2.4 Class D		
HH	Occupancy	One 10 kg dry powder extinguisher with special dry powder for metal fires for every 100 m <sup>2</sup> of floor area or part thereof with minimum of two extinguisher per compartment/ room. Extinguishers should be available within a radius of 10m.

**NOTES -**

1. The recommendations are minimum for a specific area. In case, the area is more than specified, high capacity extinguishers may be used based on these minimum requirements, that is proportionately higher capacity can be used.
2. In case of dry powder /CO<sub>2</sub>/clean agent types, equivalent lower capacities may also be used.
3. The halons shall be restricted for essential use only.
4. On implementation of IS 15683, 6 kg and 9 kg dry powder extinguishers shall be replaced by 5 kg or 10 kg dry powder extinguishers.

## Notes



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