



Government of Goa,  
Office of the Superintending Surveyor of Works,  
Public Works Department,  
Altinho, Panaji Goa.

Corrigendum to GSR-2011 for Building / Road Works

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Dated: March, 2013.

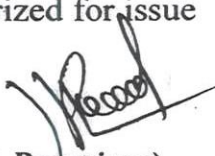
## CIRCULAR

**Sub: Corrigendum to GSR 2011 for Buildings/Road Works.**

- Ref: 1. Circular No. 3-3-05/SSW-PWD/Vol.I/2011-2012/214 Dt. 15<sup>th</sup> July 2011  
2. Circular No. 3-3-05/SSW-PWD/Vol.I/11-12/291 Dt. 17<sup>th</sup> October 2011  
3. Corrigendum No. 1 issued vide No. PWD/SSW/F.3/1/05/(Tech)/2012-2013/332  
Dated 5<sup>th</sup> September 2012.

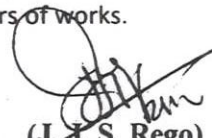
The Goa Schedule of Rates (GSR) -2011 for Building and Road works has been made effective vide above circulars against their respective dates of issue. In continuation to the said circulars, the modifications/additions with respect to the GSR -2011 for Building and Road works as per the Annexure are hereby circulated for necessary adoption in preparation of estimates and for working out the reasonable amounts in accordance with the stipulations in Para 19.4.3.1 of Central Public Works Department (CPWD) Works Manual -2007, for acceptance of the tenders of works.

Authorized for issue



(S. R. Paranjape)

Suptdg. Surveyor of Work:  
P.W.D.



(J. J. S. Rego)  
Principal Chief Engineer  
P.W.D.

Copy to:-

1. The Chief Engineer I & II, PWD, Altinho, Panaji- Goa.
2. The Superintending Surveyor of Works, PWD, Altinho, Panaji,Goa .
3. The Superintending Engineer I to IX, SE (Mon. & Eva.) PWD, Panaji/Margao, Goa.
4. The Chief Architect, PWD, Altinho, Panaji -Goa
5. The Executive Engineer, W, D. I to XXV, PWD, Panaji/Margao/Mapusa/Ponda/ Sanguem/Bicholim, Goa.
6. Joint Director of Account, Panaji- Goa.
7. Office file
8. Guard file

### CORRIGENDUM to GSR - 2011 Buildings

The following corrections are made in the various items of Goa Schedule of Rates- 2011 Buildings								
As per the existing GSR 2011					To be read as			
Sr. No.	Item No.	Description of item	Unit	Rate	Item No.	Description of item	Unit	Rate
1	2	3	4	5	6	7	8	9
1	1005	Bricks class design <b>75 kg/cm2</b> (1st class wire cut)	1000 nos	4000.00	1005	Bricks class design <b>40 kg/cm2</b>	1000 nos	4000.00
3	1015	Laterite aggregate (40mm & below)	<b>t</b>	400.00	1015	Laterite aggregate (40mm & below)	<b>cum</b>	400.00
4	1016	Cement	<b>cu.m</b>	6060.00	1016	Cement	<b>t</b>	6060.00
5	1025	Laterite boulders 150-200 mm	cu.m	<b>96.00</b>	1025	Laterite boulders 150-200 mm	cu.m	<b>150.00</b>
6	1029	Lime	<b>t</b>	<b>550.00</b>	1029	Lime	<b>qtl</b>	<b>625.00</b>
7	1065(d)	Coconut rafters	<b>ten</b>	110.00	1065	Coconut rafters	<b>m</b>	110.00
8	1066	Frosted glass 3 mm	<b>ten</b>	472.00	1066	Frosted glass 3 mm	<b>sqm</b>	472.00
9	1068	Iron screws 40 mm	<b>ten</b>	296.00	1068	Iron screws 40 mm	<b>cent</b>	296.00
10	1069	Iron screws 30 mm	<b>ten</b>	260.00	1069	Iron screws 30 mm	<b>cent</b>	260.00
11	1070	Iron screws 20 mm	<b>ten</b>	192.00	1070	Iron screws 20 mm	<b>cent</b>	192.00
12	1135	M.S steel structural (SAIL, TATA. VIZAG only)(R.S.Joists)	<b>m</b>	45150.00	1135	M.S steel structural (SAIL, TATA. VIZAG only)(R.S.Joists)	<b>t</b>	45150.00
13	1136	Flats upto 10 mm thickness	<b>m</b>	45150.00	1136	Flats upto 10 mm thickness	<b>t</b>	45150.00
14	1137	Flats exceeding 10mm thickness	<b>m</b>	45150.00	1137	Flats exceeding 10mm thickness	<b>t</b>	45150.00
15	1138	M.S Tees, Angles (SAIL, TATA. VIZAG )	<b>m</b>	45150.00	1138	M.S Tees, Angles (SAIL, TATA. VIZAG )	<b>t</b>	45150.00
16	1139	M.S Plates (SAIL, TATA. VIZAG )	<b>m</b>	<b>48562.50</b>	1139	M.S Plates (SAIL, TATA. VIZAG )	<b>t</b>	<b>48563.00</b>

17	1150	M.S. steel sheets (SAIL, TATA. VIZAG )	m	41000.00	1150	M.S. steel sheets (SAIL, TATA. VIZAG )	t	41000.00
18	1153	M.S round bars upto 10 mm dia (SAIL, TATA. VIZAG )	m	43050.00	1153	M.S round bars upto 10 mm dia (SAIL, TATA. VIZAG )	t	43050.00
19	1154	M.S round bars above 10 mm dia (SAIL, TATA. VIZAG )	m	43050.00	1154	M.S round bars above 10 mm dia (SAIL, TATA. VIZAG )	t	43050.00
20	1411	White glazed tiles	ten	230.00	1411	White glazed tiles	sqm	230
21	2006	Mixer	cum	1500.00	2006	Mixer	day	1500
22	<b>Chapter III ( Transportation)</b>				<b>Chapter III as per Annexure I</b>			
22	4026	Deduct for not rolling with power roller minimum 8 tonnes in item No. <b>4024 and 4026.</b>	cum	11.00	4026	Deduct for not rolling with power roller minimum 8 tonnes in item No. <b>4025</b>	cu.m	11.00
24	4027	Deduct for not watering in item Nos. <b>4024 &amp; 4026.</b>	cum	6.00	4027	Deduct for not watering in item Nos. <b>4025</b>	cu.m	6.00
	5010	Brick work using common burnt building bricks in cement mortar 1:4 ( 1 cement : 4 coarse sand) with bricks of class designation 40 kgs / <b>cu.m (wire cut bricks)</b>			5010	Brick work using common burnt building bricks in cement mortar 1:4 ( 1 cement : 4 coarse sand) with bricks of class designation 40 kgs / <b>cm<sup>2</sup></b>		
		In foundation and plinth.	cum	3954.00		In foundation and plinth.	cum	3954.00
		In superstructure upto floor five level.	cum	4323.00		In superstructure upto floor five level.	cum	4323.00
	5011	Brick work using common burnt building bricks in cement mortar 1:5 ( 1 cement : 5 coarse sand) with bricks of class designation 75 kgs / <b>cu.m (wire cut bricks)</b>			5011	Brick work using common burnt building bricks in cement mortar 1:5 ( 1 cement : 5 coarse sand) with bricks of class designation 75 kgs / <b>cm<sup>2</sup></b>		
	a)	In foundation and plinth.	cum	5194.00	a)	In foundation and plinth.	cum	5194.00
	b)	In superstructure upto floor five level.	cum	5562.00	b)	In superstructure upto floor five level.	cum	5562.00

	5012	Brick work using common burnt building bricks in cement mortar 1:5 ( 1 cement : 5 coarse sand) with bricks of class designation 40 kgs / <b>cu.m (wire cut bricks)</b>			5012	Brick work using common burnt building bricks in cement mortar 1:5 ( 1 cement : 5 coarse sand) with bricks of class designation 40 kgs / <b>cm2</b>		
	a)	With bricks of class designation 40kg/ <b>sq.m</b>	cum	3829.00	a)	In foundation and plinth.	cum	3829.00
	b)	In superstructure upto floor five level.	cum	4197.00	b)	In superstructure upto floor five level.	cum	4197.00
	5014	Extra for brick work in circular pillars:			5014	Extra for brick work in circular pillars:		
	a)	With bricks of class designation <b>75 kg./cu.m (wire cut bricks)</b>	cum	1464.00	a)	With bricks of class designation <b>75 kg./ cm2 (wire cut bricks)</b>	cum	1464.00
	b)	With bricks of class designation <b>40 kg./cu.m (wire cut bricks)</b>	cum	1075.00	b)	With bricks of class designation <b>40 kg./cm2</b>	cum	1075.00
	5015	Extra for brick work curved in plan upto a mean radius not exceeding 6 meters.	cum		5015	Extra for brick work curved in plan upto a mean radius not exceeding 6 meters.	cum	
	a)	With bricks of class designation <b>75 kg. sq.cm.</b>	cum	430.00	a)	With bricks of class designation <b>75 kg./ cm2</b>	cum	430.00
	b)	With bricks of class designation <b>40 kg. sq.cm.</b>	cum	331.00	b)	With bricks of class designation <b>40 kg. / cm2.</b>	cum	331.00
	5016	Extra for making tapered surface of brick masonry			5016	Extra for making tapered surface of brick masonry		
	a)	With bricks of class designation <b>75 kg. sq.cm.</b>	sqm	247.00	a)	With bricks of class designation <b>75 kg./cm2.</b>	sqm	247.00
	b)	With bricks of class designation <b>40 kg. sq.cm.</b>	sqm	189.00	b)	With bricks of class designation <b>40 kg. /cm2</b>	sqm	189.00
	5021	Extra for cutting or chamfering of bricks to required shape masonry work.	no unit mentioned	11.00	5021	Extra for cutting or chamfering of bricks to required shape masonry work.	<b>sqm</b>	11.00

	5024(a)	Brick work using fly ash bricks in cement mortar 1:4 (1 cement : 4 coarse sand ) with bricks of class designation 40 kgs / cm2. in foundation and plinth.			5024	Brick work using fly ash bricks in cement mortar 1:4 (1 cement : 4 coarse sand ) with bricks of class designation 40 kgs / cm2. in foundation and plinth.		
		230 x 110 x 80 mm	<b>sqm</b>	3825.00		230 x 110 x 80 mm	<b>cum</b>	3825.00
	(b)	Brick work using fly ash bricks in cement mortar 1:4 (1 cement : 4 coarse sand ) with bricks of class designation 40 kgs / cm2. in superstructure upto floor five level.				Brick work using fly ash bricks in cement mortar 1:4 (1 cement : 4 coarse sand ) with bricks of class designation 40 kgs / cm2. in superstructure upto floor five level.		
		230 x 110 x 80 mm	<b>sqm</b>	4194.00		230 x 110 x 80 mm	<b>cum</b>	4194.00
	5025(a)	Brick work using fly ash bricks in cement mortar 1:5 (1 cement : 5 coarse sand) with bricks of class designation 40 kg / cm2 in foundation and plinth.			5025	Brick work using fly ash bricks in cement mortar 1:5 (1 cement : 5 coarse sand) with bricks of class designation 40 kg / cm2 in foundation and plinth.		
		230 x 110 x 80 mm	<b>sqm</b>	3700.00		230 x 110 x 80 mm	<b>cum</b>	3700.00
	(b)	Brick work using fly ash bricks in cement mortar 1:5 (1 cement : 5 coarse sand) with bricks of class designation 40 kg / cm2 in superstructure upto floor five level.				Brick work using fly ash bricks in cement mortar 1:5 (1 cement : 5 coarse sand) with bricks of class designation 40 kg / cm2 in superstructure upto floor five level.		
		230 x 110 x 80 mm	<b>sqm</b>	4016.00		230 x 110 x 80 mm	<b>cum</b>	4016.00
	5028	Extra for brickwork in super structure above floor V level <b>for every four floors or part thereof.</b>	<b>sqm</b>	261.00	5028	Extra for brickwork in super structure above floor V level <b>for every four floors or part thereof.</b>	<b>cum</b>	261.00

6039	Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards upto floor five level excluding the cost of centering, shuttering, finishing and reinforcement with 1:1½ :3 (1 cement: 1 coarse sand: 2 graded stone aggregate 20mm nominal size)	cu.m	5449.00	6039	Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards upto floor five level excluding the cost of centering, shuttering, finishing and reinforcement with 1:1½ :3 (1 cement: 1 :1½ coarse sand: 3 graded stone aggregate 20mm nominal size)	cu.m	5449.00
7121	Providing 1 mm thick oxidized MS piano hinges finished with brass plating flange being 35 m wide and fixing with necessary screws.	m	455.00	7121	Providing 1 mm thick oxidized MS piano hinges finished with brass plating flange being 35 mm wide and fixing with necessary screws.	m	455.00
7122	Providing 1 mm thick MS piano hinges finished with nickle plating flange being 35 m wide and with necessary screws.	m	529.00	7122	Providing 1 mm thick MS piano hinges finished with nickle plating flange being 35 mm wide and with necessary screws.	m	529.00
8021	Welding by gas plant (using Ador or ES4B or Deh Secheron make electrodes only)	cu.m	8.00	8021	Welding by gas plant (using Ador or ES4B or Deh Secheron make electrodes only)	cm	8.00
8022	Welding by electric plant (using Ador or ES4B or Deh Secheron make electrodes only )	cu.m	7.00	8022	Welding by electric plant (using Ador or ES4B or Deh Secheron make electrodes only )	cm	7.00
9064	Fixing glazed/ceramic/vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (water based) conforming to IS 15477, using 5kg. Adhesive per sq.m. of tile area, in average 3mm thickness .	sq.m	531.00	9064	deleted		

	10090	Providing and fixing colour coated galvulium roofing sheets of 0.5mm thickness including all the accessories but excluding the cost of purlins, rafters, trusses, etc. complete as per the directions of the engineer in charge.	sq.m	809.00	10090	<b>deleted</b>		
	15607	Plugging the hole of wash basin <b>in</b> pillar tap is not to be provided,.	each	137.00	15607	Plugging the hole of wash basin <b>if</b> tap is not provided	each	137.00
	15669	Providing and fixing white vitreous china type water closet squatting pan (European type WC. pan) with flush valve Nelson/ similar) fully chromium plated with stop cock wall flanges flush pipe or elbow and vacuum breaker coupling etc. including cutting making good the walls and floors where required.	<b>m</b>	5982.00	15669	Providing and fixing white vitreous china type water closet squatting pan (European type WC. pan) with flush valve Nelson/ similar) fully chromium plated with stop cock wall flanges flush pipe or elbow and vacuum breaker coupling etc. including cutting making good the walls and floors where required.	<b>each</b>	5982.00



	15694(b)	Constructing brick masonry manhole or inspection chamber with second class bricks in cement mortar 1:5 (1 cement :5 fine sand) R.C.C. top slab with 1:2:4 mix (1 cement: 2 coarse sand ;4 graded stone aggregate 20mm nominal size foundation concrete 1:2:4 mix (1 cement ;2 coarse sand :4 graded stone aggregate 40mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) neatly finished complete as per standard design. Inside size 90 x80 cm and 60 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg.)	each	<b>9282.12</b>	15694(b)	Constructing brick masonry manhole or inspection chamber with second class bricks in cement mortar 1:5 (1 cement :5 fine sand) R.C.C. top slab with 1:2:4 mix (1 cement: 2 coarse sand ;4 graded stone aggregate 20mm nominal size foundation concrete 1:2:4 mix (1 cement ;2 coarse sand :4 graded stone aggregate 40mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) neatly finished complete as per standard design. Inside size 90 x80 cm and 60 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg.)	each	<b>9282.00</b>
	15694(c)	Inside size 1.2m x 90 cm and 90cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter total weight of cover and frame to be not less than 116 kg. (weight of cover 58 kg).	each	<b>18233.65</b>	15694 ( c )	Inside size 1.2m x 90 cm and 90cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter total weight of cover and frame to be not less than 116 kg. (weight of cover 58 kg).	each	<b>18234.00</b>

	15694(d)	Inside size 60 x 60cm and 60cm deep including C.I. cover with frame (light duty) 455x610mm internal diameter total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg).	each	6247.04	15694(d)	Inside size 60 x 60cm and 60cm deep including C.I. cover with frame (light duty) 455x610mm internal diameter total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg).	each	<b>6247.00</b>
	15695(a)	Constructing brick masonry manhole or inspection chamber with second class bricks in cement mortar 1:5 (1 cement :5 fine sand) R.C.C. top slab with 1: 1 1/2:3 mix (1 cement: 1 1/2 coarse sand ;3 graded stone aggregate 20mm nominal size foundation concrete 1:1 1/2:3 mix (1 cement ;1 1/2 coarse sand :8 graded stone aggregate 20mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) neatly finished complete as per standard design. Inside size 90 x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x610mm internal dimensions total weight of cover ad frame to be not less than 38 kg. (weight of cover 23 kg. )	each	<b>6465.79</b>	15695	Constructing brick masonry manhole or inspection chamber with second class bricks in cement mortar 1:5 (1 cement :5 fine sand) R.C.C. top slab with 1: 1 1/2:3 mix (1 cement: 1 1/2 coarse sand ;3 graded stone aggregate 20mm nominal size foundation concrete 1:1 1/2:3 mix (1 cement ;1 1/2 coarse sand :8 graded stone aggregate 20mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) neatly finished complete as per standard design. Inside size 90 x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x610mm internal dimensions total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg. )	each	<b>6466.00</b>

	15695(b)	Inside size 90 x80 cm and 60 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg.)	each	<b>7994.70</b>	15695(b)	Inside size 90 x80 cm and 60 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg.)	each	<b>7995.00</b>
	15695(c)	Inside size 1.2m x 90 cm and 90cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter total weight of cover and frame to be not less than 116 kg. (weight of cover 58 kg).	each	<b>16668.41</b>	15695(c)	Inside size 1.2m x 90 cm and 90cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter total weight of cover and frame to be not less than 116 kg. (weight of cover 58 kg).	each	<b>16668.00</b>
	15695(d)	Inside size 60 x 60cm and 60cm deep including C.I. cover with frame (light duty) 455x610mm internal diameter total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg).	each	<b>5556.79</b>	15695(d)	Inside size 60 x 60cm and 60cm deep including C.I. cover with frame (light duty) 455x610mm internal diameter total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg).	each	<b>5557.00</b>

	15696	Constructing brick masonry manhole or inspection chamber with second class bricks in cement mortar 1:5 (1 cement :5 fine sand) R.C.C. top slab with grade M 25 mix design with coarse sand and graded granitic or basaltic stone aggregate as per mix design requirements foundation concrete M 25 mix design with coarse sand graded granitic or basaltic stone aggregate as per mix design requirements inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) neatly finished complete as per standard design.			15696	Constructing brick masonry manhole or inspection chamber with second class bricks in cement mortar 1:5 (1 cement :5 fine sand) R.C.C. top slab with grade M 25 mix design with coarse sand and graded granitic or basaltic stone aggregate as per mix design requirements foundation concrete M 25 mix design with coarse sand graded granitic or basaltic stone aggregate as per mix design requirements inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) neatly finished complete as per standard design.		
	a)	Inside size 90 x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x610mm internal dimensions total weight of cover ad frame to be not less than 38 kg. (weight of cover 23 kg. )	each	<b>6561.55</b>	a)	Inside size 90 x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x610mm internal dimensions total weight of cover ad frame to be not less than 38 kg. (weight of cover 23 kg. )	each	<b>6562.00</b>
	15708	Providing and fixing rigid PVC bend of required degree (of approved make) for S.W.R. drainage pipes of approved including lubricating.			15708	Providing and fixing rigid PVC bend of required degree (of approved make) for S.W.R. drainage pipes of approved including lubricating.		

	a)	110 mm dia	<b>m</b>	280.00	a)	110 mm dia	<b>each</b>	280.00
	b)	75 mm dia	<b>m</b>	168.00	b)	75 mm dia	<b>each</b>	168.00
	18023	Providing and fixing G.I. chain link mesh 6.35cm x 6.35 cm x 10 gauge (2.5" x 2.5" x 10 gauge) fixed with angle iron posts and struts by G.I. or M.S. staples at 20cms apart with welding with the iron posts (placed at 3 meters centre to centre) including providing barbed wire stiffeners (shall weigh 9.33 kg. per 100 meters minimum) at top and bottom with barbed wire stiffeners by binding wires at 50cms centre to centre complete as per the direction of the Engineer – in – charge (angle iron posts struts, earthwork and concrete for fencing posts and struts to be paid separately)	<b>m</b>	331.00	18023	Providing and fixing G.I. chain link mesh 6.35cm x 6.35 cm x 10 gauge (2.5" x 2.5" x 10 gauge) fixed with angle iron posts and struts by G.I. or M.S. staples at 20cms apart with welding with the iron posts (placed at 3 meters centre to centre) including providing barbed wire stiffeners (shall weigh 9.33 kg. per 100 meters minimum) at top and bottom with barbed wire stiffeners by binding wires at 50cms centre to centre complete as per the direction of the Engineer – in – charge (angle iron posts struts, earthwork and concrete for fencing posts and struts to be paid separately)	<b>sqm</b>	331.00

	18038	<p><b>Providing and fixing factory made polyvinyl chloride (PVC) Door Frame of make Rajshri Plastiwood or equivalent in Prelaminated colour manufactured of the size 50 x 47mm with a wall thickness of 5mm, made out of extruded 5mm PVC sheet, miter cut at two corners and joined with 2nos. of 150mm long brackets of 15mmx15mm M.S. square tube. The two vertical door profiles are to be reinforced with 19mmx19mm M.S. Square tube of 19 gauges, EPDM rubber gasket weather seal to be provided through out the frame. The door frame shall be fixed to the wall using 65/100mm long M.S. Screws through the frame by using PVC fasteners. A minimum of 4nos. of screws to be provided for each vertical member &amp; minimum 2nos. for horizontal member etc. complete as per manufacturers specification and direction of Engineer-in-Charge.</b></p>	sq.m	2229.00	18038	<p><b>Providing and fixing 30mm thick factory made solid panel PVC door shutter of make Rajshri Plastiwood or equivalent consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19mmx19mm for stiles &amp; 15mmx15mm for top &amp; bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture. M.S. frame shall be covered with 5mm thick heat moulded Rajshri or equivalent PVC 'C' channel of size 30x50mm forming stiles, and 5mm thick, 75mm wide PVC sheets for top rails, lockrail &amp; bottom rail on either side, and 10mm(5mmx2) thick, 20mm wide cross PVC sheet as gap insert for top rail &amp; bottom rail. Panelling of 5mm thick PVC sheet to be fitted in the M.S. frame welded/ sealed to the stiles &amp; rails with 30mm wide x 5mm thick PVC sheet bidding on either side, and joined together with</b></p>	sq.m	2229.00
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									Beyond 5	Beyond 10	Beyond 20
Item nos	Materials	Unit	1 km	2km	3km	4 km	5 km		upto 10 km	upto 20 km	upto 30 km
									per km	per km	per km
	<b>(A) Lime,building rubbish, manure</b>										
	<b>sludge, moorum excavated rock</b>										
3065 - 72	( I ) Lime,moorum, building r	Cum	110.01	123.90	137.53	150.59	163.14		11.24	8.99	7.20
3073 - 80	( ii ) Earth	Cum	137.51	154.87	171.91	188.24	203.92		14.05	11.24	9.00
3081 - 88	( iii ) Manure or sludge	Cum	119.58	134.67	149.49	163.69	177.00		12.22	9.77	7.83
3089 - 96	( I v ) Excavated rock	Cum	220.02	247.80	275.06	301.19	326.27		22.49	17.99	14.40
	<b>( B ) Sand, stone metal and soling</b>										
3097 - 04	( I ) Sand stone metal below	Cum	132.01	148.68	165.03	180.71	195.76		13.49	10.79	8.64
3105 - 12	( ii ) Stone metal 40 mm & ab	Cum	142.87	160.91	178.61	195.57	211.87		14.60	11.68	9.35
3113- 20	( iii ) Soling stone	Cum	155.31	174.92	194.16	212.60	230.31		15.87	12.70	10.17
3121 - 28	2 Bricks	1000	330.03	560.47	594.11	626.62	658.06		33.73	26.98	21.61
		nos									
3129- 36	3.) Tiles	1000	206.27	232.31	257.87	282.36	305.88		21.08	16.86	13.50
		nos									
3137- 44	4.) Cement,stone blocks,C.I,A.C &										
	C.C pipes below 100 mm dia and										
	other heavy materials	Tonne	94.29	106.20	117.88	129.08	139.83		9.64	7.71	6.17
3145 - 52	5 ) Steel	Tonne	94.29	106.20	117.88	129.08	139.83		9.64	7.71	6.17
3153 - 60	6) Timber	cum	132.01	148.68	165.03	180.71	195.76		13.49	10.79	8.64
3161 - 68	7) Tar, bitumen	Tonne	146.68	165.20	183.37	200.79	217.52		14.99	11.99	9.60
3169 - 76	8) Steam coal	cum	120.01	135.16	150.03	164.28	177.00		12.27	9.81	7.86



							97			
3177 - 84	9 ) Stoneware pipes									
	a ) 100 mm dia	100m	137.51	154.87	171.91	188.21	203.92	14.05	11.24	9.00
3185 - 92	b ) 150 mm dia	100m	275.02	309.75	343.82	376.48	407.84	28.11	22.48	18.00
3193 - 00	c ) 200 mm dia	100m	488.93	550.66	611.24	669.30	725.05	49.97	39.97	32.01
3221 - 28	d ) 230 mm dia	100m	628.63	707.99	785.88	860.53	932.21	64.25	51.39	41.15
3229 - 36	e ) 250 mm dia	100m	785.78	884.99	982.35	1075.66	1165.26	80.31	64.23	51.44
3237 - 44	f ) 300 mm dia	100m	1000.09	1126.35	1250.26	1369.02	1483.06	102.21	81.75	65.47
	10 ) R.CC, P.C Hume steel C.I pipes									
3245 - 52	a ) 100 mm dia	100m	225.43	253.89	281.82	308.59	334.30	23.04	18.43	14.76
3253 - 60	b ) 150 mm dia	100m	360.69	406.22	450.91	493.75	534.87	36.86	29.48	23.61
3261 - 68	c ) 200 mm dia	100m	601.15	677.04	751.52	822.91	891.46	61.44	49.14	39.35
3269 - 76	d ) 250 mm dia	100m	819.74	923.24	1024.80	1122.15	1215.62	67.01	67.01	53.66
3277 - 84	e ) 300 mm dia	100m	1060.85	1194.78	1326.22	1452.20	1573.16	108.42	86.72	69.45
3285 - 92	f ) 350 mm dia	100m	1502.87	1692.60	1878.81	2057.28	2228.64	153.60	122.85	98.39
3293 - 00	g) 400 mm dia	100m	2003.82	2256.80	2505.08	2743.04	2971.52	204.80	163.80	131.18
3301 - 08	h)450 ,500 mm dia	100m	2576.34	2901.61	3220.81	3526.76	3820.53	263.31	210.60	168.66
3309 - 16	l )600,700,750,800 mm dia	100m	3606.88	4062.25	4509.14	4937.47	5348.74	368.64	294.84	236.13
3317 - 24	k) 900,1000,1100 &1 1200mm	100m	4508.60	5077.81	5636.42	6171.83	6685.93	460.80	368.55	295.16
3325 - 32	l)1400,1600,1800 mm dia	100m	9017.19	10155.62	11272.84	12343.67	13371.85	921.60	737.11	590.31
3333 - 40	11)Empty cement bags	1000	3.30	3.72	4.13	4.52	4.89	0.34	0.27	0.22
		nos						0.32		
3341 - 48	12)Hollow glass block	100	3.14	3.54	3.93	4.30	4.66	#REF!	0.26	0.21
		nos								

**C) BY MANUAL LABOR INCLUDING LOADING, UNLOADING AND STACKING OF LEAD LESS THEN 0.50 KM.**

Item No.			Materials	Unit	Cost of carriage including loading unloading and stacking for first 50 metres	Cost for additional 50m or part thereof beyond 1st 50m upto 0.5 km
			<b>Light Material</b>			
	a)		Lime, murrum, building rubbish, earth, manure or sludge and excavated rocks			
3349 50		i.	Lime murrum and building rubbish.	1.00 Cu.m.	37.8	8.23
3351 –52		ii	Earth	1.00 Cu.m.	47.25	10.29
3353 –54		iii.	Manure and sludge	1.00 Cu.m.	41.09	8.95
3355 –56		iv.	Excavated rocks	1.00 Cu.m.	75.6	16.46
	b)		Sand, stone aggregate and soiling.			
3357 –58		i.	Sand, stone aggregate below 40 mm	1.00 Cu.m.	47.25	10.29
3359 –60		ii.	Stone aggregate 40 mm nominal size and	1.00 Cu.m.	51.08	11.12
3361 62		iii.	Soling stone	1.00 Cu.m.	55.59	12.1
3363 –64			Bricks	1000 Nos.	88.21	19.21
3365 –66			Tiles	1000 Nos.	55.13	12
3367 –68			Steam coal	1 Tonne	44.1	9.6

Remarks : This rate is applicable to net quantities after deduction of prescribed percentage for voids mentioned in the specification under sub-head "Carriage of Materials".

**C) BY MANUAL LABOR INCLUDING LOADING, UNLOADING AND STACKING OF LEAD LESS THEN 0.50 KM.**

Item No.		Materials	Unit	Cost of carriage including loading unloading and stacking for first 50 metres	Cost for additional 50m or part thereof beyond 1st 50m upto 0.5km (Y)
		<b>Heavy Materials</b>			
3369 –70	a)	Stone blocks, G.I. C.I. and C.C. pipes below 100 mm dia and other heavy material.	1 Tonne	34.5	5.06
3371–72	b)	Cement	1 Tonne	27.37	4.02
3373–74	c)	Steel	1 Tonne	58.78	8.63
3375–76		Timber	1 Cu.m.	37.79	5.54
3377 –78		Tar Bitumen	1 Tonne	34.5	5.06
3379–80		Stone ware pipes			
3381 –82	a)	100 mm dia S.W. Pipes	100 M	69.06	10.13
3383–84	b)	150 mm dia S.W. Pipes	100 M	113.52	16.66
3385 –86	c)	200 mm dia S.W. Pipes	100 M	158.86	23.31
3387 –88	d)	230 mm dia S.W. Pipes	100 M	203.46	29.86
3389–90	e)	250 mm dia S.W. Pipes	100 M	264.5	38.81
3391–92	f)	300 mm dia S.W. Pipes	100 M	377.86	55.45
3393–94	g)	350 mm dia S.W. Pipes	100 M	529	77.63
3395–96	h)	400 mm dia S.W. Pipes	100 M	661.25	97.03
3397–98	i)	450 mm dia S.W. Pipes	100 M	801.52	117.61
3399–00	j)	500 mm dia S.W. Pipes	100 M	979.63	143.75
3401–02	k)	600 mm dia S.W. Pipes	100 M	1202.27	176.42
		Concrete, R.C. Hume steel, C.I. pipes			
3403–04	a)	100 mm dia	100 M	93.24	13.68
3405–06	b)	125 mm dia	100 M	114.09	16.74
3407–08	c)	150 mm dia	100 M	131.37	19.28

3409-10	d)	200 mm dia	100 M	197.14	28.93
3411-12	e)	250 mm dia	100 M	346.51	50.85
3413-14	f)	300 mm dia	100 M	433.61	63.63
3415-16	g)	350 mm dia	100 M	619.92	90.97
3417-18	h)	400 mm dia	100 M	721.36	105.85
3419-20	i)	450 mm dia	100 M	961.82	141.14
3421-22	j)	600 mm, 700 mm, 750 mm dia x 800 mm dia.	100 M	1058	155.25

**C) BY MANUAL LABOR INCLUDING LOADING, UNLOADING AND STACKING OF LEAD LESS THEN 0.50 KM.**

Item No.		Materials	Unit	Cost of carriage including loading unloading and stacking for first 50 metres	Cost for additional 50m or part thereof beyond 1st 50m upto 0.5km (Y)
		<b>Asbestos Cement pipes</b>			
3423-24	a)	50 MM dia	100 M	15.77	2.31
3424-25	b)	80 MM dia	100 M	43.36	6.36
3426-27	c)	100 Mm dia	100 M	61.94	9.09
3428- 29	d)	150 MM dia	100 M	86.72	12.73

Remarks: The length of SW pipes will be measured excluding of the internal depth of sockets.

## ADDENDUM I

Sr. No.	Description	Unit	Rate
7158	<p><b>Single Colour Foam Core FRP (Fiber Reinforced Polymer) Door Shutter</b></p> <p>Manufacture, Supply and Installation (including accessories as mentioned below) of EPEE or equivalent Goan make FRP (Fiber Reinforced Polymer) door shutter of specified thickness as per options below by using tray system with seasoned hard wood, moisture less than 17%, wood styles for Top rail and lock rails. FRP (Fiber Reinforced Polymer) laminate made up of 450 grams per sq.mts (gsm) chop strand matt and unsaturated polyester resin with viscosity range of 400/450 centipoises per second (cps) . The core of shutter will be filled as specified (Expanded Polystyrene Foam / Polyurethane Foam (EPS/PU) Foam). The shutter to be of single colour &amp; water proof as well as mild acid / alkali resistant manufactured using RV TIFAC (R V Engineering College, Bangalore &amp; Technology Information Forecasting &amp; Assessment Council) technology in line with IS 13034 1990 test Standard in an ISO 9001 – 2008 certified factory.</p> <p><b><u>Accessories:</u></b></p> <p>i) S. S. Hinges 4” - 3 Nos                      ii) S. S. Latch - 1 No                      iii) Tower Bolt 5” - 2 Nos                      iv) Handle 5” - 2 Nos</p> <p>Shutter Thickness : a) 30mm                      : b) 35mm                      : c) 40mm</p> <p>Note: For 35 &amp; 40mm thickness shutters, only frames of 5 x 2 ½ Cross section frames to be used.</p>	<p style="text-align: right;">sqm sqm sqm</p>	<p>2850.00 3040.00 3210.00</p>



Sr. No.	Description	Unit	Rate
7160	<p><b>Standard Wood Core Door Shutter with Single Colour</b></p> <p>Manufacture, Supply and Installation (including accessories as mentioned below) of EPEE or equivalent Goan make FRP (Fiber Reinforced Polymer) door shutter of specified thickness as per options below by using tray system with seasoned hard wood, moisture less than 17%, wood styles for Top rail and lock rails. FRP (Fiber Reinforced Polymer) laminate made up of 450 grams per sq.mts (gsm) chop strand matt and unsaturated polyester resin with viscosity range of 400/450 centipoises per second (cps).The core of Shutter will be filled with MR2<sup>nd</sup> grade Block Board. The shutter to be water proof as well as mild acid / alkali resistant manufactured using RV TIFAC (R V Engineering College, Bangalore &amp; Technology Information Forecasting &amp; Assessment Council) technology in line with IS 13034 1990 test Standard in an ISO 9001 – 2008 certified factory.</p> <p><b><u>Accessories:</u></b></p> <p>i) S. S. Hinges 4” - 3 Nos  ii) S. S. Latch - 1 No  iii) Tower Bolt 5” - 2 Nos  iv) Handle 5” - 2 Nos</p> <p>Shutter Thickness : a) 32mm  : b) 35mm  : c) 40mm</p>	sqm sqm sqm	3620.00 3978.00 4170.00



	Note: For 35 & 40mm thickness shutters, only frames of 5 x 2 ½ Cross section frames to be used.		
Sr. No.	Description	Unit	Rate
7161	<p><b>Wood Finish Wood Core FRP (Fiber Reinforced Polymer) Door Shutter</b></p> <p>Manufacture, Supply and Installation (including accessories as mentioned below) of EPEE or equivalent Goan make FRP (Fiber Reinforced Polymer) door shutter of specified thickness as per options below by using tray system with seasoned hard wood, moisture less than 17%, wooden styles for Top rail and lock rails. FRP (Fiber Reinforced Polymer) laminate made up of 450 grams per sq.mts (gsm) chop strand matt and unsaturated polyester resin with viscosity range of 400/450 centipoises per second (cps) and printed matt having wooden textures used along with UV Resistant resin to give the clear texture on the door. The core of shutter will be filled with MR 2<sup>nd</sup> grade Block Board. The Shutter to be water proof as well as mild acid / alkali resistant manufactured using RV TIFAC (R V Engineering College, Bangalore &amp; Technology Information Forecasting &amp; Assessment Council) technology in line with IS 13034 1990 test Standard in an ISO 9001 – 2008 certified factory.</p> <p><b><u>Accessories:</u></b></p> <p>i) S. S. Hinges 4” - 3 Nos  ii) S. S. Latch - 1 No  iii) Tower Bolt 5” - 2 Nos  iv) Handle 5” - 2 Nos</p> <p>Shutter Thickness : a) 32mm  : b) 35mm</p>	sqm sqm	4070.00 4420.00

	: c) 40mm	sqm	4620.00
<p>Note: For 35 &amp; 40mm thickness shutters, only frames of 5 x 2 ½ Cross section frames to be used.</p>			

Sr. No.	Description	Unit	Rate
7162	<p><b>FRP (Fiber Reinforced Polymer) Frames</b></p> <p>Manufacture, Supply and Installation (with anchor fastener) of EPEE or equivalent Goan make FRP (Fiber Reinforced Polymer) Frame of cross section as per options below with right angle joint and FRP (Fiber Reinforced Polymer) laminate made from 450 grams per sq.mts (gsm) chop strand glass fiber (matt) and unsaturated polyester resin with viscosity range of 400/450 centipoises per second (cps). The core of frame would be filled with seasoned wood as infill material. The slot of frame for door resting will be of suitable width so as to take specified thickness door.. The frame will be water proof as well as mild acid/ alkali resistant manufactured in an ISO 9001- 2008 certified company.</p> <p>Specified Cross Section : a) 3" x 2" b) 4" x 2" c) 4" x 2 ½ " d) 5" x 2 ½ "</p>	           m m m m	           515.00 550.00 585.00 660.00
7163	<p><b>FRP (Fiber Reinforced Polymer) Frames with Wood Finish</b></p> <p>Manufacture, Supply and Installation (with anchor fastener) of EPEE or equivalent Goan make FRP (Fiber Reinforced Polymer) Frame of</p>		

	<p>cross section as per options below with right angle joint and FRP (Fiber Reinforced Polymer) laminate made from 450 grams per sq.mts (gsm) chop strand glass fiber (matt) and unsaturated polyester resin with viscosity range of 400/450 centipoises per second (cps). The core of frame would be filled with seasoned wood as infill material. The slot of frame for door resting will be of suitable width so as to take specified thickness door. The frame will be water proof as well as mild acid/ alkali resistant manufactured in an ISO 9001- 2008 certified company.</p> <p>Specified Cross Section : a) 3" x 2"  b) 4" x 2"  c) 4" x 2 ½ "  d) 5" x 2 ½ "</p>	<p>m  m  m  m</p>	<p>585.00  625.00  660.00  740.00</p>
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<b>ADHESIVES</b>			
<b>Sr. No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
18046	<p><b>Long open time epoxy bonding agent for bonding old concrete to new concrete</b></p> <p>Providing and applying structural grade bonding agent CONCRETSIVE 1414 of BASF make or equivalent, a two component, solvent less epoxy resin based. It shall be formulated to meet the requirement of ASTM C881 Type 2, Grade 2, Class B &amp; C. The Bonding agent shall exhibit minimum open time of 6 hours and shall exceed the tensile strength of concrete in terms of its adhesive bond strength. This epoxy system on mixing yields an adhesive for internal or external bonding of renderings, granolithic toppings, and new concrete to old concrete. Item is inclusive of all tools, plant, labour, materials including necessary scaffolding, etc complete.</p>	sqm	498.00
18047	<p><b>Acrylic bonding agent for bonding repair mortar</b></p> <p>Providing and applying on a well prepared surface polymer bonding agent RHEOMIX 131 of BASF make or equivalent. The product shall have minimum solids of 40%. The polymer shall be capable of being used as bonding agent and shall have pull-off bond strength not less than 1 MPa. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	sqm	427.00
<b>COATINGS</b>			
18048	<p><b>High build, Crack-bridging, Elastomeric, protective and waterproof coating for Concrete &amp; Masonry specially for concrete surfaces of bridges</b></p> <p>Providing and applying on a well prepared vertical surface Masterseal 300H of BASF make or equivalent which is single component, high performance, acrylic resin based coating for long term protection of concrete &amp; masonry from aggressive atmospheric gases such as, carbon dioxide, sulphur dioxide and chloride ions. The product shall be applied in minimum two coats to achieve total DFT of 300 Microns. The product must be crack-bridging high elongation type with elongation at break, exceeding 300% &amp; tensile strength exceeding 2.5 MPa. The system shall exhibit excellent bond strength with the substrate at least exceeding 1.5 MPa, when tested as per ASTM D 4541. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	sqm	493.00
18049	<p><b>Pitch extended epoxy coating to protect marine and waste water handling structures coal tar epoxy protection coating in splash zone, sewage treatment plants</b></p>	sqm	360.00

Sr. No.	Description	Unit	Rate
	<p>Providing and applying on a well prepared concrete surface Masterseal SP120 of BASF make or equivalent which is high build, pitch extended epoxy , a 100% solids, solvent free, tough abrasion resistant protective coating. The product shall exhibit excellent bond strength with the substrate at least exceeding 2.5 MPa, when tested as per ASTM D4541. The product shall be formulated to have high build thickness exceeding 150 microns per coat on average and shall be applied to achieve overall thickness of 300 microns in two coats. The product shall be formulated to resist exposure to accelerated weathering test as per ASTM D4587 and shall not exhibit any flaking or blistering. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>		
18050	<p><b>Corrosion inhibitor treatment specially for splash zone of bridge,jetty concrete surfaces</b>  Providing and applying on a well prepared surface Protectosil CIT of BASF make or equivalent penetrating deeply into concrete and providing organofunctional molecules to inhibit the electrochemical corrosion process between the rebar and the chloride ions, oxygen and moisture.The product shall be applied at an average rate of 600 ml/m2 in two to three coats The product shall exhibit excellent depth of penetration and shall react with the concrete substrate and form a permanent chemical bond. The product shall have measurable reduction in the corrosion current of concrete after 28 days of application at site. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	sqm	2540.00
18051	<p><b>Deep penetrating and reactive water repellent coating for protection heritage structure surfaces</b>  Providing and applying on a well prepared vertical /Horizontal surface Protectosil BHN of BASF make or equivalent which is solvent free liquid based on a monomeric alkylalkoxysilane. The amount to be applied depends to a large extent on how absorbent the substrate is. In practice, it has to be determined by a trial impregnation. The product shall be based on pure silane formulation, and free of siloxane and solvents.The material shall be mixed and applied fully in accordance with the manufacturer's instructions. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	sqm	688.00
	<b>GROUTS</b>		
18052	<b>Low viscosity epoxy resin with long pot life for crack injection for structural repairs</b>	kg	1117.00

Sr. No.	Description	Unit	Rate
	<p>Providing and Supplying Concessive 1315 of 'BASF' make or equivalent which is two-component epoxy injection resin, low viscosity resin system having viscosity less than 350 cps at ambient temperatures. The injection resin shall be high strength in excess of 55 MPa at 1 day &amp; 65 MPa at 7 days. The product shall exceed 55 MPa in flexural strength at 7 days and shall exceed 15 MPa in slant sheer bond strength. The product shall have minimum pot life of 30 minutes at ambient temperatures. The injection resin shall comply with ASTM C881, Type 1 &amp; 4, Grade 1, Class B &amp; C. The injection resin must have pass rating for shrinkage test as per ASTM C881 and shall be impermeable.. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>		
18053	<p><b>Rapid curing flowable epoxy grout with high early strength under base plates</b>  Providing and Supplying Masterflow 400 of 'BASF' make or equivalent which is rapid-curing, high flow, filler-extended epoxy resin grout. The grout shall exhibit high early strengths by exceeding compressive strength of 75 MPa at 1 day and 100 MPa at 7 days; shall exceed flexure strength of 25 MPa at 7 days. The formulation shall be of 100% solids and free of solvents. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	l	528.00
18054	<p><b>Ultra-high strength, high-precision, dual shrinkage compensated, free flow cementitious grout for machine , column base plates</b>  Providing and Supplying Masterflow 928T of BASF make or equivalent approved which is dual shrinkage-compensated, cementitious grout shall be hydraulic-cement based free-flow, high strength grout that complies with ASTM C1107. The grout shall have compressive strength minimum of 35 MPa at 1 day and 75 MPa at 28 days; flexure strength minimum of 9 MPa at 28 days. The grout must exhibit positive volumetric expansion in plastic stage as well as hardening stage. Grout must be flowable at 0.15 w/c ratio and shall have fresh wet density in excess of 2200 Kg/m³. The grout must be accredited by reputed testing institute for dynamic load resistance test of 2 million cycles with no sign of cracking or strength loss. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, .tools and plant etc. complete</p>	l	129.00
18055	<p><b>Pure epoxy resin based anchoring mortar for anchoring of rebars</b></p>	l	7060.00

Sr. No.	Description	Unit	Rate
	<p>Providing and Supplying Masterflow 935 of 'BASF' make or equivalent which is a two-component, thixotropic, pure epoxy resin based chemical anchoring mortar. The product is specially designed for applications where heavy loads under critical conditions are to be fixed in concrete. Both components of Masterflow® 935, packed in a single cartridge with separate compartments, are correctly mixed in the mixing nozzle during application. The product should be styrene free formulation and shall have very low shrinkage, even on big diameters. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of drilling of requisite holes in concrete , all labour, materials, tools and plant etc. complete.</p>		
<b>REPAIRS</b>			
18056	<p><b>High strength, dual-shrinkage compensated, micro-concrete for concrete repairs</b>            Providing and laying EMACO S66 T of BASF make or equivalent which is dual shrinkage-compensated, cementitious micro-concrete, high strength, high flow, single component cementitious formulation. The repair micro-concrete shall have compressive strength minimum of 55 MPa at 7 day and 65 MPa at 28 days. The repair mortar shall not require polymer bonding agent as primer. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	l	121.00
18057	<p><b>High strength, fibre reinforced, thixotropic repair mortar</b>            Providing and applying on a well prepared vertical surface Emaco S88 CT of BASF make or equivalent which is dual shrinkage - compensated, cementitious patch repair mortar, high strength single component mortar modified with fibres. The repair mortar shall have compressive strength minimum of 20 MPa at 1 day and 70 MPa at 28 days. The repair mortar shall not require polymer bonding agent as primer and shall be thixotropic consistency, capable of applying 50mm thick in single layer. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	l	146.00
18058	<p><b>One component, anti-corrosion primer for reinforcement</b></p>	l	336.00

Sr. No.	Description	Unit	Rate
	<p>Providing and applying on a well prepared vertical surface Thorostructure primer of BASF make or equivalent which is anti-corrosion primer for steel reinforcement shall be a single component polymer-modified, cement-based compound. The primer shall be formulated to provide dual protection of a polymeric barrier and an integral corrosion-inhibiting system. The primer shall exhibit quick drying within 10 minutes and shall have adhesive bond strength greater than 5 Kg/cm<sup>2</sup> when tested as per ASTM D4541. The product shall exhibit good abrasion resistance by maintaining less than 60 mg/1000 cycle wear loss when subjected to ASTM D4060, CS 17 wheel on Taber abrasion machine. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>		
	<b>STRUCTURAL RETROFITTING</b>		
18059	<p><b>Mbrace Glass and Carbon fibre sheets for structural retrofitting</b>  Providing and applying on a well prepared primed surface MBrace Fibre system of BASF make or equivalent as a externally bonded fibre reinforcement enveloped in MBrace saturant resin. Primer used shall be Mbrace primer or equivalent . Primer is the concrete bonding adhesive for use with the fiber Composite Strengthening System. It is a 100% solids low viscosity epoxy resin able to cure in the presence of moisture and at temperatures as low as 2°C. When applied to sound concrete PRIMER gives high tensile bond strength to the fiber COMPOSITE STRENGTHENING SYSTEM. MBrace Saturant resin or equivalent is the easy-to-apply, 100% solids material that permits adhesion of a lightweight sheet, within the fiber Composite Strengthening System. When cured with the tow sheet, Saturant resin produces a high performance composite system for use in external structural repair or upgrade applications. Concrete 2200 putty or equivalent shall be used for the concrete smoothing for use with the fiber Composite Strengthening System. It is 100% solid, non-sag paste epoxy resin material.</p> <p>All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>		
a)	<p><b>Mbrace glass fiber ( Mbrace G sheet EU 900 @900 GSM(Glass Fibre Unidirectional))</b>  The product shall have Modulus of elasticity of 73KN/mm<sup>2</sup> and Tensile strength at break of 3400N/mm<sup>2</sup>. and Ultimate strain of 4.5 %</p>	sqm	3272.00
b)	<p><b>Mbrace carbon fiber ( Mbrace CF 240/200 - Unidirectional Carbon Fiber Reinforcement System High Tensile CF) or equivalent</b>  .The product shall have Modulus of elasticity of 73 KN/mm<sup>2</sup> and Tensile strength at break of 3800N/mm<sup>2</sup>. and Ultimate strain of 1.55 %</p>	sqm	5209.00



Sr. No.	Description	Unit	Rate
c)	<p><b>Mbrace carbon fiber ( Mbrace CF 240/400 - Unidirectional Carbon Fiber Reinforcement System High Tensile CF) or equivalent</b>            .The product shall have Modulus of elasticity of 73 KN/mm2 and Tensile strength at break of 3800N/mm2. and Ultimate strain of 1.55 %</p>	sqm	6028.00
18060	<p><b>Structural retrofitting with Carbon Mbrace Laminate</b>            Providing and applying on a well prepared primed surface Mbrace carbon fiber laminate system BASF make or equivalent as a externally bonded fibre reinforcement with Mbrace adhesive of BASF make or equivalent. Primer used shall be Mbrace primer or equivalent . Primer is the concrete bonding adhesive for use with the fiber Composite Strengthening System. It is a 100% solids low viscosity epoxy resin able to cure in the presence of moisture and at temperatures as low as 2°C. When applied to sound concrete PRIMER gives high tensile bond strength to the fiber COMPOSITE STRENGTHENING SYSTEM. Mbrace Laminate Adhesive is a two component solventless epoxy system which when mixed yields a non slumping, fast curing adhesive. concrete 2000 putty or equivalent shall be used for the concrete smoothing for use with the fiber Composite Strengthening System. It is 100% solid, non-sag paste epoxy resin material.</p> <p>All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p> <p><b>Mbrace carbon laminate grade 165/2500 -50x1.4</b>            .The product shall have Modulus of elasticity of 165KN/mm2 and Tensile strength at break of 2500N/mm2. and Ultimate strain of 1.3 %. Laminate should essentially have peel ply system on both the sides and surface of the laminate shall be rough for good bonding with the adhesive.</p>	m	3441.00
<b>WATERPROOFING</b>			
18061	<b>Spray applied fast curing, heat resistant polyurethane seamless waterproofing membrane</b>	sqm	3146.00

Sr. No.	Description	Unit	Rate
	<p>Providing and applying on a well prepared horizontal surface Coniroof 2111 of BASF make or equivalent Supply and Installation of BBA Approved spray applied waterproofing membrane system, a multi-layered system comprising, primer, waterproofing membrane. The product shall have the green label certificate. The primer shall be CONCRESSIVE 2525 or equivalent, a two component, solvent free epoxy resin based. The fast-drying primer shall be CONCRESSIVE 2525 or equivalent, a two component, solvent free epoxy resin based. It shall be formulated to meet the requirements of non tainting for usage in food storage and potable grade structures. It shall be fully compatible with CONCRESSIVE Range of repair mortars. Dried, graded MASTERTOP SRA no. 3 sand or equivalent is immediately and evenly spread over the entire wet surface by hand or mechanically. When sufficiently cured the surface is vacuumed to remove any loose sand. Waterproofing Membrane: The waterproofing membrane shall be CONIPUR M 800 or equivalent, a solvent free two component spray applied system. Ladders supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p> <p>It is highly reactive and can only be applied by special, two component spray equipment. UV Top Coat: The top sealer for use on exposed areas shall be Conipur TC459 or equivalent based on aliphatic polyurethane, pigmented, single component; moisture curing, UV and weather resistant. Conipur TC459 or equivalent should be stirred well and applied evenly by spraying. The rates are inclusive of labor, tools and tackles. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>		
18062	<p><b>An elastomeric, cementitious, waterproof coating for concrete and masonry</b></p> <p>Providing and applying on a well prepared vertical surface Masterseal 550EL of BASF make or equivalent elastomeric flexible, two component polymers modified cementitious composite system that requires no addition of water at the site. The product shall be applied in minimum two coats to achieve total DFT of 1mm. The material shall be mixed and applied fully in accordance with the manufacturer's instructions. The product shall exhibit at least 40% elongation at ambient &amp; 30% elongation in under water condition with tensile strength greater then 20 Kg/cm2. The product shall resist 1.5 bars pressure when tested as per DIN 1048 at 2mm DFT. When applied at 2mm DFT, elastomeric coating shall be able to bridge crack up to 0.5mm width. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	sqm	317.00
18063	<p><b>Synthetic membrane of plasticized PVC in Fire resistant version for basement</b></p>	sqm	1576.00

Sr. No.	Description	Unit	Rate
	Providing and laying on a well prepared horizontal / vertical surface 2 mm Masterpren BG FR of BASF make or equivalent which is a synthetic membrane made of plasticised PVC of fire resistant manufactured by twin coloured co-extrusion method.The product shall have a Puncture resistance of atleast 1100 mm as per DIN 16726-5.12.All scaffolding, ladders, supporting materials , fuse welding etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete. Rate shall be paid on net area covered.		
18064	<p><b>Synthetic membrane of masterpren TPE for roof</b></p> <p>Providing and laying on a well prepared roof surface 1.2 mm Masterpren TPE of BASF make or equivalent which is modified polyolefin, in two-colour version (sand grey/black), obtained by co-extrusion, which allows it to be produced in a single layer a liner with different physical-chemical properties on the two sides. It has a polyester mesh reinforcement.The product shall have a Tear Resistance of 300 N as per DIN 53363.All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant ,fuse welding etc. complete. Rate shall be paid on net area covered.</p>	sqm	1822.00
18065	<p><b>Liquid, cold-applied elastomeric waterproofing membrane system</b></p> <p>Providing and applying on a well prepared vertical surface Sonoshield HLM 5000 of BASF make or equivalent one-component,moisture-curing, bitumen-modified polyurethane elastomeric waterproofing membrane for exterior below-grade or between-slab applications. The product shall be applied in minimum two coats to achieve total DFT of 1.25 mm. The materials shall be mixed and applied fully in accordance with the manufacturer's instructions. This material has got very high Elongation Almost &gt;600%. All scaffolding, ladders, supporting materials etc. complete. Rates shall be inclusive of all labour, materials, tools and plant etc. complete.</p>	sqm	962.00
18066	Providing fusion bonded epoxy to reinforcing bars as per IS:13620-1993 specification for a thickness of 175 +- microns including testing of coating at plant, extra cost f careful handling using PVC coating, binding wires instead of G.I. wires, touching up the material supplied, repair work etc. complete as per detailed specifications MORT&H section 1600 etc. complete and as per the Directionof Engineer in charge.	t	15285.00

CORRIGENDUM to GSR - 2011 Roads

The following corrections are made in the various items of Goa Schedule of Rates- 2011 Roads								
As per the existing GSR 2011					To be read as			
Sr. No.	Item No.	Description of item	Unit	Rate	Item No.	Description of item	Unit	Rate
1	2	3	4	5	6	7	8	9
1	6101	Pre-cast cement concrete kerb-stones(factory made) of M-20 with 20 mm nominal size granitic/basaltic aggregate properly consolidated by mechanical plat-form and vibrators with smooth finish including fixing at site complete as per specification.			6101	Pre-cast cement concrete kerb-stones(factory made) of M-20 with 20 mm nominal size granitic/basaltic aggregate properly consolidated by mechanical plat-form and vibrators with smooth finish including fixing at site complete as per specification.		
	c	Size 60 cm L x45 cm H x 15 cm T	rm	<b>541.00</b>	c	Size 60 cm L x45 cm H x 15 cm T	rm	<b>781.00</b>
	d	Size 60 cm L x30 cm H x 10cm T	rm	<b>406.00</b>	d	Size 60 cm L x30 cm H x 10cm T	rm	<b>513.00</b>
2		Chapter III (Transportation and carriage of Materials ) (A) By tipper truck including loading, unloading and stacking.. ..... <b>Beyond 20 up to 30 km per km.</b>				Chapter III (Transportation and carriage of Materials ) (A) By tipper truck including loading, unloading and stacking.. ..... <b>Beyond 20 km per additional km.</b>		
3		Chapter III (Transportation and carriage of Materials ) (B) By Mechanical transport including loading, unloading and stacking.. ..... <b>Beyond 20 up to 30 km per km.</b>				Chapter III (Transportation and carriage of Materials ) (B) By Mechanical transport including loading, unloading and stacking.. ..... <b>Beyond 20 km per additional km.</b>		