Delhi Schedule of Rates (DSR – 2016) of New Technologies by CPWD

New Technologies included in CPWD Schedule of Rates (DSR 2016)

Sl No.	Name of New Technology	SOR Item No.
1.	Light Gauge Steel Framed Structures (LGSFS)	26.41
2.	External and internal wall systems on LGSFS	26.42 & 26.43
3.	Expanded Polystyrene Core (EPS core) panels	26.46 & 26.47
4.	Monolithic Concrete Construction by using Aluminium Formwork	26.48
5.	Prefab Technology	5.50 to 5.57
6.	EPS cement sandwich light weight solid core panels	26.49
7.	Glass Fibre Reinforced Gypsum (GFRG) Panel System	26.51 to 26.61
8.	Speed Floor System	26.62 to 26.64
9.	Factory Made Fast Track Modular Building System	26.65 to 26.66
10.	Non Asbestos fibre reinforced aerated cement sandwich solid core panels	26.50
11.	Bamboo Technology	26.1 to 26.6 & 26.6A to 26.6E

Code No.	Description	Unit	Rate ₹
	Note: 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.		
	26.38.1 25mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	498.45
	26.38.2 50mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	831.30
	26.38.3 75mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	1217.60
26.39	Providing and inserting 12mm dia galvanised steel injection nipple in honey comb area and along crack line including drilling of holes of required diametre (20mm to 30mm) up to depth from 30mm to 80mm at required spacing and making the hole & crack dust free by blowing compressed air, sealing the distance between injection nipple with adhesive chemical of approved make and allow it to cure complete as per direction of Engineer-In-Charge.	each	147.50
26.40	Providing and fixing hard drawn steel wire fabric of size 75 x25 mm mesh or other suitable size wire mesh to be fixed & firmly anchored to the concrete surface by means of "L" shaped mild steel shear key welded with existing reinforcement including the cost of materials, labour, tool & plants as approved by engineer-in-charge.	sqm	601.60
	NEW TECHNOLOGY ITEMS		
26.41	Designing, providing, installing and fixing factory finished custom designed cold form Light Gauge Steel Framed super structure comprising of steel wall panel, trusses, purlins etc manufactured out of minimum 0.75 mm thick steel sheet as per design requirements. The steel sheet shall be galvanized (AZ-150 gms Aluminium Zinc Alloy coated steel having minimum yield strength 300- 550 Mpa) conforming to AISI specifications and IBC 2009 for cold formed steel framing and construction and also as per IS: 875-1987, ISO 800-1984 and IS: 801- 1975. The wind load shall be as per provisions of IS 875 (part -III). LGSFS frame shall be designed as per IS: 801 using commercially available software such as Frame CAD Pro-11.7/ STAAD PRO-V8i/ArchitekV2.5.16/ Revit architecture-2011 or equivalent. Proper usage of Connection Accessories like Heavy Duty Tension Ties, Light Duty Hold-ons, Twist Straps (to connect truss with wall frames), Strong Tie, Tie Rod, H-Brackets, Boxing Sections, L-Shaped Angles for better structural stability. The framing section shall be cold form C-type having minimum web depth 89 mm x 39mm flange x 11mm lip in required length as per structural design requirement duly punched with dimple/slot at required locations as per approved drawings. The slots will be along centre line of webs and shall be spaced minimum 250mm away from both ends of the member. The frame can be supplied in panelized or knock down condition in specific dimensions and		

Code No.	Description	Unit	Rate ₹
	fastened with screws extending through the steel beyond by minimum of three exposed threads. All self drilling tapping screws for joining the members shall have a Type II coating in accordance with ASTM B633(13) or equivalent corrosion protection of gauge 10 & 12, TPI 16 & 8 of length 20mm. The frames shall be fixed to RCC slab or Tie beam over Neoprene rubber using self expanding carbon steel anchor bolt of dia as per approved drawings. design subject to minimum 12mm diameter and 121mm length conforming to AISI 304 and 316 at 500mm c/c with minimum embedment of 100mm in RCC (RCC to be paid separately) and located not more than 300mm from corners or termination of bottom tracks complete in all respects. The item also includes the submission of stability reports duly examined and issued by any NIT/IIT.The rate includes the concept design, detailed design, fabrication of sections, transportation, installation and all required fixing arrangement at site as described above.	Kg	174.10
26.42	Providing and fixing of external wall system on Light gauge steel frame work with . Outer face having 6mm thick heavy duty fiber cement board fixed on 9mm thick heavy duty fiber cement board confirming to IS 14862:2000, category IV type A (High pressure steam cured) as per standard sizes fixed with self-drilling / taping screws / fasteners @ 60cm c/c of approved make. A grove of 2 mm to 3mm shall be maintained and groves shall be sealed with silicon based sealant. The board shall be fixed in a staggered pattern.Screws shall be of counter sunk rib head of 1.60mm to 4 mm thick of 8 to 10 gauge of length varying from 25 to 45 mm and internal face 12.5mm thick gypsum plaster board fixed on 8mm thick fiber cement board confirming to IS 14862:2000 of category III type B (High pressure steam cured) as per standard sizes fixed with self-drilling / taping screws / fasteners @ 60cm c/c of approved make, proper taping and jointing to be done using fiber mesh tape and epoxy and acrylic based jointing compound for seamless finish.(cost of frame work to be paid for separately).	Sqm	2783.65
26.43	Providing and fixing internal wall panels on Light gauge steel frame work with 12.5mm thick gypsum plaster board conforming IS 2095:2011 fixed on 8mm thick fiber cement board conforming to IS 14862:2000 of category III type B (High pressure steam cured) as per standard sizes fixed with self-drilling / taping screws / fasteners @ 60cm c/c of approved make, Screws shall be of counter sunk rib head of 1.60mm to 4 mm thick of 8 to 10 gauge of length varying from 25 to 45 mm. Proper taping and jointing to be done using fiber mesh tape and epoxy and acrylic based jointing compound for seamless finish.(cost of frame work to be paid for separately)	Sqm	1738.45
26.44	Providing and fixing in all exterior face panels breathable vapour barrier underneath the cement fiber board as per National Building Code 2009 complete as per direction of Engineer-in-charge.	Sqm	238.05
26.45	Supplying and installation of moisture resistant/fire resistant 6 mm thick Heavy duty fiber cement board (High pressure steam cured) conforming to IS 14862:2000 of category III type B as per standard sizes fixed with self-drilling / taping screws. Screws shall be of counter sunk rib head of 1.60mm to 4 mm thick of 8 to 10 gauge of length varying from 25 to 45 mm.	Sqm	869.15

Code No.	Description	Unit	Rate ₹
26.46	Providing and fixing in position, 200 mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shortcrete materials on outer faces. The fabric mesh shall be made of 3 mm dia G.I. wire mesh with 50 mm pitch in both the directions and on both faces of the wall, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50-70 degree) . The EPS core shall consist of 100 mm thick EPS of density not less than 20 kg/ per cum. Both the outer faces of the panel shall be finished by applying the layer of 50 mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size upto 6 mm)} À with the help of shotcreting/guniting equipment etc at a pressure not less than 1 bar (100Kn/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	sqm	3246.15
26.47	Providing and fixing in position, 230mm thick factory made Expanded Polystyrene Core (EPS Core) roof/floor panels made of 3 mm dia G.I. wire mesh with 50 mm pitch in both the directions and on both faces of panel, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50-70 degree). The EPS core shall consist of 100 mm thick EPS of density not less than 20kg/ per cum. The bottom side of the panel shall be finished by applying a layer of 60-65 mm thick cement mortar 1: 3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size upto 6 mm)} À with the help of shotcreting equipment etc at a pressure of not less than 1 bar (100Kn/m2) and surface finished with trowel. The top face of the panel shall be provided and finished by applying 70-75 mm thick layer of cement concrete 1:1.5: 3 (1 cement :1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size). Fixing operations of roof/floor panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	sqm	3436.35
26.48	Providing and fixing of costomized 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, 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-in-charge.(Cost of RCC work shall be paid seperately)	sqm	149.45

Directorate, CPWD
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This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 20 /07/2017

OFFICE MEMORANDUM

Sub:- Correction slip no.6 Delhi Schedule of Rates 2016.

The following new item of prefab technology to be included in DSR-2016 after item No 5.49 of SH:5 (Reinforced Cement Concrete).

Code No	Description			Unit	Rate (Rs)
5.50	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 shuttels of standard make & layed on bed with the help of extruder/Slipformer, finishing, curing and also provision of steam curing. Cutting, 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. (Cost of strands should be paid separately). **Note: Excess/less cement over the specified cement content used as per design mix is payable/recoverable separately)**				
	5.50.1	Concrete Grade M-40 (Cement content 400kg)			
		5.50.1.1	100 mm thick hollow core slab	metre	878.65
		5.50.1.2	120 mm thick hollow core slab	metre	1032.55
		5.50.1.3	150 mm thick hollow core slab	metre	1263.45
		5.50.1.4	200 mm thick hollow core slab	metre	1546.55
		5.50.1.5	250 mm thick hollow core slab	metre	1905.95
		5.50.1.6	300 mm thick hollow core slab	metre	2265.30
		5.50.1.7	350 mm thick hollow core slab	metre	2624.70
		5.50.1.8	400 mm thick hollow core slab	metre	2984.10
	5.50.2	Extra for using M-50 (Cement content 425 kg) instead of M-40			
		5.50.2.1	100mm thick hollow core slab	metre	17.10
		5.50.2.2	120mm thick hollow core slab	metre	20.55
		5.50.2.3	150mm thick hollow core slab	metre	25.70
		5.50.2.4	200mm thick hollow core slab	metre	31.95
		5.50.2.5	250mm thick hollow core slab	metre	39.95
		5.50.2.6	300mm thick hollow core slab	metre	47.95
		5.50.2.7	350mm thick hollow core slab	metre	55.95
		5.50.2.8	400mm thick hollow core slab	metre	63.95
	5.50.3	Extra for using M-60 (Cement content 440 kg) instead of M-40			
		5.50.3.1	100mm thick hollow core slab	metre	27.40
		5.50.3.2	120mm thick hollow core slab	metre	32.90

EE(TAS-II).

Code No	Description			Unit	Rate (Rs)
		5.50.3.3	150mm thick hollow core slab	metre	41.10
		5.50.3.4	200mm thick hollow core slab	metre	51.15
		5.50.3.5	250mm thick hollow core slab	metre	63.95
		5.50.3.6	300mm thick hollow core slab	metre	76.70
		5.50.3.7	350mm thick hollow core slab	metre	89.50
		5.50.3.8	400mm thick hollow core slab	metre	102.30
5.51	Fabrication and manufacturing of 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, Façade 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). **Note:** Excess/less cement over the specified cement content used as per design mix is payable/recoverable separately)				
	5.51.1		Concrete grade M-35 (Cement content 370 kgs)	cum	13765.10
	5.51.2		Extra for using M-40 (Cement content 400 kg) instead of M-35	cum	228.30
	5.51.3		Extra for using M-50 (Cement content 425 kg) instead of M-35	cum	418.55
	5.51.4		Extra for using M-60 (Cement content 440 kg) instead of M-35	cum	532.75
5.52	Providing & laying in position Prestressing steel strands (low relaxation) on hollow core bed by using mechanical pulling arrangement like Rabbit/ Bed master including all accessories for Stressing & destressing operations as per approved make conforming to IS1343 & grade FY-1860 etc, complete as per drawings and direction of Engineer -in-charge.			kg	130.75
5.53	Transportation of Precast Elements by flat bed Trailor (Double / Triple axle 40ft Length with proper accessories like A frame etc) from factory, including the cost of loading, unloading & stacking at site with the help of required capacity cranes.				
	5.53.1		lead with in 15 km	MT	389.85
	5.53.2		Add/Deduct over item 5.53.1 for every additional lead of 5 km	MT	73.00
5.54	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 i.e hangers. All work up to fifth floor.				

EE (TAS-TS)

Code No	Description		Unit	Rate (Rs)
	5.54.1	Prestressed hollow core slab up to 200 mm thickness	sqm	217.45
	5.54.2	Prestressed hollow core slab above 200 mm up to 400 mm thickness	sqm	367.15
	5.54.3	Solid concrete wall elements	cum	2642.60
5.55	Providing & Applying weather proof sealant on outer joints of approved make confirming to IS & directed by Engineer-in-charge.			
	5.55.1	Sealant 25mmX10mm at joints	metre	460.45
5.56	Providing & Laying of levelling sim pads required sizes (5x5cm to 10x10cm) of PVC / Rubber to adjust level of bearing surface of supporting members as per the direction of Engineer in charge.			
	5.56.1	2mm thick	each	17.55
	5.56.2	5 mm thick	each	23.40
	5.56.3	10 mm thick	each	35.00
5.57	Providing & Grouting of dowel tubes / Shear keys / Joints of precast members with M-60 grade cementitious grout (Non Shrink) of approved make by suitable means (Free flowing /pump), curing etc. Complete as per directions of Engineer-in-charge. (The payment shall be made on the basis of actual weight of approved grout injected.)			
	5.57.1	Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	65.00

20/7/17

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No. 133/SE (TAS)/CS-DSR-2016/ 141-E

Dated: 20 /07/2017

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This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 10/11/2017

OFFICE MEMORANDUM

Sub:- Correction slip no.8 Delhi Schedule of Rates 2016.

The following new items of EPS cement sandwich light weight solid core panels to be included in DSR-2016 after item No 26.48 of SH: 26 (New Technologies and Materials).

Code No	Description	Unit	Rate (Rs)
26.49	Providing and fixing in position factory made EPS cement sandwich wall/roof/floor light weight solid core panels made of core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum) adhesive, cement, sand, flyash and other bonding material in mortar state processed to form in a preset mould. The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each. Panel shall be laid on 6mm thick cement mortar (1 cement: 2 fine sand) mixed with chemical adhesive of 0.5kg per 50kg of cement or shall be preferably fixed into 'C' channel made of 1.2mm thick MS plate screwed/fastenened to the slab/column/beam etc. The panel shall fixed vertically with tongue and groove joint and horizontally locked with steel bar between each other and floors and filled with cement mortar and adhesive. Panels should be used as floor & roofing with additional structural support, steel or RCC depending upon the design. All the operation shall be completed in all respect as per drawings, Manufacturers specifications and under the overall direction of Engineer-in-Charge (Cost of all the material is included except "C channel" which will be paid separately).		
26.49.1	Non load bearing panels 50mm thick of required size	sqm	1123.30
26.49.2	Non load bearing panels 60mm thick of required size	sqm	1277.45
26.49.3	Non load bearing panels 75mm thick of required size	sqm	1561.90
26.49.4	Non load bearing panels 90mm thick of required size	sqm	1871.70
26.49.5	Non load bearing panels 100mm thick of required size	sqm	2215.00

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No. 133/SE (TAS)/CS-DSR-2016/ 263-Pt. Dated: 10/11/2017

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This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 13 /08/2018

OFFICE MEMORANDUM

Sub:- Correction slip no.13 Delhi Schedule of Rates 2016.

The following new items of GFRG items to be included in DSR-2016 item No 26.51 to 26.61 of SH: 26 (New Technologies and Materials).

Code No	Description	Unit	Rate
26.51	Supplying of standard quality GFRG panel of 124 mm thickness with modular cavities purchased from GFRG panel manufacturing plant in the country, cut to required wall sizes and floor/ roof slab sizes in correct length and height, including cutting of door, window and ventilator opening as per the cutting drawing prepared by architects /design engineers for the construction of GFRG building and loaded in stillages for transportation to the construction site. Cost of panel includes security deposits, hire charges of stillages & jaws, cost of transportation in trucks/ lorries without any damages upto 300kms including all leads and lifts from GFRG manufacturing plant to construction site and unloading at site using suitable fork lift/ crane. (Payment shall be made on the basis of area of one side of panel without reduction of opening of door/ window / ventilator). For transportation above 300kms, additional charges to be paid.	sqm	1290.05
26.52	Erection of GFRG Panels in walls in all floors using suitable crane as per instructions of Engineer-in-Charge, as per cutting drawings and structural drawings, in perfect line and plumb, above RCC plinth beam/GFRG panel below and provide necessary lateral/ slanting support to keep the wall panel in safe position, providing & tieing of Reinforcement as per structural drawings and applying a coat of water repellant coating Zycosil/equivalent or equivalent product (1 Zycosil/equivalent compound :10 water) to saturation level over RCC plinth beam to provide water proofing treatment to joint between wall panel & plinth beam as per the guide lines / instruction by the engineer in charge. (Cost of reinforcement, water proofing of walls and plinth beam/GFRG panel below joints and installation of door/ window frames before filling of concrete shall be paid separately). The rate quoted shall include making provision for laying of lintels, beams, sunshades, staircase		

EE(TAS)

Code No	Description	Unit	Rate
	Beams, lofts, plumbing work, electrical conduits and any structural insertion etc., as per the drawing and direction of the engineer in charge. The payment shall be made based on the actual exposed area (one side only) of the panel. The work shall be carried out as per the Special Conditions For Glass Fibre Reinforced Gypsum (GFRG) Structures mentioned in NIT. **Note:** 1) When cutting panel, "A" side is to be for outside or external surface of respective external wall and B side is to be for internal surface of wall. 2) Erection of panel is to be with reference to both building plan & cutting drawing by following notational mark indicated in the cutting drawing as well as notional mark written on each panel cut as per cutting drawing.	sqm	213.70
26.53	Filling of empty cavities (as shown in the structural design drawing) with quarry dust mixed with 5% cement (by volume). After initial infill of 50 mm thick with M25 concrete at base/bottom of cavities to seal off, infill wall panel cavities in 3 stages as detailed below, (i) 1st pour / infill to be limited to 0.3 to 0.50 m height from bottom of the panel. (ii) 2nd Pour/ infill: infilling shall be done only after 90 minutes interval between successive pours. The maximum height of infill shall be restricted to 1.5m height or up to the top level of door / window. (iii) 3rd pour/infill: After an interval of 90 minutes of second pour, infill or pour the balance height up to the bottom of embedded RCC tie beam. Pour enough water just required to dampen the dry mix enough to form cake form after each stage. (cost of laying M25 concrete shall be paid separately) (If any rain falls in between any stages of concrete pour, make sure to cover the panel top to prevent ingress of water or water falling into the cavities. In case of water collection over the concrete inside the panel, drill 10mm hole in GFRG panel immediately above concrete filled level to drain out water before pour/in-fill of balance concreting)	cum	2021.75
26.54	Laying of GFRG panel as roof / floor slab panel and staircase panel using suitable crane as per instructions of Engineer-in-Charge, including providing support system with 25mm x 300mm-400 mm wide plywood, as runner with proper prop below proposed micro beams including (a) Cutting of top flange of panel to 180 mm wide (leaving 25mm projection on either side) to provide RCC embedded		

EE(TAS)

Code No	Description	unit	Rate
	micro beam as per cutting drawings and structural drawings. (b) Reinforcement for micro beams and tie beams to be provided in position with proper anchorage as per structural drawings. (c) Provision for Electrical cabling, fan hooks and laying of pipes for plumbing work. (d) Concreting of Tie beam, micro beam and top of GFRG panels (50 mm thick) with M-25 cement concrete mix using coarse aggregate of size less than 20 mm including laying of 10 gauge 100x100 size weld mesh with 25 mm effective cover from the panel top.	sqm	237.30
26.55	Supplying and fixing 10 Gauge weld mesh of size 100mm x100 mm for floor/roof slab concrete screed over the micro beams as reinforcement. The weld mesh shall be fixed as per drawing.	sqm	225.90
26.56	Application of ZMB 60/equivalent solution (100 Kg ZMB 60/equivalent, 1 litre ZMB Nano Thinner, 20 litre water & 1 Litre Zycoprime/equivalent = 122 litre/kg) over already applied coat of Zycosil/equivalent & Zycoprime/equivalent solution on the top of all the RCC plinth beams by brush/spray coat before erection of GFRG over RCC plinth beams in GF. In the case of upper floors 150 mm wide on floor slab for all the external walls, bath/toilet/wet areas (3 hrs drying time) before erection of wall panel on upper floors including erection of parapet wall.	sqm	229.80
26.57	After erection of GFRG wall panels, seal all GFRG wall joints with paper tape temporarily. Water proofing treatment of vertical joints with Zycosil/equivalent water proofing Solution (1 litre of Zycosil/equivalent & 20 litres of water stirred first & 2 litres of Zycoprime/equivalent added and stirred (total 23 litres)) with 50 ml syringe till the gap and in filled concrete is completely saturated. After removing the paper seal, seal off the vertical joints with water proofing material "Grout RW/equivalent" (Sealing cost excluded.)	metre	65.30
26.58	Filling of joints between RCC plinth beam / floor slab and wall panel of external walls, toilet / bath room / wet areas walls on all floor and parapet wall over roof slab, stair case head room at the time of erection of GFRG panels with Grout RW/equivalent sealant compound after the erection of panel before the infill of concrete in panel cavities and fine finish. This applies for all horizontal and vertical joints between GFRG wall and slab panels.	metre	29.10

EE(T&S)

Code No	Description	unit	Rate
26.59	Water proofing treatment of Vertical joints (of external side and internal side) between door frame, window & ventilator frames (on all four sides) of outer wall over the Zycosil/equivalent & Zycoprime/equivalent solution already applied (before the installation of door / window / ventilator frames in position) and fine finish with Grout RW/equivalent.	metre	29.90
26.60	Water proofing treatment of RCC sunshade with Zycosil/equivalent water proofing Solution (1 litre of Zycosil/equivalent & 20 litres of water stirred first & 2 litres of Zycoprime/equivalent added and stirred (total 23 litres)) till it meets the saturation level and testing as per RILEM or by water drops test in which water drops do not absorb but drops remain or rolls.	sqm	112.10
26.61	In-filling / sealing of joint between RCC lintel cum sunshade and wall (on external side) in all floors by pushing in Grout RW/equivalent in paste form and coving 20 mm x 20 mm after applying a coat of Zycosil/equivalent & Zycoprime/equivalent solution before cement plastering of top, bottom and sides of RCC sunshade.	metre	29.90

13/8/18

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No. 133/SE (TAS)/CS-DSR-2016/ 113-E Dated: 13/08/2018

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13/8/18

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This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 13 /08/2018

OFFICE MEMORANDUM

Sub:- Correction slip no.14 Delhi Schedule of Rates 2016.

The following new items of Speed Floor System New Technology items to be included in DSR-2016 item No 26.62 to 26.64 of SH: 26 (New Technologies and Materials).

Code No	Description		Unit	Rate
26.62	Designing, Providing, installing and fixing factory finished customed design pregalvanized high tensile steel joists manufactured from G350 Z275 confirming to IS:277-1992, minimum coating of galvanizing 275 gm/sqm, minimum yield stress 35 MPa & minimum tensile strength of 380 MPa placed 1.23 metre apart to support the load of slab etc as per the design & directions of Engineer-in-Charge.		kg	133.10
26.63	Providing and fixing special adjustable lock bars of mild steel E-250 to support the temporary plywood for work between joists during construction as per design & directions of the Engineer-in-charge.		kg	14.00
26.64	Centering and shuttering with 12mm thick shuttering plywood confirming to IS 4990:2011 and removal of form at all heights. Plywood will be supported on lock bars.			
	26.64.1	Suspended floors, roofs, landings, balconies and access platform.	sqm	82.75

13/8/18
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No. 133/SE (TAS)/CS-DSR-2016/ 117-E Dated: 13 /08/2018

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13/8/18
Executive Engineer (TAS-II)

Directorate, CPWD
DG/DSR/27
NIRMAN BHAWAN, NEW DELHI – 110011.

This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 13 /08/2018

OFFICE MEMORANDUM

Sub:- Correction slip no.15 Delhi Schedule of Rates 2016.

The following new items of Factory Made Fast Track Modular Building System Technology items to be included in DSR-2016 item No 26.65 to 26.66 of SH: 26 (New Technologies and Materials).

Code No	Description	Unit	Rate
26.65	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).	sqm	1394.95
26.66	Providing and fixing in position, **130** mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shortcrete materials on outer faces. The fabric mesh shall be made of 3 mm dia **zinc coated** G.I. wire mesh with 50 mm pitch in both the directions and on both faces of the wall **and connected by GI wire of 3mm dia at alternate row by welding**. The EPS core shall consist of **60** mm thick EPS of density not less than **16** kg/ per cum. Both the outer faces of the panel shall be finished by applying the layer of **35** mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size upto 6 mm)} with the help of shotcreting/guniting equipment etc at a pressure not less than 1 bar (100KN/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	sqm	2171.30

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No. 133/SE (TAS)/CS-DSR-2016/ 115-E Dated: 13 /08/2018

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This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 02 /01/2018

OFFICE MEMORANDUM

Sub:- Correction slip no.11 Delhi Schedule of Rates 2016.

The following new items of Non asbestos fibre reinforced aerated cement sandwich wall/roof/floor light weight solid core panels to be included in DSR-2016 after item No 26.49 of SH: 26 (New Technology & Materials).

Code No	Description		Unit	Rate (Rs)
26.50	Providing and fixing in position factory made non asbestos fibre reinforced aerated cement sandwich wall/roof/floor light weight solid core panels made of light weight cement concrete core composed of OPC cement, pulverized flyash, quick lime, cotton pulp & Gypsum in mortar state mixed with aeration agent in a preset mould. The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000. These solid wall panels are installed using Galvanized iron steel tracks/C channel of 1mm thick of required sizes as recommended by manufacturer's and fixed to floor and RCC soffit in plumb to each other with steel screw/fasteners. The panel shall be fixed vertically with tongue & groove joint with cement based polymer modified jointing compound. The exposed surface finished with fibre mesh/glass fibre tape with polymer based jointing compound having superior flexibility. Panels should be used as floor & roofing with additional structural support, steel or RCC depending upon the design. All the operation shall be completed in all respect as per drawings, Manufacturers specifications and under the overall direction of Engineer-in-Charge (Cost of all the material is included except "tracks/C channel" which will be paid separately).			
	26.50.1	Non load bearing panels 50mm thick of required size (minimum 4mm thick fibre cement board)	sqm	1200.00
	26.50.2	Non load bearing panels 75mm thick of required size (minimum 5mm thick fibre cement board)	sqm	1417.75

2/1/18
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No. 133/SE (TAS)/CS-DSR-2016/05-Rev Dated: 02 /01/2018

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2/1/18
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S.N 6 BAMBOO TECHNOLOGY. 7

ITEM NO. 26.1 to 26.6 & 26.6A to 26.6E.

26.0 NEW TECHNOLOGIES AND MATERIALS

Code No.	Description	Unit	Rate ₹
26.1	Providing & fixing in position Phenol bonded Bamboowood flooring with planks of sizes 14mm thick, 1800mm length (minimum) and 130 mm wide(minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC). The flooring shall be fixed with tongue and groove interlocking system, with underlayment of 4mm thick expanded poly ethylene foam sheets having density 40kg/cum, over prepared surface with necessary quarter round planks of size 1900mm x 18mm and door reducer of size 1900mm x 44mm, wherever required. The bomboowood planks shall have minimum density of 1000 Kg/cum & minimum Hardness 1000 Kgf. with Eco friendly UV coating, all complete as per direction of Engineer in-charge.	sqm	4959.20
26.2	Providing & fixing in position Phenol bonded Bamboo wood in wall skirting with planks of sizes 14mm thick, 1900mm length (minimum) and 85mm wide(minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC). The skirting shall be fixed with SS screws & rawl plugs, over underlayment of 4mm thick, expanded poly ethylene foam sheets having 40kg cum density over prepared surface. The bomboowood planks shall have minimum density of 1000 Kg/cum & minimum Hardness 1000 Kgf. with Eco friendly UV coating, all complete as per direction of Engineer in-charge.	sqm	4769.55
26.3	Providing & fixing in position Phenol bonded Bamboo wood wall cladding at all height with planks of sizes 10mm thick, 1800mm length (minimum) and 130 mm wide (minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC), with necesasary profiled edges fixed with 40mm SS screws 5 nos in each tile to frame work made of second class teak wood of size 20x15 mm in centre of each tile and bottom and top of work height, 40x15mm placed at ends of each tile. The cladding shall be laid over backlayment of 1.00 mm thick expanded poly ethylene foam of density 40kg/cum in two layers, first layer on wall surface before fixing wooden frame and second layer on frame under cladding..The bomboowood planks shall have minimum density of 1000 Kg/cum & minimum Hardness 1000 Kgf. with Eco friendly UV coating, all complete as per direction of Engineer in-charge.	sqm	4784.75
26.4	Providing & fixing in position Phenol bonded Bamboo wood panelled or panelled and glazed shutters for doors, windows, clerestorey windows with pre-molded 30mm thick planks, in approved colours, texture & finish. It shall have 10mm wide, 25mm deep groove to fit in panels.The bamboo wood shall have minimum density of 1000 Kg/cum, minimum Hardness 1000 Kgf. All styles and rails shall have profiled interlocking system locked in place by bamboo pins, all complete as per direction of Engineer in charge. (The panelling will be paid for separately).	sqm	4918.00

Code No.	Description	Unit	Rate ₹
26.5	Providing & fixing in position Phenol bonded Bamboo wood panelling of 10mm thick, in 25 to 40 mm thick panelled or panelled & glazed shutters for doors, windows, clerestorey windows, in approved colour, texture & finish. The bomboo wood planks shall have minimum density of 1000 Kg/cum & minimum Hardness 1000 Kgf. The panels shall have profiled interlocking system locked in place with bamboo pins all complete as per directions of Engineer in-charge. (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured).	sqm	3016.10
26.6	Providing & fixing in position 65 mm thick factory made door frame of Phenol bonded Bamboo wood (superior class, interior use), in approved colour, texture and finish.The bamboo wood shall have minimum density of 1000 Kg/cum, minimum hardness 1000 Kgf. The door frame shall have tenon & mortise interlocking system, to be fixed to the wall with 100 mm size G.I screws all complete as per directions of Engineer-in charge.	cudm	228.65
26.7	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size between cavity wall, complying with ISO 4898:2008 & ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W m K as per ASTM C 578 (measured as per IS 3346), compressive strength of > 350 kPa listed as per ASTM D 1621, density of 34-36 kg/cum as per ASTM D 1622, water absorption ≤ 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardant property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the directions of Engineer-in-Charge.	sqm	649.10
26.8	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size underdeck on ceiling surface, complying with ISO 4898:2008 & ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of > 350 kPa listed as per ASTM D 1621, density of 34-36 kg/m³ as per ASTM D 1622, water absorption ≤ 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardent property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the directions of Engineer-in-Charge.	sqm	685.75
26.9	Providing and fixing factory made solid Foam uPVC profile for kitchen cabinet frame (45x20 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/cum 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 Fastener with necessary stainless steel screws, all complete as per directions of Engineer-in-charge.	metre	294.65

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This issue with the approval of DG, CPWD.

NIRMAN BHAWAN NEW DELHI DATED: 25/07/2017

OFFICE MEMORANDUM

Sub:- Correction slip no.7 Delhi Schedule of Rates 2016.

The following new items of Bamboo wood material to be included in DSR-2016 after item No 26.6 of SH:26 (New Technologies and Materials).

Code No	Description	Unit	Rate (Rs)
26.6A	Providing, erecting, laying and fixing in position in 3.5 to 4 mm thick bamboo mat corrugated sheet (BMCS) as per IS: 15476-2004 in roofing with self drilling screws along with EPDM washers complete or with galvanized iron J or L hooks 8mm dia G.I. plain and bitumen washers etc, all complete as per direction of Engineer-in-Charge.	sqm	4430.00
26.6B	Providing and fixing in position ridges of 3.5 to 4 mm thick bamboo mat ridge cap (BMRC) as per IS: 15476-2004 in roofing with self drilling screws along with EPDM washers complete or with galvanized iron J or L hooks 8mm dia G.I. plain and bitumen washers etc, all complete as per direction of Engineer-in-Charge.	metre	3586.65
26.6C	Providing and fixing at all height false ceiling of 4mm thick phenol bonded Bamboo Mat board (595x595mm) conforming to IS:13958-1994 including providing and fixing of frame work made of GI angle 25x25x0.4 mm thick all around suitably fixed to wall with the help of dash fastener and hanger frame (600x600 c/c) made GI slotted Tee having powder coating on bottom side (30x25x0.3 mm thick for main member & 25x25x0.3 mm for cross member) connected to ceiling with 2.64mm GI wire and anchor fastener at every junction and also including cost of making openings for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed all complete as per direction of Engineer-in-charge.	sqm	2714.40
26.6D	Providing and fixing at Bamboo Mat board conforming to IS:13958-1994 for partition to frame by bucking or studding with screws etc. complete (Frames, backing or studding to be paid separately)		
	26.6D.1 3mm thickness	sqm	2012.95
	26.6D.2 4mm thickness	sqm	2312.55
	26.6D.3 6mm thickness	sqm	2770.70
	26.6D.4 9mm thickness	sqm	3528.40
	26.6D.5 12mm thickness	sqm	4068.25
26.6E	Providing and fixing at all height wall panelling with phenol bonded Bamboo Mat board conforming to IS: 13958-1994 including providing and fixing to frame work made of 50mm x 50mm hardwood plugs including cutting brick work and fixing in cement mortar and making good the wall etc. and also providing and fixing wooden moulded corner beading of triangular shape to the junction of panelling etc. with iron screws all complete as per direction of Engineer-in-Charge.		

EE (THS)

Code No	Description		Unit	Rate (Rs)
	26.6E.1	9mm thickness	sqm	3791.75
	26.6E.2	12mm thickness	sqm	4332.55

25/7/17

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25/7/17

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