OFFICE OF THE ENGINEER-IN-CHIEF

P.W.D. SIRPUR BHAVAN RAIPUR (CHHATISGARH)

AMMENDMENT NO. 02

No.65011/ 089 /SOR/ Raipur, Dated 25/10/2016

The following new items are added hereby issued in the S.O.R. for Building Works (in effect from 01-01-2015) in a new **(chapter-24) Pre-engineered building works.**

24.0 PRE-ENGINEERED BUILDING WORKS

Item No.	Description	Unit	Rate
1.	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 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

	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 (9)
3.	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
4.	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
5.	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
6.	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

	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 (10)
8.	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 bc (-1 mm), and shall conform to IS 14687-1999. Pins and wedges to be made of high grade mild steel,all complete as per direction of Engineer-incharge.(Cost of RCC work shall be paid seperately)	Sqm.	149.45

All above ammendments shall be applicable with immediate effect.

Engineer-in-chief
P.W.D. Raipur (C.G.)

(11)

End. No.65011/ 090 /SOR/ Raipur, Dated 25/10/2016

Copy to the

1. P.A. to honorable Minister of P.W.D.C.G. Govt. Raipur.
2. Secretary, C.G. Govt. P.W.D. Raipur.
3. Secretary, Finance Department C.G. Govt. Raipur
4. All Chief Engineers. P.W.D. Chhattisgarh.
5. All Superintending Engineer, P.W.D. Chhattisgarh.
6. Chief Technical Examiner (V) C.G. Raipur
7. Accountant General, C.G. Raipur
8. All Collectors, Chhattisgarh.
9. All Executive Engineer, P.W.D. Chhattisgarh.
10. Website Public Works Department https://www.cg.nic.in/pwdraipur

Engineer-in-chief
P.W.D. Raipur (C.G.)