

Chapter 10

SPECIFICATIONS FOR PEB STRUCTRE

A. DESIGN LOADS

While designing the PEB structure following design loads shall be considered

1. Dead load
2. Roof live load on purlins
3. Roof live load on frames
4. Snow load
5. Collateral load
6. Wind load
7. Seismic load (zone no.) As per IS standards
8. Lighting load, false ceiling load and duct loading (Duct loading should be considered only for Weaving shed)
9. Special loads if any.

The date which is required for the designing the RCC work like Pedestal shall be given by contractor within 7 days of the issue of notice to proceed with the work.

1. APPROVAL DRAWINGS

Bidders shall submit tender Drawings at the time of Bid submission and standard erection drawings required for the erection of the buildings within 2-3 weeks for approval from date of signing contract/issue of Purchase Order.

2. STANDARD PRODUCT SPECIFICATIONS

A Standard System shall be made up of primary members, secondary members, connections, roof sheeting, wall sheeting, sheeting fasteners, sealer, closures, ridge caps, flashing and trim, gutters and downspouts.

1. PRIMARY MEMBERS:

Primary structural framing shall include the transverse rigid frames, lean-to-rafters and columns, canopy rafters, interior columns (beam and column frames), bearing frame rafters and corner columns and end wall wind columns.

2. SECONDARY MEMBERS:

Secondary structural framing shall include the purlins, girts, eave struts, wind bracing, flange bracing, base angles, clips and other miscellaneous structural parts.

3. PAINT OF STRUCTURAL MEMBERS:

All structural members shall be cleaned by wire brushing to remove dirt, grease, oil and loose mill scale and given one shop coat of red oxide, air drying & two coats of synthetic enamel on site.

4. CONNECTIONS:

All field connections shall be bolted (Unless otherwise noted). Primary bolted connections shall be furnished with high strength bolts conforming to the physical specifications of ASTM A325 (or equivalent). Secondary bolted connections shall be furnished with machine bolts

5. PHYSICAL SPECIFICATIONS OF STRUCTURAL MEMBERS:

Members fabricated from plate or bar stock shall have flanges and webs joined on one side of the web by a continuous welding process and will conform to the physical specifications of ASTM A 572 (Grade 50) or equivalent and having a minimum yield strength of 50,000 P.S.I. (345 MPa). Members fabricated by cold forming process shall conform to the physical specifications of ASTM A572 (Grade 50) or equivalent and having a minimum yield strength of 50,000 P.S.I (345 MPa) or (240 Mpa). Members fabricated from hot rolled structural shapes shall conform to the physical specifications of ASTM A572 (Grade 50) or equivalent and having a minimum yield strength of 35,000 P.S.I. (240 MPa). Rod and angle bracing shall conform to the physical specifications of IS 2062 and having a minimum yield strength of 35,000 P.S.I. (240 MPa). Roof and wall cladding shall conform to the physical specifications of ASTM A-792M Grade 80 and having a minimum yield strength of 80,000 P.S.I. (550 MPa). All other miscellaneous secondary members shall have minimum yield strength of 35,000 P.S.I. (240MPa).

6. ROOF SHEETING / WALL SHEETING :

BASE METAL:

Providing and fixing trapezoidal profile sheeting having high crest height of 28mm at 196mm c/c with a cover width of 980mm. In between the two crests there are two additional small ribs to provide extra strength to the sheet. The side lap is provided with anti-siphoning flute for perfect water tightness.

The base steel shall be Bare / Colour coated Galvalume / Zinalume steel, made out of 0.47mm Nominal Thickness having tensile strength of 550mpa. The steel will have a metallurgical coating of 150gsm of aluminium and zinc alloy (both sides inclusive) comprising of 55% aluminium + 43.5% zinc + 1.5% silicon as per ASTM A-792 M Grade 80

The profiled sheets shall be supplied up to 12 Mt long in single sheet to minimize the longitudinal joints.

COLOUR COATING:

The organic coating will consist of 20 - 25 microns of Silicon Modified Polyester / Super polyester paint inclusive of 5 - 7 microns of corrosion inhibiting primer. The reverse side will be as per manufacturer's standard backer coat.

7. SHEETING FASTENERS :

Standard fasteners shall be No. 14, Type A, self tapping sheet metal screws with metal and neoprene washers. All screws shall have hexagonal heads and made of zinc plated steel.

Fasteners to be used will be self-drilling self- tapping type of the best quality as per AS-3566 Class 3 approved, which should compatible to be used with Galvalume / Zinalume steel sheets.

8. SEALER / ROPE SEAL :

This is to be applied around Skylights and self flashing windows. Sealer shall be 6mm wide x 5mm thick, asbestos fiber filled pressure sensitive Butyl tape. The sealer shall be non asphaltic, non shrinking non drying and non toxic and shall have superior adhesion to metals, plastics and painted surfaces at temperatures from - 51 deg. 'C' to + 104 deg. 'C'.

9. CLOSURES / FILLER STRIPS :

Solid or closed cell E.T.P. (Ethylene Polypropylene Terpolymer) closures matching the profile of the panel shall be installed along the eaves, rake and other locations specified on LCPL drawings.

10. RIDGE CAP :

A formed panel matching the material colour, slope and profile of adjoining Colour Metal roof panels.

11. FLASHING AND TRIM :

Flashing and/or trim shall be furnished at the rake, corners, eaves, framed openings and wherever necessary to provide weather tightness and finished appearance. Color shall be white for rake and eave flashings and color of wall for corner flashings unless otherwise specified by client. Material shall be 26 G thick conforming to the physical specifications of ASTM A446 Grade C or equivalent and having minimum yield strength of 35,000 P.S.I. (240 MPa).

These shall be formed out of the same substrate and corresponding thickness as that of the roofing / cladding sheets and shall be supplied in standard lengths of 2.5mm or as directed in the required shapes and girths and fixed by means of hex-head mechanically galvanized stitching screws with EPDM washers.

12. EAVE GUTTERS AND DOWNSPOUTS:

Eave gutters shall be box shaped, color coated, 0.47mm nominal thickness (26 gauge) galvanized steel. The outside face of the gutter shall be supported with color coated 0.5mm nominal thickness (26 gauge) galvanized straps to the eave member at a maximum spacing of 1.2m. Downspouts shall be rectangular shaped, color coated 0.47mm nominal thickness (26 gauge) galvanized steel. Downspouts shall have a 45 degree elbow at the bottom and shall be supported by attachment to the wall covering at 3.0m maximum spacing.