

PROJECT-6

PRE ENGINEERING BUILDING (PEB)

1. **Primary Members** (Main Frame: Columns, Rafters, Beams)

- Materials: Hot-rolled plates / built-up welded sections (I-beams, H-sections).
- Applicable standards:
 - **IS 2062(E250, E350,E410)-India**
 - **ASTM A572 Gr. 50 / ASTM A36 – USA**
 - **EN 10025 S355JR, S27JR)- EUROPE**
- Fabrication: Cut, welded, straightened (SAW,GMAW,SMAW)
- Surface finish: shot-blasted & primer painted (red oxide/ epoxy zinc primer) or hot-dip galvanized

2. **Secondary members** (Purlins, Girts, Eave, struts)

- Material: cold-formed light-gauge steel sections.
- Applicable standards:
 - **IS 801/ IS 513 (CR steel)-INDIA**
 - **ASTM A653 (Grade 50)-USA**
- Thickness: 1.6 mm to 3.0 mm.
- Finish: Pre-galvanized sheets(**Z120-Z275 G/M2 as per IS 277/ ASTM A653**)

3. **Roof & wall cladding sheets**

- Material: cold-rolled galvanized (GI) or galvanized (AZ) steel sheets.
- Base metal thickness (BMT): 0.45 mm to 0.60 mm(standard for (PEBs)
- Coating options:
 - Galvalume (AZ150): **150 g/m² zinc coating (IS 277).**
 - Galvanized (GI Z275): **275 g/m² zinc coating (IS 277).**
- Mechanical properties: yield strength 240-550 MPa.

4. **Fasteners (Bolts, Screws, Anchors)**

- Frame connections:
 - Material: High-strength carbon or alloy steel.
 - Standard: **ASTM A325 / A490, IS 3757.**

- Grade: **8.8 or 10.9.**
- Roof & Cladding Screws :
 - Self-drilling carbon steel screws with class 3 Zn-Al coating.
 - EPDM washers for weather sealing.

5. Welding consumables

- Electrodes: Low-hydrogen type (E7018 or equivalent).

6. Applicable Standard : *IS 2062, IS 801, IS 277, IS 4759, ASTM A36/ A572, ASTM A653/A792, ASTM A325/ A490, AWS D1.1/ ISO 1461*