

## Annexure A

### **Additional Structural Design criteria's:**

1. Bracing slopes to be kept preferably in the range of 35 to 50 deg.
2. Projection of sheet beyond end purlins/runners to be kept as 300mm maximum.
3. Minimum thickness of base plate for columns at ground level shall be 20mm and washer plate 16mm, same at other levels may be kept as 12mm minimum
4. Minimum dia of foundation bolts for columns shall be 20 dia.
  - Monorails to be designed for local bending in the transverse and longitudinal direction also.
5. Monorail having projection outside building beyond 1.5m and having capacity more than 2T to be supported on a bracket system.
6. For design of monorails, hoists, etc., an impact factor of 1.25 for electrically operated and 1.1 for hand operated shall be considered. Weight of pulley blocks and other accessories shall be considered in the design.
  - For sliding supports rollers shall be preferred.
7. STAAD Modeling of Jn Houses , Sheds and Process buildings to be done in 3D only.
8. In the design of Conveyor/Cable gallery chord members, uniform section is to be provided throughout the length of the chord and single angle is not to be used as chord members.
9. In the design of Conveyor galleries having span more than 30m, camber shall be provided to neutralize the effect of deformation due to dead load plus 50 % of imposed loads.
10. Vertical Deflection shall not exceed the following limits :
  - a) For roofing and cladding components : Span / 250
  - b) For gratings and chequered plates : Span / 200 subject to a max of 6 mm

**The above shall form part of the tender document.**