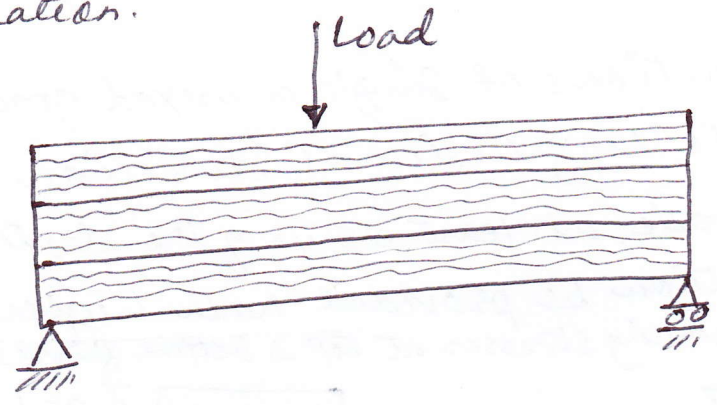


2

Horizontally Laminated Beams

Beams in which laminations are parallel to the neutral plane. Here, the load is applied perpendicular to the plane of the lamination.



Design consideration

Design of glulam beams should satisfy the following criteria:

- 1) Bending
- 2) Shear
- 3) Bearing
- 4) Deflection

1) Bending criteria:

$$\sigma_{m,a,||} \leq \sigma_{m,adm,||}$$

Based on material strength

↓

$$\text{i.e. applied stress} \leq \text{permissible stress}$$

Where $\sigma_{m,a,||}$ = maximum applied bending stress

$$= \frac{M_{max}}{Z}$$

- M_{max} = max^m bending moment due to applied loading
- Z = Section modulus or elastic modulus
- = $\frac{I}{y}$ ← moment of Inertia
- y ← distance from neutral axis to extreme fibre