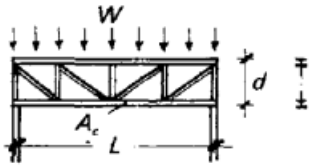
Simply supported truss



$\frac{M}{d.A_c} < p_c$ where M is working value of bending moment on truss at midspan

A_c is area of top or bottom chord of truss at midspan

d is depth of truss between chord centre lines

p_c is allowable working stress of steel in compression $\approx 150\ N/mm^2$ ($=21$ ksi)

$\Delta \approx \frac{10W.L^3}{384E.I}$ where I is moment of inertia of top and bottom chords about centreline of truss $= A_c.d^2/2$

If live load deflection limited to $L/360$ then

$E.I > 7.96W_L.L^2$

Economic value of $L/d = 10$ to 14

Given formulae apply to trusses with top chord restrained against buckling

Forces in truss members largely axial and are checked under tension or compression

Deflection in truss is greater than that of beam with same moment of inertia because of shear deflection in truss due to change in length of diagonal and vertical members