

Beam Loading Formulas

$$W = TL * TW$$

$$TL = DL + LL$$

$$R1 = W * L / 2$$

$$M = (WL^2) / 8$$

$$Fb = Fy * .66$$

$$Sz = M / Fb$$

$$Ad = (L / 360)$$

$$M = F * D$$

$$Af = TL / Sb$$

Variables

Ad = Allowable Deflection (Amount it can bend) - Must be in inches

Af = Area Footing

D = Distance

DL = Dead Load

TL = Total Load

F = Force

Fb = Allowable Bending Stress

Fy = Constant to calculate Fb (Pressure)

L = Length

LL = Live Load

M = Tendency of force to cause body to rotate around a point.
(Force * Perpendicular Distance)

R1 = Reaction 1

R2 = Reaction 2

Sb = Soil Bearing Capacity

Sz = Sizing of section module required

TL = Total Load

TW = Tributary Width

W = Beam Loading (Applied force a specific area)

