

Elastic Twisting of Narrow Rectangular Sections

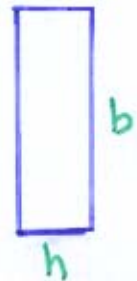
If the section is made of a "Narrow" rectangle
($\frac{b}{h} > 10$), then $\alpha = \beta = \frac{1}{3}$ in the formulas
above. \Rightarrow

$$\tau_{max} = \frac{Th}{J}$$

$$\frac{d\theta}{dz} = \frac{T}{JG}$$

When J is given by

$$J = \frac{1}{3} b h^3$$



$$\frac{b}{h} > 10$$

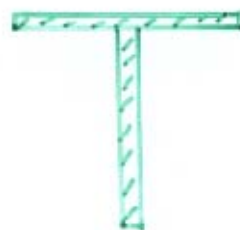
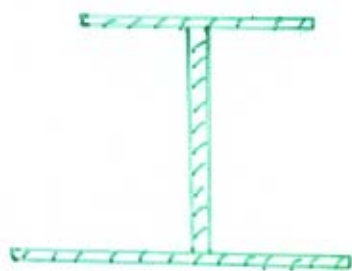
* h is the smaller dimen.

If the section is composed of a series of narrow rectangular parts as shown below, then, the formulas above still apply, but J is given by:

$$J = \sum_{i=1}^n J_i$$

When J_i is J for each segment (leg)

and n is the number of segments/legs



Sections composed of a series of narrow rectangular parts