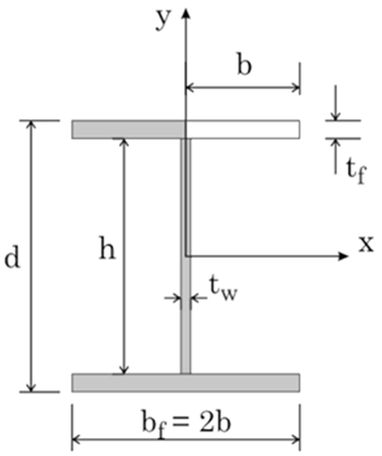
SE1_E06-01



Calcule:
Q01) Módulo Elástico em torno do eixo x (Wx);
Q02) Módulo Elástico em torno do eixo y (Wy);
Q03) Módulo Plástico em torno do eixo x (Zx);

para uma seção transversal de perfil soldado Série CS com as seguintes dimensões:

$d := 250\ \text{mm}$

$bf := 200\ \text{mm}$

$tw := 8\ \text{mm}$

$tf := 9,5\ \text{mm}$

$h := d - 2 \cdot tf = 231\ \text{mm}$

$$Ix := \frac{bf \cdot d^{3}}{12} - \frac{(bf - tw) \cdot h^{3}}{12} = 6319,4411\ \text{cm}^{4}$$

$$Wx := \frac{Ix}{\frac{d}{2}} = 505,5553\ \text{cm}^{3} \quad \text{Q01}$$

$$Iy := \frac{2 \cdot tf \cdot bf^{3}}{12} + \frac{h \cdot tw^{3}}{12} = 1267,6523\ \text{cm}^{4}$$

$$Wy := \frac{Iy}{\frac{bf}{2}} = 126,7652\ \text{cm}^{3} \quad \text{Q02}$$

$$Zx := 2 \cdot \left((bf \cdot tf) \cdot \frac{(tf + h)}{2} + \left(\frac{h}{2} \cdot tw \right) \cdot \frac{h}{4} \right) = 563,672\ \text{cm}^{3} \quad \text{Q03}$$
