$$C_b = \frac{209.82\,(12.5)}{209.82\,(7.5+3+4+3)} = 1$$

$$m_p = Z \times \sigma_y = \frac{32.16 \times 10^3 \times 275}{10^6} = 884.4 \text{ kN.m}$$

$$0.7\sigma_y S_x = 0.7 \times 275 \times \frac{2896 \times 10^3}{10^6} = 557.48 \text{ kN.m}$$

$$m_n = 1\left[884.4 - (884.4 - 557.48)\left(\frac{8-3.46}{12.106-3.46}\right)\right] \leq m_p$$

$$712.735 \leq 884.4$$

$$m_n = 712.735 \text{ kN.m} \quad , \quad \overset{0.9}{\phi} m_n = m_{cx} = 641.46 \text{ kN.m}$$
$$m_{rx} = 209.82 \text{ kN.m}$$

In weak axis: LTB is not an issue.

Check compactness: $\lambda = \frac{150}{21} = 7.14$ $\quad \lambda_p = 0.38\sqrt{\frac{7 \times 10^5}{2\pi}}$ $\lambda < \lambda_p$ compact

just flange ⟶

$$7.14 < 10.24$$
compact

$$m_n = m_p = Z_y \sigma_y = \frac{965.5 \times 10^3 \times 275}{1000} = 265.5 \text{ kN.m}$$

$$\overset{0.9}{\phi} m_n = m_{cy} = 238.96 \text{ kN.m}$$

$$m_{ry} = \frac{P_u \times \overset{-8}{C}}{4} \times 1.24, \quad \boxed{m_{ry} = 2.48 P_u}$$

30/30

$$\frac{P_r}{P_c} = \frac{1000}{218285} = 0.058 > 0.2$$

$$\frac{1000}{2182.85} + \frac{8}{9}\left(\frac{209.82}{641.46} + \frac{m_{ry}}{238.96}\right) = 1.0$$

$$m_{ry} = 67.51 = 2.48 P_u$$

$$\boxed{P_u = 27.22 \text{ kN}}$$