

Remarks: See § 4.4, pages 168 till 170

Answers:

a. $\sigma_{(z=+180 \text{ mm})} = +1 \text{ N/mm}^2$

b. $\sigma_{(z=-120 \text{ mm})} = -9 \text{ N/mm}^2$

c. see figure

d. $z_{\text{na}} = +150 \text{ mm}$

Explanation:

The normal centre is located 270 mm from the top side of the cross-section.

$$A = 450 \times 10^3 \text{ mm}^2$$

$$\sigma^{(N)} = -5 \text{ N/mm}^2$$

$$I_{zz} = 13,095 \times 10^9 \text{ mm}^4$$

$$\sigma_b^{(M)} = -9 \text{ N/mm}^2$$

$$\sigma_o^{(M)} = +11 \text{ N/mm}^2$$

