Remarks: See § 4.4, pages 168 till 170

Answer:

Stress-diagram b.

Explanation:

Calculate the location of the normal centre NC.
The distance of the NC from the top of the cross –section is:

$$\frac{(10\times 30\times 5\ \text{mm}^3)+(30\times 10\times 25\ \text{mm}^3)}{(10\times 30\ \text{mm}^2)+(30\times 10\ \text{mm}^2)}=15\ \text{mm}$$

Since N=0, the normal stress at the normal centre NC must be zero.
Therefore stress-diagram b is correct.