Remarks: See §5.4.3, pages 345 till 355

Answers:

c. $\tau^{A} = 20 \text{ N/mm}^2$

d. $\tau^{B} = 9,9 \text{ N/mm}^2$

e. $\tau_{max} = 28,5 \text{ N/mm}^2$

f. Linearly varying shear stress distribution in the bottom and top flanges. Parabolic shear stress distribution in the webs

Explanation:

c. Shear stress in the upper flange at the place of A:

$$\tau^{A} = \frac{(99,3\times10^{3} \text{ N})(254,1\times10^{3} \text{ mm}^3)}{(2\times7 \text{ mm})(90,1\times10^{6} \text{ mm}^4)} = 20 \text{ N/mm}^2$$

d. Shear stress in the bottom flange at the place of B:

$$\tau_{max} = \frac{(99,3\times10^{3} \text{ N})(125,3\times10^{3} \text{ mm}^3)}{(2\times7 \text{ mm})(90,1\times10^{6} \text{ mm}^4)} = 9,9 \text{ N/mm}^2$$

e. Maximum shear stress in web at the height of NC $(z = 0)$:

$$\tau_{max} = \frac{(99,3\times10^{3} \text{ N})(362,13\times10^{3} \text{ mm}^3)}{(2\times7 \text{ mm})(90,1\times10^{6} \text{ mm}^4)} = 28,5 \text{ N/mm}^2$$