

Remarks: See §6.2.1, pages 415 till 420

Answer:

$$M_{t,\max} = 7,2 \text{ kNm}$$

Explanation:

$$A = 2\pi R t = 1000 \text{ mm}^2$$

$$I_p = 2\pi R^3 t = AR^2$$

$$\tau = \frac{M_t R}{I_p} = \frac{M_t}{AR} = \frac{M_t}{(1000 \text{ mm}^2)(80 \text{ mm})} \leq 90 \text{ N/mm}^2$$

$$\rightarrow M_{t,\max} = 7,2 \text{ kNm}$$