

Proracun navojnog vretena na izvijanje

materijal C. 0370

$$E = 206 \cdot 10^3 \cdot \frac{\text{N}}{\text{mm}^2} \quad \text{modul elasticnosti celika}$$

$$A = 310 \cdot \frac{\text{N}}{\text{mm}^2}$$

$$B = 1.14 \cdot \frac{\text{N}}{\text{mm}^2}$$

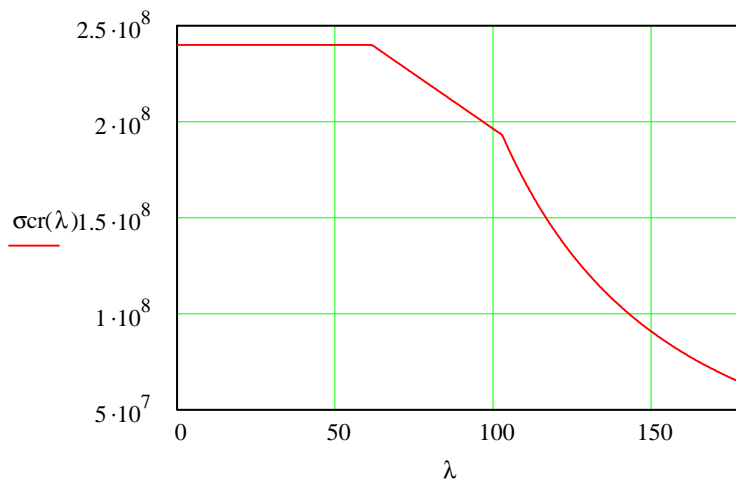
$$\sigma_T = 240 \cdot \frac{\text{N}}{\text{mm}^2}$$

$$\lambda_0 = \frac{A - \sigma_T}{B} \quad \lambda_0 = 61$$

$$A - B \cdot \lambda_1 - \frac{\pi^2 \cdot E}{\lambda_1^2} = 0 \text{ solve, } \lambda_1 \rightarrow \begin{pmatrix} -72.009551751668835181 \\ 102.63965623238794682 \\ 241.29972008068439713 \end{pmatrix}$$

$$\lambda_1 = 102.64$$

$$\sigma_{cr}(\lambda) = \begin{cases} \sigma_T & \text{if } \lambda \leq \lambda_0 \\ (A - B \cdot \lambda) & \text{if } \lambda_0 < \lambda < \lambda_1 \\ \frac{E \cdot \pi^2}{\lambda^2} & \text{if } \lambda > \lambda_1 \end{cases}$$



$$= 400 \cdot \text{mm}$$

$$n = 5 \cdot \text{mm}$$

$$= \frac{l_k}{i_{\min}} \quad \lambda = 80$$

$$(\lambda) = 218.8 \cdot \frac{\text{N}}{\text{mm}^2}$$