

Problem 433

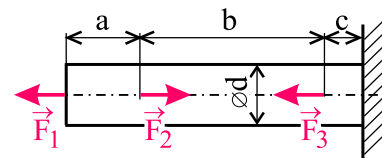
Determine the distribution of inner resultants, stresses, displacements, and the total strain energy at the bar in the figure. The material of the bar is isotropic, homogeneous and linear elastic in all the range of loading. Gravitational forces can be neglected.

Input values::

$$a = 1000 \text{ mm}, \quad F_1 = 40 \text{ kN}, \quad E = 2,1 \cdot 10^5 \text{ MPa},$$

$$b = 2500 \text{ mm}, \quad F_2 = 60 \text{ kN}, \quad \mu = 0,3,$$

$$c = 500 \text{ mm}, \quad F_3 = 80 \text{ kN}, \quad d = 20 \text{ mm}.$$



Solutions

tension

inner resultants

stress

displacement

strain energy