

**Answer on Question#36837 - Physics - Mechanics**

Young's modulus is

$$Y = \frac{F/A}{\text{breaking strain}}$$

where  $A$  - the minimum cross sectional area of rod,  $F$  - a load.

We have

$$A = \frac{F}{Y * \text{breaking strain}} = \frac{10^4 * 100}{7 * 10^9 * 0.2} = 7.1 * 10^{-4} m^2.$$

**Answer:  $7.1 * 10^{-4} m^2$ .**