

A LECTURE NOTE ON TH 2- STRENGTH OF MATERIAL SEMESTER -3



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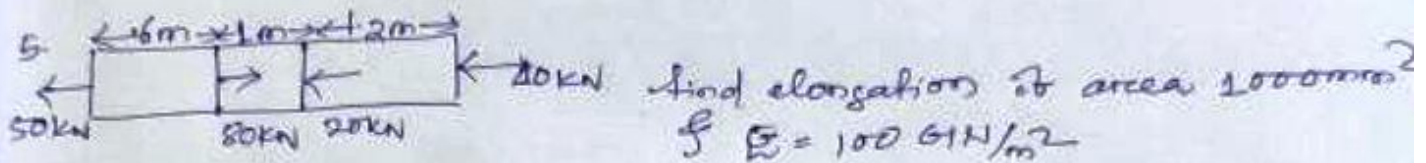
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Strength of Material :

Chapter - 01

1. Define stress, strain & Hooke's law.
2. What is temperature stress.
3. What is strain energy?

4. Derive $E = \frac{QK}{\Delta K + e}$



Chapter - 02

Circumferential

1. What is hoop/ and longitudinal stress
2. Expression for hoop stress ($\sigma_c = \frac{Pd}{2t}$), longitudinal stress ($\sigma_l = \frac{Pd}{4t}$).

3. Problems : find change in diameter $\left(\delta d = \frac{Pd^2}{2tE} \left(1 - \frac{1}{2} - \mu \right) \right)$

find change in length $\left(\delta l = \frac{Pdl}{2tE} \left(\frac{1}{2} - \mu \right) \right)$

find change in volume $\left(\delta v = v \left(2 \frac{\delta d}{d} + \frac{\delta l}{l} \right) \right)$
remember the formulas.