

MECHANICAL PROPERTIES OF SOLIDS

(11). Elongation produced in rod of Length l ; due to its own weight is $\Delta l =$ SAY

(21). Thermal stress $\sigma =$ o.

Elastic potential energy density $u = \frac{1}{2} \times \text{Stress} \times \text{(strain)}$

(41). Bulk Modulus, $K = \frac{AV}{\Delta V}$ 1. Compressibility $\frac{1}{K}$

(6). Restoring couple per unit twist $= \frac{1}{2} \pi r^4 G \theta$ (7). $\phi = \frac{\Delta L}{L}$

(4) Relation between γ , σ , ϵ $\frac{9135}{3B + 5}$ Relation between σ and $\epsilon = \frac{311}{E(1 + 2\nu)}$

(ia) Relation between γ , σ , ϵ (5) (11). Poisson's Ratio $\mu = \frac{\epsilon_{\perp}}{\epsilon_{\parallel}}$

(12). Depression at the middle of a beam $y = \frac{M^3}{4Thd^3}$

(13) Shear Modulus $G = \frac{Ph}{\Delta \theta}$ (14) Relation between G and E $G = \frac{E}{2(1 + \mu)}$