

As a result of measurements made on the surface of a machine component it has been established that the principal strains on the surface are $\epsilon_1 = +400\mu$, $\epsilon_2 = -50\mu$.

Given that $\nu = 0.3$ and $\epsilon_3 = \frac{-\nu}{1-\nu} [\epsilon_1 + \epsilon_2]$

Determine:

- (a) The maximum in plane shear strain.
- (b) The true value of the maximum shear strain near the surface.

ANS (a) 450μ , (b) 550μ .