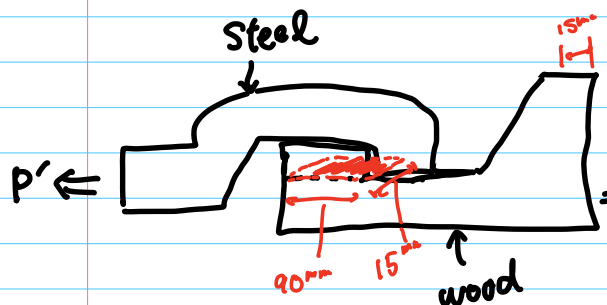
Mini quiz 6 solution

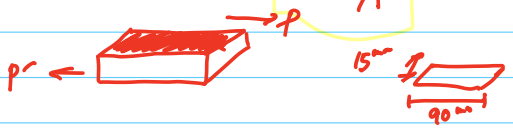


When the force P reached 8 kN, the wooden specimen show failed in shear along the surface indicated by the dashed line.

Determine the average shearing stress along that surface at the time of failure.

Shearing stress $\tau = \frac{P}{A}$

$P = 8\,kN = 8000\,N$



$A = 90^{mm} \times 15^{mm} = 1350\,mm^2$

$\tau = \frac{8000\,N}{1350\,mm^2} = 5.93\,MPa = 5.9\,MPa$

5.8 ↑ ↓ 6.0