ES120 Spring 2018 – Section 6 Notes

Matheus Fernandes

March 22, 2018

Problem 1:

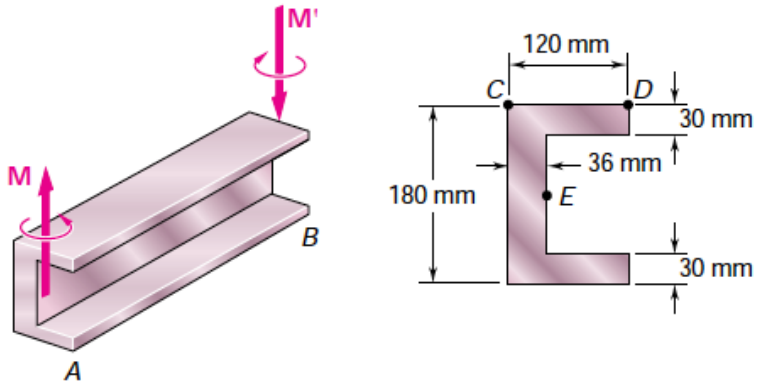

Figure 1

Two equal and opposite couples of magnitude $M = 25$ [kN·m] are applied to the channel-shaped beam AB. Observing that the couples cause the beam to bend in a horizontal plane, determine the stress at (a) point C, (b) point D, (c) point E.

Problem 2:

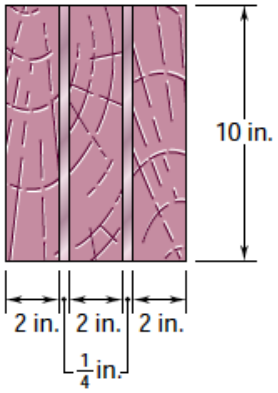

Figure 2

Three wooden beams and two steel plates are securely bolted together to form the composite member shown. Using the data given below, determine the largest permissible bending moment when the member is bent about a horizontal axis.

	Wood	**Steel**
Modulus of elasticity	2×10^6 psi	30×10^6psi
Allowable stress	2000 psi	22, 000 psi