nd Class 2Class:
Subject: Mechanics of Materials
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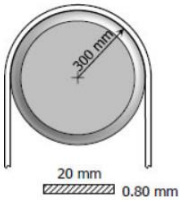
Lec 10 :Tutorial

Example 1

A high strength steel band saw, **20 mm** wide by **0.80 mm** thick, runs over pulleys **600 mm** in diameter. What maximum flexural stress is developed? What minimum diameter pulleys can be used without exceeding a flexural stress of **400 MPa**? Assume **E = 200 GPa.**

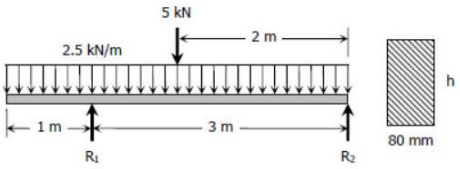


Example 2

A simply supported beam, 0.05 m in wide by **0.1 m** in high and **4 m** long is subjected to a concentrated load of **10 kN** at a point **1 m** from one of the supports. Determine the maximum fiber stress and the stress in a fiber located **0.01 m** from the top of the beam at midspan.

Example 3

Determine the minimum height h of the beam shown in figure 7.3 if the flexural stress is not to exceed 20 MPa.



Example 4

A 50-mm diameter bar is used as a simply supported beam 3 m long. Determine the largest uniformly distributed load that can be applied over the right two-thirds of the beam if the flexural stress is limited to 50 MPa.