

Example 2.2.3

The beam in Figure 1 is made of stainless steel with $E = 200 \text{ GPa}$ and $\sigma_y = 250 \text{ MPa}$. The intensity of the load distribution w is increased gradually from zero. Find the value of w at the onset of plastic deformation anywhere in the beam.

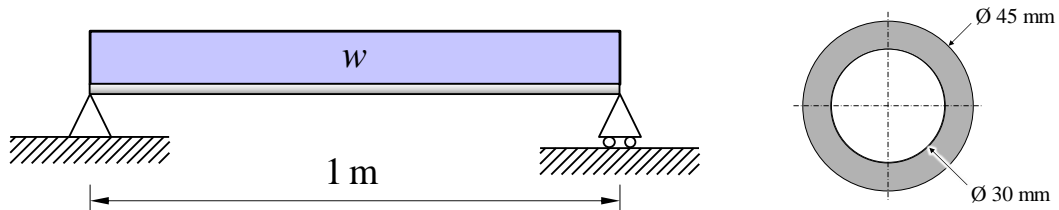


Figure 1: A simply-supported beam.