16-3

A 1/32-in.-thick steel blade is wrapped around a drum of 3-ft diameter. Compute the maximum flexural stress in the blade.

Solution.

$$\sigma_{MAX} = \frac{Ec}{\rho} = \frac{(30\ 000\ ksi)(1/64\ in)}{1.5ft\left(\frac{12in}{ft}\right)}$$

$$= 26.0\ ksi$$