5-3. A shear force $V \sim N(35, 3^2) \, \mathrm{kN}$ is applied to a wide-flange beam with the cross section as shown. If the allowable shear stress on the web at A is $\tau_a \sim N(4, 0.5^2) \, \mathrm{MPa}$, determine the probability of failure of the beam. Assume that τ_a and V are independent.

(**Ans.** $p_f = 2.03 \times 10^{-6}$)