

1-6. The normally distributed force $P \sim N(5000, 650^2)$ N is applied to the system as shown. If both beams AB and BC must have the same cross sectional area, and the allowable yield stress of the beams is $S_y \sim N(300, 45^2)$ MPa, what is the minimum thickness that they must have if their widths are 15 mm? Let the maximum probability of failure be 10^{-4} and $\theta = 45^\circ$. Also, assume P and S_y are independent variables. (Ans. $t = 17.78$ mm)

