

13. The new diameter is

$$\begin{aligned} D &= D_0(1 + \alpha_{\text{Al}}\Delta T) \\ &= (2.725 \text{ cm})[1 + (23 \times 10^{-6}/\text{C}^\circ)(100.0^\circ\text{C} - 0.000^\circ\text{C})] = 2.731 \text{ cm} . \end{aligned}$$