

TOPIC

Strength of Materials

QUESTION

A 1-meter diameter steel cylindrical tank used to store propane at high pressure. If the allowable stress of steel is 100 MPa and the propane is stored at a pressure of 1000 kPa, the minimum thickness in mm of the tank most nearly is

- (A) 5.0
- (B) 7.5
- (C) 10
- (D) 20

HINT

Hoop stress in the tank governs the maximum allowable stress
Hoop stress is equal to circumferential stress and tangential stress

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