

**EXAMPLE**

**Casing Yield Strength**

Compute the body-yield strength for 9-5/8 inch L-80 casing with a nominal wall thickness of 0.472 in.

**Solution**

$$ID = OD - 2(t) = 9.625 - 2(.472) = 8.681 \text{ in}$$

$$A_s = \frac{\pi}{4} (OD^2 - ID^2) = \frac{3.14}{4} (9.625^2 - 8.681^2) = \frac{3.14}{4} (92.6406 - 75.3598) = 13.565 \text{ in}^2$$

$$F_{ten} = 80,000 \times 13.565 = 1,085,235.8 \text{ lbf}$$

From Table = 1,086,000 lbf

**EXERCISE**

Compute the body yield strength for 7 in. C-75 casing with nominal weight per foot of 45.3 lbm/ft.

**EXAMPLE**

**Casing Burst Pressure**

Compute the burst pressure for 5-1/2 in. N-80 casing with a nominal wall thickness of 0.415 in.

**Solution**

$$P_{br} = 0.875 \frac{2 Y_m \cdot t}{OD} \quad (7.2)$$

$$= (0.875) \frac{(2)(80,000)(.415)}{5.5} = 10563 \text{ psi}$$

$$= 10560 \text{ psi}$$

From page 315, column 13,  $P_{br} = 10560 \text{ psi}$

**EXERCISE**

Compute the burst pressure for 8-5/8 in. J-55 casing with a nominal weight per foot 32 lbf/ft

**EXAMPLE**

**Casing Collapse Pressure**

Compute the collapse pressure rating for 20 in K-55 casing with a nominal wall thickness of 0.635 in.

**Solution**

$$\frac{OD}{t} = \frac{20}{0.635} = 31.496$$

From Table 5

$$A = 1.99 \quad , \quad B = 0.036$$

$$P_c = Y_m [A/(D/t) - B] = 55000 [(1.99)/(31.496) - 0.036]$$

$$= 1495 \text{ psi}$$

$$\cong 1500 \text{ psi}$$

From table on page 324, column 11  $P_c = 1490 \text{ psi}$

**EXERCISE**

Compute the collapse pressure rating for 10-3/4 in P-110 casing with nominal weight per foot of 65.70 lbf/ft