Bursting Pressure For Tubes

P = Internal Pressure PSI
S = Fiber Stress of Tube PSI
T = Wall Thickness in Inches
D = Outside Diameter in Inches

$$P = \frac{2ST}{D}$$

Example smls 304A269, 3" O.D. x .065 wall, tensile 85,000 PSI

$\frac{2 \times 85{,}000 \times .065}{3} = \frac{11{,}050}{3}$ = 3,683 PSI Theoretical Bursting Pressure

Theoretical Weight Per Foot Formula

(A) Round Steel Tube O.D. minus wall, time wall times (factor) 10.68

Example: 3" O.D. x .065 wall steel tube

3 - .065 (= 2.935) x .065 (= .1908) x 10.68 = 2.037 lbs per ft.

(Square and rect. steel tube factor is 13.60)

(B) Round Aluminum Tube O.D. minus wall, time wall times 3.1416 (factor) times alloy factor

Example: 3" O.D. x .065 wall, 6061 aluminum tube

3 - .065 (= 2.935) x .065 (= .1908) x 3.1416 (= .5994) x (alloy factor) 1.176 = .7049 lbs per ft.

Aluminum alloy factors:

type	factor
3003	1.188
2024	1.200
5052	1.164
6061	1.176
6063	1.176

(Square and rect. alum. tube factor is 4.000)

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