

Barlow's Formula

Barlow's Formula is used to find the relationship between internal fluid pressure and stress in the pipe wall. It is simple to use and is conservative; the results are safe. Barlow's Formula is sometimes known as the "outside diameter" formula because it utilizes the outside diameter of the pipe. Bursting tests on commercial steel pipe of the commonly used thicknesses have shown that Barlow's Formula predicts the pressure at which the pipe will rupture with accuracy well within the limits of uniformity of commercial pipe thickness.

$$P = \frac{(2 \times t \times s)}{D}$$

Where:

P = internal unites pressure, psi

S = unit stress, psi

D = outside diameter of pipe, in.

T = wall thickness, in.