FlexRite™ Definitions *Industry Recognized Terms*

Bend Radius (fluoropolymer hose and all rubber hose)
• The radius of a bent section of hose measured to the innermost surface of the curved portion (R1).

Bend Radius (metal hose)
• The radius of a bent section of hose measured to the hose centerline (R2).

Minimum Bend Radius
• The smallest radius at which a hose can be used.

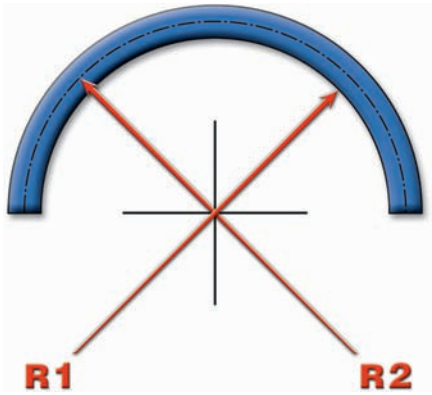
Force to Bend
• The amount of stress required to induce bending around a specified radius - a measure of stiffness.

Maximum Rated Working Pressure
• The maximum pressure hoses should be subjected to on a continuous basis.

Maximum Rated Test Pressure
• The maximum rated pressure is multiplied by 150%.

Nominal Rated Burst Pressure
• The average pressure at which the core or braid will rupture at ambient temperature.

Pressure / Temperature Correction
• Hose pressure capabilities decrease as the temperature increases. Consult factory to determine pressure rating at elevated temperatures.



Bend Radius All (Except Metal Hose) Measure to inside radius

Bend Radius for Metal hose Measure to centerline radius

Flexibility / Bend Radius

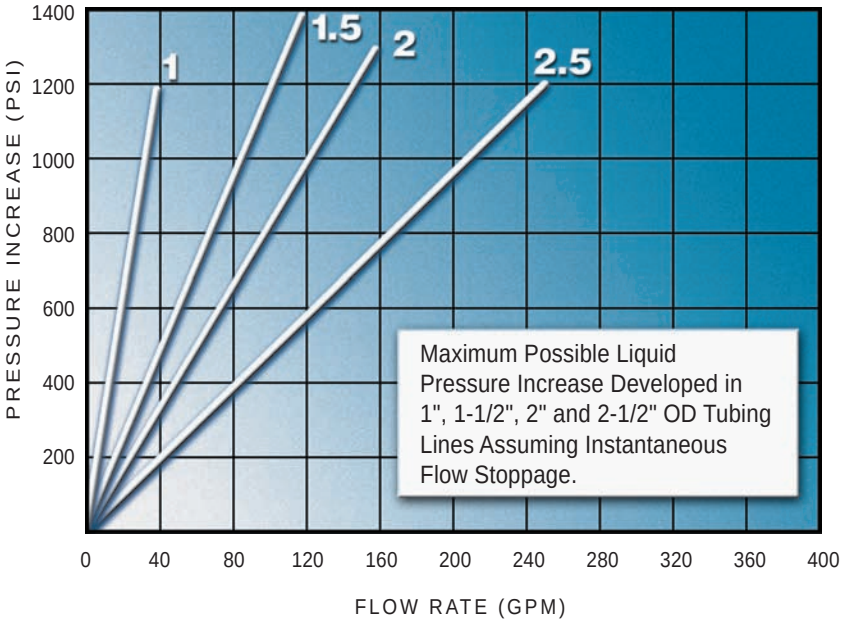
Reprinted from RMA Hose Handbook IP-2 Fourth Edition

Flexibility and minimum bend radius are important factors in hose design and selection if it is known that the hose will be subjected to sharp curvatures in normal use. When bent at too sharp an angle, hose may kink or flatten in the cross-section. The reinforcement may also be unduly stressed or distorted and the hose life thereby shortened

Adequate flexibility means the hose should be able to conform to the smalllest anticipated bend radius without over stress. The minimum bend radius is generally specified for each hose in this catalog. This is the radius to which the hose can be bent in service without damage or appreciably shortening its life. The radius is measured to the inside of the curvature.

Hydraulic Shock…

Due To Instantaneous Pressure Increase



Formula to determine minimum hose length given bend radius and degree of bend required:

$$L = \frac{A}{360^\circ} \times 2\pi B$$

L = Minimum length of hose to make bend *(bend must be made equally along this portion of hose length)*
A = Angle of bend
B = Given bend radius of hose
π = 3.14

Example: To make a 60° bend at the hose's rated minimum bend radius of 15 cm

$$L = \frac{60}{360^\circ} \times 2 \times 3.14 \times 15 \cong 16\,\text{cm}$$

Thus, the bend must be make over approximately 16 cm of hose length. The bend radius used must be equal to or greater than the rated minimum bend radius. Bending the hose to a smaller bend radius than minimum may kink the hose and the result in damage and early failure.

Springer Pumps, LLC
Tel: 866-777-6060 Fax: 866-777-6383 info@springerpumps.com www.springerpumps.com