

## Hose installations guidelines

Proper hose installation is essential to maximise hose life and following these basic guidelines when installing a hose assembly will insure a longer time between servicing and the need to replace the hose.

Where appropriate secure the hose to the equipment in such a way as to protect the hose assembly from being damaged. Following the framework of the equipment is generally best. Try to secure the hose away from points of chafing or wear. If this is not possible, use an appropriate protective cover.

When routing, do not exceed the minimum bend radius of the hose. If hoses of various ID's are bundled together, the largest ID hose will dictate the minimum bend radius. If the hose pivots, rotates, flexes or reciprocates during operation, be sure to allow enough length for free movement at all points in the cycle. Even in a stationary application, be sure to allow for length change during pressure cycles.

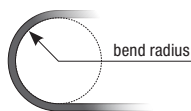
Where extreme heat cannot be avoided, especially when conveying flammable substances, always use fire sleeving.

Hose is a good compensator in multi-plane flexing applications, but it will fail quickly if subjected to torquing or twisting. In these applications route the hose so as to avoid torque or twist, or use a rotary joint or fitting. Always avoid torquing the hose assembly when attaching the second end.

If the hose is subject to frequent handling, be sure to do so safely and appropriately. Observe minimum bend radius guidelines. Abuse is the number one cause of shortened hose life and hose failure. When replacing a failed hose, be sure it was properly installed in the first place. Look for areas of wear and kinks. Never assume the hose was properly installed to begin with.

### DEFINITIONS

**Bend Radius:** The radius of a bent section of hose, measured to the innermost surface of the curved portion.



**Minimum Bend Radius:** The maximum amount to which a hose can be bent before causing kinking or damage. Follow the formula below to determine the minimum length of hose to make the angle of bend required.

**Note:** The bend should take effect over the entire minimum length, not just a portion of it.

### GENERAL FORMULA

Angle of bend ÷ 360 x 2πr = minimum length of hose to make bend

r = given bend radius of hose

π = approximately 3.14

#### Example:

Static 90° bend with **Codan 3304** with 12.7 mm ID

r = 75 mm

angle of bend = 90°

$90 \div 360 \times 2 \times 3.14 \times 330 = 518.1 \text{ mm}$

518.1 mm is the minimum length to make a 90° bend without damage.

For hose installations in a moving assembly, please multiply length by 1.2

**Note:** The minimum bend radius listed in the catalogue is for static bend at ambient temperature. Flexible bending, especially at elevated temperatures, will increase the minimum bend radius accordingly.

For more information and special applications please contact Codan.

