

### Selection Criteria

The selection of flexible metal hose for a particular application is influenced by six primary considerations:

- Temperature
- Pressure
- Media
- Size
- End Fittings
- Motion

To make the best choice for a specific application, consider all the relevant operating factors against the properties of the various types of flexible metal hoses.

#### Temperature

The physical properties of any material varies with temperature. Limits for operating temperature are affected by the working pressure, the type of media being conveyed and the nature of the application. By careful selection of material, it is possible to provide flexible metal hose for a wide range of operating temperatures. The choice of hose type, metal alloy, end fitting and method of fitting attachment determines the temperature limit.

#### Pressure

The nominal pressure ratings of flexible metal hose varies according to type, material and size. Specific pressure ratings for each type of flexible metal hose are found in each section of this catalog. Under actual working conditions, pressure is affected by many other factors such as temperature, pulsating conditions and bending stresses.

#### Media

The type of media being conveyed is an important consideration in the selection process. Metal hose is subject to corrosion by both the material flowing through it and the outside environment. For almost all applications, a metal hose can be selected that is resistant to the intended media. Since metal hose is a thin-walled product, it will not have the same total life as heavier walled tube or pipe of the same material.

For Corrosion Resistance of Materials to different environment, refer to a chart posted on our web site:

<http://www.penflex.com/tools-corrosion-chart.php>.

#### Size

The size of flexible metal hose is specified by the nominal diameter. The existing piping will normally dictate the size of the metal hose for a particular application. However, flow rate, velocity and pressure drop considerations may also influence the selection of the hose size.

#### End Fittings

The use of flexible metal hose is complimented by the extensive range of end fittings that are available. Such end fittings may be male or female pipe threads, unions, flanges, flared tube fittings or other specially designed connectors. End fittings are attached by welding, silver brazing, soldering and occasionally by mechanical means, depending on the type of hose and the alloy. For further detail on the appropriate type of end fitting please consult your fabricating distributor.

#### Motion

Flexible metal hose is generally used in four types of applications.

- To correct problems of misalignment.
- To provide flexibility in manual handling operations.
- To compensate for regular or constant movement.
- To absorb vibration.

In all types, careful hose selection, design of the assembly and installation are important for optimal service life. The flexibility of a hose is determined by its mechanical design and the inherent flexibility of its material.