

CORRUGATED METAL HOSE (DESIGNING AN ASSEMBLY)

ANALYZING AN APPLICATION

S.T.A.M.P.E.D.

To properly design a metal hose assembly for a particular application, the following design parameters must be determined. To help remember them, they have been arranged to form the acronym "S.T.A.M.P.E.D."

1. **S**ize - The diameter of the connections in which the assembly will be installed is needed to provide a proper fit. This information is required.
2. **T**emperature - As the temperature to which the assembly is exposed (internally and externally) increases, the strength of the assembly's components decreases. Also, the coldest temperature to which the hose will be exposed can affect the assembly procedure and/or fitting materials. If you do not provide this information it will be assumed that the temperatures are 70°F.
3. **A**pplication - This refers to the configuration in which the assembly is installed. This includes both the dimensions of the assembly as well as the details of any movement that the assembly will experience. This information is necessary to calculate assembly length and required flexibility.
4. **M**edia - Identify all chemicals to which the assembly will be exposed, both internally and externally. This is important since you must be sure that the assembly's components are chemically compatible with the media going through the hose as well as the environment in which the hose is installed. If no media is given, it will be assumed that both the media and the external environment are compatible with all of the available materials for each component.
5. **P**ressure - Identify the internal pressure to which the assembly will be exposed. Also, determine if the pressure is constant or if there are cycles or spikes. This information is important to determine if the assembly is strong enough for the application. If no pressure is given it will be assumed that the pressure is low and there are no pressure surges or spikes.
6. **E**nd Fittings - Identify the necessary end fittings. This is required since fittings for the assembly must be chosen to properly fit the mating connections.
7. **D**ynamics - Identify the velocity at which the media will flow through the assembly. Since corrugated metal hose does not have a smooth interior, rapid media flow can set up a resonant frequency that will cause the hose to vibrate and prematurely fail. If no velocity is given, it will be assumed that the velocity is not fast enough to affect the assembly's performance.