# Application Data

## General Hose Information

The final hose component is the outer cover. The outer cover protects the reinforcement from the external environment. It is usually rubber, thermoplastic, fiber, or metal. The hose outer cover must protect against weathering, abrasion, chemicals, extreme temperature ranges, ozone, and other adverse conditions.

The "Elastomers" chart in this catalog (page 31) contains a listing of general characteristics of some common elastomers and their physical properties as they relate to specific service needs. When application questions arise, contact Eaton Technical Support at 1-888-258-0222.

Heat can be a catalyst for chemical reaction. When selecting a Boston hose, consider both the ambient temperature and the temperature of the material being conveyed.

**⚠ WARNING Do not use a hose at temperatures that exceed the hose temperature rating. Doing so could deteriorate the hose, leading to leaks, hose bursting, and end blow-offs. This could result in serious personal injury or death.**

Cold temperatures are another consideration. Hose must be flexible and be able to withstand temperatures well below 0°F in some applications.

Be aware that rated hose temperatures do not imply that a hose can handle all materials within the listed temperature range and concentration.

For specific application information and hose temperature ratings, always follow the guidelines in this catalog, or contact Eaton Technical Support at 1-888-258-0222. All chemicals listed in the chart are rated at 70°F unless otherwise stated.

### Size

Size can refer to the length of the hose, the inner diameter (I.D.), and the outer diameter (O.D.). To determine the correct length of hose for an application, always remember to subtract the cut-off factor for each end fitting or coupling from the overall length of the assembly. For example, if the total length of the assembly needs to be 20 feet, and each end extends past the hose three inches, the cut-off factor is three inches at each end, or six inches total. Twenty feet minus six inches yields a hose length of 19-1/2 feet.

Remember to subtract the cut-off factor for each end fitting when preparing hose.

Inner diameter is important in relation to volume transfer requirements. The larger the hose inner diameter, the greater the volume of material that can be transferred in a given time.

Cut-off Factor

**⚠ WARNING Be aware that if you replace a hose with one having a different I.D. than the original hose, material velocity could increase or decrease, possibly creating static electricity. This could lead to an explosion causing serious injury or death.**

### Temperature vs. Pressure Table for Reinforced PVC Hose

The table below has been prepared to demonstrate the effects of temperature vs. working pressure on reinforced PVC hose products. Working pressures for PVC hoses are tested at 68°F (20°C).

**Example:**

2-Spiral hose has stated working pressure of 250 PSI at 68°F (20°C)

At 104°F (40°C) working pressure = 250 PSI x 56% = 140 PSI.

**Example:**

4-Spiral hose has stated working pressure of 400 PSI at 68°F (20°C)

At 140°F (60°C) working pressure = 400 PSI x 43% = 172 PSI.

**NOTE: WORKING PRESSURE DECREASES AS TEMPERATURE INCREASES. HOSE MUST BE PROPERLY COUPLED TO OBTAIN THE SPECIFIED PRESSURE RATING.**

| TEMPERATURE | | ALLOWABLE PERCENT OF ORIGINAL WORKING PRESSURE | |
|---|---|---|---|
| °C | °F | Clear Tubing and 2-Spiral | 4-Spiral |
| 20 | 68 | 100% | 100% |
| 25 | 77 | 86% | 90% |
| 30 | 86 | 75% | 81% |
| 35 | 95 | 65% | 73% |
| 40 | 104 | 56% | 66% |
| 45 | 113 | 47% | 59% |
| 50 | 120 | 40% | 53% |
| 55 | 131 | 33% | 47% |
| 60 | 140 | 27% | 43% |
| 65 | 149 | 23% | 40% |
| 70 | 158 | 20% | 38% |
| 75 | 167 | 17% | 37% |
| 80 | 176 | 15% | 35% |

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