

## Temperature

In most selection processes, the temperature of the fluid at the gasketed joint should be considered first. This will reduce the number of product candidates quickly, especially as temperatures go from 200°F (95°C) to 1,000°F (540°C). When system operating temperatures approach a particular gasket material's maximum continuous operating temperature limit, an upgrade to a superior material is suggested. In some situations cryogenic temperatures must also be considered.

## Application

The most important information under Application is the type of flange and bolts used. The number, size and grade of bolts used in the application determines the load available. The surface area being compressed is calculated from the gasket contact dimensions. The load from the bolts and the contact area of the gasket result in the compressive load available to seal the gasket. We have calculated and tabulated this information on standard ANSI raised face flanges (see page C-45). Compressive stress available on non-standard flanges must be calculated on an individual basis. Without this information, we cannot choose between various types of materials such as elastomeric (rubber) gaskets, compressed sheet, GRAPH-LOCK® and GYLON® styles.

## Media

There are thousands of different fluids. We cannot, in this manual, make recommendations for all fluids. Fortunately, however, there are a relatively limited number of fluids that make up the vast majority of the media encountered in industry. A general overview of fluid compatibility is provided for the most popular styles shown in this manual (see Chemical Resistance chart, pages C-26 to C-38). System cleanout and flushes should also be considered. Additional information on products versus fluids is available upon request.

## Pressure

Next to be considered is the internal pressure of the fluid at the gasketed joint. We list the maximum pressure limits for each style. If severe and frequent pressure changes are involved, we should be given the details, since an alternative product may be needed.

## Pressure (psi or bar) x Temperature (°F or °C)

We strongly recommend that pressure and temperature be considered simultaneously by using the following procedure:

1. First select the Garlock style(s) being considered for your application/service,
2. List the maximum pressure, temperature and P x T value for the style(s),
3. Make sure the actual service conditions do not exceed the style limitations in any of the three criteria. If they don't, the style(s) can be used, provided all other requirements are met. If they do exceed any one limit, another style or styles should be considered. Rarely can a style be recommended when the service conditions of pressure and temperature are both at the maximum limits for that style.

Example: BLUE-GARD® Compressed Asbestos-free Gasketing Style 3000

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|-------------------------------|---------------------|
| 1. Pressure Limit:            | 1,000 psig (70 bar) |
| 2. Maximum Temperature Limit: | 700°F (370°C);      |
| Continuous Operating Temp.:   | 400°F (205°C)       |
| 3. P x T Limit:               | 350,000* (12,000)   |

At 1,000 psig (70 bar), maximum temperature is 350°F (180°C).

### Important

Maximum pressure and P x T ratings are based on the use of ANSI RF flanges at our preferred torque. The ratings were developed using laboratory tests at ideal gasketing conditions. Field conditions will undoubtedly affect the gasket performance.

When approaching maximum pressure, continuous operating temperature, minimum temperature or 50% of maximum PxT, consult Garlock Applications Engineering.

We hasten to point out that this method for gasket selection is merely a general guide and should not be the sole means for selecting or rejecting a product.

\* P x T based on 1/16" sheet thickness unless otherwise stated.

