

Factors Affecting Gasket Performance

A gasket has one basic function: to create a positive seal between two relatively stationary parts. The gasket must do a number of different jobs well to function properly: first, create an initial seal; second, maintain the seal over a desired length of time; third, be easily removed and replaced. Varying degrees of success are dependent on how well the gasket does the following:

1. Seals system fluid.
2. Chemically resists the system fluid to prevent serious impairment of its physical properties.
3. Deforms enough to flow into the imperfections on the gasket seating surfaces to provide intimate contact between the gasket and the seating surfaces.
4. Withstands system temperatures without serious impairment of its performance properties.
5. Is resilient and resists creep enough to maintain an adequate portion of the applied load.
6. Has sufficient strength to resist crushing under the applied load, and maintain its integrity when being handled and installed.
7. Does not contaminate the system fluid.
8. Does not promote corrosion of the gasket seating surfaces.
9. Is easily and cleanly removable at the time of replacement.

During the gasket product selection process that follows, we recommend that these nine (9) factors be used as a checklist from the viewpoint of the user's degree of need for each factor and the manufacturer's degree of compliance.

Questions? Call

WARNING:

Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury.

Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing.

While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice.

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Gasket Selection

Selecting gasketing materials for particular applications is not an easy task. The variables present in a flanged connection seem endless and yet all of them must be taken into consideration to assure a proper seal. In the past, the acronym "TAMP" (Temperature, Application, Media and Pressure) seemed to give sufficient information to make a gasketing recommendation. Today, items such as: the flange metallurgy, the amount of bolt thread embedment, the amount of flange rotation, the amount of bolt stretch, the additives to the media and the flange surface finish (in addition to other variables) determine how well a gasket will perform. In general, the definition of what a seal is has changed drastically over the years. Leakage measurements have gone from drips a minute to parts per million.

This catalog is designed to help guide you through the various gasketing products and narrow your choices. All industry standard tests are included in order to allow an end user a means of comparison between different materials. Many of the test procedures require that the tests be conducted on 1/32" material. As a rule of thumb, gasket performance decreases as material thickness increases. In addition, compressive loads must be increased with thicker materials. Proper bolting sequences are necessary to ensure those compressive loads are uniform. The temperature, pressure and P x T ratings are all based on optimum conditions. When approaching those extremes, it is suggested that you consult with the Garlock Applications Engineering Department or possibly upgrade to a material that has higher ratings.

As industry standards change and new products are introduced, this catalog will be updated. In the meantime, we urge you to take advantage of our experienced personnel for assistance. In-plant training, instructional video tapes, additional technical information and gasketing recommendations all are available to help in your selection process. Please feel free to call, fax, write, or e-mail us should you have any questions or concerns. Garlock is here to help.