

Full Face Gaskets

See Flanges.

Gasket Constants

The ASME and ASTM committees are working on a new system and new set of numbers to be used in the ASME code calculations for flange design. These new constants address leak rates at installation and during loss of compressive load and therefore are meant to help end users design for a certain leak level. The use of a defined leak rate will generally generate much higher bolt load requirements for the flanges, which should improve performance of designed joints. **For gasket constant values, see page C-40.** Also see M & Y Values and Emissions.

Gasket Grooves

Gaskets installed in grooves or tongue and groove flanges require one extra consideration: the compressed height of the gasket must fill the groove. This is typically important where a highly compressible gasket such as GYLON® Styles 3545 and 3540 or one of the GRAPH-LOCK® styles is used to replace a compressed sheet gasket. The fully compressed thickness, not the original thickness, must be greater than the groove depth or the space between the tongue and groove when flanges contact each other. Ideally, the tongue should be at least as tall as the groove depth.

Gasohol

Gasohol is a blend of gasoline with an alcohol— usually 15% ethyl alcohol. GYLON® styles are preferred; nitrile-bound compressed sheet styles should be acceptable; most rubber gaskets are not recommended.

Installation

Garlock strongly recommends the use of calibrated torque wrenches to tighten bolts to the correct load. We have an installation procedure and discussion available upon request. A video covering the same material is also available.

Insulation Kits

Customers will occasionally ask for a flange insulation or isolation kit or gasket to electrically insulate one flange from the mating flange. Kits are available from a variety of distributors and include an insulating gasket along with a sleeve for the bolts and insulating washer to be installed under the steel washers and nuts.

Garlock does not currently sell kits, but we do offer many gasket styles with good electrical insulating properties (see Dielectric Breakdown Voltage).

Jet Fuels

Jet fuels are typically refined petroleum products similar to kerosene. We recommend our GYLON®, nitrile bound compressed sheet and GRAPH-LOCK® products. (See Aviation Gasoline)

Leachable Levels (chemical)

Some pipe specifications call out maximum levels of "leachables" for gaskets. These limits are usually concerned with leachable chlorides, fluorides, halogens and sulfur. These ions, or charged particles, are of concern due to their tendency to promote corrosion of piping systems. Garlock keeps test results for numerous gasket styles on file and we will test and certify leachable chlorides, etc., where required. There is a charge for these tests. Due to the nature of this type of analysis, we publish "typical" leachables only on certain styles such as our nuclear grade Style 9920.

"M" and "Y" Values for Flange Design

See page C-40.

Note: Our testing shows an increase in "M" and "Y" values as gasket thickness increases. This is the opposite of the trend found in the ASME Code. Fugitive emission and gasket blowout studies have validated this trend.

Modulus of Elasticity

Some flange programs ask for the modulus of elasticity for the gasket material. This could be erroneous, since only rubber gaskets are elastic. Other types of gasketing do not have a true modulus. Garlock Applications Engineering does have compression vs. load curves which can be inverted to calculate a rough estimate for use in these calculations (see Compression).

Monomers

Monomers are materials, such as styrene and vinyl chloride, which can combine with themselves and become polymers, such as polystyrene and polyvinyl chloride. GYLON® Styles 3510 and 3530 are recommended for monomers, since elastomer-bound gaskets are rarely compatible with monomers. Some monomers, under certain conditions, will penetrate a gasket and polymerize inside the gasket, causing the gasket to swell and, occasionally, rupture. This effect is known as "popcorning". This effect can be reduced or eliminated with additional compressive load which lowers the void space inherent in a gasket.