

GASKETING

Gaskets are used to prevent fluid or gas leaks by forming impervious barriers. For successful gasketing, the seal must remain intact and leak-free over a prolonged period of time. Therefore, the gasket must resist the fluid and/or gaseous medium being sealed or excluded, and withstand the operating temperatures and pressures to which it is subjected.

There are three types of flange gaskets.

1. Conventional pre-cut compression gaskets are made from paper, rubber, cork, metal or other materials.
2. Formed-in-Place (FIP) gaskets are applied as a liquid sealant to one of the flange surfaces before the parts are assembled. After assembly, the FIP gasket spreads and cures between the flanges filling gaps, scratches, and surface irregularities to provide a durable seal.
3. Cured-in-Place (CIP) gaskets, which are applied as a liquid by tracing machines in precise beads to one of the flanges and cured by ultraviolet (UV) light, form an elastomeric material with adhesion to the flange surface. Sealing is achieved through compression of the cured gasket during flange assembly.

What is the Best Gasket for My Application?

Many factors influence gasket choice to achieve the required sealing performance on a wide range of flanges. The following chart will work best when selecting the right gasket type. This chart is intended to serve as a general guideline to help you determine which gasket type is best suited for your application. The data presented herein reflects typical properties for each gasket type; however, there may be exceptions to the data presented. Individual product information can then be found on the following pages to help narrow your search.

This chart should not be used to specify gasket materials without specific testing. It is recommended that you conduct on-part testing to ensure adhesive performance before specifying any Loctite® brand gasketing product.

Henkel Adhesives and Sealants Specialists are available to assist you with new flange designs, or to help you re-engineer an existing application using Loctite® brand products for improved performance and cost savings. They can also set up testing of your parts at the Henkel Customer Engineering Center. For application assistance, call 1-800-LOCTITE (562-8483) or visit www.loctite.com and select "Contact Loctite."

GENERAL COMPARISON	GASKET TYPE		
	Form-in-Place Anaerobic	Form-in-Place Silicone	Cure-in-Place Silicone
Benefits	Improve Structural Strength Long Open Time High Pressure Seals	High Gap Filling Resistant to Dynamic Fatigue On-line Pressure Testing	High Gap Filling Reusable/Serviceable Gasket Immediate Full Properties
Limitations	Gap Fill	Short Open Time	Requires Process Equipment
PERFORMANCE CONSIDERATIONS			
Temperature Resistance Continuous Operation Maximum	-40° to +300°F +400°F	-60° to +400°F +500°F	-60 to +400°F +500°F
Fluid Resistance Oil Water/Glycol Fuel Transmission Fluid	Yes Yes Limited Yes	Yes Yes No Yes	Yes Yes No Yes
Gap Fill Ideal Maximum	0.001" - 0.005" 0.050"	0.001" - 0.125" 0.240"	0.020" - 0.125" 0.240"
Instant Seal	Low Pressure	Low Pressure	High Pressure
Flange Type	Rigid	Rigid or Flexible	Rigid or Flexible
Suitable for Use With Metals Plastics¹	Yes No	Yes Yes	Yes Yes
PROCESS CONSIDERATIONS			
Number of Components	1	1	1
Cure Method	Anaerobic	RTV	UV/RTV
Cure Temperature	Room Temperature	Room Temperature	Room Temperature
Cure Speed Initial Cure Full Cure	15 - 30 minutes 24 - 72 hours	15 - 30 minutes 24 hours - 7 days	15 - 30 seconds 30 seconds
Processing Options Manual Automated	Yes Yes	Yes Yes	No Yes
For more information on each Adhesive Category, refer to the following pages...	34 - 35	36 - 37	36 - 37

¹ Uncured liquid adhesives may cause stress cracking of certain thermoplastics, e.g. polycarbonate, acrylic, and polysulfone. Special products and process techniques are available. Consult the Loctite Design Guide to Bonding Plastics (LT-2197) or contact 1-800-LOCTITE for more information.