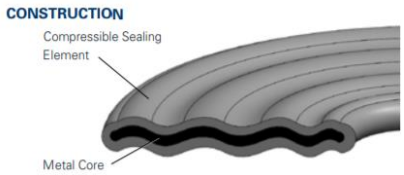
# Garlock Corrugated Metal Gaskets (CMG)

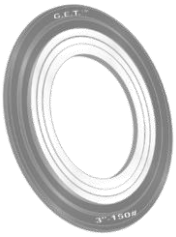
Garlock corrugated metal gaskets (CMG) are high performance gaskets that provide superior sealing capability and reliability, even in the most difficult applications. Each of the four styles is constructed of a corrugated metal core with a soft non-metallic facing material designed to provide resistance to harsh conditions, including extreme temperature, corrosive chemicals, and thermal cycling.




## Configurations

### GRAPHONIC® GASKET (STYLE 603)

- Flexible graphite sealing element
- Accommodates a wide range of temperatures
- Seals effectively during thermal cycling
- Fire safe—passed API 6FB fire tests
- Chemically resistant



### G.E.T.™ GASKET (STYLE 607)

- Flexible graphite and ePTFE sealing elements
- Combines fire safety with chemical resistance
- Conforms to minor sealing surface imperfections
- Rigid yet compressible

### TEPHONIC® GASKET (STYLE 604)

- ePTFE sealing element
- Chemically inert
- Creates a tight seal under low bolt load
- Conforms to minor sealing surface imperfections
- Withstands temperatures to 500°F (260°C)

### THERPHONIC™ GASKET (613)

- THERMa-PUR® sealing element
- Improved resistance to oxidizing media
- Withstands temperatures to 1832˚F (1000°C)
- Resists water and provides electrical isolation reducing the possibility of corrosion between flanges of dissimilar metals

## Available Facing Materials

| Material | Minimum Temperature* | Maximum Temperature* |
|---|---|---|
| ePTFE† | -400°F (-240°C)* | 500°F (260°C) |
| ePTFE† & Flexible Graphite (G.E.T.) | -400°F (-240°C)* | 500°F (260°C) |
| Flexible Graphite (APX-2)† | -350°F (-212°C)* | 850°F (454°C) |
| THERMa-PUR™ | N/A | 1832°F (1000°C)* |

*NOTE: Minimum and maximum temperature rating of the finished gasket may be limited by the metal(s) used in the gasket construction.
† Contact Garlock Applications Engineering at 800-448-6688 for values on facing materials not shown. Other grades of graphite available upon request. GYLON can also be used in place of ePTFE on TEPHONIC and G.E.T. Gaskets.

GARLOCK
*an EnPro* Industries family of companies
1666 Division Street
Palmyra, NY 14522

Tel: 1-877-GARLOCK / 315.597.4811
Fax: 800.543.0598 / 315.597.3216
www.garlock.com

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## Design Factors†

| | Gasket Constants | | | Stress required for tightness | | | | |
|---|---|---|---|---|---|---|---|---|
| | Gb (psi) | a | Gs (psi) | S 100 (psi) | S 1,000 (psi) | S 3,000 (psi) | S 5,000 (psi) | S 10,000 (psi) |
| GRAPHONIC® (1/16") | 315 | 0.36 | 1.857 | 1,653 | 3,787 | 5,624 | 7,515 | 8.676 |

† Contact Garlock Applications Engineering at 800-448-6688 for values on facing materials not shown.

## m & y Factors

| CMG Style | Thickness | Test Media | m-factor | y-factor |
|---|---|---|---|---|
| GRAPHONIC® | 1/16" | Nitrogen | 1.9 | 1,500 psi |
| GRAPHONIC® | 1/8" | Nitrogen | 2.2 | 2,000 psi |
| GRAPHONIC® | 1/16" | Water (liquid)* | 2.0 | 900 psi |
| GRAPHONIC® | 1/8" | Water (liquid)* | 2.0 | 900 psi |
| TEPHONIC® | 1/8" | Nitrogen | 2.0 | 2,500 psi |
| G.E.T.™ Gasket | 1/8" | Nitrogen | 2.0 | 1,600 psi |
| THERPHONIC™ | 1/16" | Nitrogen | 5.2(1) | 1,500 psi(1) |
| THERPHONIC™ | 1/16" | Nitrogen | 10(2) | 6,000 psi(2) |

*These values are very low and are listed mainly for informational purposes. Nitrogen values would be considered more conservative for flange design.

(1) Based on a leak rate of 4.1 cc/min/OD inch

(2) Based on a leak rate of 1.0 cc/min/OD inch

## Tolerances

| Inner Diameter | |
|---|---|
| Up to 12.00" | +/- 0.062" |
| Over 12.00" | +/- 0.125" |

| Outer Diameter | |
|---|---|
| Up to 16.125" | + 0.0"/- 0.062" |
| Over 16.125" | + 0.0"/- 0.125" |

| Full Face Dimensions | |
|---|---|
| Bolt Circle Diameter | +/- 0.062" |
| Center to Center (adjacent bolt holes) | +/- 0.031" |

| Nominal Thickness | Typical Thk Range |
|---|---|
| 1/16" | 0.060" to 0.090" |
| 1/8" | 0.105" To 0.135" |

## Temperature Limits for Metals

| Material | Minimum °F | Minimum °C | Maximum °F | Maximum °C | Abbreviation |
|---|---|---|---|---|---|
| 304 Stainless Steel | -320 | -195 | 1,400 | 760 | 304 |
| 316L Stainless Steel | -150 | -100 | 1,400 | 760 | 316L |
| 317L Stainless Steel | -150 | -100 | 1,400 | 760 | 317L |
| 321 Stainless Steel | -320 | -195 | 1,400 | 760 | 321 |
| 347 Stainless Steel | -320 | -195 | 1,700 | 925 | 347 |
| Carbon Steel | -40 | -40 | 1,000 | 540 | CRS |
| 20Cb-3 (Alloy 20) | -300 | -185 | 1,400 | 760 | A-20 |
| HASTELLOY® B 2 | -300 | -185 | 2,000 | 1,090 | HAST B |
| HASTELLOY® C 276 | -300 | -185 | 2,000 | 1,090 | HAST C |

| Material | Minimum °F | Minimum °C | Maximum °F | Maximum °C | Abbreviation |
|---|---|---|---|---|---|
| INCOLOY® 800 | -150 | -100 | 1,600 | 870 | IN 800 |
| INCOLOY® 825 | -150 | -100 | 1,600 | 870 | IN 825 |
| INCONEL® 600 | -150 | -100 | 2,000 | 1,090 | INC 600 |
| INCONEL® 625 | -150 | -100 | 2,000 | 1,090 | INC 625 |
| INCONEL® X750 | -150 | -100 | 2,000 | 1,090 | INX |
| MONEL® 400 | -200 | -130 | 1,500 | 820 | MON |
| Nickel 200 | -320 | -195 | 1,400 | 760 | NI |
| Titanium | -320 | -195 | 2,000 | 1,090 | TI |

*NOTE: Minimum and maximum temperature rating of the finished gasket may be limited by the facing or metal(s) used in the gasket construction.

Rev. September 2020

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