



PGE Technical Specifications

PGE Gasket Specifications

Description

The Pikotek PGE is a non-critical service gasket designed for electrical flange isolation and/or general sealing applications. This gasket is suitable for use in raised-face flanges up to ANSI class 300 (or equivalent) and is excellent for isolating flanges made of dissimilar metals or where prevention of flange face corrosion is desired. The design of the Pikotek PGE gasket incorporates patented overlapping and offsetting seal grooves. The purpose of this design is to break each layer of laminate within the gasket itself thereby creating a barrier through which fluid and/or gas cannot migrate. The sealing element can be any elastomeric material as well as more sophisticated Spring-Energized Teflon lip seals. As a result of this advanced gasket design, maintenance free flange isolation and flange face corrosion mitigation are achieved economically.

The PGE retainer is constructed of very rigid Glass-Reinforced Epoxy (GRE) laminates, which exhibit excellent dielectric strength, high compressive strength and superior sealing characteristics.

When ordering a complete PGE insulating kit, the following must be specified:

- 1) Flange Specification (ANSI/ASME, API, MSS, BSI or DIN standard)
- 2) Size and Pressure Rating (ANSI class 300 maximum).
- 3) Operating Pressure, Temperature and Media
- 4) Required Seal Material
- 5) Insulating Sleeve Material
- 6) Insulating Washer Material
- 7) Metal Washer Material

Gasket Thickness

All PGE gaskets are a standard 1/8" (.125) thick.

Gasket Seal Retainer Options

- | | |
|----------------|--|
| 1) G-10 | NEMA grade G-10 Glass-Reinforced (GRE) Epoxy laminate: STANDARD |
| | Compressive Strength: 65,000 PSI |
| | Dielectric Strength: 750-800 VPM |
| | Max. Continuous Operating Temp: 302° F (150° C) |
| | Water Absorption: .05% |
| | Flexural Strength: 65,000 PSI |
| | Tensile Strength: 50,000 PSI |
| 2) G-11 | NEMA grade G-11 Glass-Reinforced Epoxy (GRE) laminate material: |
| | Compressive Strength: 50,000 PSI |
| | Dielectric Strength: 500 VPM |
| | Max. Continuous Operating Temp: 350° F (177° C) |
| | Water Absorption: .085% |
| | Flexural Strength: 57,700 PSI |
| | Tensile Strength: 41,000 PSI |

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Seal Material

The sealing elements are intended to provide an impervious barrier through which no contained media or other substance can penetrate. Consequently, the composite retainer backing material behind the seal remains uncontaminated and thus permanently holds the seal in place in a static, fully encapsulated manner.

Seal Material Options

1) Teflon (Spring-Energized)

STANDARD

Recommended for all environments. Helical wound spring provides radial load. Encapsulation in the seal groove eliminates creep or cold flow. This sealing system truly distinguishes Pikotek gaskets from all other flange sealing systems. Teflon is the most reliable sealing element.

Temperature Range: -250° F to +350° F (note: gasket material is limiting factor)

2) Viton

General-purpose oilfield elastomer. Excellent resistance to aliphatic hydrocarbons and glycols. Good resistance to aromatic hydrocarbons.

Not recommended for: Systems with amine inhibitors and in piping systems containing significant partial pressures of H₂S, polar gases (i.e., CO₂) or where radical pressure drops (2000 PSI to 0 PSI) commonly occur.

Temperature Range: -15° F to +350° F

3) Nitrile

General Purpose elastomer. Excellent for use in water systems or with some aliphatic hydrocarbons, silicone base fluids and glycol based systems.

Not recommended for: Systems containing H₂S, aromatic hydrocarbons, phosphate esters or halogenated hydrocarbons; piping systems subjected to radical pressure drops (2000 PSI to 0 PSI) or piping systems containing significant partial pressures of polar gases (i.e., CO₂).

Temperature Range: -30° F to +250° F

Insulating Sleeve Options

1) GRE

STANDARD

GRE (Glass-Reinforced Epoxy) tubing is suitable for continuous exposure to 350° F. This material is an epoxy laminate that offers **excellent** resistance to crushing, cracking, breaking and thread pinch.

2) Mylar

Spiral wound Mylar is a general-purpose material recommended for bolting applications with flange temperatures below 250° F. This material has generally **fair** resistance to crushing, cracking, breaking and thread pinch.



PGE Technical Specifications (continued)

Insulating Washers

- 1) GRE STANDARD

1/8" (.125) thick Glass-Reinforced Epoxy washers cut to standard SAE washer dimensions.

Steel Washer Options

- 1) ZPS STANDARD

Zinc-Plated Steel washers cut to standard SAE washer dimensions.

- 2) SS

Stainless Steel washers cut to standard SAE washer dimensions.

Recommended Bolt Torque Values

(Bolt Stress = 30,000 PSI)

<u>Nominal Diameter of Bolts</u> (inches)	<u>Torque Value</u> (Ft. lbs.)
1/2	30
9/16	45
5/8	60
3/4	100
7/8	160
1	245
1 1/8	355
1-1/4	500
1-3/8	680
1-1/2	800
1-5/8	1100
1-3/4	1500
1-7/8	2000
2	2200
2-1/4	3180
2-1/2	4400
2-3/4	5920
3	7720
3-1/4	8400
3-1/2	9000
3-3/4	9600
4	10000

Notes:

- 1) Recommended bolt torque is based on generating a minimum gasket seating stress of 7,500 PSI.
- 2) Bolt torque values listed assume a lubricated stud bolt resulting in a .16 friction factor.
- 3) Recommended torque values are based on using weld-neck (integral) flanges.
- 4) Blind or other flanges may require different seating loads (please contact factory).
- 5) 30,000 PSI bolt stress may exceed the design allowable stress levels for certain stud bolt materials.