Insolion®
G10

The Insolion® G10 gasket consists of a modified u-shaped TFM seal energised with a phynox® spring. The TFM material was chosen for its advanced mechanical properties and improved resistance to permeation.

The TFM material was chosen for its advanced mechanical properties and improved resistance to permeation. This seal is bonded to a high strength G10 glass reinforced epoxy and 316L stainless steel composite core.

The complete flange isolation kit supplied with the gasket includes G10 bolt sleeves and isolation washers as standard and will offer extremely high levels of electrical isolation from cryogenic temperatures up to +150˚C.

Application guidelines

- Flange isolation for critical applications in the oil, gas and other processing applications.
- Media compatibility with natural gas, oils, other hydrocarbon media and many corrosive environments.
- Specified for plant wide use on the majority of flange specifications including ASME, API, EN, BS and DIN.
- Flange insulation and electrical isolation in conjunction with cathodic protection.
- Insulation between dissimilar metals/flanges to prevent galvanic corrosion.
- The position of the TFM spring energised seal allows the gasket to be used across all types of flange styles including ring joint and raised face flanges.

Availability

Insolion G10 can be supplied in sizes from NB ½" to 40" diameter to match the majority of flange specifications and can be manufactured in IBC and full face styles. Custom dimensions and sizing options are available upon request.

Insolion G10 is supplied as a kit suitable for the specific flange size and class rating required.

This kit includes:

1 Insolion G10 gasket
2 G10 bolt sleeves
3 G10 washers
4 Metallic backup washers in 316 stainless steel

TEMPERATURE

Maximum Temperature:
+150°C (+302°F)
Minimum Cryogenic Temperature:
-150°C (-238°F)

PRESSURE

Maximum Pressure:
69 MPa/690 bar (10000 psi)
(ASME Class 2500)

APPROVALS

TAT approved to
Shell MESC SPE 85/300 3.3.2 Class A (He)

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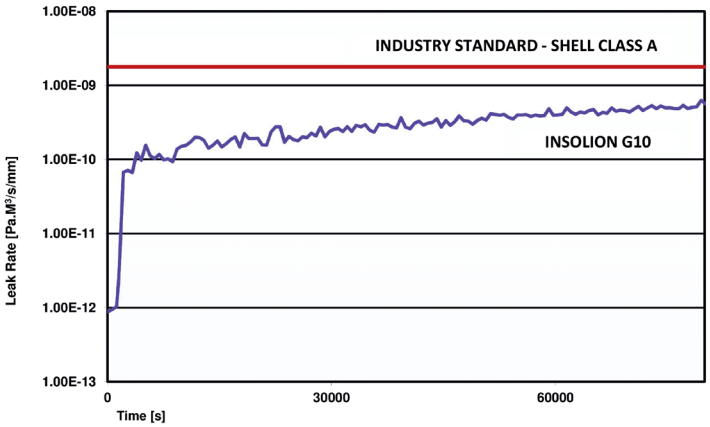
Typical performance

Fugitive Emissions

3rd party witnessed testing in accordance with EN13555 Fugitive Emission testing has shown that the Insolion G10 gasket achieved a leakage rate of 4.51×10^{-10} Pa.m³/s/mm, significantly surpassing the fugitive emissions requirements of Shell MESC SPE 85/300 3.3.2 Class A (HS).



Electrical isolation (DC)

3rd party witnessed tests conducted in accordance with Shell MESC SPE 85/300 2017 3.3.15.

Voltage applied (V)	Pass	Flange to bolt	Flange to flange
1500	>100 MΩ	18.7 GΩ	462 MΩ

Typical physical properties

G10 laminate

G10 material is Type-approved to NEMA LI-1 G10 standards, and conform to BS EN 60893-3-2-EPGC201.

Property	Test method	Parameters	Typical physical property
Water absorption	ISO 62	mg	Maximum 22.0
Electric strength	IEC 60243-1	kV/mm	Minimum 10.2
Breakdown voltage	IEC 60243-1	kV	Minimum 45
Insulation resistance	IEC 60167	MΩ	Minimum 5.0 x 10^4
Compressive strength	ASTM D 695	MPa	Minimum 345
Impact strength	ASTM D 229	ft.lb/in	Minimum 12.0
Tensile strength	ASTM D 638	MPa	Minimum 345
Shear strength	ASTM D 732	MPa	Minimum 152

Approvals / accreditations

TAT approved to Shell MESC standard

Specifically designed from the outset to meet the industry's most stringent requirements Insolion G10 is TAT approved.

In 3rd party witnessed tests the Insolion G10 gasket achieved a leakage rate of 4.51 E-^{10} Pa.m³/S/mm, significantly surpassing the fugitive emissions requirements of Shell MESC SPE 85/300 3.3.2 Class A (He).

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Health warning: If PTFE products are heated to elevated temperatures, fumes will be produced which may give unpleasant effects, if inhaled. Whilst some fumes are emitted below 300°C (572°F) from PTFE, the effect at these temperatures is negligible. Care should be taken to avoid contaminating tobacco with particles of PTFE or PTFE dispersion, which may remain on hands or clothing. Safety Data Sheets (SDS) are available on request.

Information given in this publication is given in good faith and represents the results of specific individual tests carried out by James Walker or third parties in accordance with the methodologies described in this publication, performed in a laboratory. No representation or warranty is given in relation to such information. Values and/or operating limits given in this publication are not an indication that these values and/or operating limits can be applied simultaneously. While such results may comprise useful additional information and are industry standard tests, they are no substitute for conducting (or procuring from James Walker) your own tests and engineering analysis and satisfying yourself as to the suitability of the product you select. Please also note that a product tested in accordance with the published methodology may not perform to such values in application and/or under different test conditions or methodologies for a variety of reasons, including but not limited to the environment in which it is used/tested or which passes through it or otherwise affects the product, or due to the handling, storage or installation, or due to the effect of housing or other parts. Our personnel will be happy to discuss any historical examples we have of a product having been previously used in a particular application.

To ensure you are working with the very latest product specifications, please consult the relevant section of the James Walker website: **www.jameswalker.biz**.

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