

Insolion®

G11



The Insolion® G11 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. This seal is bonded to a high strength G11 glass reinforced epoxy and 316L stainless steel composite core. The complete flange isolation kit supplied with the gasket includes G11 bolt sleeves and isolation washers as standard and will offer extremely high levels of electrical isolation even at elevated temperatures.

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 G11 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 G11 is supplied as a kit suitable for the specific flange size and class rating required.

This kit includes:

- 1 Insolion G11 gasket
- 2 G11 bolt sleeves
- 3 G11 washers
- 4 Metallic backup washers in 316 stainless steel



TEMPERATURE

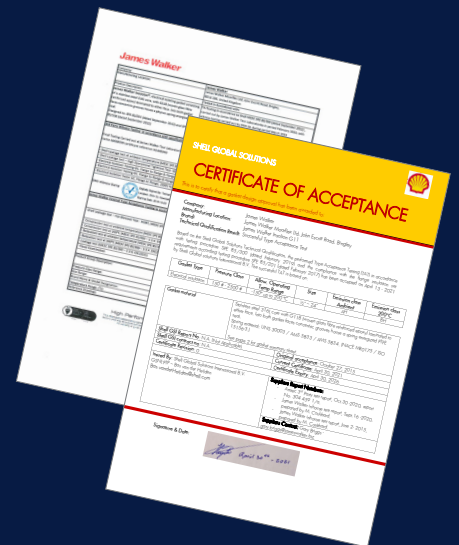
Maximum Temperature:
+180°C (+356°F)

Minimum Temperature:
-45°C (-50°F)



PRESSURE

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



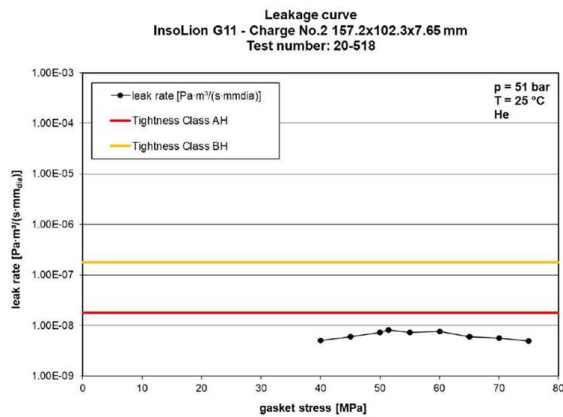
APPROVALS

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

Typical performance

Fugitive Emissions

3rd party witnessed tests the Insolion G11 gasket achieved a leakage rate of 8.2 E-9 Pa.m³/s/mm, significantly surpassing the fugitive emissions requirements of Shell MESC SPE 85/300 3.3.2 Class A (HS).



Shell leakage test (RT) according to MESC SPE 85/300 - 3.3.2

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
1000	> 100 MΩ	10.42 GΩ	9.74 GΩ

Typical physical properties

G11 laminate

G11 material is Type-approved to NEMA LI-1 G11 standards, and conform to BS EN 60893-3-2-EPGC203.

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 10.0
Tensile strength	ASTM D 638	MPa	Minimum 283
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 G11 is TAT approved.

In 3rd party witnessed tests the Insolion G11 gasket achieved a leakage rate of 8.2 E-9 Pa.m³/s/mm, significantly surpassing the fugitive emissions requirements of Shell MESC SPE 85/300 3.3.2 Class A (HS).

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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.

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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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