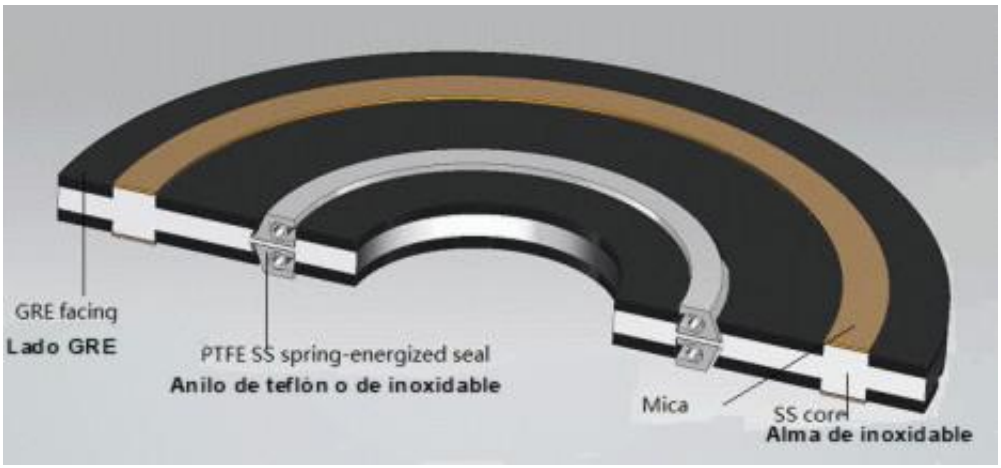
WWI PROCAT, S.L.
C/Colada de Pozuelo 3c, 28925 Alcorcón (Madrid). Telef. +34 91 6373226

MCFS Fire Safe Insulating Gasket Model WP-150



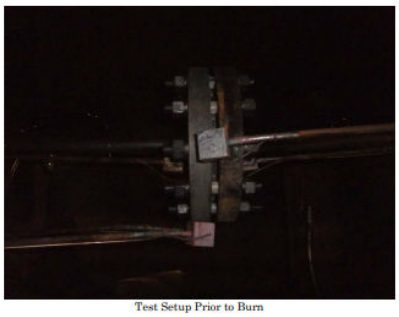
MCFS Insulation Gasket Specifications

MCFS (MCG Fire Safe) insulating gasket is API 6FB certified, which includes a PTFE spring-energized primary sealing element and a Mica secondary sealing element. It adds fire service capability to the standard MCG design through the use of a secondary sealing element of high temperature resistant Mica, which can maintain a sealing performance while subject to a fire of 1500°F (815°C). Under this design, the PTFE spring-energized primary sealing element and Mica secondary sealing element are both seated in the retainer of insulating laminate bonded to a stainless steel core, creating a fireproof insulating gasket.

Both seals of MCFS gasket have very good spring back, they require low bolt stress for the sealing. Second seal will be a backup seal under the normal environment, and it will work once the first seal failure during the fire.

MCFS Gasket Characteristics and Advantages:

1. Has Passed API 6FB FIRE SAFE test.
2. Extremely high reliability sealing and insulating solution for all critical services.
3. Seals and insulates at all pressures up to ANSI 2500# and API 10000#.
4. Unique stainless steel core bonded with high strength insulating laminate withstands severe service conditions including large bending moments, vibration, temperature and pressure cycling.
5. Designed to withstand corrosive environments, including high concentrations of CO2, H2S, produced water, etc.


Test Setup Prior to Burn


Test Gasket During Burn

MCFS Fire Safe Insulating Gasket

6. Outstanding insulation properties for cathodic protection.
7. Pressure activated seals provides high confidence sealing and eliminates costly leaks.
8. Gasket is sized to the flange bore to protect flange faces from media-induced corrosion and flow-induced erosion. Prevents turbulent flow at flanged connections.
9. Mitigates galvanic corrosion in dissimilar metal flanges.
10. Available to match any flange specification (ANSI, API, BS, DIN, AS, others).
11. Can seal mismatched RTJ Flange with Raised Face Flanges.

MCFS Insulating Gasket Material

Gasket Thickness: 6.6mm

Insulating laminate: GRE G10 or G11

Stainless Steel Core Thickness: 3mm

Stainless Steel Material: Normally SS316/L, other SS material also can be provided, such as DSS31803, SDSS32750, Inconel825, Inconel625.

Gasket Material Properties

Properties	NEMA Grade G10	NEMA Grade G11
Dielectric Strength (Volts/mil)	650	670
Water Absorption (%)	0.1	0.1
Tensile Strength (psi)	50,000	55,000
Compressive Strength (psi)	51,000	60,000
Operating Temperature (℃)	-120 to +150	-110 to +200

Sealing Element Material

The first sealing element is spring-energized PTFE, normal spring material is SS316, Hastelloy C276 and Elgiloy spring also could be provided.

The second sealing element is high temperature-resistant Mica.

Sealing Element Material Property

MCFS Fire Safe Insulating Gasket

Properties	PTFE	Mica
Operating Temperature (℃)	+230	+1000

Insulating Sleeve

The insulating sleeve is suitable for standard flange bolt hole and standard bolt.

The normal wall thickness is 0.8mm.

The insulating sleeve is full length, which will cross two insulating washers and reach one steel washer.

Insulating Sleeve Material Properties

Properties	NEMA Grade G10	NEMA Grade G11
Dielectric Strength (Volts/mil)	550	550
Water Absorption (%)	0.1	0.1
Operating Temperature (℃)	-120 to +150	-110 to +200

Insulating/ Steel Washer

1/8" (3.2mm) thick zinc-plated Carbon Steel washers plated with Insulating Harden Coating cut to standard SAE washer dimensions.

Because GRE insulating washers will be broken during the fire and may lead to flange leakage, we have developed the HCS insulating washers to replace GRE washers, which could protect the loss of bolt load during the fire.