



Commander Fire Safe Isolation Kit

PRODUCT

Commander Fire Safe Isolation Kit

PRODUCT USAGE

Total Sealing And Isolation Performance

ADNOC Approved | API 6FB Tested

Commander Fire Safe Isolation Kit is API 6FB tested and field proven system available in a range of materials for every service. Fire safe gaskets provide protection from galvanic corrosion and safely operate in sour conditions. Designed and proven in the most extreme services the fire safe system maintains flange integrity in case of fire.

GASKET

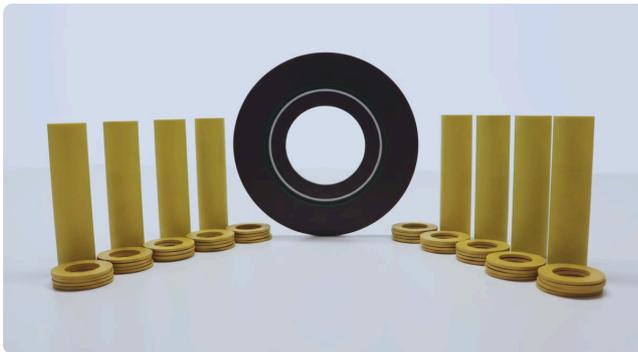
The carrier provides isolation of the two flanges and is produced from NEMA LI-1 gre g10 bonded to a stainless steel 316L core which delivers huge strength and rigidity. Optional materials are NEMA LI-1 Gre G11 for the laminate and various grades of stainless steel, duplex steel and Nickel alloys. Precision machined grooves are cut through the laminate and into the steel core locating seals as close to pipe bore as possible.

Primary Seal

High integrity spring loaded PTFE seals are locked into the grooves. The seals are pressure energized creating ever tighter seals as pressure increases. The spring ensures that the seal is always open.

Secondary Seal- Fire Safe

Coated Inconel C ring acts initially as a fire barrier to protect the PTFE seal then contains internal pressure when the PTFE seal fails.



Product Information

Carrier Thickness

6.4 MM

Comprising A 3.2mm Steel Core With 1.5mm Thick Laminate To Both Faces

Maximum Diameter

2000 MM

Maximum Rating

Class API 10,000

Minimum Temperature

-150°C

Gre G10 Laminate

Maximum Service Temperature By Carrier Laminate

NEMA L-1 Gre G10

150°C

NEMA L-1 Gre G11

200°C

Seal Options

Standard Spring Options Of Stainless Steel

Elgiloy Or Nickel Alloy

Flange Types

Raised

Face

Flat Face

Ring

Joint

Flange Standards

B16 · **B515** · **DIN**

5 · **BS1** · **50** · **AFNOR**

ASME · **AWWA**

B16.47

Commander Firesafe Gaskets can connect RF Flanges to RJ Flanges

Commander Firesafe is an ideal replacement for ring type joints where the RJ groove is damaged or isolation is required. Firesafe gaskets seal inboard of the RJ groove and require much lower bolt stress. The risk of flange rotation is also much reduced.

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ISOLATION SLEEVES

Isolate the stud bolts from the flanges. Material selection is determined by the service temperature and choice of carrier and seal.



Product Information

Wall Thickness
0.75 MM

Mylar

Minimum Temperature
-54°C

Maximum Temperature
+150°C

GRE G10

Minimum Temperature
-150°C

Maximum Temperature
+150°C

GRE G11

Minimum Temperature
-73°C

Maximum Temperature
+200°C

Nomex

Minimum Temperature
-150°C

Maximum Temperature
+210°C

ISOLATION & BACKUP WASHERS

Isolate the nut from the flanges and operate with the isolation sleeve. Key properties are compressive strength to resist stud tightening, dielectric strength and fire resistance.



Product Information

Wall Thickness
3.2 MM

Coated Steel

Minimum Temperature
-100°C

Maximum Temperature
+200°C

Compressive Strength
65,000 PSI

Hi Strength Mica

Minimum Temperature
-100°C

Maximum Temperature
<600°C

Compressive Strength
50,000 PSI

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KIT CONTENTS

Each kit contains everything necessary to isolate a standard flange.



Product Information

Isolating & Sealing Gasket
1 Per Kit

Isolating Sleeves
1 Per Bolt

Isolating Washers
2 Per Bolt

Backup Washers
2 Per Bolt



Commander FS offers the highest reliability sealing and insulating for all critical services. It can withstand severe service conditions, including large bending moments, vibration, temperature and pressure cycling.

Outstanding all round performance includes corrosive environments, and high concentrations of CO₂, H₂S and produced water.

Precisely sized to the bore to protect flange faces from media-induced corrosion, PG Sealing can match the ID of any flange assembly which can greatly mitigate the effects of flow induced corrosion, erosion, and media induced corrosion common of other types of gaskets that leave a void. High strength laminate materials resist failure due to over tightening of bolts.

Test Method	Measuring	Carrier, Sleeve & Washers		Sleeves Only		Washers Only	
		GRE G 10	GRE G11	MYLAR	NOMEX	MICA	Coated SS316
--	--	750 Volt/Mil	550 Volt/Mil	4,000 Volt/Mil	600 Volt/Mil	600 Volt/Mil	800 Volt/Mil
ASTM D149	Dielectric Strength	750 Volt/Mil	550 Volt/Mil	4,000 Volt/Mil	600 Volt/Mil	600 Volt/Mil	800 Volt/Mil
ASTM D695	Compressive Strength	65,000 PSI	63,000 PSI	--	--	50,000 PSI	65,000 PSI
ASTM D570	Water Absorption	0.05%	0.10%	0.80%	7.00%	0.85%	0.10%
ASTM D790	Flexural Strength	65,000 PSI	60,000 PSI	13,000 PSI	18,000 PSI	--	--
ASTM D256	Izod Impact Strength	14 Ft/Lbs-Inch	12 Ft/Lbs-Inch	--	--	12ft/Lbs-Inch	--
ASTM D638	Tensile Strength	50,000 PSI	42,000 PSI	--	--	--	--
ASTM D732	Shear Strength	21,000 PSI	21,000 PSI	--	--	--	--
ASTM D952	Bond Strength	2,600 PSI	2,200 PSI	--	--	--	--



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Note 1

The “FS” or “Fire Safe” designation denotes only that this isolation kit has successfully passed the API 6FB fire test.

Note 2

Temperature limits only apply to service conditions. In case of a fire the system will maintain flange integrity as per the parameters of API 6FB testing subject to correct installation.

Note 3

Always use non-metallic bolt lube when installing commander Fire Safe kits.

Fire Safe API 6FB Certified

Fire Test Report
 API Standard 6FB, Fourth Edition, 2019

Performed for

**P G Sealing Technologies
 Manufacturing LLC**
<https://www.pgsealing.com>

**4 inch Class 2500
 PG COMMANDER FS Gasket,
 Dielectric Washers and Isolation Sleeves**
Product Code: PG COMMANDER FS

Project Number: 223258
 Test Date: September 22, 2023

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

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Yarmouth Research and Technology, LLC

API 6FB FIRE TEST REPORT

Customer: P G Sealing Technologies Manufacturing LLC	
Project Number: 223258	Date: 9/22/2023
4 inch Class 2500 PG COMMANDER FS Gasket, Dielectric Washers and Isolation Sleeves	
Product Description: Isolation Sleeves	
Product Code: PG COMMANDER FS	
Specification: API 6FB, Fourth Edition, 2019	
Non-Bending, Type 1 Test	
Gasket Thickness:	0.342 inches
Seal Area OD:	5.35 inches
Seal Area ID:	4.69 inches
Mean Seal Diameter:	5.04 inches
Mean Circumference:	15.8 inches
Allowable Leakage:	15.8 ml/min
Nominal Test Pressure:	4627.5 psig
Bolt Torque:	1680 ft-lbs
YRT Technician: Dean Frank	
Version of YRT's FIRE-Control 6FB Software: B	
Equipment Confirmed to be in Calibration to NIST Standards: Yes	
After Assembly - Electrical Isolation Test	
Bolt to Bolt:	2000 MOhms with 1000 volts
Bolt to Flange:	1000 MOhms with 1000 volts
Flange to Flange:	1000 MOhms with 1000 volts
Burn and Cool Down Test	
Burn Start Time:	13:46:00
Burn / Cooldown Duration:	60 minutes
Average Pressure During Burn/Cooldown:	4652 psig
Leak Rate During Burn/Cool Down:	0.2 ml/min
Allowable External Leak Rate:	15.8 ml/min
Amount of Time of Avg. Cal. Block > 1200 deg.:	20.8 minutes
Were Test Conditions Within Compliance?	Yes
Was the Leakage Below the Allowable?	Yes
Depressurization - Re-pressurization Test	
Average Pressure During Test:	4549 psig
Gasket Leak Rate:	0 ml/min
Allowable External Leak Rate:	15.8 ml/min
Was the Leakage Below the Allowable?	Yes
Does the Gasket Pass or Fail API 6FB?	PASS

Certified By: *Matthew J. Wasielewski*

Matthew J. Wasielewski, PE
 President and Manager
 Yarmouth Research and Technology, LLC

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APPROVED BY

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