

Limited bolt load FRP flanges are challenging to seal due to aggressive chemicals and dramatic thermal and high-pressure system cycling.

The FR-PITA® combines VSP PITA® and OPRA™ gasket designs to deliver broad chemical resistance and high-tightness sealing for long-term reliability.

Customers benefit from significant cost savings.



Corrugated Alloy
C-276 Core

ePTFE Outer Facings

The ultimate gasket for high-tightness sealing for FRP flanges

Flanges

- ▶ Fiber reinforced plastic
- ▶ Vulnerable to inadvertent overload
- ▶ Increased risk of flange damage

Gaskets

- ▶ Full-face type gaskets required to mitigate flange rotation
- ▶ Inadequate resultant gasket stress for most PTFE materials, require higher loads than available

Bolting

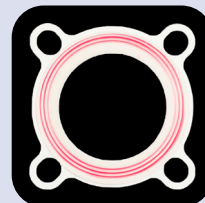
- ▶ Limited available bolt torque to prevent flange breakage

Design

- ▶ Live-loaded spring insert delivers high gasket recovery, unmatched thermal cycling performance and exceptional operational Tightness



Point Contact Loading



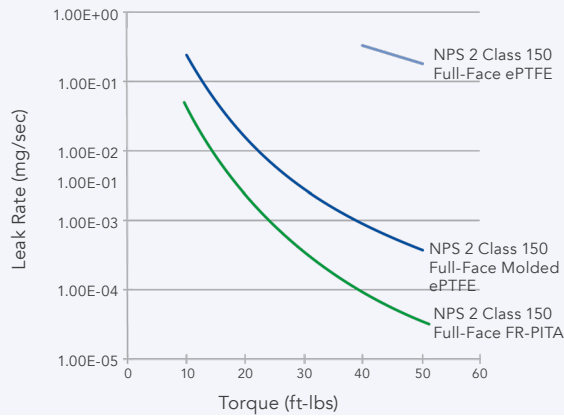
Pressure Film Highlights
Concentrated Gasket
Stress

VSP Technologies deploys a team of Engineers and Fluid Sealing Specialists who provide engineered solutions for your unique sealing requirements.

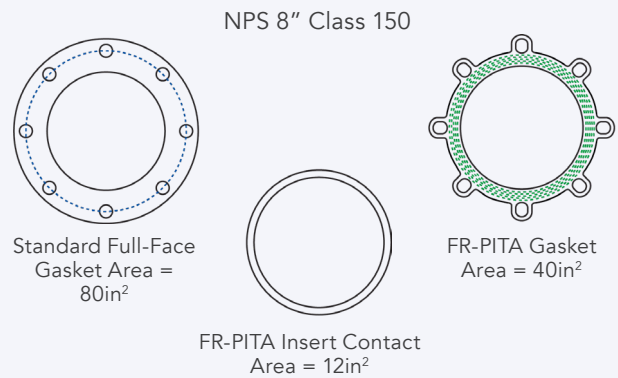
8140 Quality Drive, Prince George, VA 23875
800-334-6013 • vsptechnologies.com

SPRING ENERGIZED CONSTRUCTION

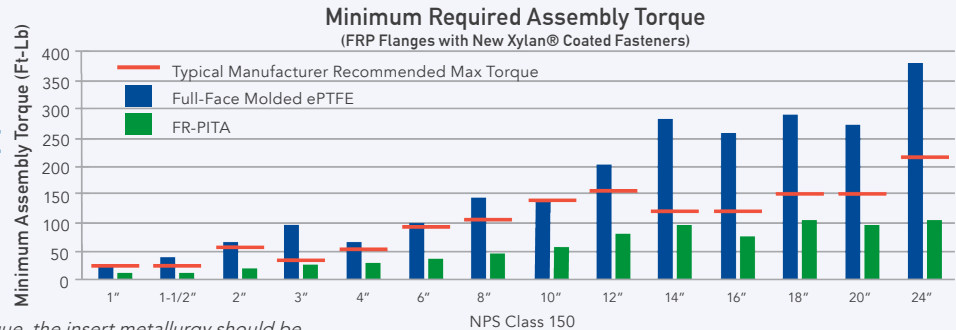
FR-PITA maintains 10X lower leak rate than full-face molded ePTFE



FR-PITA combines patented OPRA and PITA technology to reduce gasket area/contact area



FR-PITA seals at a significantly lower minimum assembly torque than molded ePTFE and is within typical manufacturer max torque recommendations



Note: When using minimum assembly torque, the insert metallurgy should be compatible with the process

Product Specifications

Temperature Range	Max= 600°F Min= -330°F
Pressure Resistance	Full vacuum to maximum flange rating
Chemical Resistance	All chemical services (pH 0-14) except molten alkali metals, elemental fluorine and aggressive tri-fluoride compounds
ASME Gasket Factors	m=2.5 y=1,200 psi
PVRC Gasket Factors (PVRC ROTT)	G _B =263 psi a=0.299 G _S =2.93E-10 psi
Tightness & Sealability (PVRC ROTT)	T _{p (max)} =33,749 T _{p (min)} =13,454
Stress Required to Achieve Helium Leak Rate of 1.02E-04 (mg/sec) @ 150 psig (NPS 4x150 Ring Gasket)	2,078 psi
Safe Reserve Operating Temperature (HOBT2 with Cycles)	500°F ASME Class 150 Service 450°F ASME Class 300 Service
Standard Insert Metallurgy	Alloy C-276

FR-PITA Minimum Recommended Assembly Torque ASME Class 150

NPS	TORQUE (Ft-Lb)
1	10
1.5	10
2	20
3	25
4	25
6	35
8	45
10	55
12	80
14	95
16	75
18	105
20	95
24	105

- ▶ ASME flange sizes NPS 1 - NPS 24
- ▶ Available in custom designs for vessel manways and covers