

Garlock[®] Stress Saver[®] Gaskets

Superior low-torque gaskets for metallic or non-metallic flanges



Style 3504 GYLON® Stress Saver®

Since 1996 the Garlock family of companies has successfully sealed low load flanges with our Stress Saver® family of products. The molded raised ribs help to create a tighter seal by concentrating the compressive load, ideal for lightweight piping. Our new Style 3504 GYLON® Stress Saver® combines these proven sealing advantages with the performance characteristics of the industry recognized GYLON® 3504. The combination of these two time-tested configurations make Style 3504 GYLON® Stress Saver® the ultimate sealing solution.

VALUE AND BENEFITS

- » Versatility - Suitable for both metallic and non-metallic piping with either flat or raised face flanges
 - » Chemical resistance – GYLON® 3504 is ideal for a wide range of caustics and acids, helping to simplify the selection process
 - » Limited Creep and Cold-Flow – Greatly reduces the leakage after installation and system cycling
 - » Superior Physical Properties – Higher temperature and pressure capabilities as compared to rubber gaskets
 - » Homogeneous Construction – Single piece design helps avoid permeation, delamination, fold-over of PTFE envelopes, or potential splitting when installed against raised face flanges
 - » High purity- FDA, USP Class VI, and NSF-61* as requested
- *Style 3505 GYLON® Stress Saver® is able to meet the stringent requirements of NSF-61 for potable water applications.



BLUE GYLON® STYLE 3504 STRESS SAVER®

| | | | | | | | | | |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Gasket Stress (psi) | 200 | 300 | 600 | 900 | 1200 | 1800 | 2400 | 3600 | 4640 |
| Internal Press (psig) | 50 | | | 580 | | | | | |
| Leakage (cc/min) | <0.011 | <0.011 | <0.011 | <0.011 | <0.011 | <0.011 | <0.011 | <0.011 | <0.011 |

Note: <0.011 is used when no measureable leakage is observed.

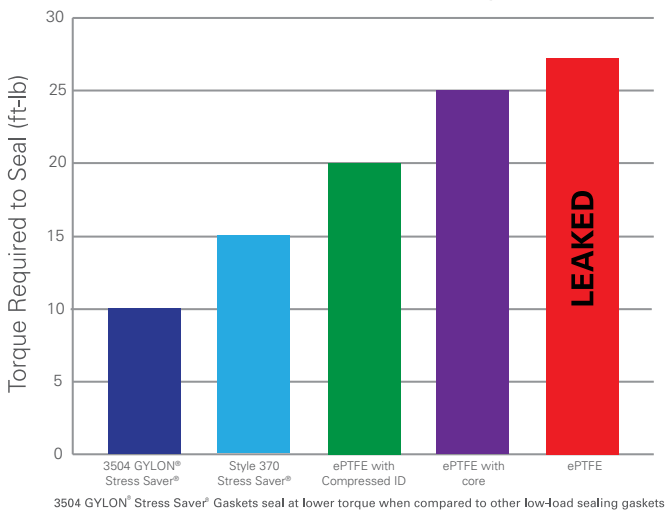
THERMAL CYCLE TEST



Style 3504 GYLON® Stress Saver® showed no signs of leakage when installed between FRP flanges – the flange assembly was subjected to over 3,000 thermal cycles without a re-torque.

- Size: 6" FRP pipe flange w/ lubricated carbon steel bolts
- Temp: 95°F to 180°F
- Media: Water
- Pressure: 150psi
- Torque: 35ft-lbs (recommended torque per manufacturer)
- Cycle: 30min ramp up to 180°F
5min Dwell @180°F
10min Cool down to 95°F

PVC Non-Metallic Flange Test



System Pressure: 100psi
Media: Water
Temp: Ambient (~75°F, 23°C)
Size: 3"-150lb
Type: PVC flanges

Stress Saver® XP

Single piece molded design made from high performance, proprietary blend of fluoroelastomers. Suitable for use in potable water, steam and most chemicals.

VALUE AND BENEFITS

- » Tighter seal - Lower seating stress than expanded PTFE gasket; designed for flat-faced non-metallic flanges
- » Chemical resistance - High performance fluoroelastomer; outperforms traditional fluoroelastomers in severe chemical and steam applications with improved heat resistance.
- » System Compatible Program approved and recommended for CORZAN® piping system
- » Certified to NSF 61 for drinking water systems



Stress Saver® Style 370

White EPDM elastomeric gasket molded and encapsulated at the inside diameter with a chemically resistant PTFE envelope. Proprietary process bonds the PTFE to the elastomer without the use of adhesives, eliminating envelope fold-over concerns during installation.

VALUE AND BENEFITS

- » Tighter seal - Lower seating stress than expanded PTFE gasket; designed for flat-faced non-metallic flanges
- » Chemical resistance - PTFE sealing surface resists a variety of moderate to severe chemicals
- » High Purity - Contaminant-free white EPDM is ideal for ultrapure services: electronics*, pharmaceuticals and food industries
- » Constructed of FDA approved ingredients**

* Tested by BALAZS Labs for trace metal extractables, Anions, Cations, and T.O.C.s. Results available upon request.

** Consult Garlock Applications Engineering for FDA information



Stress Saver® Style 6800

Made with 100% white EPDM elastomer. Suitable for less critical application where a tight seal is needed. Recommended for use in flat face flanges only.

* CORZAN is a registered trademark of Lubrizol®



TYPICAL PHYSICAL PROPERTIES

| | Style 3504 GYLON® STRESS SAVER® | Style XP STRESS SAVER® | Style 370 STRESS SAVER® | Style 6800 STRESS SAVER® |
|---|--|--|--|-------------------------------------|
| Composition | 100% GYLON® PTFE with glass microspheres | Proprietary blend of fluoroelastomer (70 durometer) | 100% Pure PTFE bonded to EPDM | EPDM only (65 durometer) |
| Color | Blue | Black | PTFE: Sky Blue EPDM: Off-white | Off-white |
| Temperature | +500°F (+260°C) -450°F (-268°C) | +400°F (+204°C) -15°F (-26°C) | +300°F (+150°C) -40°F (-40°C) | +300°F (+150°C) -40°F (-40°C) |
| Pressure¹ psig (bar) | 800 (55) | 250 (17) | 250 (17) | 250 (17) |
| PxT (max)^{1,2}, (psig x °F)(bar x °C) | 250,000 (8,600) | 50,000 (1,717) | 50,000 (1,717) | 50,000 (1,717) |
| Media³ | All solvents, most caustics and acids, hydrocarbons, refrigerants, cryogenics and potable water ⁴ | Potable water, steam, most hydrocarbons, gases, solvents | Moderate acids, caustics, gases, water, hydrocarbons | Water, very mild acids and caustics |
| M&Y | TBD | 2.0 / 200 psi | 2.0 / 400 psi | 0.5 / 100 psi |

¹ Max pressure is dependent on available compressive stress and is not achievable in all flange types.

² When approaching maximum pressure or temperature, or 50% of maximum PxT, consult Garlock Engineering

³ The suitability of a specific media should be verified with Garlock Applications Engineering

⁴ Specify Style 3505 GYLON® Stress Saver®

This is a general guide and should not be the sole means of selecting or rejecting this material. Values do not constitute specification limits.

Garlock Bolt Torque Values for Stress Saver® Gaskets B16.5 150# Flat Face Flanges

| Nominal Pipe Size (in) | Number of Bolts Bolts | Size of Bolts (in) | Minimum Suggested Torque (ft. lbs) | Preferred Torque Range | |
|---------------------------|--------------------------|-----------------------|---------------------------------------|------------------------|---------------|
| | | | | Min. (ft. lbs) | Max (ft. lbs) |
| 0.5 | 4 | 0.50 | 5 | 9 | 19 |
| 0.75 | 4 | 0.50 | 6 | 12 | 23 |
| 1 | 4 | 0.50 | 7 | 14 | 28 |
| 1.25 | 4 | 0.50 | 8 | 16 | 32 |
| 1.5 | 4 | 0.50 | 10 | 19 | 37 |
| 2 | 4 | 0.63 | 17 | 33 | 66 |
| 2.5 | 4 | 0.63 | 23 | 45 | 90 |
| 3 | 4 | 0.63 | 25 | 49 | 97 |
| 3.5 | 8 | 0.63 | 15 | 30 | 60 |
| 4 | 8 | 0.63 | 17 | 33 | 66 |
| 5 | 8 | 0.75 | 21 | 41 | 82 |
| 6 | 8 | 0.75 | 23 | 46 | 92 |
| 8 | 8 | 0.75 | 33 | 66 | 132 |
| 10 | 12 | 0.88 | 32 | 64 | 128 |
| 12 | 12 | 0.88 | 47 | 93 | 186 |
| 14 | 12 | 1.00 | 67 | 134 | 268 |
| 16 | 16 | 1.00 | 60 | 120 | 241 |
| 18 | 16 | 1.13 | 66 | 132 | 264 |
| 20 | 20 | 1.13 | 62 | 124 | 249 |
| 24 | 20 | 1.25 | 87 | 173 | 347 |

*NOTE 1: Table based on A193 B7 bolts or bolts of equal strength.

*NOTE 2: Garlock does not recommend exceeding the flange manufacturers max. recommended torque.

*NOTE 3: Min Torque value is equal to 300 PSI Compressive stress.

*NOTE 4: Req'd Range creates 600 to 1200 PSI Compressive stress.

*NOTE 5: For metal flanges with GYLON® Stress Savers, torque values are higher. Consult Applications Engineering.

IDEAL FOR

Industries

- » Chemical Processing
 - » Electronics, semiconductor
 - » Food
 - » Pharmaceutical
 - » Pulp and Paper
 - » Potable/Drinking water*
- *Specify Style XP and Style 3505 GYLON® Stress Saver®

IDEAL FOR

Flange Types

- » PVC
- » FRP
- » PVDF
- » CPVC
- » Polypropylene
- » Cast and ductile iron

| Stress Saver® | Flat Face Flange | Raised face flange |
|--------------------|------------------|--------------------|
| 3504 GYLON® | ✓ | ✓ |
| Style XP | ✓ | |
| Style 370 | ✓ | |
| Style 6800 | ✓ | |

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