LineBacker® 61™

NSF Certified Sealing and Isolation Systems

GPT
an EnPro Industries company

INNOVATIVE ENGINEERING FOR CORROSION PROTECTION

LineBacker® sealing gaskets utilize a rectangular sealing element, referred to as a "quad" ring, in combination with a unique groove design to effectively seal and isolate flanges for all types of applications. Used and proven for over 40 years in the water and energy industries - LineBacker® gaskets have been effectively sealing flanges within piping systems carrying potable water and other materials in high/low temperature extremes even at high pressure ratings.

Of particular importance with respect to NSF/ANSI Standard 61, is the micro-exposure of the sealing element (EPDM) within the G-10 Epoxy Glass retainer material. In addition to providing positive sealing characteristics relative to the fluid flowing within the pipe, the seal element is also protected from deterioration by atmospheric conditions which dramatically lengthens the service life of the gasket.

NSF/ANSI Standard 61 establishes minimum health effect requirements for the chemical contaminants and impurities that may be indirectly imparted to drinking water.

The LineBacker® 61™ Sealing/Isolating kit meets all criteria associated with NSF health effects testing, certification and production facility inspections. GPT confirms that NSF has assessed and certified the LineBacker® 61™ as conforming with the relevant NSF standards. For more information regarding NSF, visit www.nsf.org.

BEFORE TIGHTENING

The sealing elements extend slightly above the surface of the retainer. As the flange is tightened the sealing elements are compressed and move sideways into the inclined portion of the groove, developing a high unit pressure against the flange faces.

AFTER TIGHTENING

The flange faces have come into firm contact with the retainer, thus encapsulating the sealing elements within grooves. At the same time, the unique LineBacker seal configuration provides elastic memory for elastomers not normally associated with this characteristic - resulting in a simple flat gasket with extremely high loading and self energizing characteristics without adverse cold flow problems.

COMMON LINEBACKER® 61™ PHYSICAL PROPERTIES - RETAINER

ASTM	Test Method	G-10 Epoxy Glass
D149	Dielectric Strength Volts/Mil (Short Time)	800
D695	Compressive Strength (psi)	65,000
D229	Water Absorbtion (%)	0.04
D257	Insulation Resistance Meg Ohms	300,000
D790	Flexural Strength (psi)	65,000
D785	Hardness Rockwell "M"	115

ASTM	Test Method	G-10 Epoxy Glass
D256	IZOD Impact Strength (Ft-Lbs/Inch)	26.0
D638	Tensile Strength (psi)	51,000
D732	Shear Strength (psi)	21,000
	Temperature Range	Cryogenic to +302°F Cryogenic to +150°C
Seal Element Temperature Range		**EPDM**
	Temperature Range (F)	-65 to +300°F
	Temperature Range (C)	-54 to +149°C

HCS COATED WASHER SYSTEM

GPT suggested washer and sleeve material to complement your NSF 61 Flange Kit application. For more sleeve and washer combinations, please review our published Flange Isolation catalog or visit www.gptindustries.com.

G-10 1 PC Sleeve and Washer Sets

One-piece sleeve and washer sets include the following items for each bolt:

One - 1/8" thick steel washer

One - 1/8" thick G-10 Washer

One - G-10 Isolating Sleeve

Application Considerations

Completely assembled, easier to install, 1 PC sleeves also allow the inspector a visual indication of sleeve usage.

1/8" WASHER AND SLEEVE MATERIAL PHYSICAL PROPERTIES

ASTM Test Method		G-10 Epoxy Glass
D149	Dielectric Strength Volts/Mil (Short Time)	800
D695	Compressive Strength (psi)	65,000
D229	Water Absorbtion (%)	0.04
D790	Flexural Strength (psi)	65,000
Cut Through Resistance (ft-lbs)		16,000
Operating Temp. (°F)		Cryogenic to +302
Operating Temp. (°C)		Cryogenic to +150

QUALITY (MADE IN THE U.S.A. - A.R.R.A COMPLIANT)

Flange isolating kits shall be manufactured at a facility that has a registered ISO 9001:2008 Quality Management System. Submittals shall include copy of valid ISO registration and NSF 61 certification.

NSF 61 FLANGE ISOLATION KIT SPECIFICATION

Materials for flange isolation kits on pipes containing drinking/potable water (up to 302°F, 150°C) shall consist of the following components:

ISOLATING AND SEALING GASKET

The full faced, NSF 61 certified, isolating and sealing gasket shall be LineBacker® 61™ Sealing Gasket (LB61) - Type "E", 1/8" thick, G-10 retainer. The retainer contains a precision tapered groove to accommodate the controlled compression of a EPDM quad-ring sealing element. Sealing element placement shall accommodate either flat, raised face or RTJ flanges. Quad-ring seal shall be pressure energized. G-10 retainer shall have a 800 volts/mil dielectric strength and a minimum 65,000 psi compressive strength. Full faced flange isolating gasket (weld-neck) shall be equal to or slightly smaller than the bore of the flange; (slip-on) shall be equal to or smaller than the I.D. of mating pipe.

FULL LENGTH BOLT ISOLATING SLEEVES

One full length G-10 sleeve (extending half way into both steel washers) for each flange bolt. The G-10 shall be a 1/32 inch thick tube with a 800 volts/mil dielectric strength and water absorption of 0.04% or less.

WASHERS

Two, 1/8 inch thick, G-10 isolating washers for each bolt. Their compressive strength shall be 65,000 psi, dielectric strength 800 volts/mil and water absorption 0.04% or less. Two, 1/8 inch thick zinc plated, hot rolled steel washers for each bolt. The I.D. of all washers shall fit over the isolating sleeve and both the steel and isolating washers shall have a same I.D. and O.D.

AVAILABILTIY

Kits shall be manufactured by GPT, Wheat Ridge, CO, U.S.A.

GPT
an EnPro Industries company

4990 Iris St., Wheat Ridge, CO 80033
Tel: (303) 988-1242 Fax: (303) 988-1922
www.gptindustries.com

6455 Clara Road, Suite 300, Houston, TX 77041
Tel: (713) 747-6948 Fax: (713) 747-6029
www.gptindustries.com

Unit 3-5, Chester Road, Colmworth Business Park
Eaton Socon, St. Neots, Cambridgeshire, PE 19 8YT
Tel: +44 (0) 1480 404661 Fax: +44 (0) 1480 404662
www.gptindustries.com