



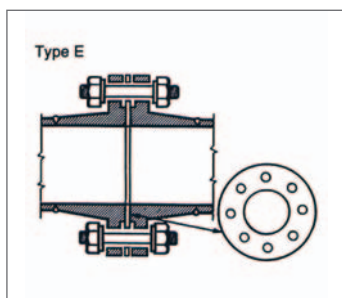
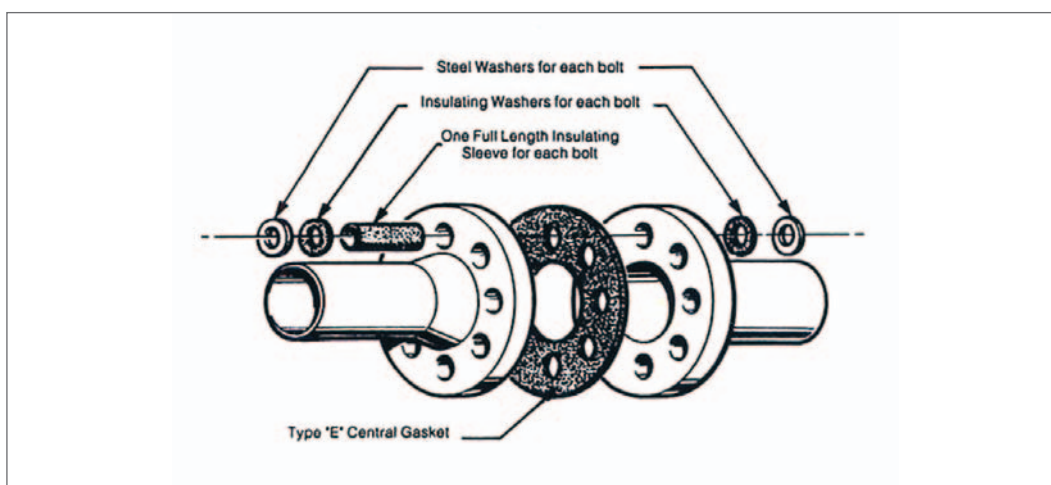
INSULATING FLANGE KITS

REVISION 1

APPLICATION

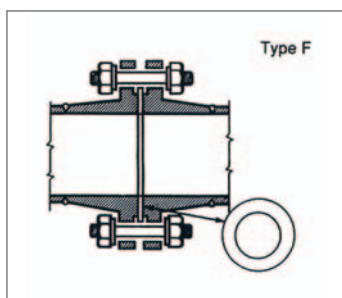
Flange insulation kits for metallic pipelines are available for all flange sizes, types, pressure ratings and materials. Flange insulation kits are commonly installed at each end of a pipeline to electrically isolate the pipe from other buried foreign metallic structures and plant grounding systems therefore limiting the amount of cathodic protection current required to protect the pipeline.

FLANGE INSULATION KIT DATA



TYPE "E" GASKETS

Have the same outside diameter as the flanges, and are made with precision-located bolt holes. They are easy to centre and will prevent foreign material from becoming lodged between the flange faces and "shorting out" the flange insulation. Type "E" gaskets are available in a wide variety of materials.



TYPE "F" GASKETS

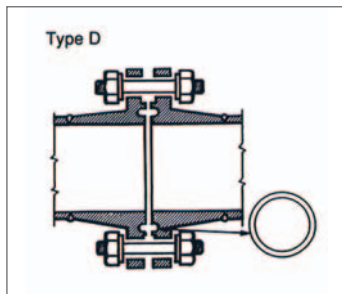
Are made to fit within the bolt hole circle of the flange faces. The outside diameter of the gasket is slightly larger than the inside diameter of the bolt hole circle. They are available in a wide variety of materials.



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TYPE "D" GASKETS

Are made specifically to fit into the ring groove of RTJ flanges. They are available in reinforced phenolic and other materials.



INSULATING SLEEVES AND WASHERS

Are available in complete kits, with or without a gasket. Sleeves and washer are available as separate parts or as a one-piece moulded unit. Sleeves and washers are enclosed in a strong polyethylene bag to eliminate any possibility of loss.

TYPICAL SPECIFICATIONS

Standard Specification Range

Flange Isolation Kit Specification : Materials for flange isolation kits on pipes containing water, aqueous fluids or natural gas (up to 221°F, 105°C) shall consist of the following components:

Insulating and Sealing Gasket : One full faced insulating and sealing gasket, LineBacker Type "E", 1/8" thick, phenolic retainer containing a precision tapered groove to accommodate the controlled compression of a nitrile quad-ring sealing element. Sealing element placement shall accommodate either flat, raised or RTJ face flanges. The quad-ring seal shall be pressure energized. The phenolic retainer shall have a 500 volts/mil dielectric strength and a minimum 25,000 psi compressive strength. The full faced flange insulating gasket shall be 1/8" less in I.D. than the I.D. of the flange in which it is installed.

Full Length Bolt Insulating Sleeves : One full length Mylar sleeve (extending half way into both steel washers) for each flange bolt. The Mylar shall be a 1/32" thick tube with a 4000 volts/mil dielectric strength and water absorption of 0.8% or less.

Washers : Two, 1/8" thick, glass clad phenolic insulating washers for each bolt. Their compressive strength shall be 33,000 psi, dielectric strength 500 volts/mil and water absorption 1.6% or less. Two, 1/8" thick steel washers for each bolt. The I.D. of all washers shall fit over the insulating sleeve and both the steel and insulating washers shall have the same I.D. and O.D.



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High Temperature Specification Range

Flange Isolation Kit Specification : Materials for flange isolation kits on pipes containing natural gas, oil and aqueous fluids (up to 280°F, 138°C) shall consist of the following components:

Isolating and Sealing Gasket : One full faced isolating and sealing gasket, LineBacker Type "E", 1/8" thick, G-10 retainer containing a precision tapered groove to accommodate the controlled compression of a Teflon (or Viton) quad-ring sealing element. Sealing element placement shall accommodate either flat, raised face or RTJ flanges. The quad-ring seal shall be pressure energized. The G-10 retainer shall have a 550 volts/mil dielectric strength and a minimum 50,000 psi compressive strength. The full faced flange isolating gasket shall be 1/8" less in I.D. than the I.D. of the flange in which it is installed.

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 400 volts/mil dielectric strength and water absorption of 0.10% or less.

Washers : Two, 1/8" thick, G-10 isolating washers for each bolt. Their compressive strength shall be 50,000 psi, dielectric strength 550 volts/mil and water absorption 0.10% or less. Two, 1/8" 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.

Common LineBacker & Gasket Seal Laminates/Retainers Physical Properties & Max Temperature Limits



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ASTM	Test Method	Plain Phenolic	Neoprene Faced Phenolic	G-3 Hi-Temp Phenolic	(*)G-7 Silicon Glass	G-10 Epoxy Glass	G-11 Epoxy Glass
D149	Dielectric Strength Volts/Mil (short time)	500	500	550	350-400	550	550
D695	Compressive Strength (psi)	25,000	25,000	50,000	40,000	50,000	50,000+
D229	Water Absorption (%)	1.60	1.60	0.70	0.07	0.10	0.10
D257	Insulation Resistance (MΩ)	40,000	40,000	46,000	2,500	200,000	200,000
D790	Flexural Strength (psi)	22,500	22,500	60,000	27,000	60,000	75,000+
D785	Hardness Rockwell "M"	85	85	115	105	115	115
D256	IZOD Impact Strength (ft-lbs/inch)	1.2	1.2	12.0	8.0	14.0	12.0
D638	Tensile Strength (psi)	20,000	20,000	42,000	25,000	45,000	43,000
D732	Shear Strength (psi)	10,000	10,000	18,000	20,000	22,000	22,000
	Temperature Range (°F)	-65 to +220	-65 to +175	-65 to +392	Cryogenic to +450	Cryogenic to +280	Cryogenic to +350
	Temperature Range (°C)	-54 to +104	-54 to +79	-54 to +200	Cryogenic to +232	Cryogenic to +138	Cryogenic to +177

(*) G-7 Material should not be used with Hydrocarbons, not even in trace amounts

For every enquiry or Order please quote:

- Flange Pressure Class and Standard (ANSI, BS, DIN)
- Nominal Pipe Diameter
- Type E, F or D Flange Kit
- Type of Insulating Material required for Central Gasket & Sleeves
- Type of Product being carried by Pipeline