Flange insulating set

GENERALS

In conditions where a galvanic corrosion cell could exist (e.g. the joining of stainless and carbon steel flanges in an assembly), then an insulating gasket system is often required. In these systems a rubber-faced phenolic material is commonly used for the gasket, and to avoid electrical conduction through the bolts, these too are insulated using phenolic washers and insulating sleeves.

CENTRAL DISK TYPE

Type "E" disk

The "E" disk type has the same outside diameter and the same bolt-holes centre distance as the flanges in which it will be used. It is available in various materials.
Main advantages of type "E" disk are:
1) Impossibility of formation of electrically conducting deposit between flanges internal faces.
2) Easy assembling and centering.

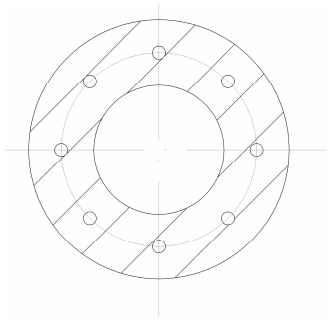
Type "F" disk

Type "F" disk has external diameter a bit lower than bolt-holes internal diameter.
As the above mentioned disk, it is available in various materials.

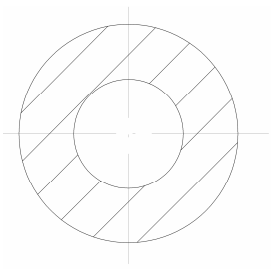
STANDARD MATERIAL SPECIFICATIONS

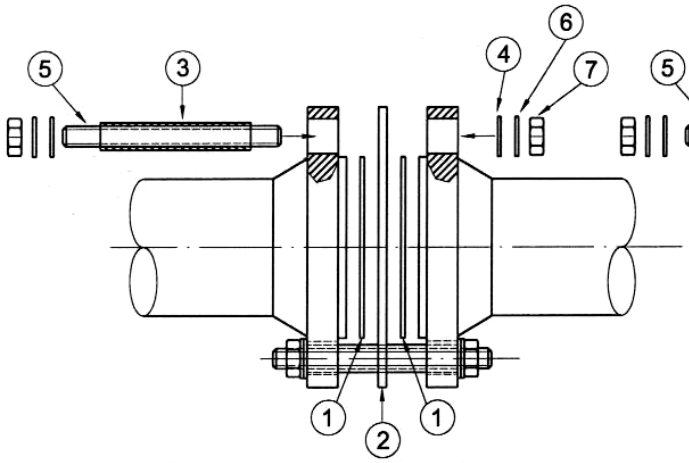
All materials used for insulating flange assembly are selected to provide quality products, that will assure an effective electrical insulation of flanged joints in the time .
The following table lists and figures some of the main characteristics of the above mentioned insulating materials.

TYPE E

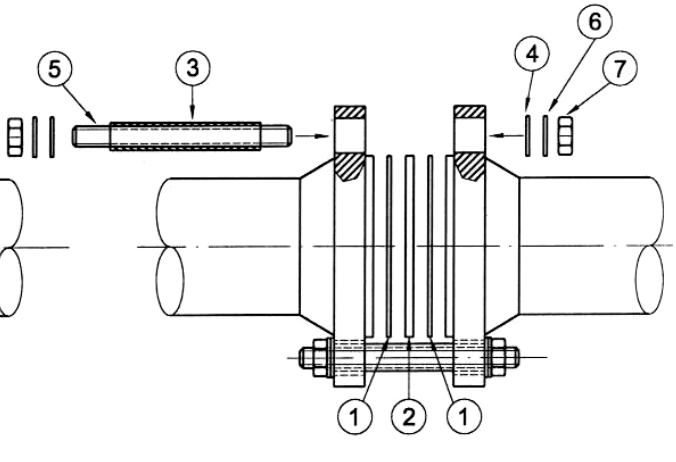


TYPE F





TYPICAL ASSEMBLY FOR TYPE "E" DISK



TYPICAL ASSEMBLY FOR TYPE "F" DISK

1) SEALING GASKET (ON REQUEST)
2) INSULATING DISC BY PHENOLIC RESIN TYPE "E"
3) INSULATING SLEEVE BY MYLAR TUBE
4) INSULATING WASHER BY PHENOLIC RESIN
5) STUD BOLT (ON REQUEST)
6) STEEL WASHER
7) STEEL NUT (ON REQUEST)

1) SEALING GASKET (ON REQUEST)
2) INSULATING DISC BY PHENOLIC RESIN TYPE "F"
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CENTRAL INSULATING DISK

Material composed Rubber Faced Paper Reinforced Phenolic Resin Sheet Neoprene Rubber thickness of 0.4mm on each face of Phenolic Sheet, thickness 2.4mm to NEMA L1-1-1983, type XPC, with the following properties: 0.4mm per surface.
Disk overall thickness: 2,4mm
XPC type, characteristics as follows:

Main characteristics
- self estinguishness
- suitability for electrical equipments
- high resistance to hydrocarbons - fresh/salt water
- low water absorption

INSULATING SLEEVES

Spirally Wound Polyester (Mylar) Tube with standard wall thickness of 0.8mm.

Main characteristics
- self estinguishness
- suitability for electrical equipments
- high resistance to hydrocarbons - fresh/salt water
- low water absorption

Classification
NEMA L1-1-1983

INSULATING WASHERS

Fabric Reinforced Phenolic Resin Bonded Sheet, with thickness of 3mm to NEMA L1-1-1983 Type LE, with the following properties:

Main characteristics
- self estinguishness
- suitability for electrical equipments
- high resistance to hydrocarbons - fresh/salt water
- low water absorption

CHARACTERISTICS:

	CENTRAL INSULATING DISK	INSULATING SLEEVES	INSULATING WASHERS
Dielectric strength in oil at 23°C.	500 Volt/Mil (20,000 Volt/mm)	700 Volt/Mil (28,000 Volt/mm)	200 Volt/Mil (8000 Volt/mm)
Water absorption after 24 hrs immersion in water at 23°C	0.6%	0.5%	2.2%
Compressive strength at 23°C.	168N/mm²		300 N/mm²
Maximum continuous operating temperature	100°C.	120°C.	120°C.
Minimum continuous operating temperature	-40°C.		
Insulation resistance	1.2×10^{6} MΩ	5.2×10^{8} MΩ	3.3×10^{3} MΩ
Classification	NEMA L1-1-1983	NEMA L1-1-1983	NEMA L1-1-1983