SAINT FERRER® VOLT® SELECTION PROCESS

This section describes a procedure that may be used to select flange isolation products for the flanged joint and the technical information needed to select flange isolation products for given applications. The selection process involves collecting information about your application. To help with this process, you can use the Saint Ferrer® VOLT® table as a guide.

Note that the steps do not necessarily have to be in the following sequence as long as the information is collected.

V — Volts per mil

O — Operating conditions

L — Lowest rated component

T — Type of protection

V—Volts/mil

Specifically, you must know the required dielectric strength in Volts/mil. You might also want to know the isolation product's maximum allowed water absorption in percent. Dielectric strength is the Voltage gradient at which dielectric failure of the isolating material occurs under the specific conditions of the test. The units are Volts/mil (mil being 1/1000th of an inch, not 1 mm). Thickness, temperature, electrical frequency, and many other factors affect a material's dielectric strength. Therefore, when installed in the field, the dielectric strength of a material will vary from published values.

Dielectric strength is obtained by testing to ASTM D149, Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power frequencies. Water absorption is a value obtained by testing to ASTM D570, Standard Test Method for Water Absorption of Plastics. In this test, material specimens are submerged in water at an agreed upon condition, generally 23° C for 24 hours. The part's water absorption is the increase in weight by percent found after submersion. It is not mandatory to know the maximum allowed water absorption, but doing so can help ensure a more appropriate selection.

O—Operating Conditions

The media and temperature.

L—Lowest Rated Component

This step is a reminder that when choosing a gasket, sleeve, and washer combination, the physical properties of the lowest rated component are the maximum physical property of the entire combination.

T—Type of Isolation

Determine whether protection should be one- or two-side, i. e., whether to have washers on one or both sides of the flanged joint. Typically, one-side protection is used in conjunction with an overall cathodic protection system to isolate sections of pipe. Two-side protection merely insulates two flanges of different materials from each other.

SAINT FERRER® VOLT® SELECTION MATRIX

Model No.	Type	Joint Treatment	Sleeve	Isolating Washer	Backing Washer	Gasket	Maximum Temp (°F)	Dielectric Strength (v/mil)
105-SW1	Sleeve and Washer	One side	Poly	Phenolic	Zinc Steel	None	105	400
105-SW2	Sleeve and Washer	Two side	Poly	Phenolic	Zinc Steel	None	105	400
105-EK1	Type E Sleeve and Washer	One side	Poly	Phenolic	Zinc Steel	CNA1500	105	400
105-EK2	Type E Sleeve and Washer	Two side	Poly	Phenolic	Zinc Steel	CNA1500	105	400
221-SW3	Sleeve and Washer	One side	BoPET	Phenolic	Zinc Steel	None	221	400
221-SW4	Sleeve and Washer	Two side	BoPET	Phenolic	Zinc Steel	None	221	400
221-EK3	Type E Sleeve and Washer	One side	BoPET	Phenolic	Zinc Steel	CNA1500	221	4000
221-EK4	Type E Sleeve and Washer	Two side	BoPET	Phenolic	Zinc Steel	CNA1500	221	400
V-E10N1	Type E Sleeve and Washer	One side	G10	G10	Zinc Steel	G10 with nitrile sealing element	200	530
V-E10N2	Type E Sleeve and Washer	Two side	G10	G10	Zinc Steel	G10 with nitrile sealing element	200	530
V-E10V1	Type E Sleeve and Washer	One side	G10	G10	Zinc Steel	G10 with FKM sealing element	285	530
V-E10V2	Type E Sleeve and Washer	Two side	G10	G10	Zinc Steel	G10 with FKM sealing element	285	530
V-EPN1	Type E Sleeve and Washer	One side	BoPET	Phenolic	Zinc Steel	Phenolic with nitrile sealing element	200	400
V-EPN2	Type E Sleeve and Washer	Two side	BoPET	Phenolic	Zinc Steel	Phenolic with nitrile sealing element	200	400
V-EPV1	Type E Sleeve and Washer	One side	BoPET	Phenolic	Zinc Steel	Phenolic with FKM sealing element	221	400
V-EPV2	Type E Sleeve and Washer	Two side	BoPET	Phenolic	Zinc Steel	Phenolic with FKM sealing element	221	400