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Garlock BLUE-GARD® 3400

MATERIAL PROPERTIES*:

Color:	Gray-Black
Composition:	Aramid fibers with a SBR binder
Fluid Services [1]:	Water, saturated steam[3], inert gases
Temperature[2], °F (°C)	
Minimum:	-100 (-73)
Continuous Max:	+400 (+205)
Maximum:	+700 (+371)
Pressure[2], Maximum, psig (bar):	1200 (83)
P x T (max.)[2], psig x °F (bar x °C):	
1/32 and 1/16":	350,000 (12,000)
1/8"	250,000 (8,600)

TYPICAL PHYSICAL PROPERTIES*:

ASTM F36	**Compressibility** , range, %:	7-17	
ASTM F36	**Recovery**, %:	50	
ASTM F38	**Creep Relaxation, %:**	18	
ASTM F152	**Tensile**, Across Grain, psi (N/mm^2):	2250 (15)	
ASTM F1315	**Density**, lbs./ft.^{3} (grams/cm^3):	100 (1.60)	
ASTM F433	**Thermal Conductivity (K)** W/m°K (Btu.·in./hr.·ft.2·°F)	0.29-0.38 (2.00-2.65)	
ASTM D149	**Dielectric Properties**, range, volts/mil.		
	Sample conditioning	1/16"	1/8"
	3 hours at 250°F:	603	422
	96 hours at 100% Relative Humidity:	101	58
ASTM F586	**Design Factors**	1/16" & Under	1/8"
	"m" factor:	3.5	6.6
	"y" factor, psi (N/mm^2)	2100 (14.5)	3000 (20.7)
ASTM F104	**Line Call Out:**	F712902A9B4E45K5L102M9[(4)]	

SEALING CHARACTERISTICS*

	ASTM F37B Fuel A	ASTM F37B Nitrogen	DIN 3535-4 Gas Permeability
Gasket Load, psi (N/mm2):	500 (3.5)	3000 (20.7)	4640 (32)
Internal Pressure, psig (bar):	9.8 (0.7)	30 (2)	580 (40)
Leakage	**0.1 ml/hr.**	**0.4 ml/hr.**	**0.3 cc/min**

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IMMERSION PROPERTIES*- ASTM F146 Fluid Resistance after Five Hours

	ASTM #1 Oil 300°F (150°C)	**ASTM IRM #903** 300°F (150°C)	**ASTM Fuel A** 70-85°F (20-30°C)	**ASTM Fuel B** 70-85°F (20-30°C)
Thickness Increase, (%)	0-10	15-30	0-15	5-20
Weight Increase, (%)	<15	-	<20	<30
Tensile Loss, (%)	-	<70	-	-

Notes:

This is a general guide and should not be the sole means of selecting or rejecting this material. ASTM test results in accordance with ASTM F-104; properties based on 1/32" (0.8mm) sheet thickness unless otherwise mentioned.

* Values do not constitute specification Limits

[1] See Garlock chemical resistance guide.

[2] Based on ANSI RF flanges at our preferred torque. When approaching maximum pressure, continuous operating temperature, minimum temperature or 50% of maximum PxT, consult Garlock Applications Engineering. Minimum temperature rating is conservative.

[3] These styles are not preferred choices for steam service, but are successful when adequately compressed. Minimum recommended assembly stress = 4,800psi. Preferred assembly stress = 6,000-10,000psi. Gasket thickness of 1/16" strongly preferred. Retorque the bolts/studs prior to pressurizing the assembly. For saturated steam above 150psig or superheated steam, consult Garlock Engineering.

[4] Fourth numeral 9: % Thickness Increase in IRM Oil #903 = 25-50% max. A9: Leakage in Fuel A (Isooctane), Gasket Load = 500psi (3.5N/mm2), Pressure = 9.8psig (0.7bar): Typical = 0.1ml/hr, Max = 1.0ml/hr. A9: Leakage in Nitrogen, Gasket Load = 3,000psi (20.7N/mm2), Pressure = 30psig (2bar): Typical = 0.4ml/hr, Max = 1.0ml/hr. M9: Tensile Strength = 2,250psi min. (15N/mm2 min.).

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