

an EnPro Industries company



Garlock BLUE-GARD® 3400

MATERIAL PROPERTIES

Color: Grey-black Composition: Aramid fibers with a SBR binder Fluid Services¹: Water, saturated steam³, inert gases Temperature², °F (°C) -100 (-73) Minimum: Continuous Max: +400 (+205) Maximum: +700 (+371) Pressure², 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) 250,000 (8,600) 1/8":

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/mm²):	2250 (15)
ASTM F1315	Density , lbs./ft. ³ (grams/cm ³):	100 (1.60)
ASTM F433	Thermal Conductivity (K), W/m°K (Btuin./hrft. ² .°F):	0.29-0.38 (2.00-2.65)
ASTM D149	Dielectric Properties, range, volts/mil.	
	Sample conditioning	<u>1/16"</u>
	3 hours at 250°F:	603 422
	96 hours at 100% Relative Humidity:	101 58
ASTM F586	Design Factors	<u>1/16" & Under</u> <u>1/8"</u>
	"m" factor:	3.5 6.6
	"y" factor, psi (N/mm²):	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.	0.03 cc/min

IMMERSION PROPERTIES* - ASTM F146 Fluid Resistance after Five Hours

	ASTM #1 Oil	ASTM IRM #903	ASTM Fuel A	ASTM Fuel B
	300°F (150°C)	300°F (150°C)	70-85°F (20-30°C)	70-85°F (20-30°C)
Thickness Increase, (%)	0-10	15-30	0-15	5-20
Weight Increase, (%)	<20	-	<25	<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

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.).