Garlock
an EnPro Industries family of companies

GRAPH-LOCK® 3125TC TECHNICAL DATA SHEET

MATERIAL PROPERTIES*

Product Code		37725-XXXX
Description		Laminated layers of 0.381mm (0.015") purified natural graphite flake that have been acid washed, expanded under heat, and then compressed into sheets with a minimum graphite content of 98%. This sheet contains a 0.102mm (0.004") thick 316 stainless steel tang insert (53 tangs/m²) bonded mechanically to the graphite.
Advantages		Excels in extreme conditions, withstanding heat, pressure, and aggressive chemicals. Seals easily under moderate bolt load, offers superior torque retention. Retains dimensional stability in high temperatures; seals tightly during pressure fluctuations.
Temperature[1]	Min	-240 °C (-400 °F)
	Max Cont. (atm)	+454 °C (+850 °F)
	Max Cont. (steam)	+650 °C (+1200 °F)
Pressure[1]	Max	140 bar (2000 psi)
P × T[1] - Max	0.8mm & 1.5mm	25,000 bar × °C (700,000 psi x °F)
	3.0mm	12,000 bar × °C (350,000 psi x °F)
Applications[2]		Mild acids, mild caustics & alkalis, hydrocarbons, oxidizers, gases (except fluorine), aldehydes, ketones, ethers, some chlorides, phenols, amines, solvents, oils, fuels, alcohols, lubricants, halogenated compounds, cryogenics, and saturated steam.
Approvals & Certifications		Shipping: ABS Fire Safe: API 607

TYPICAL PHYSICAL PROPERTIES*

ASTM F36	Compressibility, Range		40%		
ASTM F36	Recovery		15%		
ASTM F38	Creep Relaxation		10%		
ASTM F152	Tensile Strength, Across Grain		24 MPa (3500 psi)		
ASTM F1315	Density		1.12 g/cm³		
ASTM F586	M/Y Design Factors	1.5mm	M = 2.6	Y = 17.2 MPa	
		3.0mm	M = 6.0	Y = 20.7 MPa	
ROTT	Gasket Constants	1.5mm	Gb = 1,400	a = 0.324	Gs = 0.01

SEALING CHARACTERISTICS*

	ASTM F37B – Fuel A	ASTM F37B – Nitrogen	Din 3535-4 – Gas Permeability
Gasket Load	35 bar (500 psi)	207 bar (3000 psi)	320 bar (4640 psi)
Internal Pressure	0.7 bar (9.8 psig)	2 bar (30 psig)	40 bar (580 psig)
Leakage	2.0 ml/hr	1.5 ml/hr	1.0 cc/min

CHEMICAL IMPURITY DATA

Chemical Limits	
Leachable Levels, Maximum (ppm)	**Total Chemical Limits, Maximum (ppm)**
Chlorides: 100 ǀ Fluorides: 100 ǀ Sulphur: 200	Total Chlorides: 500 ǀ Total Fluorides: 300 ǀ Total Sulphur: 1000

NOTES ASTM test results in accordance with ASTM F-104; properties based on 0.8mm sheet thickness unless otherwise mentioned ǀ *Values do not constitute specification limits ǀ [1]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 Engineering. ǀ [2]See Garlock chemical resistance guide.

WARNING Ensure this material is compatible with the media being sealed. Properties/applications as above are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. Performance data above has been developed from field testing, customer field reports and/or in-house testing. While the utmost care has been taken in compiling this data sheet, we assume no responsibility for errors. Specification subject to change without notice.

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