# KLINGER®
Graphite Laminate PDM

KLINGER®Graphite Laminate PDM - the more highly compressed pure graphite gasket with two rough sheet metal inserts.

Adhesive-free and manufactured from expanded graphite, this gasket material features two 0.1 mm thick tanged stainless steel inserts. Ideal for high-pressure, hot water and steam at temperatures up to 450 °C, this gasket material is free of resins, impregnations or other organic compounds. Furthermore, it displays stable physical properties across the entire temperature range.
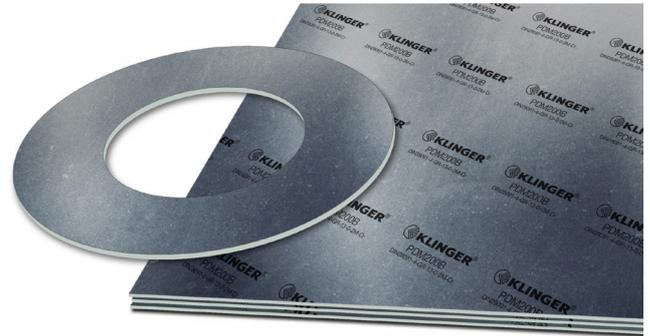
Basis composition	Expanded graphite with two 0.1 mm thick tanged stainless steel inserts.
Color	Grey
Certificates	Per Request

Sheet size	1000 x 1000 mm
Thickness	1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm

Tolerances

Thickness:	± 5 %
Length:	± 5 mm
Width:	± 5 mm

Industry

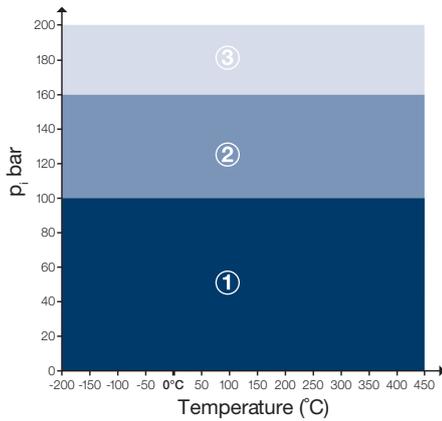General industry / Chemical / Oil & Gas / Energy / Pulp & Paper / Marine / Automotive

TECHNICAL DATA - Typical values for a thickness of 2.0 mm

Density of the graphite layer	DIN 28090-2	g/cm³	1.3
Purity of graphite[1]	DIN 51903	%	≥ 99.0
Metallic reinforcement	Tanged metal	mm	AISI 316 (L)
	Thickness	mm	0.10
	Number of sheets	mm	2
Compressibility	ASTM F36 A	%	15 - 25
Recovery	ASTM F36 A	%	35 - 45
Compression creep DIN 52913	16 h/ 50 MPa/ 300°C	MPa	≥ 48
Klinger cold/hot compression 50 MPa	Thickness decrease at 23°C	%	15 - 25
	Thickness decrease at 300°C	%	1 - 3
Specific leak rate λ	DIN 28090-2	mg/ s x m	< 0.10
Chloride content of graphite layer[2]	DIN 28090-2	ppm	≤ 40

1) High purity graphite with a purity of ≥99.8 with low sulphur and chloride levels available per request.

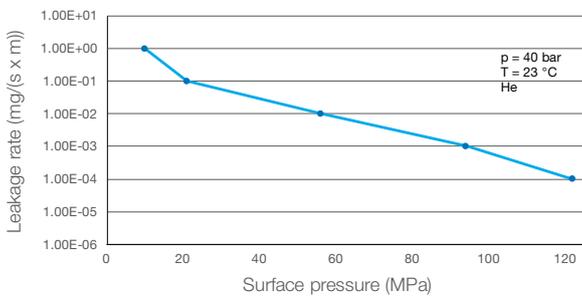2) Detailed specifications of the used graphite foils can be sent to you on request

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trusted. worldwide.

P-T diagram - thickness 2.0 mm

p, bar (y-axis): 0, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200

Temperature (°C) (x-axis): -200 -150 -100 -50 0°C 50 100 150 200 250 300 350 400 450

① ② ③

The area of the P-T diagram

① In area one, the gasket material is normally suitable subject to chemical compatibility.

② In area two, the gasket material may be suitable but a technical evaluation is recommended.

③ In area three, do not install the gasket without a technical evaluation.

Always confirm the chemical resistance of the gasket to the media.

Tightness performance

Leakage rate (mg/(s x m)) (y-axis): 1.00E+01, 1.00E+00, 1.00E-01, 1.00E-02, 1.00E-03, 1.00E-04, 1.00E-05, 1.00E-06

Surface pressure (MPa) (x-axis): 0, 20, 40, 60, 80, 100, 120

p = 40 bar
T = 23 °C
He

The tightness performance graph

The graph shows the required stress at assembling to seal a certain tightness class. The determination of the graph is based on EN13555 test procedure which applies 40bar Helium at room temperature. The sloping curve indicates the ability of the gasket to increase tightness with raising gasket stress.

Chemical resistance chart

Simplified overview of the chemical resistance depending on the most important groups of raw materials:

KLINGER® Graphite Laminate PDM   **A**: small or no attack   **B**: weak till moderate attack   **C**: strong attack

Paraffinic hydrocarbon	Motor fuel	Aromates	Chlorinated hydrocarbon fluids	Motor oil	Mineral lubricants	Alcohol	Ketone	Ester	Water	Acid (diluted)	Base (diluted)
A	A	A	A	A	A	A	A	A	A	B	B

For more information on chemical resistance please contact us

klinger.com.au