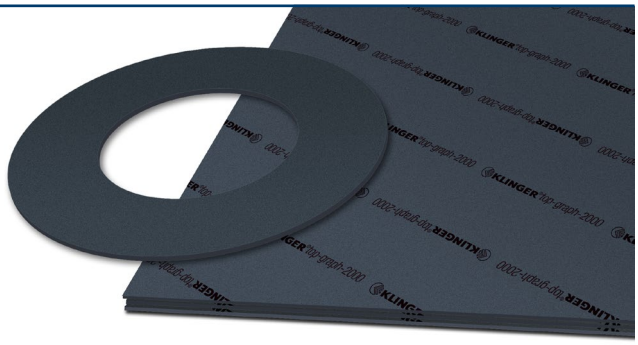
KLINGER®
top-graph 2000

KLINGER Dichtungstechnik

KLINGER®top-graph 2000 – the really flexible graphite sealing material.

Combining the benefits of both reinforcement and flexibility, this gasket material is made of graphite and synthetic fibers bonded with NBR. Its reliable handling, high load-bearing capacity and low embrittlement make it the best choice for steam and other demanding applications.



Basis composition	Graphite and synthetic fibers, bonded with NBR.
Color	Black
Certificates	Oxygen-tested, DIN-DVGW, TA- Luft (Clean air)

Sheet size	1000 x 1500 mm, 2000 x 1500 mm
Thickness	0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm

Tolerances

Thickness according to DIN 28091-1
Length: ± 50 mm
Width: ± 50 mm

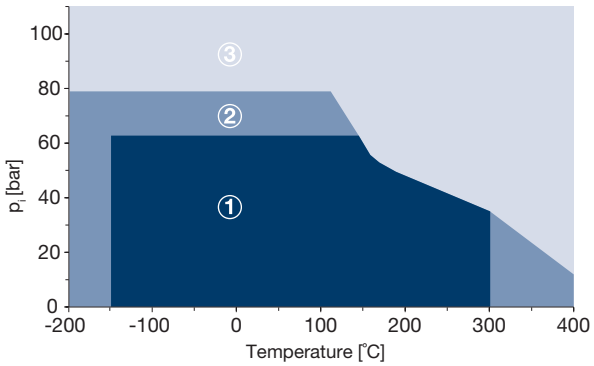
Industry

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

TECHNICAL DATA – Typical values for a thickness of 2.0 mm

Compressibility	ASTM F 36 J	%	10
Recovery	ASTM F 36 J	%	60
Stress relaxation DIN 52913	50 MPa, 16 h/300°C	MPa	30
Stress relaxation BS 7531	40 MPa, 16 h/300°C	MPa	27
KLINGER cold/hot compression	thickness decrease at 23°C	%	10
50 MPa	thickness decrease at 300°C	%	10
Tightness	DIN 28090-2	mg/(s x m)	0.05
Specific leakrate	VDI 2440	mbar x l/(s x m)	1.84E-05
Thickness increase after fluid	oil IRM 903: 5 h/150°C	%	5
immersion ASTM F 146	fuel B: 5 h/23°C	%	7
Density		g/cm³	1.8
Average specific volume resistance	ρD	Ω cm	6.7x10E3
Thermal conductivity	λ	W/mK	0.69
Classification acc. to BS 7531:2006	Grade AX		
ASME-Code sealing factors			
for gasket thickness 2.0 mm	tightness class 0.1mg/s x m	MPa	y 20
			m 4.2

P-T diagram – thickness 2.0 mm



The area of the P-T diagram

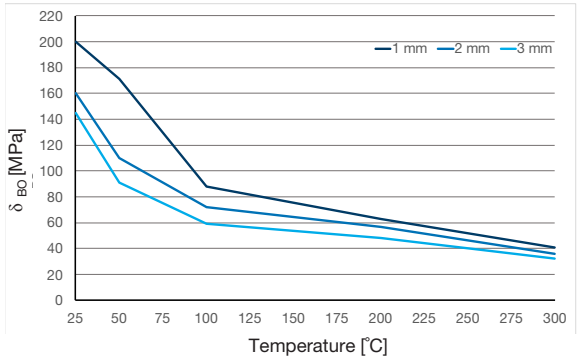
① In area one, the gasket material is normally suitable subject to chemical compatibility.

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 refer to the chemical resistance of the gasket to the media.

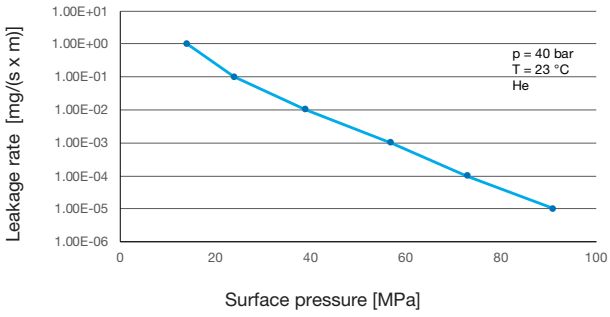
Sigma BO



Maximum surface pressure in operating conditions of Sigma BO

This diagram shows the maximum surface pressure in MPa with which the sealing material may be loaded, depending on the operating temperature. The characteristic curves apply to the specified sealing thicknesses. In contrast to Qsmax according to EN 13555, the surface pressures specified here are based on a maximum permissible reduction in thickness.

Tightness performance



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 40 bar 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®top-graph 2000 — **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	**B**	**C**	**C**	**A**	**B**	**A**	**C**	**C**	**A**	**A**	**A**

For more information on chemical resistance please visit www.klinger.co.at.

Certified acc. to DIN EN ISO 9001:2015 Subject to technical alterations. Status: December 2024
Rich. Klinger Dichtungstechnik GmbH & Co KG / Am Kanal 8-10 / A-2352 Gumpoldskirchen, Austria
Tel +43 (0) 2252/62599-137 / Fax +43 (0) 2252/62599-296 / e-mail: marketing@klinger.co.at