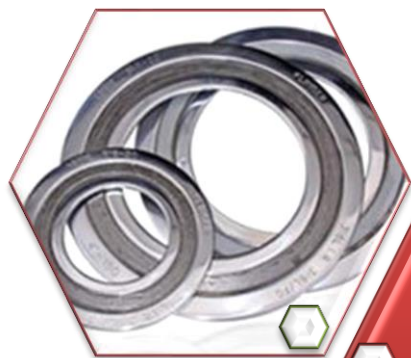
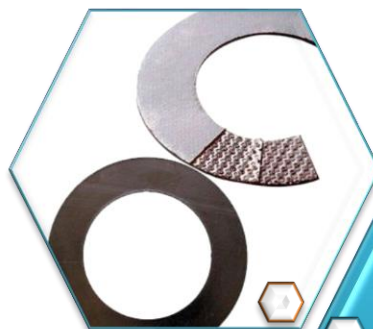




SPIRAL
WOUND
GASKETS

&



GASKETS
GRAPHITE
SHEETS

SPIRAL WOUND GASKETS



- Spiral wound gaskets have the ability to recover under the action of fluctuating loads caused by process fluid pressure and temperature changes, flange face temperature variations, flange rotation, bolt stress relaxation and creep.
- The gasket-sealing element consists of a pre-formed metallic winding strip with layers of a softer, more compressible sealing material which, during compression, is densified and flows to fill imperfections in the flange surfaces when the gasket is seated. The metal strip holds the filler giving the gasket mechanical resistance and resilience.
- Maxiflex gaskets can be manufactured from a range of filler materials according to different service conditions:

Klinger Maxiflex spiral wound gaskets also meet the tightness requirements of TA-Luft.

Filler Material	Maximum Temperature	ASME B16.20 Colour Coding
Graphite	550°C	Grey stripe
PTFE	260°C	White stripe
Nonas	350°C	Pink stripe
Mica	1000°C	Light Green
Mica & Graphite, Zonal	900°C	N/A

Winding Material	Maximum Temperature	ASME B16.20 Colour Coding
304 Stainless Steel	650°C	Yellow
316L Stainless Steel	800°C	Green
Duplex	800°C	N/A
347 Stainless Steel	870°C	Blue
321 Stainless Steel	870°C	Turquoise
Monel 400	800°C	Orange
Nickel 200	600°C	Red
Titanium	540°C	Purple
Hastelloy B-2	1000°C	Brown
Hastelloy C-276	1000°C	Beige
Inconel 600	1000°C	Gold
Inconel 625	1000°C	Gold
Inconel X-750	1000°C	Light Grey
Incoloy 825	1000°C	White
Zirconium 702	500°C	N/A



aerospace
sector
certification
scheme

BS EN 9100:2003, ISO 9001:2008
Certificate no: FM 10571



GRAPHITE GASKETS

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1. Graphite specifications

Property	Quality	A	B	C
Thickness	mm	0.25 – 1.00	0.20 – 1.50	0.20 – 1.50
Density	g/cm ³	1.00	1.00	1.00
Purity	%	≥ 99.8	≥ 99.0	≥ 98.0
Ash content	%	≤ 0.2	≤ 1.0	≤ 2.0
Leachable chloride	ppm	≤ 20	≤ 40	≤ 50
Sulfur	ppm	≤ 600	≤ 800	≤ 1100
Total halogens	ppm	< 450	-	-
Compressibility	%	40 – 50	40 – 50	40 – 50
Recovery	%	10 – 15	10 – 15	10 – 15
Tensile strength	MPa	> 4	> 4	> 4
Leakage rate (DIN 3535)	ml/min			
- Foil thickness < 0.63 mm		< 0.25	< 0.25	< 0.40
- Foil thickness 0.63 - 1.00 mm		< 0.40	< 0.40	< 0.70
- Foil thickness > 1.00 mm		< 0.55	< 0.55	< 1.00
Thermal conductivity	W/mK	180 - 200	180 - 200	180 - 200
- along length and width	W/mK	4 - 6	4 - 6	4 - 6
- through thickness				
Thermal expansion	m/m°C	ca. 1 · 10 ⁻⁶		
- parallel to layers	m/m°C	ca. 30 · 10 ⁻⁶		
- through thickness				
Specific heat	J/kg°C	710		

Klinger Graphite laminate is usually produced with graphite density 1.00 g/cm³. Other densities have to be ordered specifically.

Exception: PDM with 2 tanged inserts and graphite density 1.3 g/cm³.

Graphite qualities:

A	high purity
B	standard
C	economy

2. Product overview

Name	Type	Insert		
		Insert	Basic material	Thickness
ESM	laminate	expanded	1.4404 / passo 4	0.50 mm
G	homogeneous	-	PET overlay	0.01 mm
H / HL	homogeneous	-	-	-
PCM	laminate	tang	DIN 1624	0.20 mm
PDM	laminate	tang	1.4401/1.4404 graphite compressed	0.10 mm
PHM	laminate	tang	alloy C276	0.10 mm
PIM	laminate	tang	alloy 625	0.10 mm
PMM	laminate	tang	monel 400	0.10 mm
PSE	laminate	tang	1.4401/1.4404	0.10 mm
PSM *	laminate	tang	1.4401/1.4404	0.10 mm
SAB	laminate	plain	aluminum one-side self-adhesive	0.03 mm
SLA	laminate	plain	aluminum	0.10 mm
SLG	laminate	glas fibre	glas fibre	0.20 mm
SLN	laminate	plain	nickel	0.01 mm
SLS	laminate	plain	1.4401/1.4404	0.05 mm
SLW	laminate	wire mesh	1.4301	0.18 mm
SMB	laminate	foil	PET overlay self-adhesive	0.01 mm
SML	laminate	foil	PET	0.01 mm
TSM **	laminate	tang	1.4401/1.4404	0.10 mm
X ***	homogeneous	-	-	-
XSM ***	laminate	tang	1.4401/1.4404	0.10 mm

* insert 0.05 mm available on request

** TA-Luft laminate

*** continuous service temperatur up to 550 °C

All graphite laminates (no rolls) can be printed with Klinger logo or tailor made logo.

3. Sheets

Name	Graphite quality	Size			
		Thickness (mm)	(mm)	(mm)	(mm)
ESM	B C	1.00 – 3.00	2000 x 1000	1000 x 1000	-
G	B	1.00 – 3.00	2000 x 1000	1000 x 1000	-
H / HL *	A B C	0.50 – 3.00	2000 x 1000	1000 x 1000	1500 x 1500
PCM	B C	1.00 – 2.00	2000 x 1000	1000 x 1000	-
PDM	B C	1.00 – 3.00	2000 x 1000	1000 x 1000	1500 x 1500
PHM	A B C	1.00 – 3.00	-	1000 x 610	-
PIM	A B C	1.00 – 3.00	1000 x 910	1000 x 610	-
PMM	A B C	1.00 – 3.00	-	1000 x 610	-
PSE	C	1.00 – 3.00	2000 x 1000	1000 x 1000	1500 x 1500
PSM *	A B C	0.60 – 3.00	2000 x 1000	1000 x 1000	1500 x 1500
SAB	B C	0.25 – 1.00	2000 x 1000	1000 x 1000	-
SLA	B C	0.60 – 2.00	2000 x 1000	1000 x 1000	-
SLG	B C	0.60 – 2.00	-	1000 x 1000	-
SLN	A B C	0.60 – 3.00	1000 x 1000	1000 x 500	-
SLS **	A B C	0.50 – 3.00	2000 x 1000	1000 x 1000	1500 x 1500
SLW	B C	1.00 – 3.00	1500 x 1000	-	-

Name	Graphite quality	Size			
		Thickness (mm)	(mm)	(mm)	(mm)
SMB	B C	0.20 – 1.00	2000 x 1000	1000 x 1000	-
SML	B C	0.75 – 3.00	2000 x 1000	1000 x 1000	-
TSM ***	B	1.00 – 3.00	-	1000 x 1000	-
X	B	0.50 – 1.00	2000 x 1000	1000 x 1000	-
XSM	B	1.00 – 3.00	2000 x 1000	1000 x 1000	-

Other qualities, thicknesses and sizes on request

* sheet size 1500 x 1500 mm only for graphite quality B and C

** sheet size 1500 x 1500 mm only for graphite quality C

*** impregnated foil (TA-Luft laminate)

The graphite surface can be given a non-stick coating at the customer's request for an additional charge (exception: Type G).



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