KLINGERSIL® C-4300
A universal gasket, with good stress relaxation

Universal high-pressure gasket for a wide range of suitable applications.

Basis

Aramide fibres, bound with NBR. Resistant to hot water, steam, oils, hydrocarbons and many other chemicals.

Klinger cold/hot compression

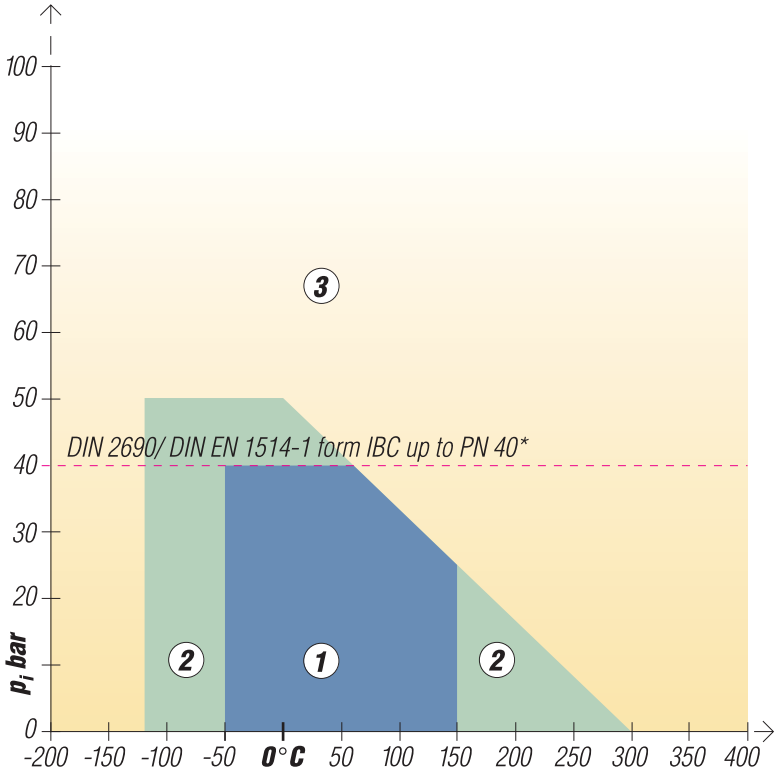
With this test method developed by Klinger you can evaluate the cold/hot compression of a gasket in cold and hot condition.

Unlike the method acc. to DIN 52913 and BS 7531, the surface load is kept constant during the complete test so that the gasket is exposed to much tougher conditions.

The thickness decrease at an ambient temperature of 23°C and at heating up to 300°C is measured.

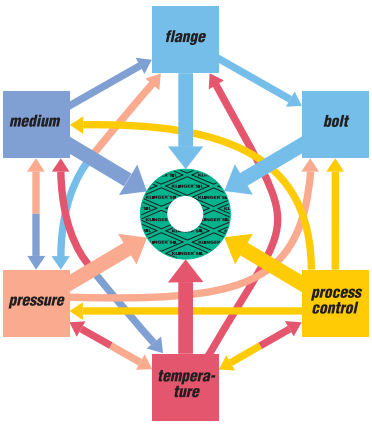
The indicated thickness decrease at 300°C refers to the thickness obtained after loading at 23°C.

** Gaskets according to DIN 2690 are only standardised up to PN 40*



The many and varied demands made on gaskets

The successful operation of a gasket depends upon a multiplicity of factors. Many who use static gaskets believe that the values quoted for maximum admissible temperature and maximum operating pressure are inherent properties or characteristics of gaskets and gasket materials.



Unfortunately, this is not the case.

The maximum temperatures and pressures at which gaskets may be used are influenced by a large number of factors.

Therefore a definite statement of these values for gasket material is not possible.

So why does Klinger provide pT diagrams?

For the reasons given the pT diagram is not infallible: it serves as a rough guide for the end user who often has only the operating temperatures and pressures to go on.

Additional stresses such as greatly fluctuating load may significantly affect whether a gasket is suitable for the application.

Resistance to media must be taken into account in every case.

The fields of decision

(1) If your operating temperatures and pressures fall within this field, a technical examination is normally unnecessary.

(2) If your operating temperatures and pressures are within this field, a technical examination is recommended.

(3) If your operating temperatures and pressures are within this "open" field, a technical examination is always necessary.

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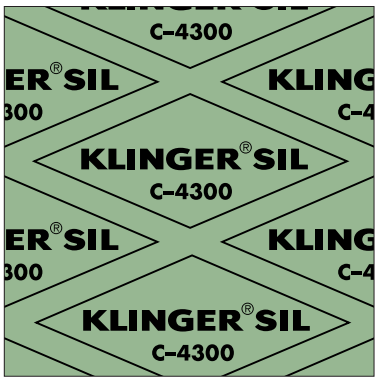

Typical values for 2 mm thickness			
Compressibility ASTM F 36 J		%	14
Recovery ASTM F 36 J	min	%	50
Stress relaxation DIN 52913	50 MPa, 16 h/300 °C	MPa	20
	50 MPa, 16 h/175°C	MPa	24
Klinger cold/hot compression, 50 MPa	thickness decrease at 23°C	%	10
	thickness decrease at 300°C	%	25
Tightness acc. to DIN 3535/6		ml/min	0.2
Soluble chloride content	chlorides (sol.)	ppm	150
Thickness increase ASTM F 146	oil JRM 903: 5 h/150 °C	%	5
	fuel B: 5 h/23 °C	%	10
Density		g/cm³	1.6
Average surface resistance	R_{OA}	Ω	3.6x10E10
Average specific volume resistance	ρ_D	Ω cm	1.4x10E10
Average dielectric strength		kV/mm	24
Average power factor	1 kHz, ca. 3 mm thickness	tan δ	0.147
Average dielectric coefficient	1 kHz, ca. 3 mm thickness	εr	9.7
Heat conductivity		W/mK	0.40-0.42

ASME-Code sealing factors				
for gasket thickness 2,0 mm and tightness classes DIN 28090	tightness class 1.0 mg/s x m	MPa	y	11
		MPa	m	1.5
	tightness class 0.1 mg/s x m	MPa	y	15
		MPa	m	3
	tightness class 0.01 mg/s x m	MPa	y	20
		MPa	m	6.5

Important points to be observed

The selection of gaskets requires expertise and know-how since ever greater reliability coupled with the lowest possible leakage rates are demanded of gasket materials.

The exacting demands made on the tightness of gasket materials (e.g. Tightness class $L_{0.01}$) mean that with increasing internal pressure higher surface pressures must be applied to the gasket.

It must be shown that the flange joint will tolerate the demands made on it without being mechanically overloaded. Furthermore, the surface pressure applied to create the seal should never fall below the required minimum value since this will reduce the life of the gasket. Highly stressed, but not overstressed gaskets have a longer life than understressed gaskets.

If the gasket fitted will be subjected to non-static loading, or will suffer stress fluctuations during discontinuous operation, it is advisable to choose a gasket which is not prone to embrittlement with increasing temperature (e.g. KLINGERgraphite laminate or KLINGERtop-chem), especially for steam and/or water applications.

For discontinuous operations in water and/or steam applications, we recommend as a general guide a surface pressure of about 30 MPa. In such cases the gasket should be as thin as is practicable.

For reasons of safety, we advise against the re-use of gaskets.

Dimensions of the standard sheets

Sizes:
1,000 x 1,500 mm, 1,500 x 2,000 mm
Thicknesses:
0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm; other thicknesses on request.
Tolerances:
thickness ± 10%, length ± 50 mm, width ± 50 mm

Rings and other finished gaskets

These gaskets are available in any size and corresponding sheet thicknesses, also flanged and PTFE-enveloped.

Surfaces

The standard surface finish of the material is such that the surface has an extremely low adhesion.
On request, graphite facings and other surface finishes on one or both sides are also available.

Function and durability

The performance and life of KLINGER gaskets depend in large measure on proper storage and fitting, factors beyond the manufactor's control. We can, however, vouch for the excellent quality of our products.

With this in mind, please also observe our installation instructions.

Tests and approvals.

Approved for gas supply in acc. with DIN 3535/6.
DIN-DVGW approval no. NG-5123 BM 0396.
SVGW-permit.
KTW recommendation.
Food toleration, Austria.
TÜV Poland.
Germanischer Lloyd.

Subject to technical alterations.
Status: February 2003

Certified according to DIN EN ISO 9000:2000.

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