

## KLINGER Maxiprofile Type T109

### Fire Safe to API 6FB

The KLINGER Maxiprofile is a composite gasket which utilizes a serrated metal core with a soft facing material. The metal core is machined on each contact face with concentric serrations which provide high pressure areas, ensuring that the soft coating flows into any imperfections in the flange even at relatively low bolt loads. The soft facing material is engineered to compress in to the serrations on the core and form a thin film across the peaks creating the ideal sealing density in the grooves of the profile. The result is a gasket which combines the benefits of soft cut materials with the advantages of seal integrity associated with metallic gaskets.

### Standard Facing Materials

Expanded graphite is the most common facing material used for Maxiprofile gaskets. However, other materials can be used, such as PTFE for chemically aggressive duties or Mica for high temperature service.

### Standard Core Materials

Maxiprofile Gaskets are available to order in a wide range of components materials to suit specific applications.

### Flange Surface Requirements

The ideal flange surface finish for Maxiprofile gaskets is 3.2 to 6.3 microns Ra.

### Gasket Factors of Maxiprofile Gaskets

$M = 2$  ;  $Y = 17.2 \text{ MPa}$  \*

\*'M' and 'Y' values are to be used for flange designs only as specified in the ASME Boiler and Pressure Vessel Code. They are not meant to be used as gasket seating stress values in actual service. On request, Klinger can calculate the recommended stress and torque values for specific applications.

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### Maximum Temperature Limits

The table below show some examples of using various core and facing materials for various temperature limits. Please consult KLINGER for specific applications.

Winding Material	Maximum Temperature
304/304L	650°C
316/316L	800°C
Duplex 31803	800°C
347SS	870°C
321SS	870°C
Monel 400	800°C
Nickel 200	600°C
Titanium	500°C

Winding Material	Maximum Temperature
Inconel	1000°C
Incoloy	600°C
Hastelloy	700°C
Super Duplex	600°C
Alloy 20	600°C
254 SMO	600°C
Zirconium	500°C
Carbon Steel	500°C

Filler Material	Maximum Temperature
Graphite	500°C
PTFE	260°C
Mica	1000°C
KLINGERSIL C-4430	250°C

The temperatures shown are guidelines only and do not apply in all fluids. Please consult KLINGER for advice.

### General Properties of Maxiprofile Gaskets

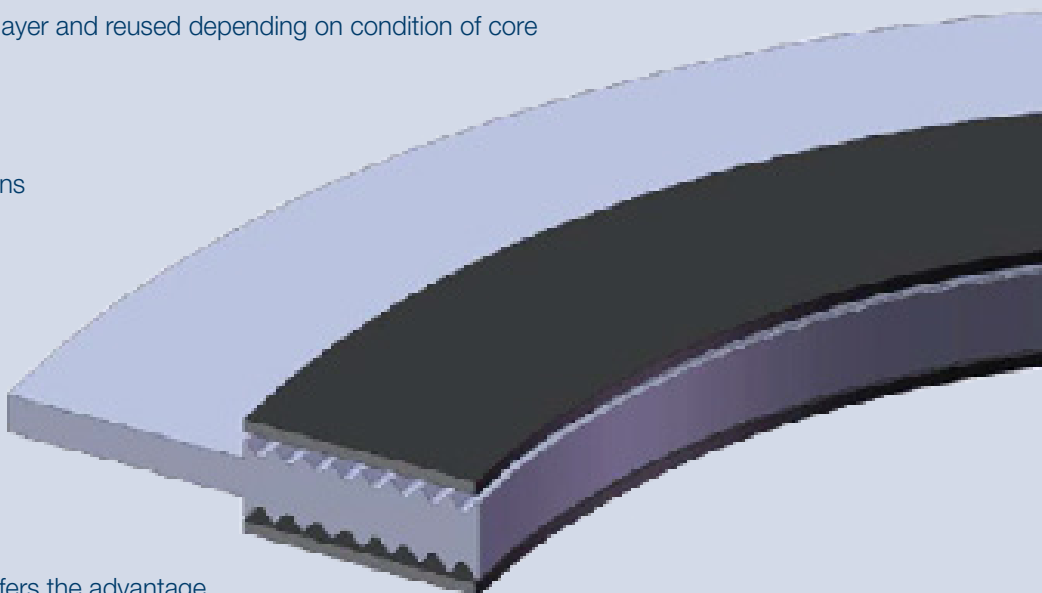
- » A wide range of seating stresses under which the seal is effected and maintained
- » Can be used when there is insufficient bolt load to seal conventional gasket materials
- » Easy to handle and fit
- » Suitable for a wide range of operating conditions
- » The soft facing layer prevents damage to the mating flange
- » Sealing is not sensitive to uneven bolt loading conditions
- » Can be refurbished with a new facing layer and reused depending on condition of core

### General Applications

- » Heat Exchanger and vessel applications
- » High and low temperatures
- » High Pressures
- » Low bolt loads
- » Narrow flange widths
- » Damaged flanges

### Core Design

Standard core design is parallel which offers the advantage of even stress distribution across the gasket face. Convex Maxiprofiles are also available which have a reduced depth of grooves towards the profile centre.



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### Applications

- » Used for a wide range of applications including steam, oil, hydrocarbons and can also be tailored to suit more aggressive chemicals.
- » Used for applications requiring a high-integrity seal such as chlorine
- » Especially suited to use in heat exchangers

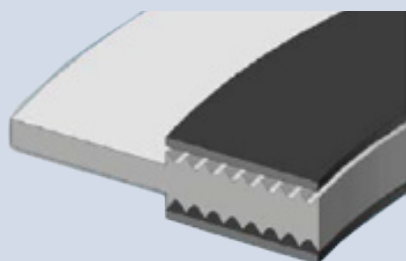
### Typical Properties

- » High pressure gasket with a wide seating stress range
- » Excellent tightness even at low bolt loads
- » Reusable metallic core can be refaced after service
- » Available facings include:
- » Graphite, PTFE, Mica, KLINGERSIL, Soft-Chem (Expanded PTFE)

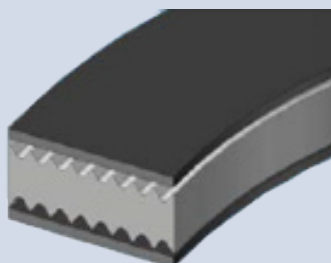
### Typical Specifications

Core material:	Standard SS316L – 3.0, 4.0, 5.0 mm Thick (other materials on request)
Facing material:	Graphite 0.5 mm thick
Facing density:	1 g/cm <sup>3</sup>
Max. temperature:	500°C – oxidizing conditions
Max. pressure:	>400 bar – subject to application, flange design etc. Please consult KLINGER.
Suitability:	For flanges to: ASME B16.5, DIN, BS 10, JIS, AS2129 and customer designs

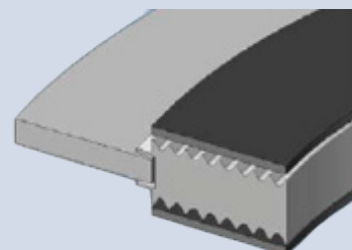
Style	Description
LA1	Used for standard pipework. Lateral Profiled joint with guide ring for raised and flat face flanges.
LA2	Used for vessels and heat exchangers. Lateral profiled joint without a integral guide ring for male and female, tongue and groove and grooved flanges.
LA3	Used for large diameter standard pipework. Lateral profiled joint with floating guide ring for raised and flat face flanges.



Maxiprofile LA1



Maxiprofile LA2



Maxiprofile LA3

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### Characteristics

- » The Klinger Type T108 is a rigid laminated gasket consisting of graphite layers bonded to each face of a solid steel core.
- » Type graphite T108 gasket was initially designed to provide a high performance, low seating stress gasket replacement to the traditional metal jacketed and compressed asbestos fibre type gaskets utilized on heat exchanger applications.
- » The core of the Type T108 has the ability to be re used if manufactured from a suitable quality material for the application.
- » Can be laser cut into many configurations to suit various gasket profiles for heat exchangers

### Applications

- » Used for boiler and heat exchangers, suitable for narrow sealing faces
- » Used to create a more stable gasket than laminated graphite materials for large gaskets
- » Especially suited to use in heat exchangers

### Typical Properties

- » Economical alternative to Maxiprofile Type T109 gaskets for lower pressure, lower critical applications
- » Medium pressure gasket with a wide seating stress range
- » Excellent tightness at low bolt loads.
- » Excellent corrosion resistance
- » Narrow gasket width available
- » Particularly suitable for rectangular or non – round shapes

### Typical Specifications

Standard Core materials:	SS304L/SS316L ,Carbon Steel/Soft Iron (other materials available on request)
Facing material:	Graphite (for PTFE lamination please consult Klinger)
Facing density:	1 g/cm <sup>3</sup>
Max. temperature:	450°C
Max. pressure:	>100 bar – subject to application, flange design etc. Please consult Klinger
Thickness:	Core: 3.0 mm (standard or as specified by customer) Facing: 0.5 mm ,Graphite standard purity, >99% graphite