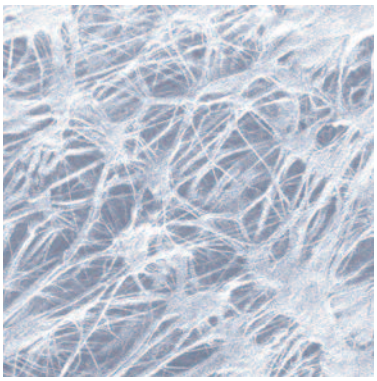
KLINGER®top-flon multi
High-tech premium PTFE sealing tape

KLINGER®top-flon multi.
This PTFE sealing tape, with its multidirectional fibre structure, offers exceptional stability for applications in steel and glass-lined flanges at temperatures of between -240°C and +270°C.

KLINGER – The global leader in static sealing

The further development of production technologies for PTFE materials has allowed KLINGER to offer you a PTFE sealing tape with really special properties.
Special stages in the process means that the fibre structure generated within the KLINGER®top-flon multi sealing tape is longitudinal and lateral at the same time, which gives remarkable strength in both directions.
This gives both excellent stability in terms of width – despite the high press resistance scores, the widening of the sealing tape under stress is virtually negligible – and the high levels of cold flow appearing usually with untreated PTFE products are also dramatically reduced. Both of these guarantee that the gasket load remains at a high level and thus ensures the stability of the flange connection.



Particularly suitable for sealing heat exchanges, large pressure containers and flanges with relatively large diameters and levels of unevenness. For applications on glass-lined flanges and on weak materials such as glass or ceramics.

KLINGER®top-flon multi
High-tech premium PTFE sealing tape

Application field

PTFE is known for its particular chemical resistance. KLINGER®top-flon multi is a virginal PTFE and therefore resistant to all media except fluorine in element form, other aggressive fluorine compounds and molten alkaline metals. Can be used in pH range of 0 to 14.

The temperature resistance of the material ranges from -240°C to +270°C, up to 315°C in the short term.

Because of the possible different loads and sealing forces under real conditions, the practical limits in terms of pressure and temperature can vary.

Please do not hesitate to contact us if you have any questions on sizing.

The format of the tapes in 4 levels with thicknesses of 2 mm to 9 mm and widths of 10 mm to 65 mm, depending on the thickness, allows a range of different sealing requirements to be met. Generally, it should be fitted in the connecting type of floating connection. The tape can simply be adapted to the different designs and safely affixed to the sealing surface using the special adhesive strip.

Due to their high adaptability KLINGER®top-flon multi is the optimum sealent for sealing heat exchangers, large pressure containers and flanges with relatively large diameters and levels of unevenness.

The 3 mm tape thickness is generally used for steel flanges, but 2 mm or 6 mm can also be used.

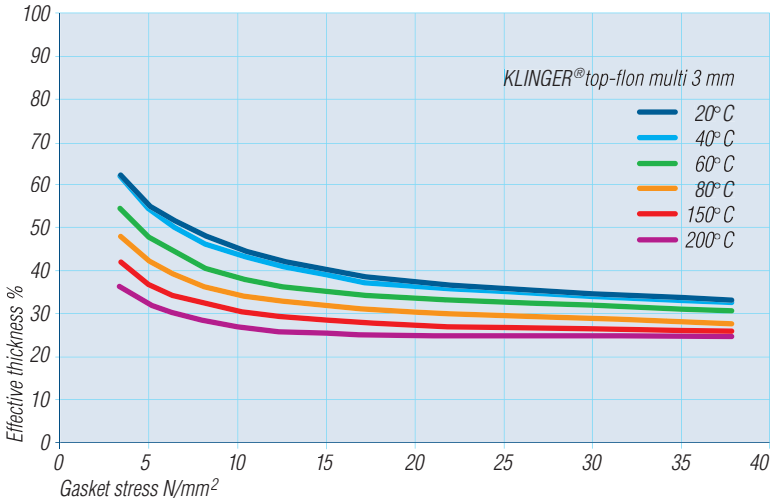
The 6 mm and 9 mm thick tapes are often best for applications on glass-lined flanges and on weak materials such as glass or ceramics, KLINGER®top-flon multi is physiologically safe and complies with FDA regulations.

It can therefore easily be used for pharmaceutical and food applications.

Characteristic properties

AD-Instructions B7	
$k_0 \times k_D$	$= 25 \times b_D$
k_1	$= 2.5 \times b_D$
EN 13555	
$Q_{MIN\ (0\ 01/\ 10\ bar)}$	= 20 MPa
$Q_{MIN\ (0.01/\ 40\ bar)}$	= 25 MPa
$Q_{MIN\ (TA\text{-}Luft)}$	= 30 MPa
$Q_{S\ MIN\ (0.01)}$	= 5 MPa
$Q_{S\ MIN\ (blow\ out\ safety\ Class\ C)}$	= 10 MPa
Q_{CRIT}	= 180 MPa
DIN 28090-2	
KSW	= 39 %
WSW	= 14 %

Compressed thickness



Dimensions

Width mm	Spool-Lenght in meter 2 mm thickness	3 mm thickness	6 mm thickness	9 mm thickness
10	10/ 25/ 50	10/ 15/ 25	10/ 15/ 25	
15	10/ 25/ 50	10/ 15/ 25	10/ 15/ 25	
20	10/ 25/ 50	10/ 15/ 25	10/ 15/ 25	5/ 10/ 15/ 25
25	10/ 15/ 25	10/ 15/ 25	10/ 15/ 25	5/ 10/ 15/ 25
30	10/ 15/ 25	10/ 15/ 25	10/ 15/ 25	5/ 10/ 15/ 25
35	5/ 10/ 15/ 25	5/ 10/ 15/ 25	5/ 10/ 15/ 25	5/ 10/ 15/ 25
40	5/ 10/ 15	5/ 10/ 15	5/ 10/ 15	5/ 10/ 15
45	5/ 10/ 15	5/ 10/ 15	5/ 10/ 15	5/ 10/ 15
50		5/ 10/ 15	5/ 10/ 15	5/ 10/ 15
55		5/ 10/ 15	5/ 10/ 15	5/ 10/ 15
60			5/ 10/ 15	5/ 10/ 15
65			5/ 10	5/ 10

Tests and approvals

KLINGER®top-flon multi has the following tests and approvals:

- *TA-Luft certificate (German clean air act)*
- *FDA conformity*

Seal selection and Installation

Seal selection

On a general basis, we can only put forward recommendations, as the conditions of use vary enormously.

For steel flanges, we recommend a seal width of 33 % to 50 % of the seal surface.

If the seal is for a flange which is sensitive to tension (glass or ceramic flange) then the seal width should be equal to the maximum seal surface area in order to distribute possible tension as evenly as possible.

For glass-lined flanges the gasket should excess the outer diameter by minimum 3 mm to ensure form-fitting.

Function and service life

The function and service life of KLINGER seals largely depends on the conditions of use, on which we have no influence. So we can only guarantee the perfect composition of our material.

Please note our fitting instructions as well.

Special fitting instruction for glass-lined flanges available.

Fitting

1. *Prior to fitting a new seal, check that all residues of the old seal material have been removed and the flanges are clean, degreased, in good condition and parallel.*

2. *The seal should be fitted dry, sealing aids can cause the seal to fail.*

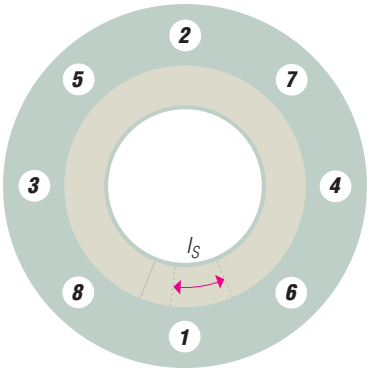
3. *KLINGER® top-flon multi is placed in the centre of the seal area, starting at a screw hole.*

Just remove enough of the protective backing as you can stick sealing tape in a single step, so you can make sure the adhesive tape does not get dirty.

4. *As shown in the diagram, cut the sealing tape diagonally with a sharp knife and overlap it.*

5. *Then put the components together and tighten the screws diagonally in several stages until the desired torque is reached.*

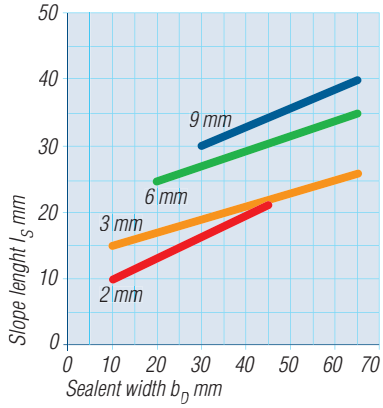
It is very important that the screws are tightened diagonally and gradually in order to prevent the flange bending.



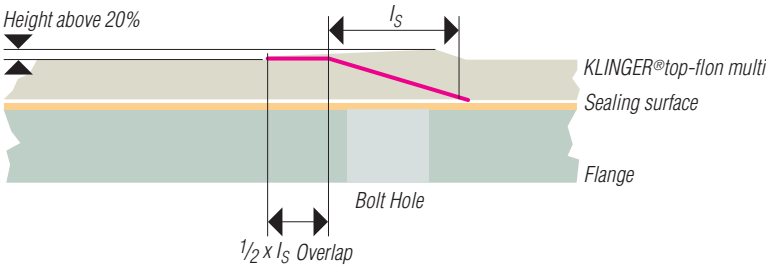
6. *It also makes sense to tighten them up at a later date – after the first temperature cycle for steel flanges, and the same for flanges which are sensitive to tension, but only at room temperature.*

7. *For safety reasons, it is generally advisable not to use seals more than once.*

Slope lenght l_S



Assembly with sloping cut l_S



KLINGER GmbH
Rich.-Klinger-Straße 37
D-65510 Idstein
Tel +49 (0) 6126 4016-0
Fax +49 (0) 6126 4016-11/ -22
e-mail: mail@klinger.de
http://www.klinger.de

Certified according to DIN EN ISO 9001:2008

März 2012