

SIGRAFLEX®

Large size flat gaskets

Depending on the service pressure and the maximum permissible gasket stress, SIGRAFLEX gaskets with outside diameters of more than 1500 mm can be produced from the following sealing material:

- SIGRAFLEX sealing tapes made from SIGRAFLEX flexible graphite foil, self-adhesive
 - SIGRAFLEX segments with optional metal reinforcement
- When selecting a suitable gasket structure, the maximum permissible gasket stress and the field of applications must be considered.

SIGRAFLEX sealing tapes made from self-adhesive SIGRAFLEX flexible graphite foil

- For complicated designs [e.g. heat exchangers], exhaust gas lines in incineration plants, also as an outer layer on smooth, profiled or corrugated stable metal support sheets
- For low service pressures of up to 25 bar and mean gasket pressures σ_{B0} up to 60 N/mm²
- For use in highly corrosive media owing to its extremely high chemical resistance

The sealing tape is available in various grades and dimensions to match the application concerned. High-purity tapes with low chloride content can be supplied for the nuclear power industry and applications where high purity is essential. SIGRAFLEX tapes can be used for virtually all diameters. Even greater thicknesses can be obtained by applying the tape in successive layers.

Further advantages are ease of assembly and minimum storage. Long service lives and substantial reductions in downtimes result in reduced costs. SIGRAFLEX tapes are supplied by well-known gasket manufacturers.

Assembly instructions

The tape can be used to cover nearly all large sealing faces in sections. The individual pieces are torn, not cut, from the supply in the box. They should overlap on the sealing face by at least 10 mm.

The sealing faces must be dry and free from grease and oil to ensure adhesion of the adhesive film. Any major unevenness in the sealing faces can be compensated for by localized padding.

Procedure

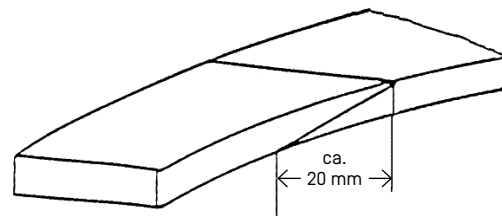
- Apply the sealing tape in the groove or around the outer sealing edge in raised-face flanges. The minimum sealing height should not be less than 2.0 mm [before applying gasket stress].
- Flanges should be aligned as plane-parallel as possible.
- Flange bolts should be tightened in diagonal order, first to about 30 % of the torque value, in the second stage to about 60 %, and to the full value in the third stage but not before. All bolts must be tightened to the specified value; hence the torque should be checked repeatedly.

If the tape is applied in several layers, the maximum permissible gasket assembly stress must be adjusted accordingly. This is very important for gaskets with a large diameter combined with a narrow face width.

SIGRAFLEX segmented gaskets

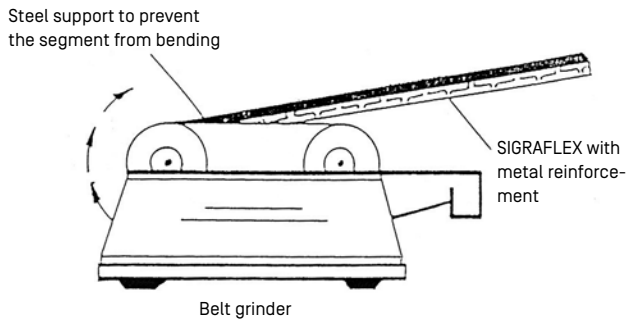
a) without reinforcement

SIGRAFLEX graphite materials are susceptible to mechanical damage, typically buckling or breaking, so they must be handled with special care. If possible, the individual segments should be assembled directly on the flange sealing face. Segmented gaskets without metal reinforcement e. g. are manufactured from SIGRAFLEX STANDARD. The overlapping ends can be chamfered with a sharp knife or a belt grinder.



b) with metal reinforcement

For segmented gaskets with stainless steel foil reinforcement e.g. SIGRAFLEX UNIVERSAL (PRO) or SIGRAFLEX HOCHDRUCK (PRO) are used. The overlapping ends of such metal-reinforced SIGRAFLEX gaskets (face width > 10 mm) are chamfered with the belt grinder running against the direction of taper.

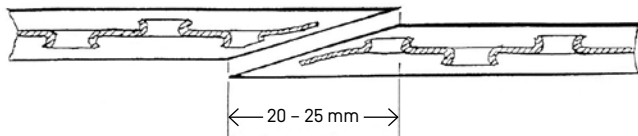


Assembly procedure for SIGRAFLEX gasket segments

In this paragraph, only the peculiarities of segmented gasket assemblies are explained. For further reference about the assembly procedure please refer to the technical information "SIGRAFLEX handling and assembly instructions".

To prevent the ready-assembled segmented gaskets or the individual segments from being displaced, a commercial chloride-free spray adhesive can be used as an assembly aid. The adhesive should be used very sparingly and applied at a few points only.

- Arrange the SIGRAFLEX segments on the sealing face in such a way that the chamfered ends overlap. The last segment needs to be adjusted to fit. The segments should overlap by 20 - 25 mm.
- For metal-reinforced versions, the two segments must overlap in such a way that the metal reinforcements are not directly on top of each other but in contact with the chamfered graphite of the adjoining segment (no metal/metal contact).
- Carefully place the cover or top flange in position and secure to prevent displacement, after that the part should not be moved any more if possible. The cover or top flange must be aligned parallel to the lower sealing face.



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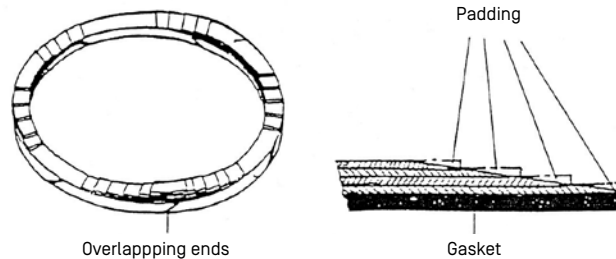
Padding of SIGRAFLEX gaskets

Any major flange distortions [e.g. ≥ 0.5 mm for gasket thickness of 3 mm] can be compensated for with SIGRAFLEX. This is done by padding the gasket with SIGRAFLEX segments until a homogeneous, fully performing sealing ring is obtained when bolts are tightened.

Procedure

- Check and mark flange alignment.
- Measure the flange distortion
- Join the flanges together and measure the gap widths with a gauge (with a distance of 100 mm).
- Record the flange gap dimensions. The actual padding height is obtained by multiplying the gap dimension by a factor of 1.5.
- Cut the required padding segments to size and bond them directly to the gasket already in situ.
- Level the transitions with a sharp knife, rasp, sandpaper, or the like.
- If too much material was accidentally removed when fitting the segments, the error can be corrected by adding a suitable segment.

Please note: The maximum mechanical load-bearing capacity of the segmented gasket, which is already reduced in comparison with a single-part gasket, will be reduced even further by padding.



If a segmented gasket is applied in several layers, care should be taken to ensure that the overlapping ends are staggered.

TIS SIGRAFLEX largesize gaskets.00

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