



sealing for a safer and greener tomorrow



EXPANDED AND STRUCTURED
PTFE SEALING MATERIALS

PTFE as the basis for gaskets of the newest generation...

Numerous advantages make our PTFE-products an ideal and extremely versatile sealing material:

- chemical resistance from pH 0 – 14
- temperature range from -240°C up to + 270°C (+310°C for short periods)
- high residual stress
- physiologically harmless
- conforms to FDA regulations
- non-ageing, UV resistant
- non-inflammable
- vacuum resistant

...perfected by special TEADIT® manufacturing processes

Our all-purpose mono-directionally expanded PTFE joint sealant tapes are manufactured from 100% pure PTFE (Polytetrafluorethylen). A special, thermo-mechanical stretching process results in a micro-porous fibre structure which adds high tensile strength and malleability to the general advantages of PTFE, while the negative characteristics - like cold flow and creep - are almost totally eliminated. Because of the excellent malleability of expanded PTFE, TEADIT® joint sealant tapes adapt easily to irregularities or damages on the sealing areas (flange faces), sealing effectively at already low flange loads.

mono-directional



Based on the production process of our monoaxially expanded PTFE tapes, we have strived to further improve the cold flow properties and deformation characteristics of expanded PTFE-material. We have managed to develop the complex stretching process to a level which results in a multi-directional fibre structure which guarantees equal tensile strength in all directions. As



a result of this, the new material has excellent dimensional stability and is subject to only very minimal cold flow. All this without losing any of the superb sealing properties of pure PTFE.

multi-directional

The latest addition to our family of ePTFE sealing products is our



structured

range of TF sheets. A unique production process provides a highly fibrillated PTFE structure of the gasket sheets, which results - together with the carefully chosen filler materials - in very high mechanical strength of the sheets, which makes handling of big gaskets easier. The filler materials are chosen to suit the different applications occurring in all kinds of industry.

This makes TEADIT® the only manufacturer world-wide who produces a full range of expanded AND structured PTFE sealing products.

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Structured PTFE gasket material TF

The TF range of PTFE gasket sheets are made from pure PTFE with special filler substances. Because of the multidirectionally orientated fibre structure of these PTFE-sheets, the problems usually associated with PTFE, like cold flow and creep, have been largely eliminated. Gaskets from those sheets can be used in considerably higher temperature/pressure combinations than conventional PTFE materials.

Advantages

- excellent compressibility
- outstanding recovery
- low hot creep during service
- excellent sealability
- drastically reduced cold flow and creep
- high mechanical strength
- excellent chemical resistance

Advantages at installation

- easy to handle
- low assembly pressure
- quick and easy installation

Product standard

Sheet size: 1,500 x 1,500 mm in 1.5, 2.0 and 3.0 mm thickness, and as ready cut gasket. Other thicknesses on request.

Please note:

all our PTFE gasket sheets exceed the demanding TA Luft standard.



Structured PTFE gasket material TF

TF 1590

filled with Silica

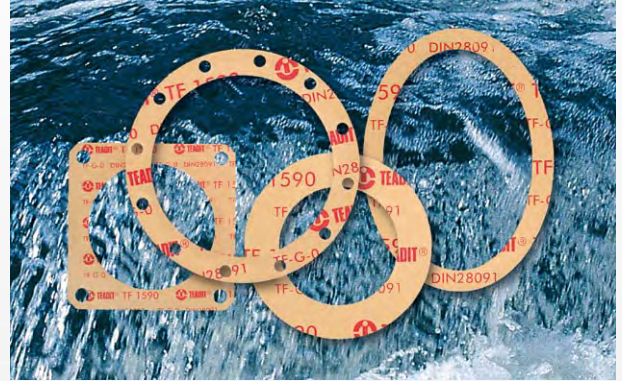
colour: fawn

Special advantages

- outstanding resistance against most chemicals
- particularly suited for use with acids
- high resistance against blow-out
- excellent mechanical strength

Application areas

- very versatile gasket material, best suited for chemical and petrochemical processes



Technical data

density (at delivery): $\rho = 2.1 \text{ g/m}^3$

temperature range: -210°C up to $+260^\circ\text{C}$

max. pressure: up to 83 bar

pH 0 – 14

minimum assembly pressure $Q_{\min 0,01} = 21 \text{ MPa}$

min. gasket pressure under operating conditions $Q_{\text{Smin } 0,01} < 10 \text{ MPa}$

maximum surface pressure $Q_{\text{max}} > 240 \text{ MPa}$

TA Luft / leakage according to VDI 2440 $L = 1.1 \cdot 10^{-6} \text{ mbar l/(sm)}$

Tests and approvals:

BAM, DVGW, Air Liquide (oxygen), FDA, TA Luft, GL, KTW, Blow-out test (VDI 2200)

Regulation (EC) No. 1935/2004

TF 1580

filled with Barium Sulfate

colour: off-white

Special advantages

- excellent resistance against most chemicals
- particularly suited for use with caustics

Application areas

- suitable for „clean“ processes and products
- extremely versatile gasket material, best suited for pharmaceutical and food industry

Technical data

density (at delivery): $\rho = 2.9 \text{ g/cm}^3$

temperature range: -210°C up to $+260^\circ\text{C}$

max. pressure: up to 83 bar

pH 0 – 14

minimum assembly pressure $Q_{\min 0,01} < 10 \text{ MPa}$

min. gasket pressure under operating conditions $Q_{\text{Smin } 0,01} < 10 \text{ MPa}$

maximum surface pressure $Q_{\text{max}} > 240 \text{ MPa}$

TA Luft / leakage according to VDI 2440 $L = 5.9 \cdot 10^{-7} \text{ mbar l/(sm)}$



Tests and approvals:

BAM, DVGW, FDA, TA Luft, GL, Blow-out test (VDI 2200)

Structured PTFE gasket material TF

TF 1570

filled with hollow glass micro spheres

colour: blue

Special advantages

- excellent adaptability
- high compressibility
- very good chemical resistance

Application areas

- suitable for pressure sensitive connections made of glass, ceramics, plastic etc.
- compensates for irregularities, roughness and/or damages on the sealing areas
- all-round gasket material, specially suited for the chemical and pharmaceutical industry

Technical data

density (at delivery): $\rho = 1.7 \text{ g/cm}^3$

temperature range: -210°C up to $+260^\circ\text{C}$

max. pressure: up to 55 bar

pH 0 – 14

minimum assembly pressure $Q_{\min 0,01} < 10 \text{ MPa}$

minimum gasket pressure under operating conditions $Q_{\min 0,01} < 10 \text{ MPa}$

maximum surface pressure $Q_{\max} > 240 \text{ MPa}$

TA Luft / leakage according to VDI 2440 $L = 3.7 \cdot 10^{-6} \text{ mbar l/(sm)}$



Tests and approvals:

TA Luft, FDA, BAM, GL, Blow-out test (VDI 2200)

TF 1510

filled with hollow glass micro spheres

colour: white

Special advantages

- Highly compressible and therefore adaptable to any sealing surface
- Outstanding mechanical resistance and residual stress

Application areas

- Suitable for service with most aggressive fluids at a wide temperature range

Tests and approvals:

BAM, TA Luft, FDA,

Blow-out test (VDI 2200), GL



Technical data

density (at delivery): $\rho = 1.1 \text{ g/cm}^3$

temperature range: -210°C up to $+260^\circ\text{C}$

max. pressure: up to 55 bar

pH 0 – 14

minimum assembly pressure $Q_{\min 0,01} < 19 \text{ MPa}$

minimum gasket pressure under operating conditions $Q_{\min 0,01} < 11.7 \text{ MPa}$

maximum surface pressure $Q_{\max} > 240 \text{ MPa}$

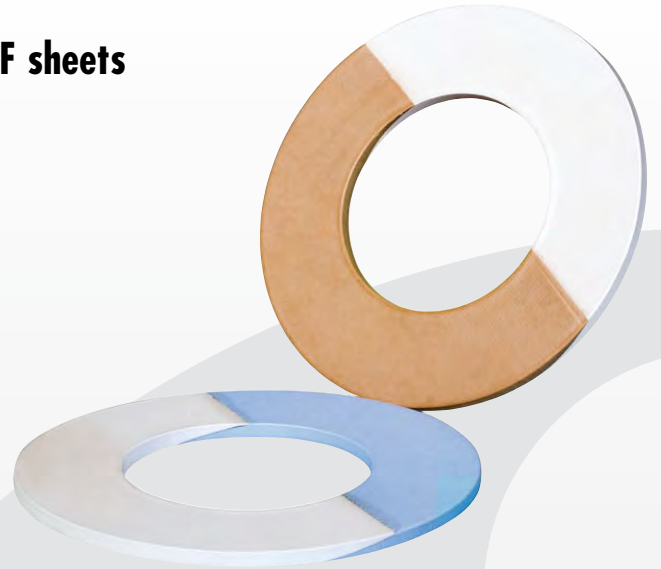
TA Luft / leakage according to VDI 2440

$L = 1.1 \cdot 10^{-5} \text{ mbar l/(sm)}$

Welded gaskets

Welded gaskets made from our TEADIT® TF sheets

For over 20 years TEADIT has been welding large size PTFE-gaskets and PTFE envelope gaskets. We enhanced this practical knowledge, the technology and materials to provide customers with gaskets in big dimensions (larger than sheet size) made from our structured TF materials. Our precisely manufactured welded gaskets achieve the same tightness classes as gaskets made from one single piece.

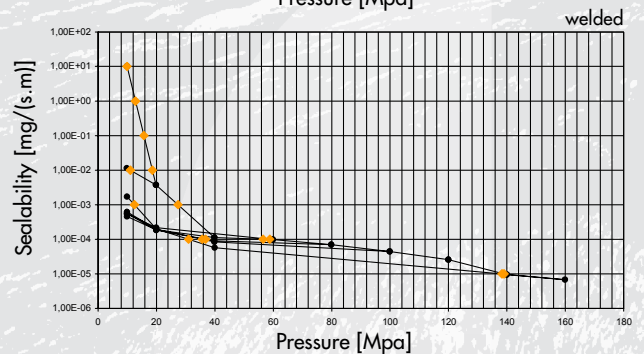
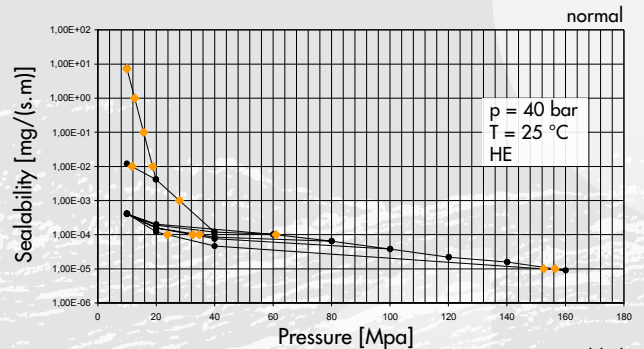


Advantages:

- Same leakage classes as gaskets cut from one piece.
- Gaskets in diameters far beyond sheet size are possible.
- Maximum material yield by producing gaskets from welded segments – therefore lower cost.
- TEADIT welded gaskets are manufactured true to size. This results in fast and easy installation, as such close tolerances cannot be achieved by welding the gasket on site.

Application areas:

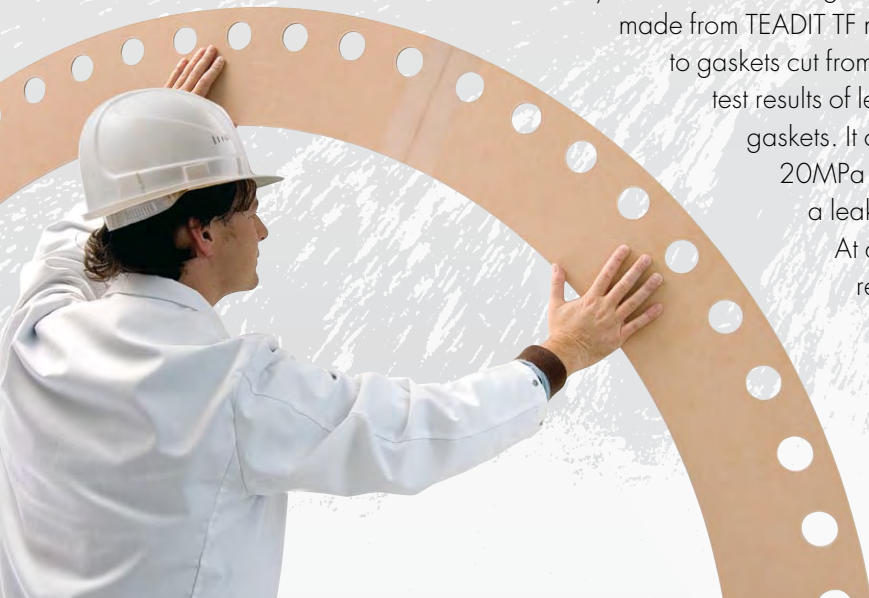
- Equipment which requires gaskets bigger than the available sheet(s).
- Bigger gaskets, where the focus is on material cost optimization.



By research and testing TEADIT provided evidence that welded gaskets made from TEADIT TF materials, in terms of leakage, show no difference to gaskets cut from one piece. The above tables are showing the test results of leakage tests of welded and single-piece TF 1590 gaskets. It can be seen that at an applied gasket pressure of 20MPa both the welded and the single-piece gasket reach a leakage class of 10^{-2} mg / (s.m).

At a gasket pressure of 40MPa both types of gaskets reach a leakage class of 10^{-4} mg / (s.m).

Tests have been carried out according to DIN EN 13555 at room temperature with Helium at internal pressure of 40bar.



Multi-directional ePTFE gasket material

TEADIT® 24 SH

TEADIT® 24 SH is a gasket sheet produced from pure, multidirectionally expanded PTFE. A special production process ensures equal tensile strength in all directions. This makes gaskets cut from TEADIT® 24 SH one of the best, most versatile and most reliable gasket materials on the market. Cold flow and creep have been eliminated, gasket parameters have been drastically improved, while all the excellent physical properties of PTFE have been fully retained.

Advantages

- material does not get wider under compression
- easy to cut or punch
- suitable also for enamel flanges and/or vessels
- compensates for irregularities and/or damages on the flange faces
- has all inherent advantages of pure PTFE

Application areas:

- suitable for all pressure sensitive and stress sensitive connections
- suitable for use with even the most aggressive chemicals
- non-contaminating - appropriate for all applications demanding highest purity
- extremely versatile for flange connections, pressure vessels, chemical reactors and/or housings of pumps, compressors etc.
- suitable as hand and manhole gaskets, heat exchangers, venting systems and many more

Technical data:

density (at delivery): $\rho = 0.9 \text{ g/cm}^3$
 temperature range: -240°C up to $+270^\circ\text{C}$
 pressure: from vacuum up to 200 bar
 pH 0 – 14
 minimum assembly pressure $Q_{\min 0,01} = 23 \text{ MPa}$
 minimum gasket pressure under operating conditions $Q_{\min 0,01} < 10 \text{ MPa}$
 maximum surface pressure $Q_{\max} > 240 \text{ MPa}$
 TA Luft / leakage according to VDI 2440 $L = 2.6 \cdot 10^{-7} \text{ mbar l/(sm)}$

Tests and approvals:

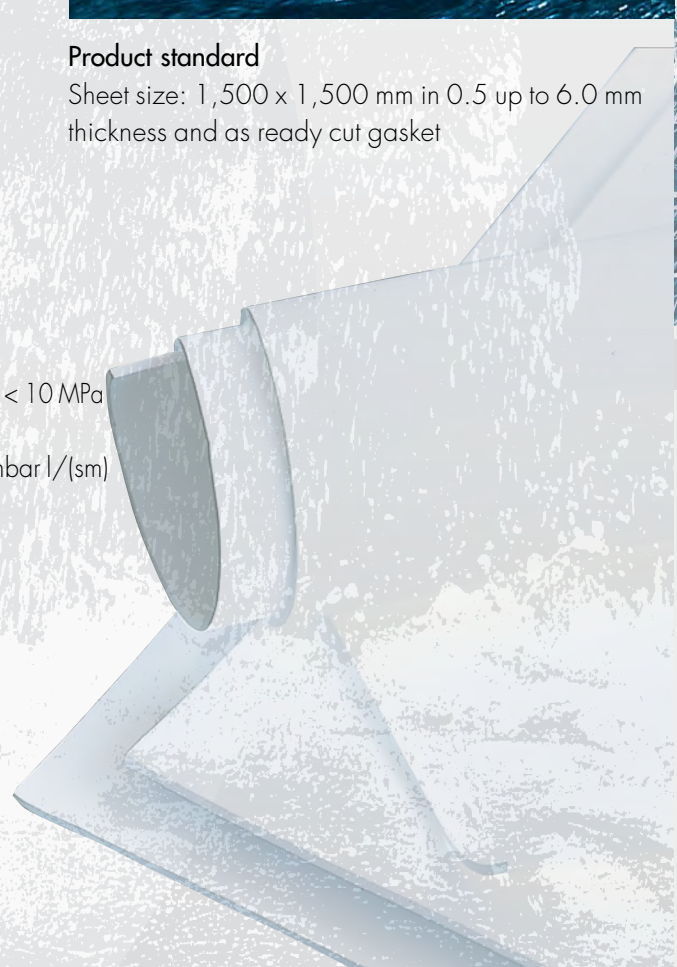
FDA, TA Luft, BAM, USP VI, Air Liquide (oxygen),
 GL, Blow-off test (VDI 2200), AREVA, WRc,
 Regulation (EC) No. 1935/2004

TEADIT 24 SH is also available in a more rigid version as **TEADIT 24 SH-R**, in 1.5mm, 2.0mm and 3.0mm thickness. Please ask for the corresponding data-sheet.



Product standard

Sheet size: 1,500 x 1,500 mm in 0.5 up to 6.0 mm thickness and as ready cut gasket



Mono-directional ePTFE gasket material

TEADIT® 25 BI

This top of the range PTFE joint sealant tape belongs also to the group of multi-directionally expanded PTFE sealing materials. Again, a very complex production process ensures equal rigidity in longitudinal and cross direction, resulting in high dimensional stability and extremely low cold flow, combined with excellent malleability and very easy handling. This makes TEADIT® 25 BI particularly well suited for use with all pressure sensitive and stress sensitive connections, it also compensates for irregularities and/or damages on the sealing areas.

Advantages

Safety

- dimensional stability, only the thickness changes under compression
- chemically resistant against all substances (exceptions: molten alkali metals and elemental fluorine)
- excellent temperature resistance
- physiologically harmless - non contaminating
- conforms to FDA regulations

Cost saving

- reduced stock cost - a few different sizes cover most applications
- no waste - no off-cuts
- one material for many applications - less risk of using the wrong material
- less down time - no cutting or punching, quick and easy to install
- can be stored indefinitely (without adhesive backing)

Technical data

density (at delivery): $\rho = 0.70 \text{ g/cm}^3$
 temperature range: -240°C up to $+270^\circ\text{C}$
 pressure: from vacuum up to 200 bar
 pH 0 – 14
 minimum assembly pressure $Q_{\min,0,01} = 23 \text{ MPa}$
 minimum gasket pressure under operating conditions $Q_{\text{Smin},0,01} < 10 \text{ MPa}$
 maximum surface pressure $Q_{\text{max}} > 240 \text{ MPa}$
 TA Luft / leakage according to VDI 2440 $L = 2.6 \cdot 10^{-7} \text{ mbar l/(sm)}$

Tests and approvals:

FDA, TA Luft, WRc
 Regulation (EC) No. 1935/2004



Application areas

- suitable for narrow sealing faces
- where a pre-defined gasket width is required
- enamelled components and glass flanges
- heat exchangers, large flanges and pressure vessels
- suction filters and strainers, etc.

Product standard

From 10 to 65 mm wide, 2 to 9 mm thick

Special dimensions as well as recommendations are available on request

Installation instructions:

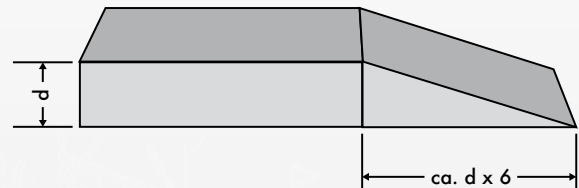
Important: to ensure an effective seal it is necessary to join the ends of the gasket tape by means of a scarfed joint! Please read next page for detailed installation instructions.

Mono-directional ePTFE gasket material

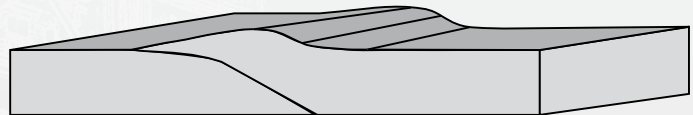
TEADIT® 25 BI installation instructions

- 1.) The sealing area has to be clean and free of grease. Damaged parts have to be repaired or replaced. All bolts and nuts should be well greased.
- 2.) Cut the beginning of the tape with a sharp knife in a skived manner as shown in sketch below.

- 3.) Remove the backing paper from the adhesive strip and stick the tape onto the sealing area, beginning at a bolt hole.



- 4.) Join the two ends as shown in the sketch below.
 Firstly the bolts should be torqued in a star pattern.
 This should be done in three stages, torquing to approx. 25% of the total required torque value with each round. The forth and final adjustment should be done in a circular direction to the full torque value.



Additional hints:

In the event of larger irregularities or damages one can achieve an effective seal by applying an additional layer of TEADIT 24B (NOT TEADIT 25 BI) at the damaged or irregular sections.

Important: Do not hesitate to contact us for advise on the best suitable dimension of TEADIT 24B for this kind of applications.

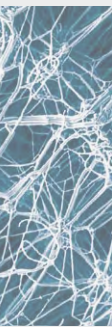
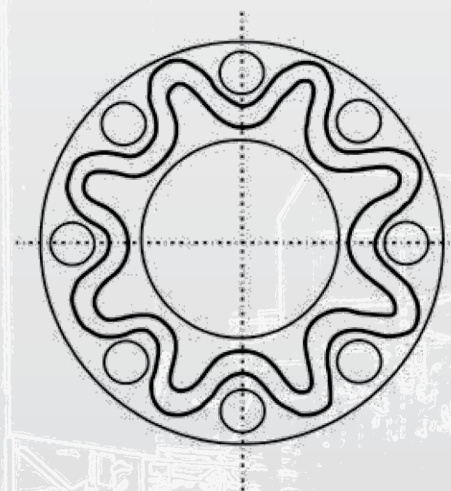
In order to prevent flanges made of thin or fragile material from bending or buckling, we recommend the use of a gasket tape which will cover the full width of the sealing area. Should the sealing area be narrow, then we recommend the tape be applied in a pattern as shown in sketch below.

This manner of applying the tape should also be used in connection with stress sensitive materials, e.g. glass, ceramics, enamel, plastics, etc.

Retorquing the bolts at operating temperatures is – especially in the case of warped surfaces, e.g. enamelled flanges - not recommended.

Please do not hesitate to contact us for additional information.

Since all parameters regarding properties, specifications and applications mentioned throughout this installation instructions are approximate and may be mutually influenced, your specific application should not be undertaken without independent study and evaluation for suitability. All technical data and advice given is based on experiences TEADIT has made so far. Failure to select proper sealing products can result in damage and/or personal injury. Properties, specifications and application parameters are subject to change without notice. TEADIT does not undertake liability of any kind whatsoever.



Mono-directional ePTFE gasket material

TEADIT® 24 B

TEADIT® 24 B is a high-grade PTFE joint sealant tape, produced by a special monoaxial stretching process from 100% pure PTFE. An adhesive strip - approved for use with foodstuffs - makes installation quick and easy.

Advantages

Safety

- chemically inert against most substances
- covers a wide temperature range
- non ageing, UV resistant
- eliminates the risk of using the wrong gasket material

Quick and easy installation

- adhesive strip aides installation
- excellent malleability compensates for irregularities
- used tape can be removed easily and without residue

Cost saving

- reduced down time because of quick installation
- minimal stock cost - a few dimensions cover most applications
- absolutely no waste



Application areas

- for all kinds of flanged joints
- for housings of pumps, compressors, etc.
- as a lid seal for various containers and vessels
- gasket for inspection holes, man holes, venting systems, heat exchangers, etc.
- for pressure sensitive and stress sensitive joints where only a low flange load may be applied

Technical data

density (at delivery): $\rho = 0.65 \text{ g/cm}^3$
 temperature range: -240°C up to $+270^\circ\text{C}$
 pressure: from vacuum up to 200 bar
 pH 0 – 14
 gasket parameter, assembly $\sigma_{VU/0,01} = 23.8 \text{ MPa}$ (40 bar)
 gasket parameter, operational $m_{0,01} = 2$

Product standard

Width from 3 mm to 40 mm
 in 1.5 mm to 7.0 mm thickness

Special dimensions and recommendations on request.

Tests and approvals

BAM, DVGW, BOC, WRc,
 FDA (incl. adhesive tape), TA Luft,
 Regulation (EC) No. 1935/2004

Please note:

also available in round cross sections
 from 1mm up to 17mm

Mono-directional ePTFE gasket material

TEADIT® 24 BB

TEADIT® 24 BB is the wider version of our universally applicable, 100% pure, expanded PTFE gasket tape. Although the fibres have a multi-directional orientation, tensile strength is considerably higher along the longitudinal axis. TEADIT® 24 BB is suitable to cut or punch gaskets from and has a full width adhesive tape on one side, approved for use with foodstuffs (also available without adhesive tape).

Technical data

density (at delivery): $\rho = 0.75 \text{ g/cm}^3$
 temperature range: -240°C up to $+270^\circ\text{C}$
 pressure: from vacuum up to 200 bar
 pH 0 – 14
 gasket parameter, assembly $\sigma_{\text{vu},0,01} = 30 \text{ MPa}$
 gasket parameter, operational $m_{0,01} = 2.5$

Product standard

Width from 25 mm to 200 mm in
 0.5 mm up to 3.0 mm thickness

Advantages

- all physical properties of 100% pure PTFE
- gaskets can be economically cut from the tape
- intricate shapes can be cut or punched with simple tools
- cost savings because of low stock cost and reduced maintenance time



Tests and approvals

FDA, WRc

TEADIT® 24 HD

TEADIT® 24 HD is a pre-densified 100% pure PTFE gasket tape. Because of its higher original density - compared to conventional PTFE joint sealant - TEADIT® 24 HD is particularly well suited to seal irregular - e.g. out-of-parallel - and/or damaged flange faces, and for applications where a certain remaining gasket thickness is required.

Technical data

density (at delivery): $\rho = 1.0 \text{ g/cm}^3$
 temperature range: -240°C up to $+270^\circ\text{C}$
 pressure: from vacuum up to 200 bar
 pH 0 – 14
 gasket parameter, assembly $\sigma_{\text{vu},0,01} = 26.5 \text{ MPa}$
 gasket parameter, operational $m_{0,01} = 2$

Product standard

Width from 3.2 mm to 15 mm wide
 in 0.3 mm up to 7.0 mm thickness

Advantages

- all physical properties of 100% pure PTFE
- the higher original density results in increased remaining gasket thickness

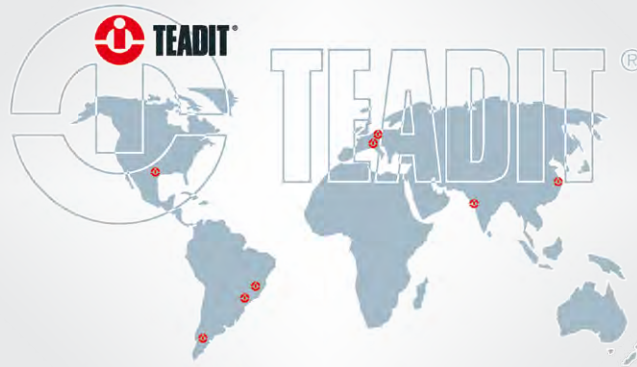
Typical applications

- sealing of tube heat-exchangers
- extra large flanges, containers, lids etc
- pump housings
- inspection holes, manholes, and many more



Tests and approvals

FDA, WRc



PTFE gasket material ■ structured PTFE sheets ■ multidirectionally exp. PTFE sheets ■ multidirectionally exp. PTFE tapes ■ monodirectionally exp. PTFE tapes ■ **Braided gland packings** ■ Carbon / Graphite packings ■ PTFE packings ■ PTFE / Aramid packings ■ Aramid packings ■ Glass packings ■ Acrylic packings ■ Ramie packings ■ Polyimid packings ■ Novoloid packings ■ Nomex packings ■ **Preformed packing rings** ■ TA-Luft packing sets ■ **Compressed fibre sheets** ■ Carbon / Graphite /NBR ■ Aramid /NBR ■ Cellulose / NBR ■ **Graphite sheets** ■ Graphite sheets with plain metal insert ■ Graphite sheets with tanged metal insert ■ Pure graphite sheets ■ **Gaskets** ■ PTFE envelope gaskets ■ Cut gaskets ■ Gaskets with metal eyelets ■ Double jacketed gaskets ■ Spiral-wound gaskets ■ Kammprofile gaskets ■ Hand- and manhole gaskets ■ Tank lid gaskets ■ Braided gasket tapes ■ **Jampak** ■ Injection gun ■ Jampak injectable compounds ■ Seal-Cage-System ■ **Accessories** ■ Various packing cutters ■ Packing extractors ■ Circular gasket cutter ■ **and many more...**

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