

Fabric expansion joints

General description of fabric expansion joints

STENFLEX® fabric expansion joints are made of top quality materials and have proven their excellence throughout decades of practical use. Ongoing development ensures that they are in line with current market requirements.

The result: a durable, efficient and highly reliable product.

Our engineering staff, working in close co-operation with our R & D department, are always available for technical consultation and to assist with specific application problems.

Purpose

STENFLEX® fabric expansion joints are developed for gaseous media and high operating temperature.

They are used in machinery, appliances, apparatus and pipe systems:

- to dampen oscillation, sound/noise and vibration
- to compensate for movement and expansion
- to compensate for installation inaccuracies

STENFLEX® fabric expansion joints are used primarily in the following areas of industry:

- Energy technology
- Waste incineration/disposal
- Cement and steel industry
- Chemical industry
- Conveying systems
- Ceramic industry

Development/Design

STENFLEX® fabric expansion joints are rated theoretically using state-of-the-art development tools, and optimized under experimental conditions. This means we can offer our customers the following advantages:

- Products especially developed for specific loads, resulting in safe and long-lasting expansion joints
- Efficient products designed for superior functionality
- Engineered for easy mounting/installation
- Reduced lead times



Versions

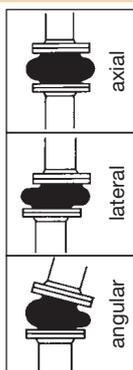
Our fabric expansion joints vary according to the following criteria:

- Bellows structure (single convolutions, multiple convolutions, cylindrical universal fabric expansion joints)
- Wall structure (single ply, multi-ply, multi-ply with pre-insulation)
- Fabric layers (rated to pressure and temperature resistance)
- Material and coating of the bellows (rated to the media being conveyed)
- Pipe connection type (retaining flange, U-shaped spacing flange, tightening straps)

The expansion joints are delivered ready for installation.

Together with standard versions featured in the catalogue, special versions are also developed and produced for special operating conditions.

Connection parts (that deviate from DIN) such as ISO, ANSI, BS and ventilation standards are also available.



Universal fabric expansion joints

Structure:

Fabric bellows with connection parts (flange, tightening straps).

Movement absorption:

Axial, lateral, angular and simultaneous movement absorption is possible. Universal expansion joints with two bellows and a connecting pipe are used to absorb large movement.

Fixed points:

Robust fixed points and correct pipe routing are necessary to absorb axial force.

Fabric bellows

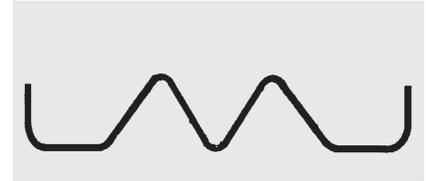
Structure

STENFLEX® fabric bellows are made from top quality materials to offer elastic bellows rated for specific applications. Three types of bellows are available, depending on the kind of movement to be absorbed:

- single convolution bellows
- multiple convolution bellows
- cylindrical bellows



Single convolution bellows



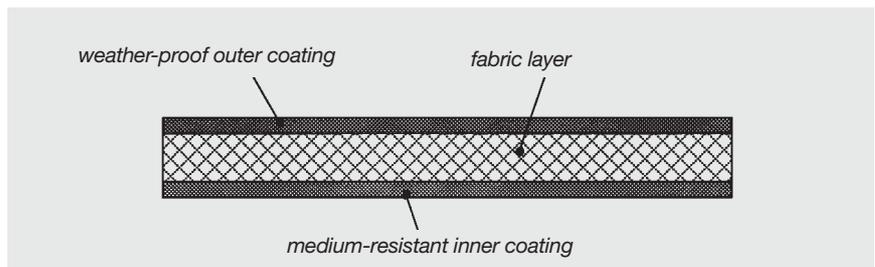
Multiple convolution bellows



Cylindrical bellows

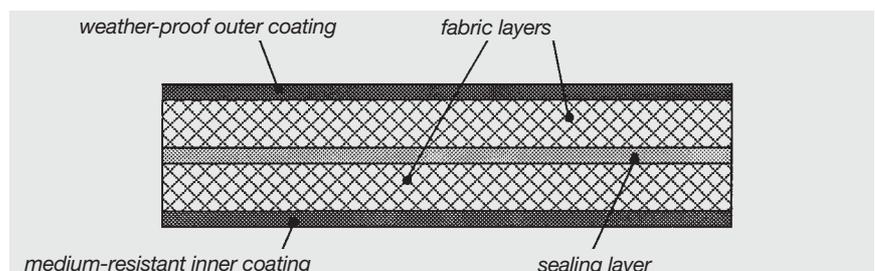
Various wall structures are also available:

- **single ply bellows**, of one layer (fabric) with a medium-resistant inner coating and a weather-proof outer coating



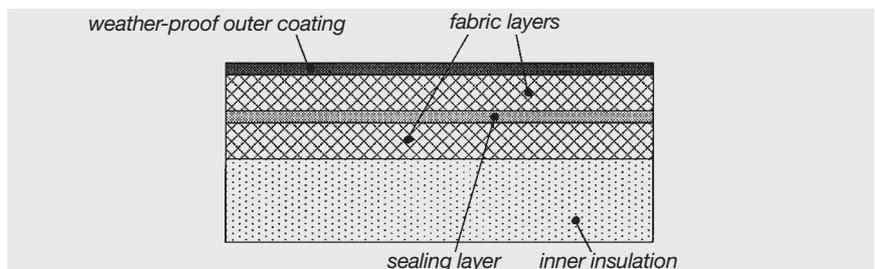
Single ply bellows

- **multi-ply bellows**, incorporating several layers of fabric with sealing layers embedded in between, a medium-resistant inner coating (on request) and a weather-proof outer coating



Multi-ply bellows

- **multi-ply bellows with pre-insulation**, incorporating several layers of fabric with sealing layers embedded in between, a weather-proof outer coating and inner insulation to protect the bellows from thermal and mechanical damage



Multi-ply bellows with pre-insulation

The optimum arrangement of the fabric layers is determined by calculation and experimentation. This ensures that pressure force within the bellows is absorbed. The elastomer quality for sealing layers and inner and outer coating is rated to certain physical properties (media resistance, ozone resistance, UV resistance, elasticity, etc.)

Fabric expansion joints

General description of fabric expansion joints

Material qualities

Rubber grade	Trade name	Properties	Applications
EPDM Ethylene propylene dieneterpolymer	Buna AP Keltan Vistaton	Heat-, and weather-proof rubber grade with special resistance to highly oxidizing media and a wide range of chemicals (not oil-resistant). Temperature resistance during continuous operation from -40 °C to +100 °C.	Water, hot water, steam, acids, lyes, pickling lyes, hypochlorite solutions.
CR Polychloroprene	Neoprene Baypren	Multi-purpose rubber grade with good oil-, weather- and flame resistance, extremely durable. Resistant to various inorganic and organic chemicals. Impermeable to gas for hydrocarbons. Temperature resistance during continuous operation from -30 °C to +90 °C, resistant to hot water up to +70 °C.	Cooling water, sea water, acids and lyes, air, coking plant gas, faecal matter
PTFE Polytetrafluoroethylene	Teflon, Hostaflon, Fluon, Polyfluoron	Heat-, and weather-proof material with outstanding chemical resistance to aggressive media. Excellent electrical insulation properties. Temperature resistance during continuous operation from -50 °C to +210 °C.	Organic and inorganic acids, lyes, chloride, sulphate, solvents, bleaches, peroxide, fuels, mineral oil, hydraulic oil, halogens, gases
CSM Chlorosulfonated polyethylene (rubber)	Hypalon	Good acid resistance. Temperature resistance during continuous operation from -25 °C to +100 °C.	Acids
FPM Fluoro rubber	Viton	Very good acid resistance Temperature resistance during continuous operation from -40 °C to +200 °C.	Acids
VMQ Silicon rubber	Silopren, Elastosil	Good resistance to weather, ageing, ozone and radiation. Temperature resistance during continuous operation from -45 °C to +180 °C.	Water, hot water, weak acids and alkalis
Stainless steel foil 1.4435 2.4816	Böhler, Eschmann, Klöckner, Remanit	High temperature resistance. 1.4435: temperature resistance during continuous operation up to +500 °C 2.4816: temperature resistance during continuous operation up to +800 °C.	Lyes, solvents

Layers	Properties	Applications
PEBA Polyester fabric	High tensile strength, abrasion and vibration resistance, temperature resistance during continuous operation not exceeding +150 °C.	Air, gases
Aramide fabric	High tensile strength, abrasion and vibration resistance, temperature resistance during continuous operation up to +150 °C.	Air, gases
GF, GM Fibreglass	Good tensile strength, good chemical resistance, good insulation properties. Temperature resistance during continuous operation up to +600 °C.	Air, gases, acids, lyes
Silicate fabric	Excellent acid resistance. Temperature resistance during continuous operation up to +1000 °C.	Air, gases, acids, lyes

Insulating material	Properties	Applications
Rock wool	Good temperature resistance, good insulating properties. Temperature resistance during continuous operation up to +500 °C.	Air, gases
Ceramic wool	Very high temperature resistance, good insulating properties. Temperature resistance during continuous operation up to +1100 °C.	Air, gases

Connection parts

STENFLEX® fabric expansion joints are usually supplied ready for installation. Individually designed expansion joints are fitted on site by our specialists. Connection to pipelines, pumps, tanks etc., is by flanges or tightening straps. Connections are standardized to fit commercially available pipes and flanges.

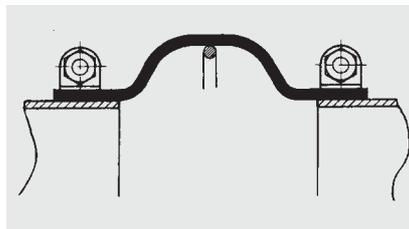
Tightening straps

Tightening straps (types GWK-10, GWK-20, GWK-30) can only be used to fit fabric expansion joints designed for low inner pressure, to round and/or oval pipes.

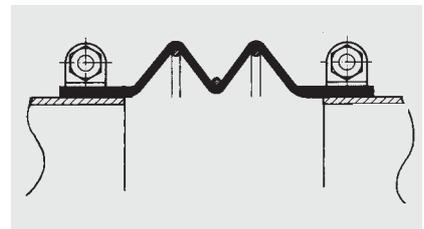
Flanges of unalloyed steel 1.0038 (S235JR) are anti-corrosion primed.

The tightening straps of unalloyed steel 1.0038 (S235JR) are electro galvanized. Stainless steels are used for tougher requirements on corrosion protection.

Other materials and forms of corrosion protection (hot-dip galvanized, special varnish, special coating, etc.) are available on request, as well as special connections according to customer specification.



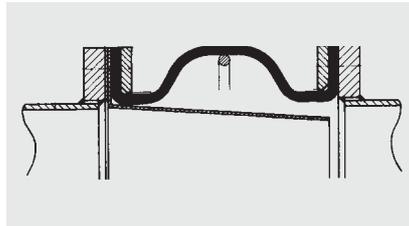
Sectional drawing STENFLEX®
Type GWK-10



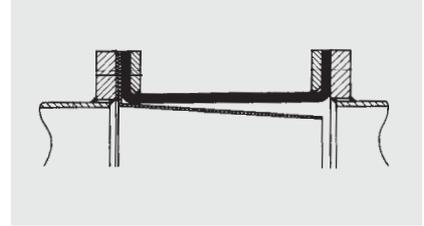
Sectional drawing STENFLEX®
Type GWK-20

Retaining flanges

Fabric expansion joints that handle internal pressure up to 4 bar are equipped with press-on retaining flanges (type GWK-11, GWK-21, GWK-31). The flanges are drilled for through bolts in accordance with EN 1092 so that standardized screws can be used. Other pitch circles and bores are available, e.g., to ANSI (ASA), BS, SAE or ventilation standards.



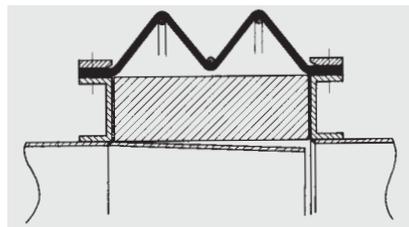
Sectional drawing STENFLEX®
Type GWK-11



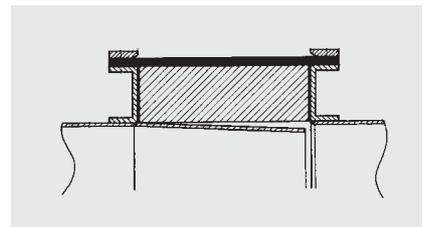
Sectional drawing STENFLEX®
Type GWK-31

Protruding flanges

Fabric expansion joints with inner insulation to handle high media temperatures are integrated in the pipe by protruding flange (type GWK-13, GWK-23, GWK-33). Protruding flanges are adjusted individually and are drilled for through bolts so that standard screws can be used.



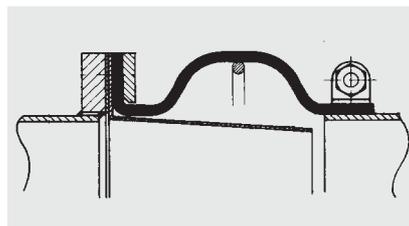
Sectional drawing STENFLEX®
Type GWK-23



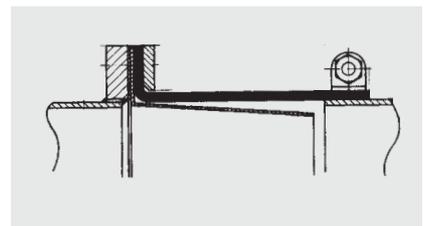
Sectional drawing STENFLEX®
Type GWK-33

Combined connections

Various kinds of connections can be combined for special applications. Combination of 'one side clamping tape, other side retaining flange' when dealing with low internal pressure (type GWK-12, GWK-22, GWK-32).



Sectional drawing STENFLEX®
Type GWK-12



Sectional drawing STENFLEX®
Type GWK-32

Fabric expansion joints

General description of fabric expansion joints

Accessories

STENFLEX® fabric expansion joints can be equipped with the following accessories:

- Vacuum supporting ring
- Internal guide sleeve

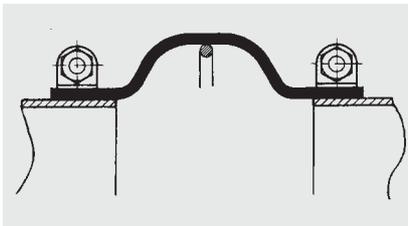
Vacuum supporting ring

Where STENFLEX® fabric expansion joints are required for negative pressure operation vacuum supporting rings are fitted to the inner surface of the bellows convolutions. As a rule, the supporting rings are made of stainless steel.

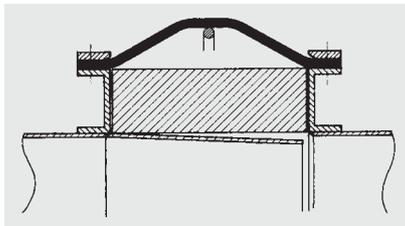
Internal guide sleeve

To improve the flow in a fabric expansion joint, we generally recommend the use of an internal guide sleeve. This will prevent the bellows from fluttering or pulsating under high flow speeds and turbulence (e.g., behind fans or pumps) and thus contribute to a considerably longer service life.

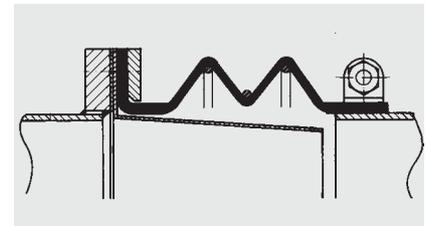
As a rule, the internal guide sleeves are made of stainless or unalloyed steel. In the case of purely axial movement, cylindrical internal guide sleeves are used. For lateral and/or angular movement, conical internal guide sleeves are fitted (tapering cross section). Note: it is very important to note the direction of flow when installing internal guide sleeves.



Type GWK-10 with vacuum supporting ring



Type GWK-13 with vacuum supporting ring and internal guide sleeve



Type GWK-32 with internal guide sleeve

Symbols for a quick product selection

The easy-to-find-list: symbols and their meaning. The colour bar of the following data sheets indicates small symbols depicting the special features of the corresponding types, for easy pre-selection.

	Universal expansion joint to absorb simultaneous movement in all three directions		Maximum operating temperature
	Maximum product pressure rate		Ideal for damping sound/noise and vibration
	Flange connections		Suitable for acids and lyes
			Suitable for gaseous media

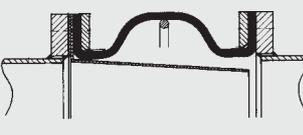
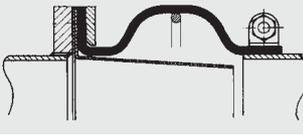
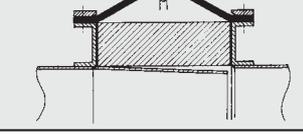
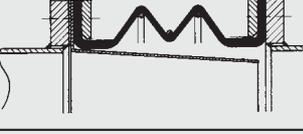
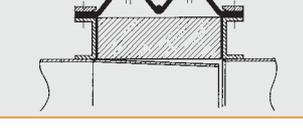
Applications/Possible uses/Industries

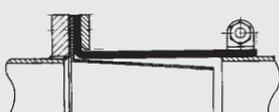
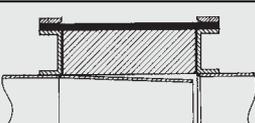
<i>Basic expansion joint types</i>		Universal fabric expansion joints											
STENFLEX® Fabric expansion joint types		Single convolution				Multiple convolution				Cylindrical			
		GWK-10	GWK-11	GWK-12	GWK-13	GWK-20	GWK-21	GWK-22	GWK-23	GWK-30	GWK-31	GWK-32	GWK-33
Applications	Reducing tension	■	■	■	■	■	■	■	■	■	■	■	■
	Absorbing axial movement	■	■	■	■	■	■	■	■	■	■	■	■
	Absorbing lateral movement	■	■	■	■	■	■	■	■	■	■	■	■
	Absorbing angular movement	■	■	■	■	■	■	■	■	■	■	■	■
	Vibration damping	■	■	■	■	■	■	■	■	■	■	■	■
	Sound/noise damping	■	■	■	■	■	■	■	■	■	■	■	■
	Compensation for installation inaccuracies	■	■	■	■	■	■	■	■	■	■	■	■
Possible uses	Metal pipes	■	■	■	■	■	■	■	■	■	■	■	■
	Plastic pipes	■	■	■	■	■	■	■	■	■	■	■	■
	Air ducts, gas ducts	■	■	■	■	■	■	■	■	■	■	■	■
	Compressors, fans,	■	■	■	■	■	■	■	■	■	■	■	■
	Fittings	■	■				■				■		
Industries	Chemical industry	■	■				■				■		
	Plant construction	■	■		■		■		■		■		■
	Energy industry	■	■				■				■		
	Ceramic industry	■	■	■	■	■	■	■	■	■	■	■	■
	Cement industry	■	■	■	■	■	■	■	■	■	■	■	■
	Drying technology	■	■	■	■	■	■	■	■	■	■	■	■
	Wast incineration plant	■	■		■		■		■		■		■
	Dedusting and filtration technology	■	■	■	■	■	■	■	■	■	■	■	■
	Conveying systems	■	■				■				■		
	Steel mills	■	■	■	■	■	■	■	■	■	■	■	■

Table showing the prime applications, possible uses and industries.

Fabric expansion joints

Program summary

Universal fabric expansion joints						
	Type	DN	Max. pressure rate	Max. operating temperature	Connection parts	Page
single convolution						
	GWK-10	DN 80 - 800	PN 0,2	+350 °C	clamping tape	4.9
	GWK-11	DN 80 - 5000	PN 4	+500 °C	retaining flange	4.9
	GWK-12	DN 80 - 800	PN 0,2	+350 °C	one side clamping tape, other side retaining flange	4.9
	GWK-13	DN 80 - 5000	PN 0,2	+700 °C	protruding flange	4.9
multiple convolution						
	GWK-20	DN 80 - 800	PN 0,2	+350 °C	clamping tape	4.11
	GWK-21	DN 80 - 5000	PN 4	+500 °C	retaining flange	4.11
	GWK-22	DN 80 - 800	PN 0,2	+350 °C	one side clamping tape, other side retaining flange	4.11
	GWK-23	DN 80 - 5000	PN 0,2	+700 °C	protruding flange	4.11

Universal fabric expansion joints						
	Type	DN	Max. pressure rate	Max. operating temperature	Connection parts	Page
cylindrical						
	GWK-30	DN 80 - 800	PN 0,2	+350 °C	clamping tape	4.13
	GWK-31	DN 80 - 5000	PN 4	+500 °C	retaining flange	4.13
	GWK-32	DN 80 - 800	PN 0,2	+350 °C	one side clamping tape, other side retaining flange	4.13
	GWK-33	DN 80 - 5000	PN 0,2	+700 °C	protruding flange	4.13



Fabric expansion joint Type GWK-10, GWK-11, GWK-12, GWK-13

Single convolution universal fabric expansion joint DN 80 – DN 5000



Type GWK-11

Customized production

Structure type GWK-10

- Single convolution self-sealing universal fabric expansion joint without insulation
- Tightening straps to attach the fabric bellows to round or oval pipes up to DN 800

Structure type GWK-12

- Single convolution self-sealing universal fabric expansion joint without insulation
- One side tightening strap, other side retaining flange to attach the fabric bellows to round or oval pipes up to DN 800

Structure type GWK-11

- Single convolution self-sealing universal fabric expansion joint without insulation
- Retaining flanges to attach the fabric bellows to round, oval or rectangular pipes up to DN 5000

Structure type GWK-13

- Single convolution self-sealing universal fabric expansion joint with inner insulation
- Protruding flanges to attach the fabric bellows to round, oval or rectangular pipes up to DN 5000

Fabric bellows PN 0,2 g / PN 4

- Elastic single convolution fabric bellows in various materials
- Bellows of one layer (fabric) with one- or two-sided elastomer coating
- Bellows of several layers (fabric) and additional sealing foils in between, one- or two-sided elastomer coating
- Bellows of several layers (fabric) and weather-proof outer coating, inner insulation

Materials	Material designation	Possible uses
Layers	Fabrics of polyester, aramide, fibre glass, silicate, ceramic fibre or stainless steel cord	Acids Lyes Gases
Coating	EPDM, CR, Hypalon, Silicon, Viton, PTFE	
Sealing	Foil of EPDM, Hypalon, Silicon, Viton, PTFE or stainless steel	
Insulation	Rock wool, ceramic wool	

Check or inquire about the resistance of the materials to temperature and medium.

Type	GWK-10	GWK-11	GWK-12	GWK-13	Temperature
Max. perm. operating pressure	0.2 bar g	4 bar	0.2 bar g		up to +350 °C up to +500 °C
Test pressure	0.3 bar g	6 bar	0.3 bar g	0.2 bar g	up to +700 °C
Vacuum	≥ 0.3 bar abs. with vacuum supporting ring or with internal guide sleeve				

Max. operating pressure to be set 30 % lower for shock loads.

Applications

- for reducing thermal and mechanical tension
- for muffling vibration and noise
- for compensating axial, lateral and angular movement
- to compensate for installation inaccuracies
- ceramic industry
- dedusting and filtration technology
- drying technology
- energy technology
- waste incineration/disposal
- cement industry
- chemical industry
- conveying systems
- steel mills

Flanges

Versions

- Protruding flanges (and press-on steel band) drilled for through bolts
- Press-on retaining flanges in round, oval or rectangular shape drilled for through bolts

Materials

Standard: 1.0038 (S235JR)
Others: stainless steel etc.

Corrosion protection

Standard: anti-corrosion primed
Others: galvanized, special varnish, special coating, etc.

Dimensions

According to customer's specification

Press-on steel band

Materials

Standard: 1.0038 (S235JR)
Others: stainless steel etc.

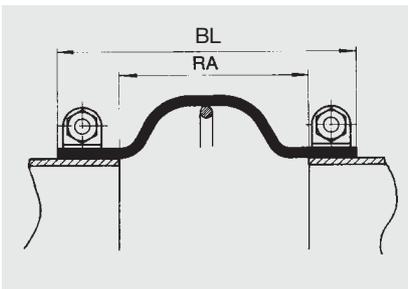
Corrosion protection

Standard: electrogalvanized (1.0038)

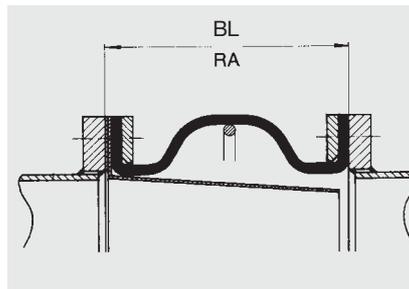
Special version

- Conical version: different fitting diameters
- Different shapes of fitting: one side rectangular, other side round

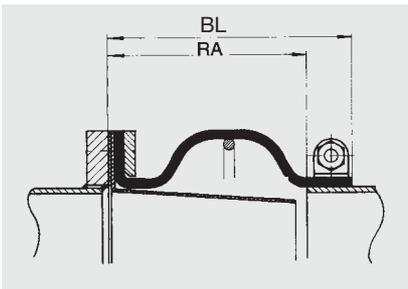
Versions



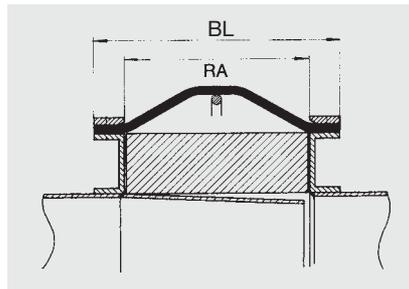
Type GWK-10



Type GWK-11



Type GWK-12



Type GWK-13

Note

Please comply with the general technical instructions. Subject to technical alterations and deviations resulting from the manufacturing process.

Please inquire for simultaneous (different) movement.

The installation length refers to the gap between pipe ends RA. The expansion joint's length (BL) can be longer than RA, depending on the type.

Accessories

- Internal guide sleeve for abrasive solids in the medium and flow speeds exceeding 10 m/s
- Vacuum supporting ring

Movement compensation

The permissible movement depends on expansion joint type and installation length (gap between pipe ends RA)

- Axial movement (compression): 30 % of gap between pipe ends RA
- Lateral movement: ± 15 % of gap between pipe ends RA

Fabric expansion joint Type GWK-20, GWK-21, GWK-22, GWK-23

Multiple convolution universal fabric expansion joint DN 80 – DN 5000



Type GWK-21



Structure type GWK-20

- Multiple convolution self-sealing universal fabric expansion joint without insulation
- Tightening straps to attach the fabric bellows to round or oval pipes up to DN 800

Structure type GWK-21

- Multiple convolution self-sealing universal fabric expansion joint without insulation
- Retaining flanges to attach the fabric bellows to round, oval or rectangular pipes up to DN 5000

Structure type GWK-22

- Multiple convolution self-sealing universal fabric expansion joint without insulation
- One side tightening strap, other side retaining flange to attach the fabric bellows to round or oval pipes up to DN 800

Structure type GWK-23

- Multiple convolution self-sealing universal fabric expansion joint with inner insulation
- Protruding flanges to attach the fabric bellows to round, oval or rectangular pipes up to DN 5000

Fabric bellows PN 0,2 g / PN 4

- Elastic multiple convolution fabric bellows in various materials
- Bellows of one layer (fabric) with one- or two-sided elastomer coating
- Bellows of several layers (fabric) and additional sealing foils in between, one- or two-sided elastomer coating
- Bellows of several layers (fabric) and weather-proof outer coating, inner insulation

Materials	Material designation	Possible uses
Layers	Fabrics of polyester, aramide, fibre glass, silicate, ceramic fibre or stainless steel cord	Acids Lyes Gases
Coating	EPDM, CR, Hypalon, Silicon, Viton, PTFE	
Sealing	Foil of EPDM, Hypalon, Silicon, Viton, PTFE or stainless steel	
Insulation	Rock wool, ceramic wool	

Check or inquire about the resistance of the materials to temperature and medium.

Type	GWK-20	GWK-21	GWK-22	GWK-23	Temperature
Max. perm. operating pressure	0.2 bar g	4 bar	0.2 bar g		up to +350 °C up to +500 °C
Test pressure	0.3 bar g	6 bar	0.3 bar g	0.3 bar g	up to +700 °C
Vacuum	≥ 0.3 bar abs. with vacuum supporting ring or with internal guide sleeve				

Max. operating pressure to be set 30 % lower for shock loads.

Applications

- for reducing thermal and mechanical tension
- for muffling vibration and noise
- for compensating axial, lateral and angular movement
- to compensate for installation inaccuracies
- ceramic industry
- dedusting and filtration technology
- drying technology
- energy technology
- waste incineration/disposal
- cement industry
- chemical industry
- conveying systems
- steel mills

Flanges

Versions

- Protruding flanges (and press-on steel band) drilled for through bolts
- Press-on retaining flanges in round, oval or rectangular shape drilled for through bolts

Materials

Standard: 1.0038 (S235JR)
others: stainless steel etc.

Corrosion protection

Standard: anti-corrosion primed
Others: galvanized, special varnish, special coating, etc.

Dimensions

According to customer's specification

Press-on steel band

Materials

Standard: 1.0038 (S235JR)
Others: stainless steel etc.

Corrosion protection

Standard: electrogalvanized (1.0038)

Special versions

- Conical version: different fitting diameters
- Different shapes of fitting: one side rectangular, other side round

Accessories

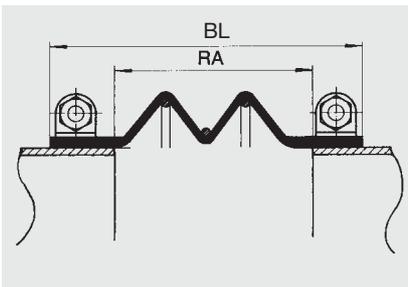
- Internal guide sleeve for abrasive solids in the medium and flow speeds exceeding 10 m/s
- Vacuum supporting ring

Movement compensation

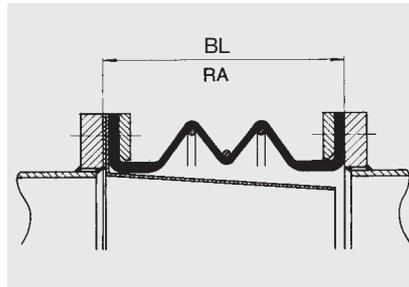
The permissible movement depends on expansion joint type and installation length (gap between pipe ends RA)

- Axial movement (compression): 50 % of gap between pipe ends RA
- Lateral movement: $\pm 30\%$ of gap between pipe ends RA

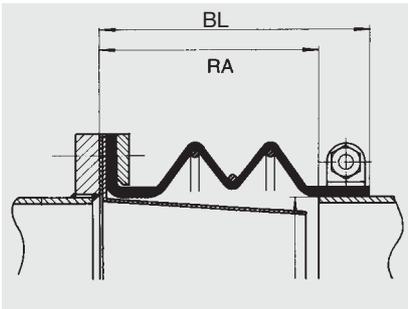
Versions



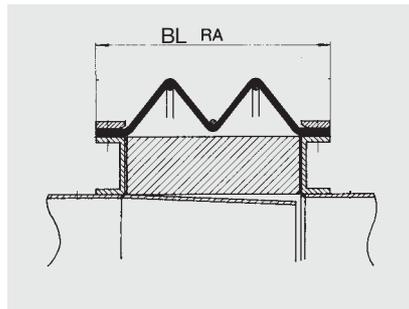
Type GWK-20



Type GWK-21



Type GWK-22



Type GWK-23

Note

Please comply with the general technical instructions. Subject to technical alterations and deviations resulting from the manufacturing process.

Please inquire for simultaneous (different) movement.

The installation length refers to the gap between pipe ends RA. The expansion joint's length (BL) can be longer than RA, depending on the type.

Fabric expansion joint Type GWK-30, GWK-31, GWK-32, GWK-33

Cylindrical universal fabric expansion joint DN 80 – DN 5000



Type GWK-31

Customized
production

Structure type GWK-30

- Cylindrical self-sealing universal fabric expansion joint without insulation
- Tightening straps to attach the fabric bellows to round or oval pipes up to DN 800

Structure type GWK-31

- Cylindrical self-sealing universal fabric expansion joint without insulation
- Retaining flanges to attach the fabric bellows to round, oval or rectangular pipes up to DN 5000

Structure type GWK-32

- Cylindrical self-sealing universal fabric expansion joint without insulation
- One side tightening strap, other side retaining flange to attach the fabric bellows to round or oval pipes up to DN 800

Structure type GWK-33

- Cylindrical self-sealing universal fabric expansion joint with inner insulation
- Protruding flanges to attach the fabric bellows to round, oval or rectangular pipes up to DN 5000

Fabric bellows PN 0,2 g / PN 4

- Elastic cylindrical fabric bellows in various materials
- Bellows of one layer (fabric) with one- or two-sided elastomer coating
- Bellows of several layers (fabric) and additional sealing foils in between, one- or two-sided elastomer coating
- Bellows of several layers (fabric) and weather-proof outer coating, inner insulation

Materials	Material designation	Possible uses
Layers	Fabrics of polyester, aramide, fibre glass, silicate, ceramic fibre or stainless steel cord	Acids Lyes Gases
Coating	EPDM, CR, Hypalon, Silicon, Viton, PTFE	
Sealing	Foil of EPDM, Hypalon, Silicon, Viton, PTFE or stainless steel	
Insulation	Rock wool, ceramic wool	

Check or inquire about the resistance of the materials to temperature and medium.

Type	GWK-30	GWK-31	GWK-32	GWK-33	Temperature
Max. perm. operating pressure	0.2 bar g	4 bar	0.2 bar g		up to +350 °C up to +500 °C up to +700 °C
Test pressure	0.3 bar g	6 bar	0.3 bar g	0.3 bar g	
Vacuum	≥ 0.3 bar abs. with vacuum supporting ring or with internal guide sleeve				

Max. operating pressure to be set 30 % lower for shock loads.

Applications

- for reducing thermal and mechanical tension
- for muffling vibration and noise
- for compensating axial, lateral and angular movement
- to compensate for installation inaccuracies
- ceramic industry
- dedusting and filtration technology
- drying technology
- energy technology
- waste incineration/disposal
- cement industry
- chemical industry
- conveying systems
- steel mills

Flanges

Versions

- Protruding flanges (and press-on steel band) drilled for through bolts
- Press-on retaining flanges in round, oval or rectangular shape drilled for through bolts

Materials

Standard: 1.0038 (S235JR)
Others: stainless steel etc.

Corrosion protection

Standard: anti-corrosion primed
Others: galvanized, special varnish, special coating, etc.

Dimensions

According to customer's specification

Press-on steel band

Materials

Standard: 1.0038 (S235JR)
Others: stainless steel etc.

Corrosion protection

Standard: electrogalvanized (1.0038)



Special versions

- Conical version: different fitting diameters
- Different shapes of fitting: one side rectangular, other side round

Accessories

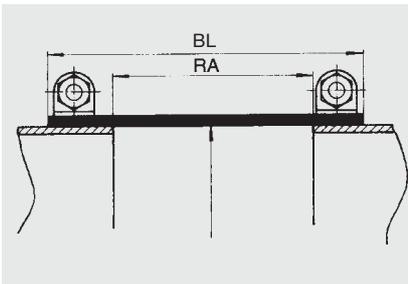
- Internal guide sleeve for abrasive solids in the medium and flow speeds exceeding 10 m/s
- Vacuum supporting ring

Movement compensation

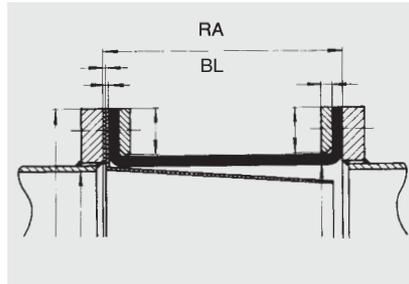
The permissible movement depends on expansion joint type and installation length (gap between pipe ends RA)

- Axial movement (compression): 25 % of gap between pipe ends RA
- Lateral movement: ± 10 % of gap between pipe ends RA

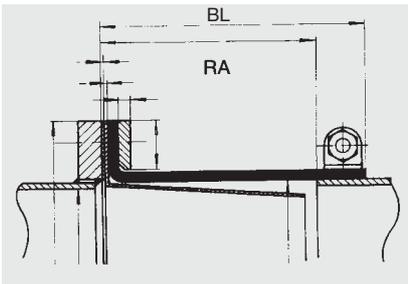
Versions



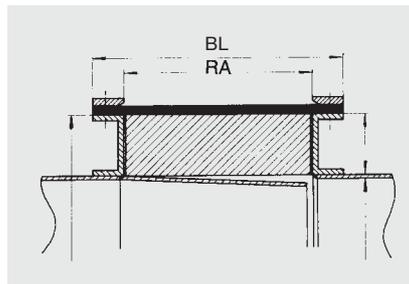
Type GWK-30



Type GWK-31



Type GWK-32



Type GWK-33

Note

Please comply with the general technical instructions. Subject to technical alterations and deviations resulting from the manufacturing process.

Please inquire for simultaneous (different) movement.

The installation length refers to the gap between pipe ends RA. The expansion joint's length (BL) can be longer than RA, depending on the type.