Teguflex® Expansion joints

Teguflex®
Expansion joints
www.trelleborg.com/fluidhandling

Expansion joints Teguflex®

Functions and advantages

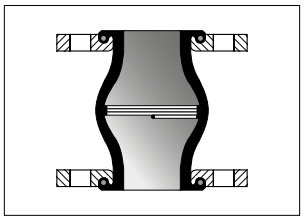
- ► Compensate for thermal elongation.
- ► Isolate vibrations.
- ► Absorb water hammers.
- ► Compensate misalignments.
- ► Ensure sealing of the pipe.

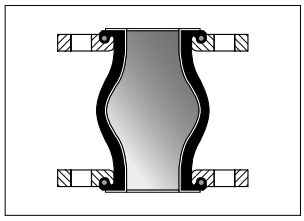
Stainless steel vacuum ring

The vacuum ring is recommended when the expansion joint is used in negative pressure (pumps, etc).
Available in stainless steel 316 Ti.

PTFE lining

PTFE lining is recommended for acids and strong and/or condensed bases.
Movements allowed by the expansion joints are then reduced by 50 %.
The use in negative pressure is forbidden.
Maximal pressure: 6 bar.





Materials and applications of TEGUFLEX® Expansion Joints

Color stripe	Inner tube	Outer cover	Working temperature	Applications
RE 	EPDM	EPDM	- ww35/+ 90°C	**WATER** Hot water, cooling water with salt solutions, chlorine solutions, esters and ketones.
HP 	EPDM HP	EPDM	- 35/+ 130°C	**STEAM 130°C** Hot water, steam, hot air up to 130°C.
DW 	EPDM ACS	EPDM	- 25/+ 90°C	**ACS** Drinkable water (ACS certificate: 15 MAT LY 018).
WH 	NITRILE WHITE	ECO	- 25/+ 90°C	**FOOD** Food and beverages. Including fats and oils.
YE 	ECO	ECO	- 25/+ 90°C	**OIL** Water, saline solutions, alkalis, mineral oils, vegetable or animal oils, oils aerosols, propane and butane gas, etc.
HO 	HNBR	HNBR	- 25/+ 120°C	**OIL 120°C** Oil, mix of water and oils, mix of compressed air and oils, etc.
BL 	SBR	CR	- 35/+ 90°C	**ABRASION** Abrasive materials, suspended stones, mud, calcium, etc.
GR 	CSM	CR	- 25/+ 90°C	**CHEMICALS** Strong and concentrated acids, etc. Compressed air that bears oil aerosols.
FP 	Viton®	Viton®	- 15/+ 150°C	**CHEMICAL HIGH TEMPERATURE** Chemical products highly aggressive with high temperature up to 150°C.

Certifications

Flange dimensions table

ND	PN 6 (EN 1092) OD D mm	Pitch Circle Diameter C mm	Number of holes	Diameter of holes d mm
25	100	75	4	11
32	120	90	4	14
40	130	100	4	14
50	140	110	4	14
65	160	130	4	14
80	190	150	4	18
100	210	170	4	18
125	240	200	8	18
150	265	225	8	18
200	320	280	8	18
250	375	335	12	18
300	440	395	12	22
350	490	445	12	22
400	540	495	16	22
450	595	550	16	22
500	645	600	20	22
600	755	705	20	26
700	860	810	24	26
800	975	920	24	30
900	1075	1020	24	30
1000	1175	1120	28	30
1200	1405	1340	32	33
1400	1630	1560	36	36
1600	1830	1760	40	36
1800	2045	1970	44	39
2000	2265	2180	48	42
2200	2475	2390	52	42
2400	2685	2600	56	42
2600	2905	2810	60	48
2800	3115	3020	64	48
3000	3315	3220	68	48

ND	PN 10 (EN 1092) OD D mm	Pitch Circle Diameter C mm	Number of holes	Diameter of holes d mm
25	115	85	4	14
32	140	100	4	18
40	150	110	4	18
50	165	125	4	18
65	185	145	4	18
80	200	160	8	18
100	220	180	8	18
125	250	210	8	18
150	285	240	8	22
200	340	295	8	22
250	395	350	12	22
300	445	400	12	22
350	505	460	16	22
400	565	515	16	26
450	615	565	20	26
500	670	620	20	26
600	780	725	20	30
700	895	840	24	30
800	1015	950	24	33
900	1115	1050	28	33
1000	1230	1160	28	36
1200	1455	1380	32	39
1400	1675	1590	36	42
1600	1915	1820	40	48
1800	2115	2020	44	48
2000	2325	2230	48	48
2200	2550	2440	52	56
2400	2760	2650	56	56
2600	2960	2850	60	56
2800	3180	3070	64	56
3000	3405	3290	68	62

ND	PN 16 (EN 1092) OD D mm	Pitch Circle Diameter C mm	Number of holes	Diameter of holes d mm
25	115	85	4	14
32	140	100	4	18
40	150	110	4	18
50	165	125	4	18
65	185	145	4	18
80	200	160	8	18
100	220	180	8	18
125	250	210	8	18
150	285	240	8	22
200	340	295	12	22
250	405	355	12	26
300	460	410	12	26
350	520	470	16	26
400	580	525	16	30
450	640	585	20	30
500	715	650	20	33
600	840	770	20	36
700	910	840	24	36
800	1025	950	24	39
900	1125	1050	28	39
1000	1255	1170	28	42
1200	1485	1390	32	48
1400	1685	1590	36	48
1600	1930	1820	40	56
1800	2130	2020	44	56
2000	2345	2230	48	62
2200	2555	2440	52	62
2400	-	-	-	-

ND	PN 20 (ANSI B16.5 150 psi) OD D mm	Pitch Circle Diameter C mm	Number of holes	Diameter of holes d mm
25	108	79.4	4	15.9
32	117	88.9	4	15.9
40	127	98.4	4	15.9
50	152	120.6	4	19.0
65	178	139.7	4	19.0
80	190	152.4	4	19.0
100	229	190.5	8	19.0
125	254	215.9	8	22.2
150	279	241.3	8	22.2
200	343	298.4	8	22.2
250	406	361.9	12	25.4
300	483	431.8	12	25.4
350	533	476.2	12	28.6
400	597	539.7	16	28.6
450	635	577.8	16	31.7
500	698	635.0	20	31.7
600	813	749.3	20	34.9
700	837	863.6	28	34.9
800	941	977.9	28	41.3
900	1057	1085.8	32	41.3
1000	1175	1200.1	36	41.3
1200	1392	1422.4	44	41.3
1400	1600	1593.8	44	47.7
1600	-	-	-	-
1800	-	2095.6	60	47.7
2000	-	2260.6	64	53.9
2200	-	-	-	-
2400	-	2755.9	68	60.3

Teguflex® P

Turnable flanges expansions joints - DN 25 - DN 300

TEGUFLEX® P applications
For all types of industrial applications, residential houses, industrial plants, industrial premises as well as heating and sanitary installations.
Compensate for thermal elongation and misalignment.
Isolate vibration, dampen noise and pressure surges coming from engines, pumps, turbines, etc.

TEGUFLEX® P design
The addition of the rubber properties and various type of reinforcement provides a flexible pipe joint that is easy to install, efficient and a long service life.
TEGUFLEX® PU building length: 130 mm.

Dimensions and movements

ND (mm)	BL (mm)	Effective cross sectional area Q (cm²)	E (mm)	F (mm)	Permissible movements				Maximum vacuum		Weight		Spring rate		
					Axial compression (mm)	Axial elongation (mm)	Lateral deflection (mm)	Angular deflection (°)	Without vacuum ring (bar)	With vacuum ring (bar)	Exp. joint & flanges (kg)	Including tied flanges (kg)	Compression (kg/cm)	Elongation (kg/cm)	Lateral (kg/cm)
25/32	130	35	77	72	30	20	20	35°	0.8	1.0	2.8	4.5	50	75	50
40	130	50	85	80	30	20	20	35°	0.8	1.0	3.3	4.8	50	75	50
50	130	74	95	90	30	20	20	35°	0.7	1.0	3.7	5.0	50	75	50
65	130	87	110	105	30	20	20	30°	0.6	1.0	4.8	6.4	50	75	50
80	130	120	125	120	30	20	20	30°	0.5	1.0	5.3	7.5	50	75	50
100	130	143	145	140	30	20	20	25°	0.5	1.0	6.2	9.0	65	85	65
125	130	210	170	165	30	20	20	25°	0.4	1.0	8.2	11.2	65	85	65
150	130	283	195	190	30	20	20	15°	0.3	1.0	11.2	13.4	75	100	75
200	130	525	245	240	30	20	20	15°	0.3	1.0	16.8	19.4	75	100	75
250	130	636	295	290	30	20	20	10°	0.2	1.0	21.6	25.4	100	150	100
300	130	897	345	340	30	20	20	10°	0.2	1.0	30.1	33.1	100	150	100

Note: maximum values do not apply simultaneously.

Nominal pressure

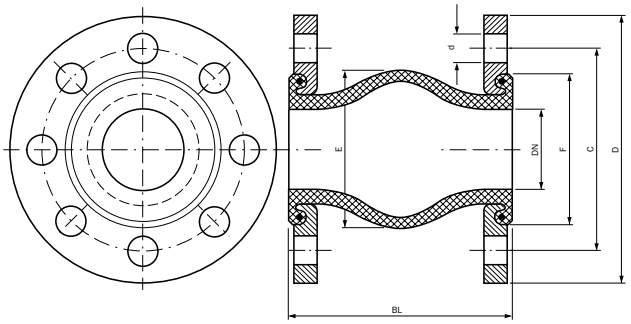
Condition	Max. temperature °C	Pressure
Maximal working pressure	70°C /90°C	16 bar/10 bar
Test pressure	20°C	25 bar
Bursting pressure	20°C	> 50 bar

Flange measurements and qualities

Flange qualities
Turnable steel flanges.
Other types of materials are available: stainless steel, hot dipped galvanized, epoxy, etc.

Flange measurements
ND 32/1000 - PN 6/10/16
(see flange dimensions table for details)
Other flange standards available on request.

Optional equipment
PTFE lining, vacuum ring stainless steel 316 Ti, flame guards, PTFE safety shield.



Teguflex® W

Turnable flanges expansions joints - DN 25 - DN 1000

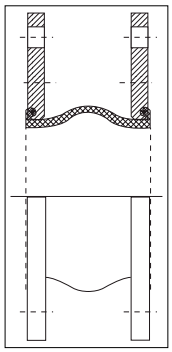
TEGUFLEX® W applications
For all types of industrial applications, residential houses, industrial plants, industrial premises as well as heating and sanitary installations.
Compensate for thermal elongation and misalignment.
Isolate vibration, dampen noise and pressure surges coming from engines, pumps, turbines, etc.

TEGUFLEX® W design
The addition of the rubber properties and various type of reinforcement provides a flexible pipe joint that is easy to install, efficient and a long service life.
TEGUFLEX® WU building length:
from 150 to 300 mm related to ND.

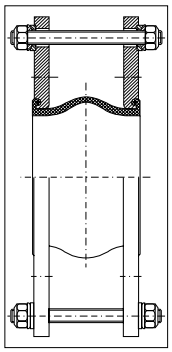
Dimensions and movements

ND (mm)	BL (mm)	Effective cross sectional area Q (cm²)	E (mm)	F (mm)	Permissible movements				Maximum vacuum		Weight		Spring rate		
					Axial compression (mm)	Axial elongation (mm)	Lateral deflection (mm)	Angular deflection (°)	Without vacuum ring (bar)	With vacuum ring (bar)	Exp. joint & flanges (kg)	Including tied flanges (kg)	Compression (kg/cm)	Elongation (kg/cm)	Lateral (kg/cm)
25/32	150	24	77	72	30	20	20	35°	0.8	1.0	3	4	50	75	50
40	150	45	85	80	30	20	20	35°	0.8	1.0	3	5	50	75	50
50	150	46	95	90	30	20	20	35°	0.8	1.0	4	6	50	75	50
65	150	82	110	105	30	20	20	30°	0.8	1.0	5	7	50	75	50
80	150	110	125	120	30	20	20	30°	0.5	1.0	6	8	50	75	60
100	150	163	145	140	30	20	20	25°	0.5	1.0	7	10	65	85	65
125	150	228	170	165	30	20	20	15°	0.5	1.0	8	12	65	85	65
150	150	321	195	190	30	20	20	15°	0.5	1.0	10	16	75	100	75
200	200	549	240	240	30	20	20	15°	0.3	1.0	15	24	100	150	100
250	200	766	295	290	30	20	20	10°	0.3	1.0	20	34	100	150	100
300	200	975	345	340	30	20	20	10°	0.3	1.0	24	45	100	150	100
350	200	1290	430	425	30	20	20	10°	0.3	1.0	32	54	100	150	100
400	200	1628	475	470	30	20	20	10°	0.3	1.0	45	71	100	150	100
450	200	2054	532	510	30	20	20	10°	0.3	1.0	52	81	150	200	150
500	200	2546	590	560	30	20	20	10°	0.3	1.0	63	100	150	200	150
600	200	3466	685	655	30	20	20	6°	0.3	1.0	95	140	175	250	175
700	275	4500	820	778	40	25	30	5°	0.3	1.0	125	347	175	250	175
800	275	5600	920	878	40	25	30	4°	0.2	1.0	160	406	200	300	200
900	300	7000	1060	988	40	25	30	4°	0.2	1.0	175	456	200	300	200
1000	300	8500	1160	1088	40	25	30	3°	0.1	1.0	210	490	225	350	225

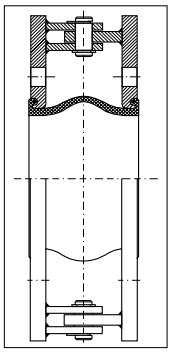
Note: maximum values do not apply simultaneously.



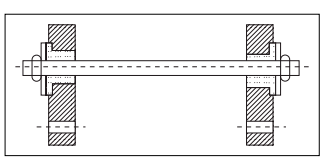
U Type
Standard unit for axial, lateral and angular movements.



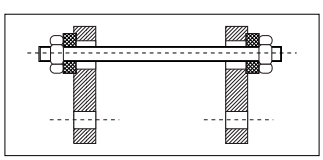
L Type
Unit with tie bars for lateral movements.



A Type
Unit with hinges to take up angular movements in one plane.



Rubber bushes for vibrations.



Spherical washers for a smother movement.

Teguflex® FFL

Full-faced rubber flange expansion joints - DN 500 - DN 2600

TEGUFLEX® FFL applications
For use in pressurized large sized pipe systems with requirements for small reaction forces, providing high reliability and long life.

Used in cooling water systems at power plants, in condensers, in gas and drinking water supply lines for pumps, turbines and boilers.

TEGUFLEX® FFL design
The TEGUFLEX® FFL expansion joint allows a great movement compensation for axial, lateral and angular directions.
Steel backing flanges with collar to ensure more flexible movements.
TEGUFLEX® FFL building length: from 250 to 300 mm.

Dimensions and movements

ND (mm)	BL (mm)	Effective cross sectional area Q (cm^2)	E (mm)	(S) mm	(B) mm	Permissible movements				Maximum vacuum	Weight
						Axial compression (mm)	Axial elongation (mm)	Lateral deflection (mm)	Angular deflection (°)	Without vacuum ring (bar)	Including flange kg
500	250	1860	620	12	12	40	30	30	6.5	0.2	45
600	250	2790	725	15	12	40	30	30	5.4	0.2	57
700	250	4300	840	15	15	40	30	30	4.8	0.2	84
800	250	4950	950	15	15	40	30	30	4.3	0.2	100
900	250	6610	1050	15	15	40	30	30	3.7	0.2	113
1000	250	8700	1160	15	15	40	30	30	3.3	0.2	133
1100	250	10900	1270	15	15	40	30	30	3.1	0.2	150
1200	300	12900	1380	20	20	40	30	30	2.8	0.2	180
1400	300	17200	1590	20	20	40	30	30	2.4	0.2	230
1500	300	19600	1705	20	20	40	30	30	2.3	0.2	250
1600	300	22200	1820	20	20	40	30	30	2.1	0.2	285
1800	300	27800	2020	20	20	40	30	30	1.9	0.2	315
2000	300	34000	2230	20	20	40	30	30	1.7	0.2	360
2200	300	40800	2440	25	25	40	30	30	1.5	0.2	445
2400	300	48000	2650	25	25	40	30	30	1.4	0.2	520
2600	300	55200	2860	25	25	40	30	30	1.2	0.2	550

Note: maximum values do not apply simultaneously. Other dimensions on request.

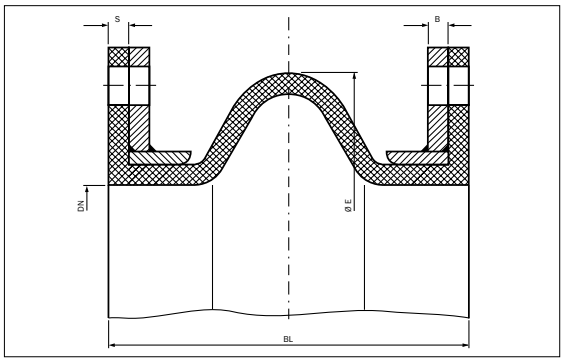
Nominal pressure

Condition	Max. temperature °C	Pressure
Maximal working pressure	90 °C	10 bar
Test pressure	20 °C	15 bar
Bursting pressure	20 °C	> 30 bar

Flange measurements and qualities

Flange qualities
Standard unit S235 following EN 10025 with rust resisting primer coating.
Other materials and surface treatments available on request.

Flange measurements
ND 500/2600 - PN 6/10
(See flange dimensions table for details).
Other flange standards available on request.



Teguflex® FFI

Full-faced rubber flange expansion joints - DN 200 - DN 3200

TEGUFLEX® FFI applications
Used in cooling water systems at power plants, in condensers, in gas and drinking water supply lines for pumps, turbines and boilers. Compensate for thermal elongation, isolate vibration, dampen noise and pressure surges. Expansion Joints best use is in pressurized large sized pipe systems with requirements for small reaction forces, providing high reliability and long life.

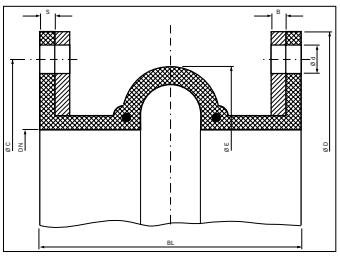
TEGUFLEX® FFI design
A molded rubber expansion joint with full-face rubber flanges which suits for high dimensions movements for axial, lateral and angular directions.
Designed for working pressure 6-10 bar and vacuum 0.8-1.0 bar as standard.

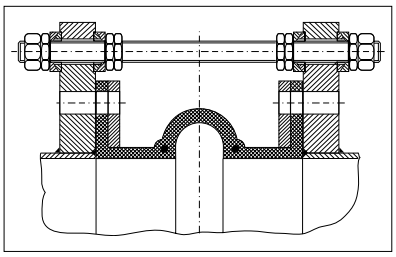
Hand-built manufacturing

Materials	EPDM, NBR, SBR, CSM, FKM, etc.
Dimensions	on request (from 200 to 3200 mm).
Building length	on request.
Flanges material	standard steel with painting. Treatment and materials on request.
Pitch Circle	on request.
Integrated vacuum ring	

Flange measurements and qualities

Flange qualities
Painted steel flanges.
Other treatments available on request.
Flange measurements
DN 200 - DN 3200
All flange standards available on request.

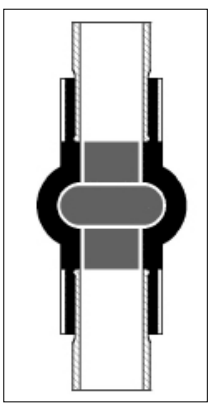


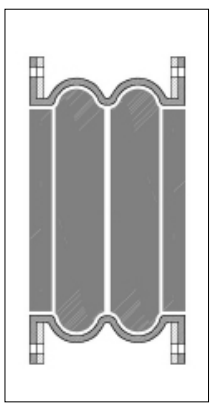


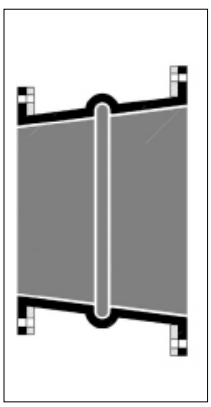
Teguflex® FFS

Taylor made

Trelleborg can supply all kind of expansion joints on drawing: multi convolutions, no convolution, conical, square...







Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way.

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