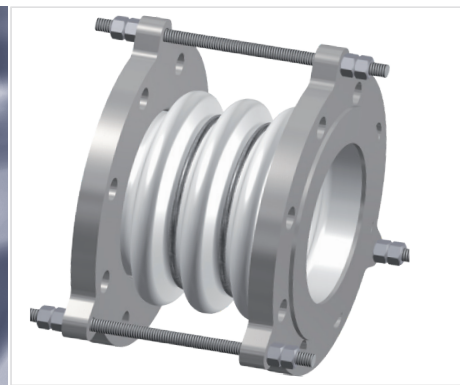




TYPE 80 WILLBRANDT PTFE EXPANSION JOINT

Type 80 is a 3- or 5-corrugated PTFE expansion joint that is hot-formed under pressure from extruded PTFE tubing. The fibers are executed without interruption. It is characterised by its high level of media resistance and movement absorption.

Type 80 is primarily used in chemical plants to absorb movement, insulate sound and compensate offsets. Its high level of elasticity and low stiffness rates means that it can also be used in pipes made from fragile materials such as glass, graphite or enamel.

Bellow design

Multi-corrugated, pure PTFE bellow with

external stainless steel supporting rings from 1.4301. PTFE bead on both sides for steel flanges with integrated tie rods. Standard version: white PTFE, electrically insulating. Special version: black PTFE, electrically conductive.

Pressure resistance

Max. operating pressure: 10 bar, depending on the temperature (see tables).

Flange version

Steel S235JRG2, primed. Standard version delivered with flange with tie rods and clearance holes (drilled according to DIN PN 10). Other flange versions and materials are possible.

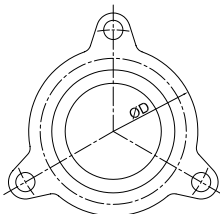
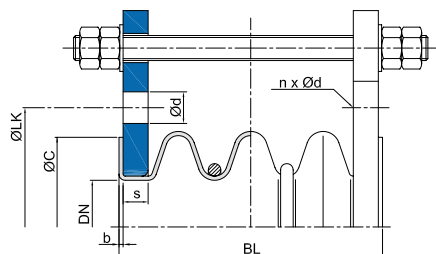
Special accessories

- PTFE guide sleeves
- Potential equalisation
- Flame-resistant protective covers
- Dust and splash protection covers
- Earth cover/sun protection hoods

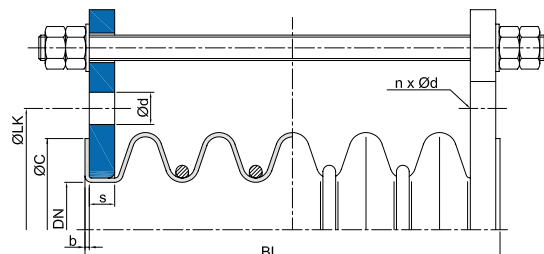
Conformity

FDA and EG 1935/2004

STANDARD VERSION 3-CORRUGATED - WITH TIE RODS



STANDARD VERSION 5-CORRUGATED - WITH TIE RODS



Important information

No additional seals are required for normal, flat flange connections up to DN 300.

From DN 350 and in the case of glass components or other connecting parts it

is necessary to use elastic seals made of TFM with reinforcement (please refer to the required surface pressure).

PTFE expansion joints may not be subject to torsion or vibration.

The bellows should not be painted.

Please refer to the installation instructions.

We will be happy to send you further information on the individual types and designs.

PERMISSIBLE PRESSURE LOADING AT TEMPERATURE (3-CORRUGATED)

DN	Temperature / Pressure										
	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
15 - 40	10,00 bar	10,00 bar	10,00 bar	10,00 bar	10,00 bar	9,50 bar	8,00 bar	7,50 bar	5,50 bar	5,00 bar	4,50 bar
50	10,00 bar	8,70 bar	7,70 bar	6,70 bar	5,80 bar	5,20 bar	4,30 bar	4,00 bar	3,50 bar	3,20 bar	3,00 bar
65 - 80	10,00 bar	8,70 bar	7,50 bar	6,50 bar	5,60 bar	4,80 bar	4,10 bar	3,50 bar	2,80 bar	2,50 bar	2,20 bar
100 - 150	8,50 bar	7,50 bar	6,50 bar	5,60 bar	4,80 bar	4,30 bar	3,50 bar	2,80 bar	2,40 bar	2,00 bar	1,60 bar
200 - 250	7,00 bar	6,10 bar	5,30 bar	4,50 bar	3,80 bar	3,30 bar	2,70 bar	2,30 bar	1,70 bar	1,40 bar	1,20 bar
300 - 350	6,00 bar	4,90 bar	4,20 bar	3,40 bar	2,80 bar	2,50 bar	2,10 bar	1,70 bar	1,40 bar	1,20 bar	0,90 bar
400 - 450	4,50 bar	3,60 bar	3,00 bar	2,50 bar	2,20 bar	1,80 bar	1,50 bar	1,30 bar	1,00 bar	0,80 bar	0,80 bar
500 - 600	3,00 bar	2,50 bar	2,00 bar	1,60 bar	2,30 bar	1,10 bar	0,80 bar	0,60 bar	0,50 bar	0,40 bar	0,40 bar
700	1,80 bar	1,70 bar	1,60 bar	1,50 bar	1,30 bar	1,20 bar	1,10 bar	0,90 bar	0,80 bar	0,70 bar	0,60 bar
800 - 900	1,50 bar	1,40 bar	1,30 bar	1,20 bar	1,10 bar	1,00 bar	0,90 bar	0,80 bar	0,60 bar	0,50 bar	0,40 bar
1000 - 1200	1,00 bar	0,90 bar	0,80 bar	0,70 bar	0,65 bar	0,60 bar	0,55 bar	0,50 bar	0,40 bar	0,30 bar	0,20 bar

PERMISSIBLE PRESSURE LOADING AT TEMPERATURE (5-CORRUGATED)

DN	Temperature / Pressure										
	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
20 - 40	7,00 bar	6,00 bar	5,50 bar	5,00 bar	4,50 bar	4,00 bar	3,80 bar	3,10 bar	2,90 bar	2,60 bar	2,30 bar
50	7,00 bar	6,20 bar	5,60 bar	5,10 bar	4,80 bar	4,30 bar	4,00 bar	3,70 bar	3,40 bar	3,00 bar	2,80 bar
65 - 80	4,25 bar	3,75 bar	3,25 bar	2,80 bar	2,40 bar	2,15 bar	1,75 bar	1,40 bar	1,20 bar	1,00 bar	0,80 bar
100 - 150	4,25 bar	3,75 bar	3,25 bar	2,80 bar	2,40 bar	2,15 bar	1,75 bar	1,40 bar	1,20 bar	1,00 bar	0,80 bar
200 - 250	3,50 bar	3,05 bar	2,65 bar	2,25 bar	1,90 bar	1,65 bar	1,35 bar	1,15 bar	0,85 bar	0,70 bar	0,60 bar
300 - 350	3,00 bar	2,45 bar	2,10 bar	1,70 bar	1,40 bar	1,25 bar	1,05 bar	0,85 bar	0,70 bar	0,60 bar	0,45 bar
400 - 450	2,25 bar	1,80 bar	1,50 bar	1,25 bar	1,10 bar	0,90 bar	0,75 bar	0,65 bar	0,50 bar	0,40 bar	0,40 bar
500 - 600	1,50 bar	1,25 bar	1,00 bar	0,80 bar	1,15 bar	0,55 bar	0,40 bar	0,30 bar	0,25 bar	0,20 bar	0,20 bar

PERMISSIBLE VACUUM LOADING AT TEMPERATURE (3-CORRUGATED)

DN	Temperature / Pressure										
	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
15 - 40	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-0,96 bar
25 - 50	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-0,96 bar	-0,91 bar	-0,85 bar	-0,79 bar	-0,70 bar	-0,63 bar	-
65 - 80	-1,00 bar	-1,00 bar	-1,00 bar	-1,00 bar	-0,96 bar	-0,91 bar	-0,85 bar	-0,79 bar	-0,70 bar	-0,63 bar	-
100 - 150	-1,00 bar	-1,00 bar	-0,96 bar	-0,90 bar	-0,81 bar	-0,74 bar	-0,66 bar	-0,58 bar	-0,46 bar	-0,35 bar	-
200 - 250	-1,00 bar	-0,91 bar	-0,85 bar	-0,79 bar	-0,70 bar	-0,62 bar	-0,53 bar	-0,43 bar	-0,30 bar	-0,20 bar	-
300 - 350	-0,80 bar	-0,74 bar	-0,66 bar	-0,59 bar	-0,49 bar	-0,40 bar	-0,28 bar	-0,18 bar	-	-	-
400 - 450	-0,75 bar	-0,69 bar	-0,61 bar	-0,55 bar	-0,45 bar	-0,32 bar	-0,22 bar	-0,13 bar	-	-	-
500 - 600	-0,69 bar	-0,64 bar	-0,56 bar	-0,49 bar	-0,39 bar	-0,29 bar	-0,18 bar	-	-	-	-
700	-	-	-	-	-	-	-	-	-	-	-
800 - 900	-	-	-	-	-	-	-	-	-	-	-
1000 - 1200	-	-	-	-	-	-	-	-	-	-	-

Note: Type 80 (5-corrugated) is not suitable for vacuum loading.

Important information

Type 80 (5-corrugated) is not suitable

for vacuum loading.

We will be happy to send you further

information on the individual types and designs.

DIMENSIONS TYPE 80 (3-CORRUGATED)

DN	BL mm	b mm	WF* ¹ mm ²	Flange PN 10* ²					ØC mm	Movement absorption* ³			Stiffness rates* ⁴		Weight kg
				ØD mm	ØPCD mm	Ød mm	n mm	s mm		AX + mm	AX - mm	LA +/- mm	AX - mm	LA +/- mm	
15	70	3,0	2400	95	65	M12	4	8	45	10	10	6	18	20	1,9
20	70	3,0	2400	105	75	M12	4	8	58	10	10	6	18	20	1,9
25	70	3,0	2400	115	85	M12	4	8	68	10	10	6	18	20	1,9
32	75	3,0	3300	140	100	M16	4	10	78	10	10	6	38	25	2,3
40	80	3,0	4000	150	110	M16	4	10	88	15	15	6	44	28	2,9
50	75	3,5	4200	165	125	18	4	12	98	15	15	15	50	45	6,0
65	75	3,0	5500	185	145	18	8	16	118	22	22	17	40	50	7,0
80	100	3,0	9000	200	160	18	8	16	122	25	25	17	40	60	8,0
100	100	3,5	13500	220	180	18	8	16	148	25	25	18	50	90	10,0
125	125	4,0	19000	250	210	18	8	18	174	28	28	18	60	110	12,0
150	150	4,0	29500	285	240	22	8	18	200	28	28	20	100	150	15,0
200	150	4,0	46000	340	295	22	8	20	256	28	28	10	150	180	20,0
250	150	4,0	67000	395	350	22	12	24	303	28	28	8	150	200	35,0
300	150	4,0	94000	445	400	22	12	24	360	30	30	6	150	200	48,0
350	150	4,5	108000	505	460	22	16	24	402	30	30	6	200	270	57,0
400	150	4,0	140000	565	515	26	16	24	453	30	30	5	200	270	70,0
450	150	3,5	180000	615	565	26	20	24	513	30	30	5	250	290	78,0
500	150	4,0	210000	670	620	26	20	26	564	30	30	4	300	350	86,0
600	175	4,0	310000	780	725	30	20	30	658	30	30	2	300	350	125,0
700	190	3,0	441500	895	840	30	24	35	800	35	35	2	350	410	136,0
800	190	3,0	570000	1015	950	33	24	35	905	35	35	2	380	490	146,0
900	190	3,0	712000	1115	1050	33	28	35	1005	35	35	2	400	530	184,0
1000	190	3,0	874000	1230	1160	36	28	35	1110	35	35	2	425	570	214,0
1200	190	3,0	1256100	1455	1380	39	32	35	1330	35	35	2	460	620	275,0

*¹ WF = effective area

*² Other dimensions (e.g. according to DIN PN 6, 16, ANSI b16,5 150 lbs) are available upon request.

*³ The movement absorption values are maximum values and must not occur in combination.

*⁴ The stiffness rate are valid for 20 °C +/- 25 %. At higher temperatures the stiffness rate can fall by up to 50 %.

DIMENSIONS TYPE 80 (5-CORRUGATED)

DN	BL mm	b mm	WF* ¹ mm ²	Flange PN 10* ²					ØC mm	Movement absorption* ³			Stiffness rates* ⁴		Weight kg
				ØD mm	ØPCD mm	Ød mm	n mm	s mm		AX + mm	AX - mm	LA +/- mm	AX - mm	LA +/- mm	
20	100	3,0	2400	105	75	M12	4	8	58	15	15	8	11	18	1,9
25	100	3,0	2400	115	85	M12	4	8	68	15	15	8	11	18	1,9
32	105	3,0	3300	140	100	M16	4	10	78	15	15	8	23	25	2,3
40	115	3,0	4000	150	110	M16	4	10	88	20	20	8	27	32	2,9
50	100	3,5	4200	165	125	18	4	14	98	20	20	25	30	35	6,5
65	100	3,0	5500	185	145	18	8	18	118	35	35	30	35	40	7,5
80	125	3,0	9000	200	160	18	8	18	122	40	40	30	35	45	9,0
100	150	3,5	13500	220	180	18	8	18	148	40	40	30	35	60	11,0
125	175	4,0	19000	250	210	18	8	20	174	45	45	32	40	80	13,0
150	225	4,0	29500	285	240	22	8	21	200	45	45	32	80	120	17,0
200	225	4,0	46000	340	295	22	8	23	256	45	45	32	100	150	22,0
250	225	4,0	67000	395	350	22	12	27	303	45	45	15	100	170	37,0
300	225	4,0	94000	445	400	22	12	27	360	50	50	10	120	170	50,0
350	225	4,5	108000	505	460	22	16	27	402	50	50	8	160	250	59,0
400	225	4,0	140000	565	515	26	16	27	453	50	50	8	200	230	72,0
450	225	3,5	180000	615	565	26	20	27	513	50	50	7	200	240	80,0
500	225	4,0	210000	670	620	26	20	29	564	50	50	7	250	300	89,0
600	250	4,0	310000	780	725	30	20	33	658	50	50	6	250	300	130,0

*¹ WF = effective area

*² Other dimensions (e.g. according to DIN PN 6, 16, ANSI b16,5 150 lbs) are available upon request.

*³ The movement absorption values are maximum values and must not occur in combination.

*⁴ The stiffness rate are valid for 20 °C +/- 25 %. At higher temperatures the stiffness rate can fall by up to 50 %.

Important information

Please note the appropriate fixed point constructions and plain bearings in your

pipng system! For more information please refer to our installation instructions.

We will be happy to send you further information on the individual types and designs.