

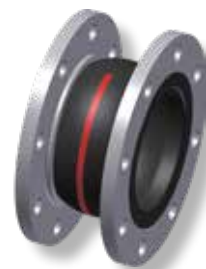
WILLBRANDT Rubber Expansion Joint Type 55 SO for Shock Design

■ mainly in stock

DN 20 to DN 300

The type 55 SO is a low corrugated, highly elastic rubber expansion joint. Its flat corrugated shape minimises flow resistance. It has been specially designed for the shipbuilding industry and is characterised by its high shock expansion absorption.

Type 55 SO is primarily used in naval shipbuilding, where it is used to absorb movement and vibrations and to dampen noise, while at the same time protecting the connected units in the event of a shock.



Bellow design	Low corrugated rubber bellow with reinforcement and shaped sealing bead with core ring, self-sealing (no additional seals required). Suitable for swiveling flanges.	Vacuum resistance	- DN 20 to 50 vacuum-proof - DN 65 to 250 up to -200 mbar - DN 300 to 1000 not vacuum-proof - With vacuum supporting spiral/ring from DN 65 to 1000 vacuum-proof
Flange version	Both sides with swiveling flange made of galvanized steel, drilled according to DIN PN 10 (standard). Other materials and dimensions are possible.	Accessories	- Tie rods - Vacuum supporting spiral/rings - Guide sleeves - PTFE lining (see type 55 PTFE on page 66) - Potential equalisation - Flame-resistant protective covers - Dust and splash protection covers - Earth cover / sun protection cover Further information on page 99 - 105.
Approvals/Conformity	CE, drinking water conform, shipbuilding approvals, TÜV tested in accordance with DIN 4809 (Detailed overview on page 5.)		

Specifications

Bellow		Bellow design			Permissible operating data								Surface resistance Ro		
Colour code	Colour marking	Core (inner)	Reinforcement	Cover (outer)	°C		bar		°C		bar		Short term °C	Core	Cover
blue-red		IIR	Polyamide	EPDM	-40	10	50	16	70	12	100	10	120	dissipative	dissipative
red KTW		CIIR	Polyester	CIIR	-40	10	50	16	70	12	100	10	120	dissipative	dissipative
red Sp		EPDM	PEEK	EPDM	-40	10	70	16	100	10	130	8	150	dissipative	dissipative
yellow		NBR	Polyamide	CR	-20	10	50	16	70	12	90	10	100	conductive	conductive

Bursting pressure for DN 20 - DN 300 > 48 bar, DN 250 and DN 300 max. 10 bar operating pressure / bursting pressure 30 bar

Application

Type 55 SO blue-red

For drinking water (WARS conform), hot water, sea water, cooling water with glycol or other chemical additives for treating water, weak acids and weak alkalis and salt solutions, technical alcohols, esters, ketones. Electrically dissipative surface. Not suitable for oil products or cooling water with additives containing oil.

Type 55 SO red KTW

Like type 55 SO blue-red, but KTW-BWGL conform instead of (drinking water).

Type 55 SO red Sp

For heating installations according to DIN 4809. For many years of operation under constant loading with hot water and heating water at 100 °C/110 °C at 10 bar/6 bar operating pressure. Electrically dissipative surface. Not suitable for media with additives containing oil.

Type 55 SO yellow

For oils, lubricants, fuels, gases, city and natural gas (not liquefied) and DIN EN fuels with an aromatic content up to 50 %. Electrically conductive surface.

Important information

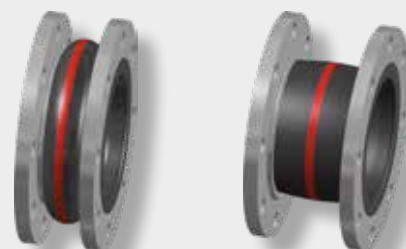
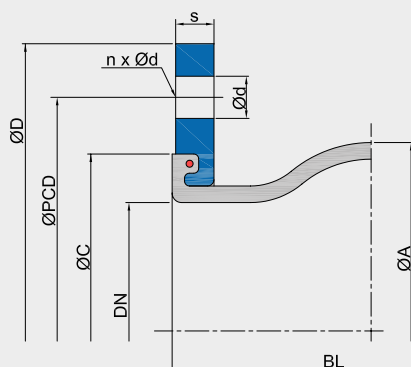
The expansion joints are designed for connection to a flange in accordance with EN 1092-1, form A/B, type 11. If the flange dimensions or surface finish differ from this, additional measures must be taken, such as installing an adapter disc (see also table „Rubber bellow sealing profiles“ on page 125). For aggressive media, please have the material resistance checked by our engineers. The bellows must not be painted or insulated at media temperatures >50 °C. Please also note the planning and installation instructions.

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Design A - without tie rods

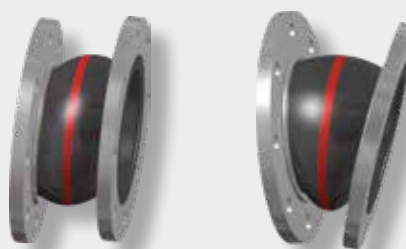
Can be used for absorb movements in all directions (for combined movements, refer to the movement diagram in the technical appendix), for vibration and noise damping.

The expansion joint's reaction force must be absorbed through appropriate pipeline guidance (see planning instructions in the appendix).



axial -

axial +



lateral ±

angular ±

Dimensions for design A

DN	Length BL	Bellow		Flange PN 10 ^{*2}						Movement absorption ^{*3}				Weight ^{*4}
		ØA	WF ^{*1}	ØD	ØPCD	Ød	n	s	ØC	axial + mm	axial - mm	lateral ± mm	angular ± °	
20	160	81	1700	105	75	M12	4	14	66	35	30	35	15	1.6
25	160	81	1700	115	85	14	4	14	66	35	30	35	15	1.8
32	160	81	1700	140	100	18	4	15	66	35	30	35	15	2.9
40	160	86	1800	150	110	18	4	15	74	35	30	35	15	3.5
50	160	96	3200	165	125	18	4	16	86	35	30	35	15	4.5
65	160	111	5300	185	145	18	8	16	106	35	30	35	15	5.3
80	160	122	8500	200	160	18	8	18	118	35	30	35	15	6.7
100	160	142	12800	220	180	18	8	18	138	35	30	35	15	7.7
125	160	168	18700	250	210	18	8	18	166	35	30	35	15	9.4
150	160	192	25900	285	240	22	8	18	192	35	30	35	15	11.9
200	160	252	41000	340	295	22	8	20	252	35	30	35	15	16.2
250	200	302	59600	395	350	22	12	20	304	35	40	30	10	22.6
300	200	354	82200	445	400	22	12	22	354	35	40	30	10	27.7

^{*1} WF = effective area

^{*2} Other standards/dimensions possible.

^{*3} Utilisation rate of movement absorption decreases at higher temperatures (see technical appendix).

^{*4} Approx. weights with reinforcement from polyamide cord.

Shock absorption in any direction ±50 mm

Important information

Please note the appropriate fixed point constructions and plain bearings in your piping system! Information on this can be found in our planning and installation instructions. Regarding the bracing, please refer to the information in the technical appendix (page 99 - 102)!