

# WILLBRANDT Rubber Expansion Joint Type 56

## DN 50 - DN 1000

Type 56 is a cylindrical rubber expansion joint that achieves very low flow resistance because of its uncorrugated bellow geometry. It is suitable for conveying media that contain solids, even at high flow rates. It is also characterised by its flexible installation length and variety of rubber qualities, which means that a suitable rubber compound is available for every application (see material descriptions on the following pages). Depending on its design, it may only be able to absorb minimal axial movement!

Type 56 is used in plant engineering, water technology and wastewater technology absorb lateral movement and vibration and to insulate sound.



<b>Bellow design</b>	Smooth cylindrical rubber bellow with reinforcement and shaped sealing bead with core ring, self-sealing (no additional seals required). Suitable for accommodating swiveling flanges.	<b>Vacuum resistance</b>	Vacuum resistance only for short installation lengths, longer versions should be fitted with a vulcanized vacuum supporting spiral.
<b>Flange version</b>	Both sides with swiveling flange made of galvanized steel, with clearance holes, drilled according to DIN PN 10 (standard). Other materials and dimensions are possible.	<b>Approvals/Conformity</b>	Drinking water approval, FDA and EG 1935/2004 conform
		<b>Accessories</b>	<ul style="list-style-type: none"> <li>- Potential equalisation</li> <li>- Flame-resistant protective covers</li> <li>- Dust and splash protection covers</li> <li>- Earth cover/sun protection hoods</li> <li>- Segment tie rods</li> </ul>

## Specifications

Bellow		Core (inner)	Bellow design		Max. temperature °C	Permissible operating data				
Colour code	Colour marking		Reinforcement	Cover (outer)		°C	bar	°C	bar	°C
red		EPDM	Polyamide	EPDM	100					
blue		EPDM TW	Polyamide	EPDM	100					
white/red		EPDM beige	Polyamide	EPDM	100					
red		EPDM AF	Polyamide	EPDM	100					
green		CSM	Polyamide	CSM	100					
yellow-grey		NBR	Polyamide	CR	100					
white-grey		NBR beige	Polyamide	CR	100					
grey		CR	Polyamide	CR	90					
red-blue-red		EPDM	Aramid	EPDM	100					
blue-blue-blue		EPDM TW	Aramid	EPDM	100					
white-blue-red		EPDM beige	Aramid	EPDM	100					
orange-blue-orange		EPDM HT	Aramid	EPDM HT	125					
red-blue-red		EPDM AF	Aramid	EPDM	100					
green-blue-green		CSM	Aramid	CSM	100					
yellow-blue-grey		NBR	Aramid	CR	100					
white-blue-grey		NBR beige	Aramid	CR	100					
grey-blue-grey		CR	Aramid	CR	90					
lilac-blue-lilac		FPM	Aramid	FPM	180					
-	-	Silicone	Aramid	Silicone	180					
-	-	Silicone	Glass fabric	Silicone	200					

Expansion joints will be designed according to your operating parameters.

## Important information

For aggressive media, please see the resistance table (can be requested separately).  
 The bellows should not be painted or insulated. Please refer to the installation instructions.  
 ++++ We will be happy to send you further information on the individual types and designs. ++++

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### Application

#### Type 56 red (EPDM)

For water, sea water, cooling water with glycol or other chemical additives for treating water, saline solutions, weak acids and weak alkali solutions. Unsuitable for aliphatic, aromatic and chlorinated hydrocarbons, oil or oily media.

#### Type 56 blue (EPDM TW)

Like Type 56 red, but approved for drinking water.

#### Type 56 white-red (EPDM beige)

Like Type 56 red, but with light-coloured rubber in food-grade.

#### Type 56 red AF (EPDM AF)

Like Type 56 red, but with abrasion-resistant EPDM rubber compound.

#### Type 56 green (CSM)

For chemicals, aggressive, chemical wastewater and compressor air containing oil.

#### Type 56 yellow-grey (NBR)

For oils, fats, gases, diesel fuels, kerosene and crude oil. Not suitable for aromatic and chlorinated hydrocarbons, esters and ketones.

#### Type 56 white-grey (NBR beige)

Like Type 56 yellow-grey, but with light-coloured internal rubber in food-grade. Not approved for drinking water!

#### Type 56 grey (CR)

For water, wastewater, swimming pool water, salt water, cooling water with anti-corrosive products containing oil, oil mixtures and compressed air containing oil.

#### Type 56 red-blue-red (EPDM/aramid)

Like Type 56 red, but with aramid fabric.

#### Type 56 blue-blue-blue AF (EPDM TW/aramid)

Like Type 56 blue, but with aramid fabric.

#### Type 56 white-blue-red AF (EPDM beige/aramid)

Like Type 56 white-red, but with aramid fabric.

#### Type 56 orange-blue-orange AF (EPDM HT/aramid)

Like Type 56 red, but with aramid fabric and for temperatures up to +125 °C.

#### Type 56 red-blue-red AF (EPDM AF/aramid)

Like Type 56 red AF, but with aramid fabric.

#### Type 56 green-blue-green (CSM/aramid)

Like Type 56 green, but with aramid fabric.

#### Type 56 yellow-blue-grey (NBR/aramid)

Like Type 56 yellow-grey, but with aramid fabric.

#### Type 56 white-blue-grey (NBR white/aramid)

Like Type 56 white-grey, but with aramid fabric.

#### Type 56 grey-blue-grey (CR/aramid)

Like Type 56 grey, but with aramid fabric.

#### Type 56 lilac-blue-lilac (FPM/aramid)

For flue gas desulphurisation systems and bio-diesel. High chemical resistance to benzene, xylene, toluene, aromatic, chlorinated hydrocarbons, mineral acids and fuels with an aromatic content of more than 50 %. For temperatures of up to +180 °C.

#### Type 56 silicone (silicone/glass fibre or aramid)

Suitable for hot air, acetic acid. Satisfactory resistance to aliphatic engine and gear oils. Also available in foodstuff quality. Excellent resistance to ageing, UV, ozone and weather. Very good radiation resistance. Not for use with steam above 120 °C. No resistance to fuels.

#### Note!

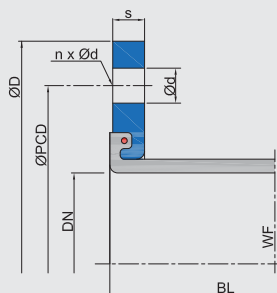
Detailed material descriptions on pages 5 - 7.

## WILLBRANDT Rubber Expansion Joint Type 56

### Design A - without tie rods

Can be used to absorb compression and lateral movement, as well as to insulate vibration and sound.

Can only absorb minimal expansion.



### Dimensions for Design A

DN*1	Overall length BL*2 mm	Bellow WF*3 mm <sup>2</sup>	B mm	ØD mm	Flange PN 10*4				Movement absorption			Weight*6 kg
					ØPCD mm	Ød mm	n	s mm	axial + mm	axial - mm	lateral*5 ± mm	
50	150 - 1000	1963	255	165	125	18	4	16	3	5	12	4.3
65	150 - 1000	3317	275	185	145	18	8	16	3	5	11	5.2
80	150 - 1000	5024	290	200	160	18	8	18	3	5	10	7.0
100	150 - 1000	7850	310	220	180	18	8	18	3	5	10	7.9
125	150 - 1000	12266	340	250	210	18	8	18	3	5	9	10.0
150	150 - 1000	17663	375	285	240	22	8	18	3	5	12	12.0
200	200 - 1000	31400	440	340	295	22	8	20	6	10	11	17.0
250	200 - 1000	49063	509	395	350	22	12	20	6	10	11	20.0
300	200 - 1000	70650	559	445	400	22	12	20	6	10	10	25.0
350	200 - 1000	96163	619	505	460	22	16	25	6	10	10	38.0
400	200 - 1000	125600	700	565	515	26	16	25	6	10	10	38.0
450	200 - 1000	158963	760	615	565	26	20	30	6	10	10	52.0
500	200 - 1000	196250	810	670	620	26	20	30	6	10	10	57.0
600	200 - 1000	282600	930	780	725	30	20	30	6	10	9	75.0
700	200 - 1000	384650	1045	895	840	30	24	35	6	10	9	128.0
800	200 - 1000	502400	1175	1015	950	33	24	40	6	10	9	161.0
900	200 - 1000	635850	1285	1115	1050	33	28	40	6	10	9	197.0
1000	200 - 1000	785000	1400	1230	1160	36	28	40	6	10	8	235.0

\*1 Intermediate diameters for other standards (e.g. ANSI) are also possible.

\*2 Overall lengths available from 150/200 mm to 1000 mm.

\*3 WF = effective area

\*4 Other standards/dimensions possible.

\*5 The lateral movement absorption applies to short overall length. The lateral movement absorption increases by 6 mm every 100 mm.

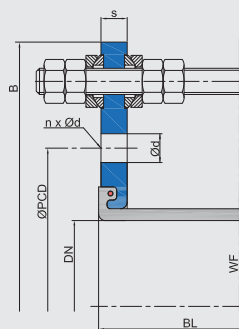
\*6 For short installation lengths.

Movement absorption is for a bellow design with 6 bar operating pressure.

### Design M - with tie rods/shear limiters

For absorbing compression while also absorbing lateral movement.

The use of PTFE-coated spherical washers and conical sockets reduces the frictional force considerably during lateral movement. Can be used for vibration insulation and absorbing lateral movement.



### Important information

Please note the appropriate fixed point constructions and plain bearings in your piping system, as well as the tolerances as per the FSA Handbook (see the technical appendix on page 118)!

For more information please refer to our installation instructions (p. 97 - 116).

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