

## Rubber expansion joint - Type C-31

Lateral expansion joint DN 300 – DN 3600

Customized production



### Structure type C-31

- Lateral expansion joint consisting of a rubber bellows and press-on retaining flanges and tie rods
- Tie rods (outer restraints) to absorb reaction force from internal pressure
- Alternative: Tie rods (outer and inner restraints) to absorb reaction force from internal pressure or vacuum
- Available in various bellows geometries and special lengths

### Applications

- for compensating lateral movement
- for reducing thermal and mechanical tension in pipes and their system components, e.g.
  - pumps
  - condensers
- to compensate for installation inaccuracies
- to compensate for ground and foundation settlement
- as installation and dismantling aid
- power station technology
- process plant engineering

### Rubber bellows PN 4 / PN 10 / PN 16

- Elastic robust bellows in various rubber grades
- Synthetic fibre reinforcement
- Full-faced self-sealing rubber flanges with drilling for through bolts
- Electrical impedance  $10^3$  to  $10^6$  Ohm (DIN IEC 93, VDE 0303-30)

Rubber grade*	Colour code	Possible uses
EPDM	orange	Cooling, sea, brackish water, acids, lyes
NBR	red	Oil
CIIR	white	Drinking water

\*Check or inquire about the resistance of the rubber grade to temperature and medium.

Technical design	DN 300 - 2400	DN 300 - 1000	DN 300 - 1000
DN	PN 4	PN 10	PN 16
Pressure rate			
Max. perm. operating pressure	4 bar*	10 bar*	16 bar*
Max. perm. temperature	+100 °C	+100 °C	+100 °C
Bursting pressure	≥ 15 bar	≥ 30 bar	≥ 48 bar
Vacuum operation	with vacuum supporting ring (at permanent vacuum)		

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

\*Please consider a decrease of pressure due to temperature (see technical annex).

### Tie rod restraints

- Tie rods carried on spherical washers and conical seats

### Materials

Standard: tie rods 8.8

Others: stainless steel

### Corrosion protection

Standard: electrogalvanized

Others: hot-dip galvanized

### Accessories

- Vacuum supporting ring
- Internal guide sleeve
- Protective tube

### Certificates

- CE (DGR 97/23/EC)
- Drinking water
- TÜV (KTA)

### Flanges

#### Version

- Press-on retaining flanges with stabilizing collar
- With ears or with second bolt circle to carry the tie rods (depending on DN and PN)
- Flange drilling for through bolts

#### Dimensions

Standard: PN 10

according to EN 1092

Others: DIN EN, ANSI, BS etc.

Connection dimensions see technical annex

#### Materials

Standard: 1.0038 (S235JR), 1.0577 (S355J2)

Others: stainless steel, etc.

#### Corrosion protection

Standard: DN 300 - DN 500

electrogalvanized

DN 600 - DN 1000

hot-dip galvanized

DN 1100 - DN 3600

anti-corrosion primed

Others: special varnish, special coating, etc.



STENFLEX® type C-31 in a power plant



## Dimensions standard program

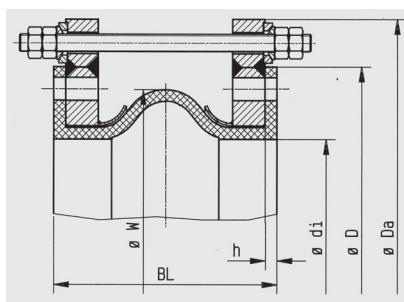
DN	Pressure rate bar	Bellows		Steel flange Outer $\varnothing$ restrainer flange mm	without vacuum supporting ring				with vacuum supporting ring					
		$\varnothing$ di Bellows inner $\varnothing$ tolerance $\pm 1\%$ mm	h Rubber-flange thickness mm		BL mm at rated pressure			$\varnothing$ W Convolution $\varnothing$ unpressurized mm	Weight approx. kg	BL mm at rated pressure			$\varnothing$ W Convolution $\varnothing$ unpressurized mm	Weight approx. kg
					4 bar	10 bar	16 bar			4 bar	10 bar	16 bar		
300	4/10/16	300	15	595	275	275	275	413	86	275	275	275	413	92
350	4/10/16	350	15	655	275	275	275	463	100	275	275	275	463	108
400	4/10/16	400	15	715	275	275	275	513	118	275	275	275	513	121
450	4/10/16	450	15	765	275	275	275	563	132	275	275	275	563	137
500	4/10/16	500	15	820	275	275	275	613	144	275	275	275	613	149
600	4/10/16	600	15	930	275	275	275	713	173	275	275	275	713	205
700	4/10/16	700	15	1065	275	275	300	813	255	275	275	300	813	263
750	4/10/16	750	15	1135	275	275	300	863	294	275	275	300	863	343
800	4/10/16	800	20	1185	275	275	300	923	357	275	275	300	923	363
900	4/10/16	900	20	1285	275	300	300	1023	397	275	300	300	1023	453
1000	4/10/16	1000	20	1420	275	300	325	1123	539	275	300	325	1123	555
1100	4	1100	20	1535	325			1268	545	350			1310	565
1200	4	1200	20	1645	325			1368	665	350			1410	715
1300	4	1300	20	1785	325			1468	800	350			1510	830
1400	4	1400	20	1895	325			1568	970	350			1610	1005
1500	4	1500	20	2015	325	on request	on request	1668	1070	375	on request	on request	1710	1210
1600	4	1600	20	2135	350			1768	1300	375			1810	1340
1700	4	1700	20	2235	350	on request	on request	1868	1360	375			1910	1515
1800	4	1800	20	2335	350	on request	on request	1968	1530	375			2010	1575
2000	4	2000	20	2545	350	on request	on request	2168	1875	375	on request	on request	2210	1935
2100	4	2100	20	2660	350			2268	2115	375			2310	2175
2200	4	2200	25	2770	375			2378	2435	400			2420	2495
2300	4	2300	25	2870	375			2478	2645	425			2520	2605
2400	4	2400	25	2980	400			2578	2865	425			2620	2940

Values are based on flange dimensions according to EN 1092 PN 10.  
Lengths (BL) may vary and depend on flange drilling, operating pressure, possible vacuum, operating temperature.  
Larger sizes (DN) on request.

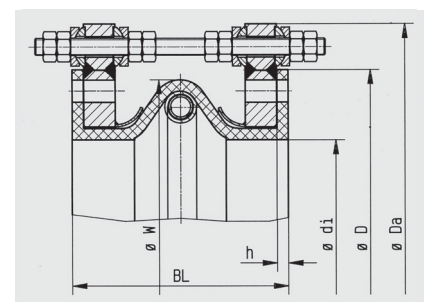
## Movement compensation

DN	without vacuum supporting ring $\Delta$ lat Lateral movement $\pm$ mm	with vacuum supporting ring $\Delta$ lat Lateral movement $\pm$ mm
300	30	30
350	30	30
400	30	30
450	30	30
500	30	30
600	30	30
700	30	30
750	30	30
800	30	30
900	30	30
1000	30	30
1100	30	35
1200	30	35
1300	30	35
1400	30	35
1500	30	35
1600	30	35
1700	30	35
1800	30	35
2000	30	35
2100	30	35
2200	30	35
2300	30	35
2400	30	35

## Versions



**Type C-31**  
Lateral expansion joint, outer restraints



**Type C-31**  
Lateral expansion joint, outer and inner restraints, with vacuum supporting ring

## Note

Please comply with the general technical instructions regarding reaction force, moving force, fixed point load, installation instructions etc.

Subject to technical alterations and deviations resulting from the manufacturing process.