

RUBBER EXPANSION JOINTS



A rubber expansion joint with full face flange eliminates the need for additional gaskets when installing the joint. The rubber flange are drilled to made with pipe line flanges (ANSI). These types of rubber joints are typically available with a single bellow double, or triple bellow to meet the face to face and movement requirements of the installation.

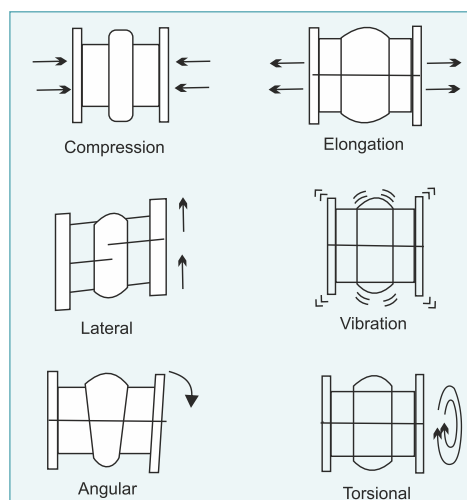
Rubber expansion bellow are designed to take care of reactional forces like thermal expansion, contraction rib rationsets, which otherwise break pipe line. These rubber expansion joints are made up of Neoprene, EPDM, Silicon and also Natural rubber etc., Technocraft rubber expansion bellow are reinforced with specially treated Nylon, Rayon, Glass fibre steel cord etc., TECHNO CRAFT RUBBER EXPANSION are available in sizes ranging from 20mm to 600mm NB with hydro testing up to 32kg/cm² pressure actual testing. These bellow are either integrated flanged or split back up flanges, and are made strictly as per the customer design, drawing and specification.

Type of movements:

Axial compression: reduction face to face dimension measured along the axis

Axial Elongation: Increase of face to face dimension measure along the axis

Transverse or Lateral: The movement of the joint perpendicular to the axis.



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Construction details:

Body:

The body consists of fabric and various rubber compound reinforced with steel rings for better strength. High quality synthetic fabric is used for standard joint for temperature range up to 80 °C for temperature beyond 80 °C and up to 120 °C subjected to pressure and or vacuum. Butyl rubber with synthetic fabric is used in construction of expansion joints.

Expansion joint cover is formed from Natural or synthetic rubber selected to suit service conditions. A special Hypalon paint is used to coat the cover for protection against occasional contact with oil and to resist weathering, Ozone and corrosive fumes.

Metal Flange: TECHNOCRAFT RUBBER EXPANSION

Flanges are normally full face with drilling standards BS 10-2009, ANSI B16.5.1998 BS 4504.3.1-1989, IS 6392-1971, ISO-7005-1: 1992(E) EN 1092-2-1997 Table D, Table E & PN STANDARDS.

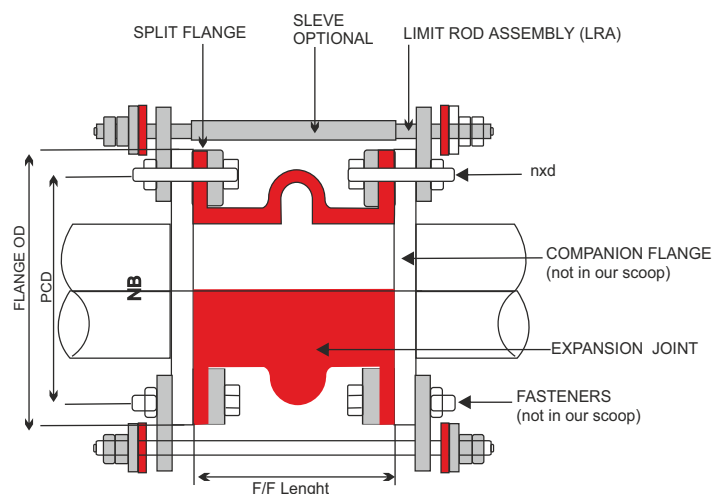
Material: TECHNOCRAFT RUBBER EXPANSION

expansion joints are available in natural rubber chloroprene, Hypalon & Nitrile for temperatures up to 80° C also available in Butyl for temperatures up to 120° C. TECHNOCRAFT RUBBER EXPANSION joints are manufactured with cotton/Nylon fabrics and GI/S.S wire Galvanized split steel retaining rings should be installed on all.

These are placed directly against the inside of the flange to prevent damage to the rubber surface when bolts are tightened and also to provide equal distribution of bolting stresses. They are split into 2 or 4 sections. Depending on joint size and are drilled to match rubber flange holes.

Control units: TECHNOCRAFT RUBBER EXPANSION

control units consist of two or more control rod assemblies extending from flange to flange of expansion joint to minimize possible damage to the expansion joint caused by excessive movement of the pipe line. The control units are set at the maximum allowable expansion of the joint and will absorb the



static pressure thrust developed at the expansion joint over compression of the expansion joints can be controlled by installing rubber pipe sleeves over the tie rod. The length of the pipe sleeves is such that the expansion joint cannot be compressed beyond maximum allowable compression stated in the chart.

Quality control Testing:

1. Endurance Testing
2. Low Temperature flexibility
3. High Temperature vacuum
4. Axial Transverse stiffness
5. Proof pressure

Applications:

1. Fluid, gas chemicals, petroleum and its by products handling system in chemical
2. Cooling and pumping system in power and energy generation plant.
3. Central heating and air conditioning, water distribution system in building and construction industry.
4. Machine cooling, fire extinguishing and fluid handling system in naval constructions and shipbuilding.
5. Industrial water and compressed air and blast furnace gas systems in iron & steel industry.

RUBBER EXPANSION JOINTS

Maxm. WP								
Drilling Standards			BS 10 Table D			BS10 Table E		
NB	LENGTH	FLANGE OD d	PCD	nx d	LRA	PCD	nx d	LRA
mm	mm	mm	mm	mm	nos	mm	mm	nos
020	150	102	073	4 x 14	2	073	4x14	2
025	150	114	083	4 x 14	2	083	4x14	2
032	150	121	087	4 x 14	2	087	4x14	2
040	150	133	098	4 x 14	2	098	4x14	2
050	150	152	114	4 x 18	2	114	4x18	2
065	150	165	127	4 x 18	2	127	4x18	2
080	150	184	146	4 x 18	2	146	4x18	2
100	150	216	178	4 x 18	2	184	8x18	2
125	150	254	210	8 x 18	2	210	8x18	4
150	150	279	235	8 x 18	2	235	8x22	4
200	150	337	292	8 x 18	2	292	8x22	4
250	200	406	356	8 x 22	2	356	12 x 22	4
300	200	457	406	12 x 22	2	406	12x26	4
350	200	527	470	12 x 26	3	470	12x26	4
400	200	578	521	12 x 26	3	521	12x26	4
450	200	641	584	12 x 26	3	584	16x26	4
500	200	705	641	16 x 26	4	641	16x26	4
550	250	762	699	16 x 29	4	699	16 x 29	4
600	250	826	756	16 x 29	4	756	16x32	4

NOMENCLATURE:

NB	Nominal Bore	RT	Room Temperature
PCD	Pitch Circle Diameter	n	No of Holes
PN	Nominal Pressure = Maxm WP	d	Diameter of hole
Maxm WP	Maximum Allowable Working Pressure at RT	LRA	Limit rod assembly
Test Pressure	1.5 X Maxm WP		

- All dimensions are rounded to nearest mm

- Also available in ANSI B 16.5, BS- 4504 DIN 2501 IS 6392. ISO 7005-1

- 1bar = 1 kg/cm² = 0.1Mpa = 100 Kpa = 1 atm = 14.5 lbs/sq in (psi)

- Material of Limit Rod - IS 1367 Gr8-8

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CODE	NOMINAL BORE	NATURAL LENGTH	MAXIMUM ALLOWABLE MOVEMENT (NOT SIMULTANEOUS)			
	NB	NL	COMPRESSION	ELONGATION	TRANSVERSE	TORSIONAL
	(mm)	(mm)	(mm)	(mm)	(mm)	(Deg)
NB -25	25	150	12	6	10	3
NB -32	32	150	12	6	10	3
NB -40	40	150	12	6	12	3
NB -50	50	150	12	6	12	3
NB -65	65	150	12	6	12	3
NB -76	76	150	12	6	12	3
NB -100	100	150	12	6	12	3
NB -125	125	150	12	6	12	3
NB -150	150	150	12	6	12	3
NB -200	200	150	19	10	12	3
NB -250	250	200	19	10	12	3
NB -300	300	200	19	10	12	3
NB -350	350	200	19	10	22	3
NB -400	400	200	19	10	22	2
NB -450	450	200	19	10	12	2
NB -500	500	200	22	11	12	1
NB -550	550	250	22	11	12	1
NB -600	600	250	22	11	12	1

PRESSURE NORMS AND FLANGE DRILLING STANDARDS

Standard RUBBER EXPANSION JOINT (SINGAL ARCH)		Class	Maxm. Working Pressure at 20°C	Maxm. Vacuum Mm of Hg
IMPERIAL	BS 10 – 2009	Table D	100 psi	700
		Table E	200 psi	
	ASME B 16.5 – 1996 Formerly ANSI B 16.5-1998	150 Class	150 psi	
		300 Class	300 psi	
METRIC	BS 4504 - 3.1 -1989 IS 6392 – 1971 ISO 7005 -1 : 1992 (E) EN 1092 -2-1997 (Formerly DIN 2533)	PN 2.5	2.5 bar	700
		PN 6	6.0 bar	
		PN 10	10.0 bar	
		PN 16	16.0 bar	
		PN 25	25.0 bar	

Test Pressure = 1.5 Maxm. WP

1bar = 1 kg/cm² = 14.5 psi

Drilling detail available on request

TEMPERATURE RATINGS

CLASS I	Standard	-10° to 70°C
CLASS II	Optional	-10° to 105°C
CLASS III	Optional	-10°C to 120°C