

RUBBER-EXPANSION-JOINTS **Type SF-130**



SF 130



Applications:

The expansion joints can be used as flexible connections within pipe systems. They are provided to neutralize axial and lateral movements in the system appearing out of heat extension. The expansion joints are designed for the following media: Hot cooling water, freshwater, acids, saltwater etc. They are NOT prepared for any oily medium!

Construction:

High quality butyl / EPDM-rubber for the inner part of the expansion joint. Nylon cord is used as reinforcement. Ozone and heat resistant EPDM-rubber is used for the outside as a protection.

Galvanized yellow-chrome-flanges are available according to DIN, PN 10 or 16.

Certification

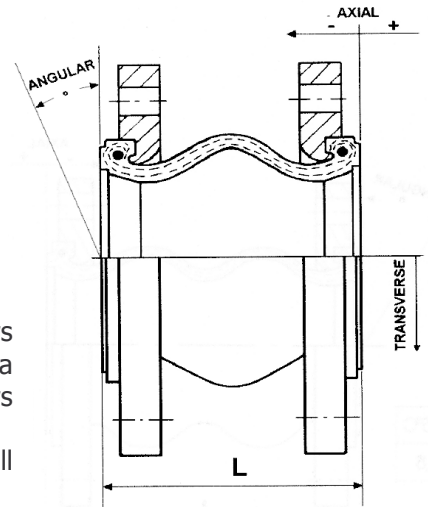
The Rubber-Expansion-Joints of the type **SF-130** are certificated according to **Lloyd's Register**



Due to the certification we have enabled the use within applications which require highest performances.



The shape of the bellows gives the expansion joint a higher flexibility and allows larger movements.
For all sizes the overall length is 130



Size mm (inch)	L mm	Axial (-) mm	Axial (+) mm	Transverse mm	Angular (°)	Max. Pressure barg (PSIG) up to 80°C	Max. Temp. °C (°F)	Vacuum mm Hg (Inch)
32 (1¼")	130	30	20	20	35°	16 (225)	105 (220)	660 (26)
40 (1½")	130	30	20	20	35°	16 (225)	105 (220)	660 (26)
50 (2")	130	30	20	20	35°	16 (225)	105 (220)	660 (26)
65 (2½")	130	30	20	20	30°	16 (225)	105 (220)	660 (26)
80 (3")	130	30	20	20	30°	16 (225)	105 (220)	660 (26)
100 (4")	130	30	20	20	25°	16 (225)	105 (220)	660 (26)
125 (5")	130	30	20	20	25°	16 (225)	105 (220)	660 (26)
150 (6")	130	30	20	20	15°	16 (225)	105 (220)	660 (26)
200 (8")	130	30	20	20	15°	16 (225)	105 (220)	660 (26)
250 (10")	130	30	20	20	10°	10 (150)	105 (220)	660 (26)
300 (12")	130	30	20	20	10°	10 (150)	105 (220)	660 (26)

Burst pressure: 60 barg (1¼" - 8")
40barg (10" - 12")

Temperature: -10°C to 105°C

The maximum allowable pressure must be adjusted by one of the factors below at operating temperatures over 80°C.

85°C	90°C	95°C	100°C	105°C
0,92	0,83	0,75	0,67	0,6

Rubber expansion joints SF 130



Outstanding : 7
 Excellent : 6
 Very Good : 5
 Good : 4
 Fair to Good : 3
 Fair : 2
 Poor to Fair : 1
 Poor : 0

Chemical ASTM D-2000SAE J-200 ANSI / ASTM D 1418-77	Neoprene BC CR	Natural Rubber AA IR	Butyl AA IIR	Nitril BF NBR	Hypalon CE CSM	EPDM BA EPDM
Alkali, conc	0	-	4	0	4	6
Animal & Veg. oil	4	-	5	5	4	5
Chemical	3	3	6	3	6	6
Water	4	5	5	4	5	5
Oxygenated Hydro	1	4	4	0	1	6
Lacouers	0	0	3	2	0	3
Oil & Gasoline	4	0	0	5	4	0
Alkali, Dilute	4	-	4	4	4	6
Acid, Dilute	6	3	6	4	6	6
Acid, Conc.	4	3	4	4	4	4
Aliphatic Hydro.	3	0	0	6	3	0
Aromatic Hydro.	2	0	0	4	2	0
Ele. Insulation	3	5	5	1	3	6
Water Absorp	4	5	5	4	4	6
Radiation	5	6	4	5	5	7
Swelling in oil	4	0	0	5	4	0
Rebound-Cold	4	6	0	4	2	6
Comp. Set	2	4	3	5	2	4
Tensile strength	4	6	4	5	2	5
Dielectric str.	5	6	5	0	5	7
Abrasion	5	6	4	4	4	5
Impermeability	4	2	6	4	4	4
Dynamic	2	2	2	5	2	5
Rebound-hot	5	6	5	4	4	6
Heat	4	2	5	4	4	6
Cold	4	5	4	3	4	5
Flame	4	0	0	0	4	0
Tear	4	5	4	3	3	4
Ozone	5	0	6	2	7	7
Weather	6	2	5	2	6	6
Sunlight	5	0	5	0	7	7
Oxidation	5	4	6	4	6	6

Rubber quality	Color band	Temperature range	Property
Neoprene Rubber: CR	No color band	-20°C to +70°C.	Excellent weather-resistance. Good oil- and gasoline resistance.
EPDM	Red	-25°C to +130°C.	Outstanding ozone- an sunlight-resistance. Suitable for most chemicals, alkaline waste-water, compressed air (oil free). Excellent electrical insulation. Not suitable for oil, gasoline and greases.
NITRIL Rubber: NBR	Yellow	-25°C to +90°C.	Very good oil- and gasoline resistance and suitable for gases, solvents and greases. Good abrasion-resistance. Not applicable to steam and hot water.
Hypalon Rubber: CSM	Green	-25°C to +80°C.	Outstanding ozone- and sunlight-resistance an suitable vor most chemicals. Good oil- and gasoline resistance.
Butyl Rubber: IIR	Blue	-25°C to +150°C.	Very good heat- and weather-resistance, suitable for alkaline waste-water, chemicals and compressed air (oil free).
Viton Rubber: FPM	Purple	-10°C to +180°C.	Suitable for chemicals, oil, gasoline an solvents. Not suitable for chlorines and ketones.
PTFE	No color band	-50°C to +230°C.	Outstanding resistance for all media, with the exeption of alkali metals at melting point and amides formed from the reaction of a carboxylic acids with an amine.

The single bellows are available in neoprene, Butyl, Nitrile, EPDM, Hypalon and Natural rubber or combinations of these elastomers for the outside cover and inside tube.

Reinforcement of the bellows by Nylon tire cords and at both ends by hardened steel wire rings.

The floating galvanized steel flanges are according to DIN PN 10/16 or ANSI 150 lbs. Other flange dimensions are eventual possible.

Rubber expansion joints SF 130

Installation Procedure



Use the right torque for the bolts

To allow the joints it's maximum movement and to prevent damage to the rubber sphere, the bolts should be inserted through the flange with the head of the bolts on the joints side.

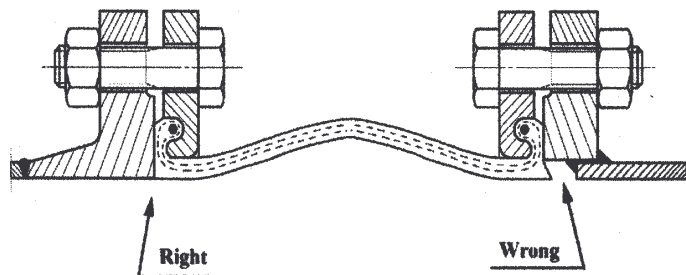
No damage can come from the thread or nut.

To secure the joint to the pipe, the bolts should be tightened in the opposite pairs applying the following torque:

For joints up to a diameter of 80 mm:	60 Nm. (max)
For joints bigger than 80 mm:	80 Nm. (max)

Use the right counter-flange

Use the right counter-flange (according to DIN 2501 PN10 / PN16) for a proper connection and to obtain a durable and safe connection the following criteria should be met: The inner diameter of the connecting flange and the rubber expansion joint should be identical. The flange should be flat to ensure maximum sealing and sufficient support for the flange (see the illustration), turbulence within the joint could cause noise, pressure loss or even leakage at the connection.



Installing the expansion joints

To install the expansion joints properly in the pipeline you should meet the following design criteria to prevent overextending the expansion joints.

The expansion joint should preferably be placed directly after the anchor. Behind the joints there must be pipe-guides to support the pipeline.

