

# TORAFLEX® RUBBER JOINTS

## S30 Double Sphere Threaded Type

### Attributes of Design



1 Double Sphere design for better strength and efficiency allow greater axial, lateral and angular movements subject to less effort and material wearing down during movements.

2 Precision injection moulded of synthetic rubber inserted into union threads .

3 Outer layer protects the bellows surface form eventual ozone attack, strikes and other environmental aggressions.



5 Light and easy to install, little installation space required, easy maintenance of replaceable bellows, no need for counterflanges.

4 Rugged design with high burst pressure, to absorb noise and vibration and withstand water hammers to a certain extent.

6 Lot number punched for full traceability purpose.



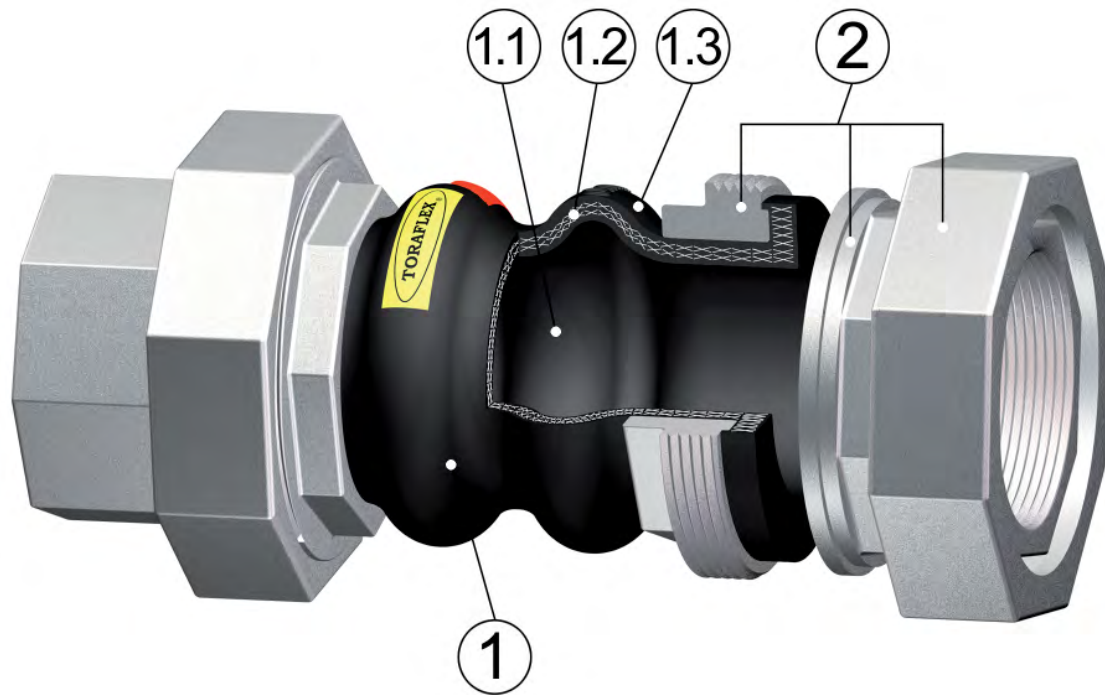
7 Rubber material identification and maximum service temperature.



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#### Parts and Materials



- 1- Vulcanised Rubber Bellow:**
- 1.1 Rubber core (inner)
  - 1.2 Nylon tire cord
  - 1.3 Rubber cover (outer)

Rubber options: EPDM, NBR, Hypalon, Neoprene, Viton, Natural Rubber, Butyl Rubber

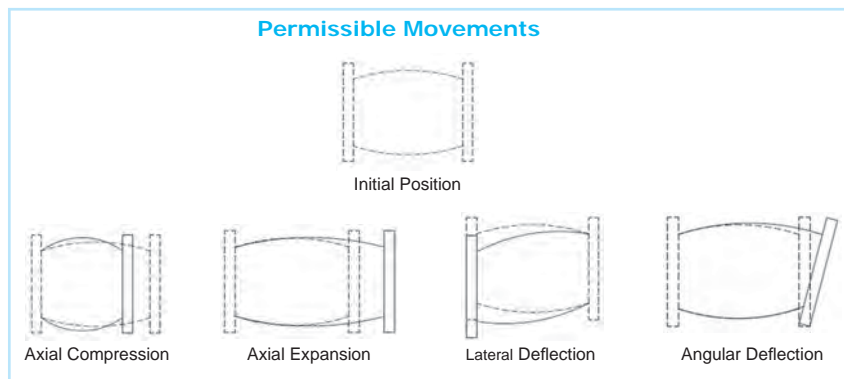
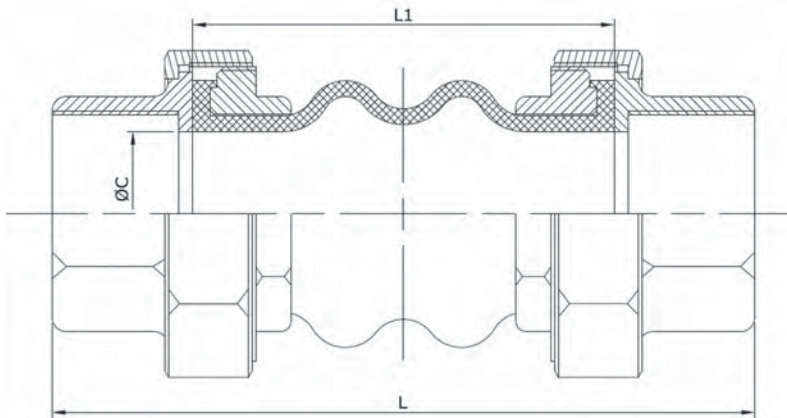
**2- Unions with threaded ends:**

Standard Material: Malleable Iron Zinc Plated EN-GJMB-350-10 according to EN1562  
(old GTS 35-10 according to DIN 1692)

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### Joint Dimensions and Permissible Movements



DN		BUILDING LENGTH (mm)		MAX. PERMISSIBLE MOVEMENTS FROM INITIAL POSITION*				ΦC (mm)	Approx. Weight (kg)
Inch	mm	INITIAL (L)	TOLERANCE INSTALLED (min-max)	AXIAL COMPRESSION (mm)	AXIAL EXPANSION (mm)	LATERAL DEFLECTION (mm)	ANGULAR DEFLECTION		
¾"	20	200	194-203	22	6	22	45°	17	0,7
1"	25	200	194-203	22	6	22	45°	25	1,2
1.1/4"	32	200	194-203	22	6	22	45°	32	1,4
1.1/2"	40	200	194-203	22	6	22	45°	39	2
2"	50	200	194-203	22	6	22	45°	47	2,6
2.1/2"	65	240	234-243	22	6	22	45°	60	3,8
3"	80	240	234-243	22	6	22	45°	70	5,2

Dimensions are expressed in mm, and subjected to manufacturing tolerances. Data can be altered without notice by our Design Department for the product benefit.

\* The stated movements are solely valid with the joint subject to a single movement direction. Values are proportionally reduced along with the movement combination.

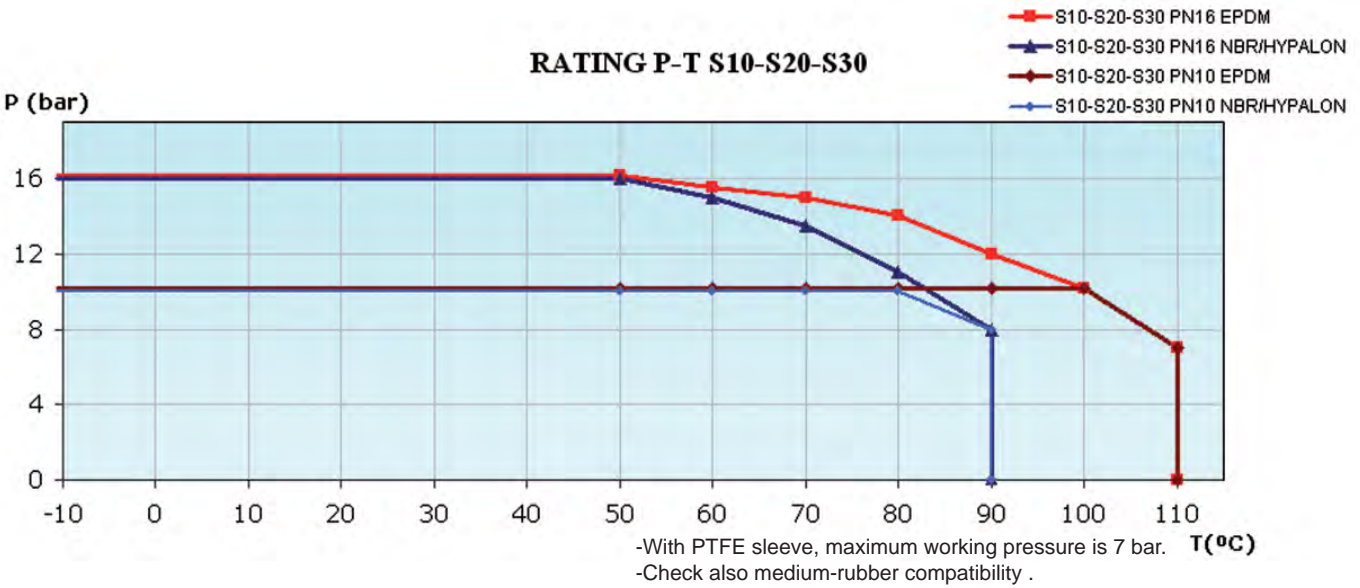
\* Increasing temperatures reduce the permissible movements capacity and number of cycles.

### Manufacture Design Standards

- QA certified to EN ISO 9001 procedures.
- Testing procedure according to EN12266-1.
- Marking according to EN19.
- Threaded unions to EN 10266-1 (ISO 7-1, DIN2999-1, BS21), with parallel female threads (Gas - Rp - BSPP)
- Rubber Joints are excluded from the Pressure Equipment Directive PED 97/23/CE, according to its article 1.3-15.

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## Rubber Bellows - Working Parameters



JOINT	BURST PRESSURE
S10-S20 DN32-200 (1.1/4"-8")	60 bar
S10-S20 DN200-600 (10"-24")	40 bar
S30 DN15-80 (1/2"-3")	30 bar

### VACUUM APPLICATION

Rubber Joints are resistant to negative pressures to a certain extent. They can become wrinkled depending on vacuum suction degree; herewith the guidelines for vacuum applications:

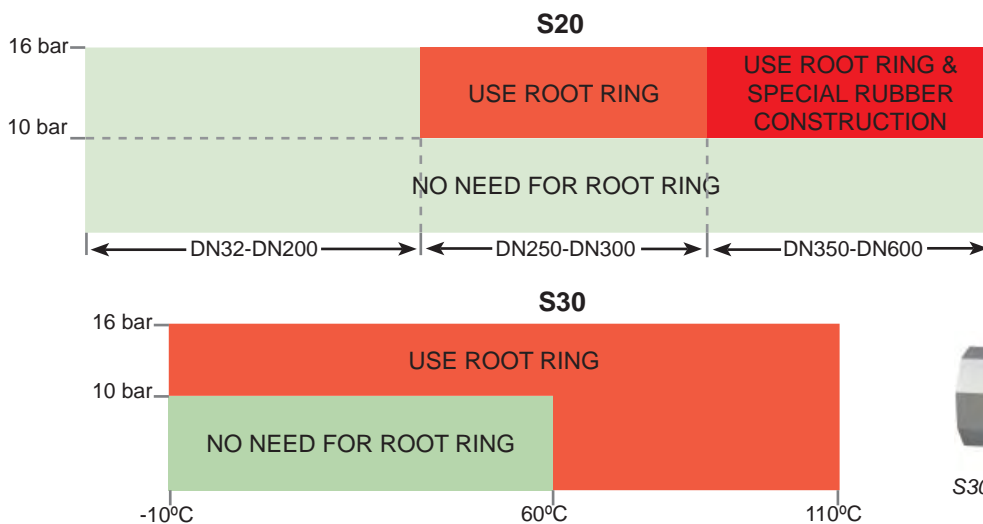
JOINT	TEMPORAL VACUUM LIMIT
S10 DN32-200 (1.1/4"-8")	-0,55 bar-g (0,45 bar-abs)
S10 DN250-600 (10"-24")	-0,25 bar-g (0,75 bar-abs)
S20 DN32-600 (1.1/4"-24")	-0,25 bar-g (0,75 bar-abs)
S30 DN15-80 (1/2"-3")	

For temporal vacuum service beyond these limits, or in case of permanent vacuum service at any value, use special joints with vacuum ring and limit rods assembled as shown in figure at left.



Limits rods for vacuum application in S10 and S20 Joints

### USE OF ROOT RINGS FOR DOUBLE SPHERE RUBBER JOINTS



S20 with root ring split type



S30 with root ring integral type