



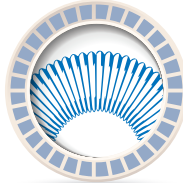
EXPANSION JOINTS & METAL HOSES





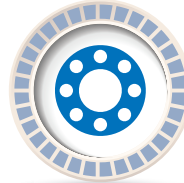
WELD END EXPANSION JOINTS

standard bellows
material



304ss

weld end material



carbon steel

temperature



400°C

pressure

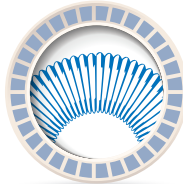


16_{barg}



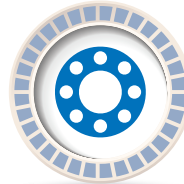
FIXED FLANGED EXPANSION JOINTS

standard bellows
material



304ss

flange material



carbon steel

temperature



400°C

pressure

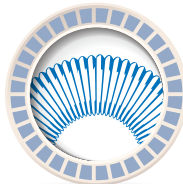


16_{barg}



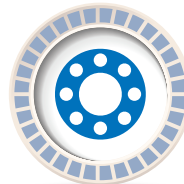
FLOATING FLANGED EXPANSION JOINTS

standard bellows
material



304ss

flange material



galvanized carbon
steel

temperature

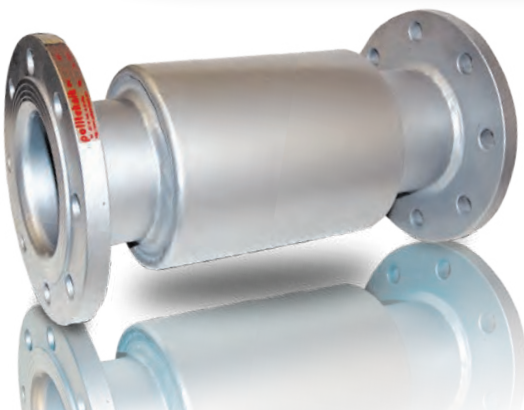


400°C

pressure

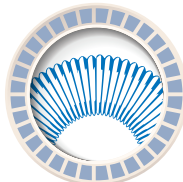


16_{barg}



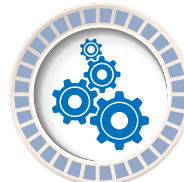
EXTERNALLY PRESSURIZED EXPANSION JOINTS

standard bellows
material



304ss

balance of materials



carbon steel

temperature



400°C

pressure

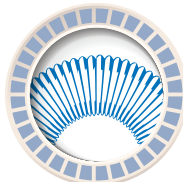


40_{barg}



SEISMIC EXPANSION JOINTS

standard bellows
material



304ss

balance of materials



carbon steel

temperature



400°C

pressure

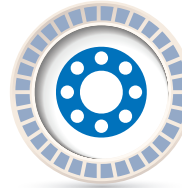


16_{barg}



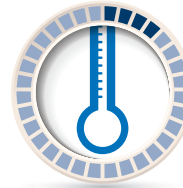
RUBBER EXPANSION JOINTS

flange material



galvanized carbon
steel

temperature



110°C

pressure

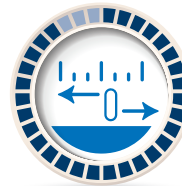


16_{barg}



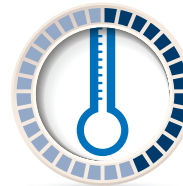
CENTRAL HEATING SYSTEM PIPE EXPANSION JOINTS

movement



50_{mm}

temperature



400°C

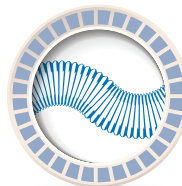
pressure



16_{barg}



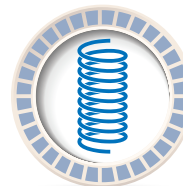
FABRIC EXPANSION JOINTS



high flexibility



low reaction force



vibration and noise
elimination

temperature

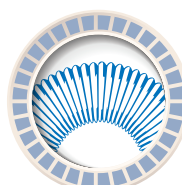


850°C



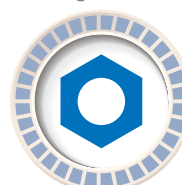
FAN-COIL FLEXIBLE CONNECTORS

hose material



316 L

fitting material



carbon steel

temperature



450°C

pressure

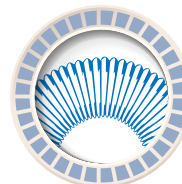


10_{barg}



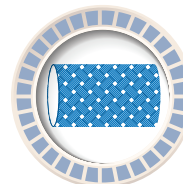
FLEXIBLE METAL HOSES

hose material



AISI316L

braid material

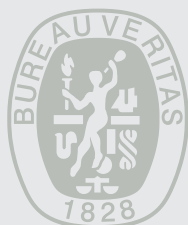


AISI304

fitting types



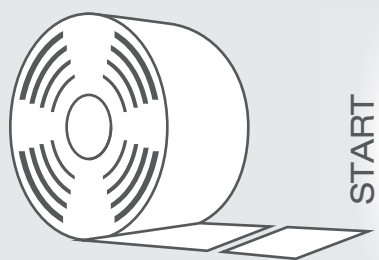
union, nipple,
weld ended, flanged



BUREAU
VERITAS



Manufacturing of expansion joints

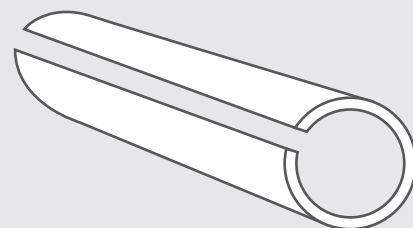


Bellows material is cut from sheet or coil

START

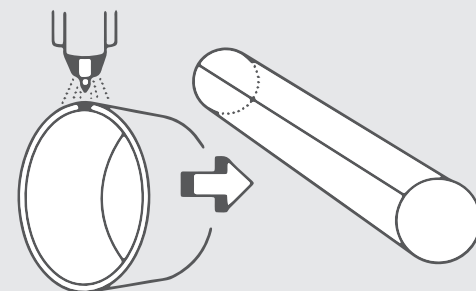
2

Material is rolled to required diameter



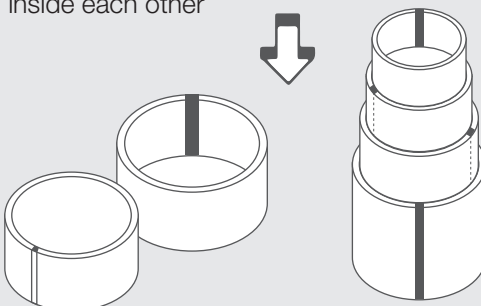
3

Rolled tubes are longitudinally welded

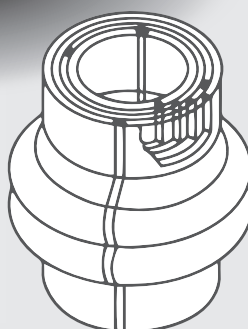


4

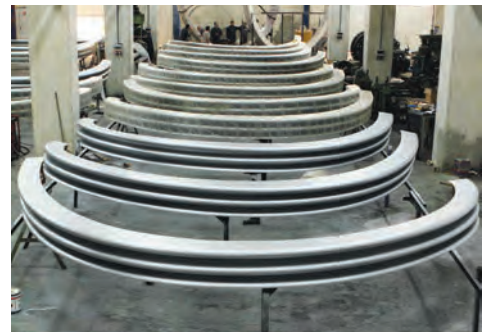
If bellows is multi ply each tube is put inside each other



FINISH



Convolutions are manufactured by mechanical or hydroforming.



Lens

Expansion Joints

Dents and gouges create stress risers in thin ply bellows which result in fatigue cracks over time. Lens bellows have the advantage of holding up to mechanical damage better than thin wall bellows. Other advantages of lens bellows are:

- Weld repair can be performed by plant maintenance staff on thick walled bellows.
- Thicker wall of lens bellows holds up better to corrosion attacks
- Common use of carbon steel material
- Drain couplings can be added to the bottom of the convolution to prevent condensate build up

Thick walled, high convolution is durable and lasts for a long time.



Expansion Joints

Expansion joint is a device containing one or more flexible element used to absorb dimensional changes such as those caused by thermal expansion or contraction of a pipeline, duct or vessel.

Bellows type expansion joints require little to no maintenance and are capable of absorbing axial, lateral and angular types of movements in a compact space.

Since expansion joints are generally custom designed, they are highly specialized products. It is necessary to supply the expansion joint manufacturer with the necessary information for correct design. As a minimum the following information must be given: Diameter, design movements, pressure and temperature, materials of construction, connection type and length.



