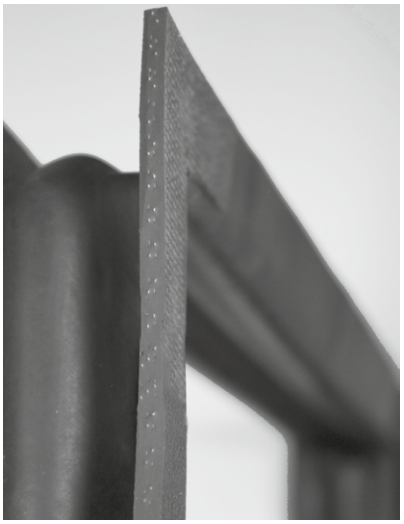
Elastomeric Expansion Joints

Involved In Expansion



EXPANSION JOINTS

LBH manufactures an extensive range of flexible joints and bellows, designed to reduce stresses in ducting and piping systems caused by thermal expansion movements and vibration. Every joint is individually fabricated by hand for its specific application.
For the elastomeric joints, the company specialises in the larger diameters, non-standard lengths and awkward shapes and configurations not covered by rubber companies' standard ranges.
This leaflet describes LBH's elastomaric expansion joints, which are suitable for continuous temperatures up to 200 C. Each joint is made from a single elastomeric material, some are laminated with one or more reinforcement layers and then vulcanised to form a solid, integral component.

Three different elastomers are included in LBH's standard range:
- **EPDM**, Ethylene PropyleneDiene Terpolymer
- **FKM**, Flourocarbon Elastomer
- **SI**, Silicone Rubber





APPLICATIONS OF THE JOINTS

LBH Elastomeric Expansion Joints provide an effective and durable solution to the problems of handling hot gases and associated condensates in hot air and flue gas systems. Unlike metal joints, elastomeric joints can easily absorb multidirectional expansion movements and vibrations and compensate for resulting misalignment.

EPDM EXPANSION JOINTS

are suitable for wet and dry chemical service at higher continuous temperatures (up to 120°C) and higher pressures (up to 50 kPa). The material – an ethylene propylene diene terpolymer – resists hot air, non-oily flue gases and extreme weather conditions, and in power-generating service withstands the acid attack of fly-ash deposits and scrubber-treated gases. However, joints are not suitable for extended exposure to oils, hydrocarbons or concentrated mineral acids.



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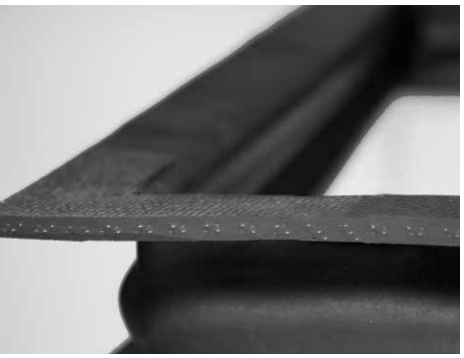


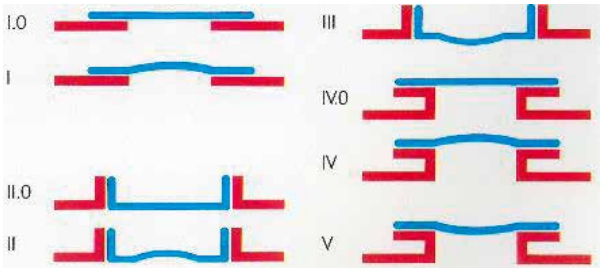
FKM EXPANSION JOINTS

are made from Viton B, a fluorocarbon elastomer with exceptional chemical resistance and outstanding thermal and sealing properties. The fluorelastomer combines temperature resistance and thermal cycling resistance with fluid resistance, compression-set resistance and retention of designed hardness. Joints are suitable for wet and dry service at continuous temperatures up to 200° C – with higher peak values – and pressures to 50 kPa. Chemically, the elastomer has excellent resisance to mineral acids, oils, weather and ozone attack.

STANDARD DESIGNS

LBH offers two basic styles of expansion joint –the **Belt Type** and the **Flange Type**. Both can be made with a flat, convex or concave profile; for round or square ducting; and to any required length and diameter. The normal range of wall thicknesses is from 1 to 6 mm.

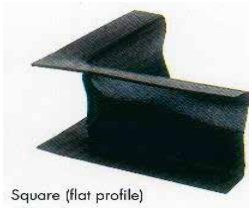


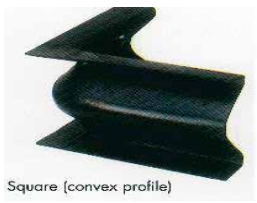


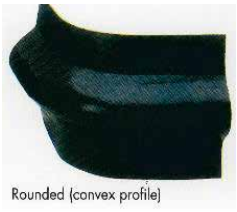


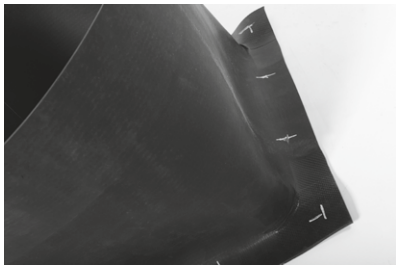
CORNER DESIGN

Expansion joints for square ducting have a continuous design which eliminates splicings in the corner itself.


Square (flat profile)


Square (convex profile)


Rounded (convex profile)



SI EXPANSION JOINTS

have thermal properties comparable to FKM joints and show stable mechanical performance over a very wide range of temperatures. Silicone rubber is favoured by the food-processing industries because it has no taste or smell and is physiologically acceptable to animal tissue. Joints are suitable for wet and dry service of continuous temperatures up to 200°C (with higher peak values) and pressures to 20 kPa.

MOVEMENT HANDLING CAPABILITY

Elastomeric expansion joints have an exceptional ability to absorb large movements and misalignments created by thermal expansion, in any combination. These movements may be linear (in all three planes), angular or torsional.

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