



FLEXICAN DURGA FAB PVT. LTD.

EXPANSION JOINTS MANUFACTURER
(AN ISO 9001 : 2015 CERTIFIED COMPANY)

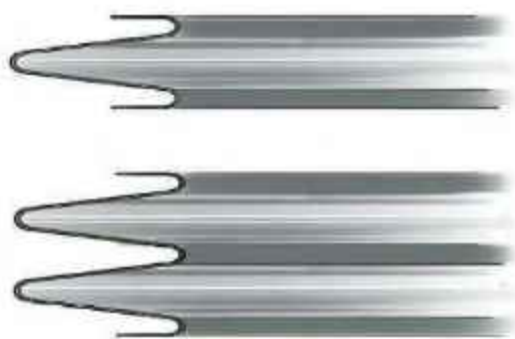
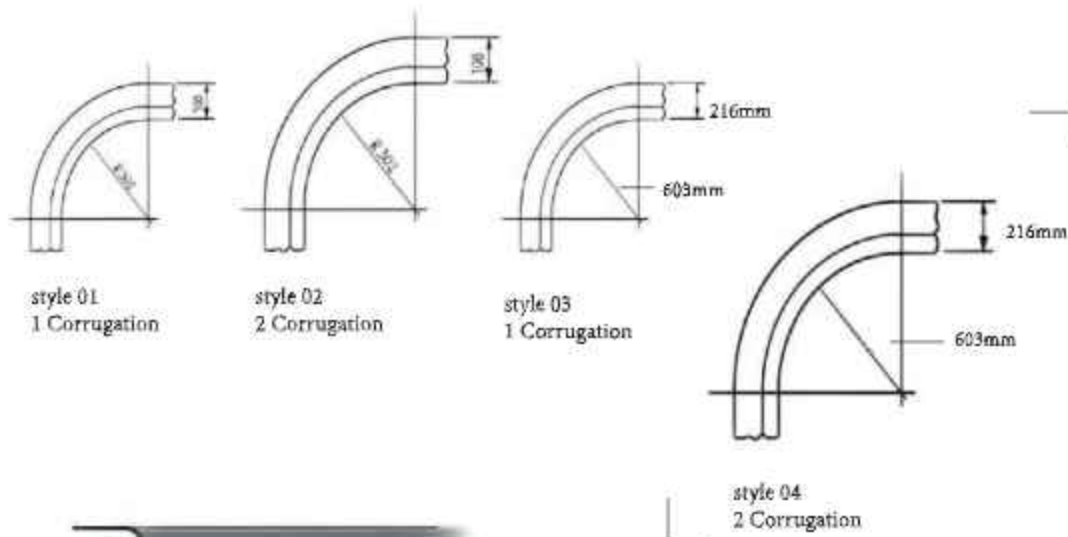


Flexican Durga Fab. Pvt. Ltd.

Flexican Durga Fab Private Limited (FDF), incorporated in 2013, situated in the Sidco industrial Estate, Thuvakudi, Tiruchirapalli in Tamilnadu, is manufacturing Metallic & Non-metallic Expansion Joints.

Flexican Durga Fab. Pvt. Ltd. specializes in the design and manufacture of metallic Expansion Bellows of all types, such as Round Corner, Rectangular Corner, Saw Tooth expansion joints. We have a dedicated team of engineers and workers who follow Quality Plan which mainly focuses on customer requirements, and we strive for continuous improvement and on-time delivery.

We are an Approved Vendors of BHEL, NTPC, NLC and few more to manufacture and supply Expansion Joints. We have special machinery and equipment with capability to manufacture metallic round corners out of carbon steel, corten steel and stainless Steel.



Stright Length Pieces

Mainly Experienced in Specified Materials:



Corten Steel



Stainless Steel



Carbon Steel

What We Do

- » Metal Round Corners and Bellows
- » Non-Metallic Rectangular and Circular Expansion Joints
- » Metal Dampers



1.
Round Corner
Bellows



2.
Single Miter
type (Square
Corner)



3.
Sawtooth or
Camera Corner
Bellows



4.
Double Miter
Type

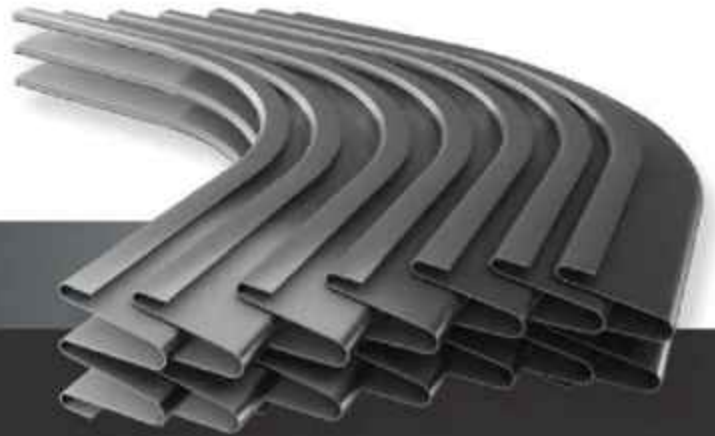
Advantages of Full Round Corner Expansion Joints and Full round Corner Bends:

- » Manufactured on Imported Fully Automatic CNC Machine.
- » High Precision.
- » Single piece construction, without weld joints.
- » Able to withstand high temperature, pressure and various medium flow.
- » Design as per Standard BHEL Specifications, ASME Boiler and Pressure Vessel Code.
- » We can conduct site visits to Power Plants to study feasibility and Requirements.



Industries & Applications

- » Coal Fired Power Plants
- » Metallurgy-Ferrous & Non-Ferrous (steel, copper, aluminum, zinc)
- » Cement
- » Fertilizer
- » Petrochemicals
- » Gas Turbine and Combined Cycle Plants
- » Water Pipelines
- » Pulp & Paper
- » Sugar
- » Desulphurization Units
- » Ships
- » Mining



Applications

- Diesel Generator Exhaust Ducts
- Coal Mill Expansion Joints
- Chimney Seals for Multi Flue gas
- Pipe Penetration Joints in Heat Recovery Steam Generator
- Reformer Tube Expansion Joints
- Dust collector units
- Large circular and rectangular ducts
- Raw mill inlet-outlet
- ESP inlet - outlet
- Pre-heater inlet - outlet
- Economizers and Air-preheated connections

Various customized applications as per specific requirements...

ON-TIME DELIVERY

Flexican D. Delivers on-time

FAST RESPONSE

Always Attentive and Fast
Action towards clients

OUR PRODUCTION **STRENGTH**

- Lifting Capacity: up to 10 tonnes
- Extensive stock of raw materials
- Methods of bellows forming: Rolling, Punch and Hydraulic
- Several test rigs; largest handles up to DN 3500
- Separate painting facility
- Advanced welding equipment



DIMENSION

DN 15-12.000
(DN 6.000-12.000
ARE SUPPLIED IN SEGMENTS)



DESIGN CODES

- | | |
|-----------------------|-------------------------|
| • EN 13445 | • ASME B31.1 |
| • EN 14917 | • EJMA |
| • ASME VIII | and others upon request |
| • Div. I ₂ | |



PRESSURE

UP TO 150 BARG (2176 PSI)
OR MORE IF REQUIRED (ALSO RING
REINFORCEMENT IF NEEDED)

Large Size Rectangular Expansion Joints can be delivered in sections to ease transit and installation. The Rectangular Expansion Joints can be supplied in segments of 2 or 4-sections with Butt Joints in the frames on the long sides of the unit. On installation the sections of the bellows and flow liner are fitted and welded into position by the installer. The Rectangular Expansion Joints are fitted with shipping bars temporarily welded to the flange edges to protect the Rectangular Expansion Joints, preventing damage during transit and assist with its handling into the final position at the job-site.

Rectangular Expansion Joints are customized solutions and are available in all dimensions, all sizes and all materials.



Metallic Expansion Joints

Round Corner



Metallic Round Corner Expansion Joint – Usage & Benefits

USAGE:

Metallic round corner expansion joints are used in piping systems to absorb thermal expansion, vibration, and mechanical movement, especially in steam boilers, power plants, chemical plants, and industrial piping systems. They provide flexibility and prevent damage to piping due to high temperature, pressure, or movement.

BENEFITS:

- Absorb axial, lateral, and angular movements
- Compensate for thermal expansion and contraction
- Reduce mechanical stress on piping systems
- Prevent leakage with reliable sealing
- Suitable for high temperature and high-pressure applications
- Extend equipment and pipeline lifespan

Material of Construction (MOC):

SS (Stainless Steel): SS304, SS316, SS316L – excellent corrosion resistance, ideal for high-temperature and corrosive environments

MS (Mild Steel): Cost-effective for general industrial use where corrosion resistance is not

Axial Expansion Joint



Flexible connector used to absorb thermal expansion or contraction in a pipeline, allowing movement along the pipe's axis.

Universal Expansion Joint



Flexible connector with two bellows and an intermediate pipe, designed to absorb lateral, axial, and angular movements in piping systems.

Gimbal Expansion Joint



Flexible joint used in piping systems that allows for angular rotation in multiple directions. It consists of a bellows assembly supported by a gimbal mechanism, which helps absorb movement while preventing axial displacement.

Hinged Expansion Joint



Flexible connector that allows angular movement in one plane while restraining axial and lateral movement. It uses a hinge mechanism to absorb thermal expansion or contraction in pipelines or duct systems.

Pressure Balanced Expansion Joint



Pressure balanced expansion joints absorb thermal expansion and contraction in piping systems while neutralizing pressure thrust forces, protecting connected equipment and reducing load on supports.

In-Line Pressure Balanced



An inline pressure balance expansion joint absorbs axial movement while maintaining system pressure balance, preventing pressure thrust on adjacent equipment.

Rectangle Expansion Joint



A metallic rectangle expansion joint is a component used in boilers and HVAC systems to accommodate thermal expansion, contraction, and movement between connected pipes or ducts. Made from metal, these joints are designed to absorb stress, prevent damage, and ensure system integrity by allowing controlled movement without leaking or compromising performance.

Non-Metallic Expansion Joint



Non-metallic expansion joints are flexible components used in systems like boilers, bag filters, and Electrostatic Precipitators (ESPs) to absorb thermal expansion, vibration, and movement. Made from materials like rubber, PTFE, or fabric, they prevent damage from system shifts, ensuring smooth operation and prolonging equipment life. These joints allow for safe and effective handling of temperature and pressure variations without compromising structural integrity.

Rubber Expansion Joint



A rubber expansion joint is a flexible, reinforced elastomer connector used in piping systems to absorb vibration, thermal expansion, and misalignment. It helps reduce noise, compensates for movement, and protects pumps, valves, and other equipment from stress, extending service life and improving overall system efficiency.

High elasticity for movement absorption, corrosion and chemical resistance for diverse fluids, pressure and temperature tolerance for demanding operations, excellent noise and vibration damping, and strong fatigue resistance for long-term performance. Widely applied in HVAC, water treatment, chemical plants, and industrial pipelines, it ensures reliable operation, reduces maintenance needs, and enhances safety in dynamic installations.

Dismantling Joint



A dismantling joint is a type of mechanical joint designed to allow easy disassembly of connected components or sections, typically in piping or machinery. It enables quick removal and reassembly for maintenance, repair, or replacement without damaging the parts.

Industrial Dampers

What are Industrial Dampers?

Industrial dampers are mechanical devices used to control, regulate, or isolate airflow, gases, or particulate-laden air in various industrial systems. They are essential components in ducting systems of power plants, manufacturing facilities, cement plants, steel plants, and HVAC systems. These dampers play a critical role in ensuring efficient operation, energy savings, and safety in industrial processes.

Functions of Industrial Dampers

1. Airflow Regulation - Control the volume and direction of airflow within ducts or ventilation systems.
2. Isolation - Completely shut off airflow to isolate certain sections of a system during maintenance or emergencies.
3. Mixing - Allow mixing of hot and cold air to achieve desired process temperatures.
4. Pressure Control - Maintain specific pressure levels in ducts by opening or closing as needed.
5. Temperature Control - Redirect airflow in systems where heat transfer is critical.

Types of Industrial Dampers

Louver Dampers

- Composed of multiple blades that can move in unison or independently.
- Used for precise airflow control.



Butterfly Dampers

- Circular dampers with a single blade that pivots around a central axis.
- Ideal for larger ducts with high-pressure applications.



Guillotine Dampers

- Feature a flat plate that slides to block airflow.
- Used for complete isolation in high-temperature or high-pressure systems.



Diverter Dampers

- Redirect airflow between two or more outlets.
- Used in bypass systems like gas turbines.



Advantages of Round Corner Expansion Joint

- In boilers, steam ducts, and flue gas systems, the temperature may go from ambient to 300°C – 600°C and back, sometimes several times a day.
- A round corner expansion joint handles these thermal cycles better than a single miter expansion joint because stresses are smoothly distributed at the corners.

Advantages of Round Corner Rectangle Expansion Joints

1. Higher Fatigue Life –

Round corners distribute stresses smoothly, avoiding sharp stress concentrations that usually occur in miter corners. This increases the life of the bellows.

2. Better Flow Characteristics –

The rounded shape reduces turbulence and pressure drop inside the duct/pipe, which is important in flue gas and air handling systems.

3. Reduced Risk of Cracks –

Since there are no sharp bends, the metal is less likely to crack under cyclic thermal and pressure loads.

4. Uniform Load Distribution –

Loads and movements are absorbed more evenly across the bellows, improving performance under axial, lateral, and angular movements.

5. Lower Maintenance Cost –

Longer service life and reduced chances of leakage mean fewer shutdowns and lower lifecycle costs.

6. Preferred for Critical Applications –

Used in boiler auxiliaries, steam ducts, and thermal power plants where reliability and long life are essential.

Limitations of Single Miter Expansion Joints (Compared to Round Corner)

- Stress Concentration at Miter Welds – Welded miter corners act as weak spots, prone to early fatigue and leakage.
- Lower Life Expectancy – Usually, they have a shorter operational life than round corner designs.
- Higher Flow Resistance – Sharp corners disturb flow, leading to higher pressure drop and erosion in some cases.

Round Corner Metallic Expansion Joint for Boiler Auxiliaries

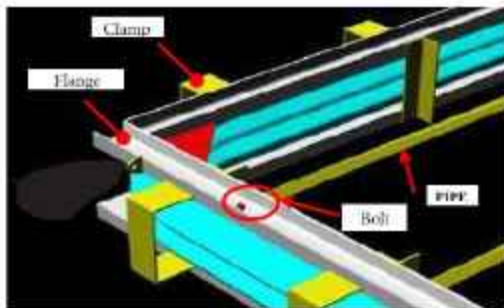
FLANGES

Expansion joints are shipped with the connecting flanges (Flanges are bolted to Expansion joints). Flanges are also split along with expansion joints and joined at site.

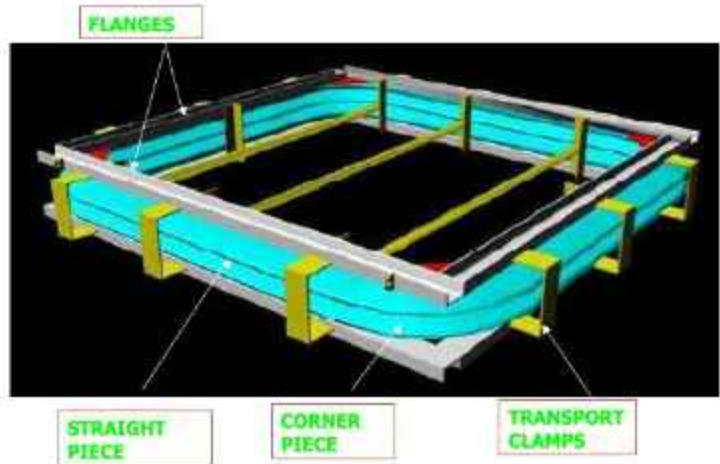
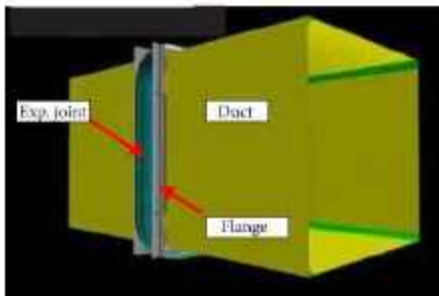
Also transport clamps / strut tubes are to be provided along with flanges.

ROUND CORNER EXPANSION JOINT

DETAILS OF ROUND CORNER EXPANSION JOINT

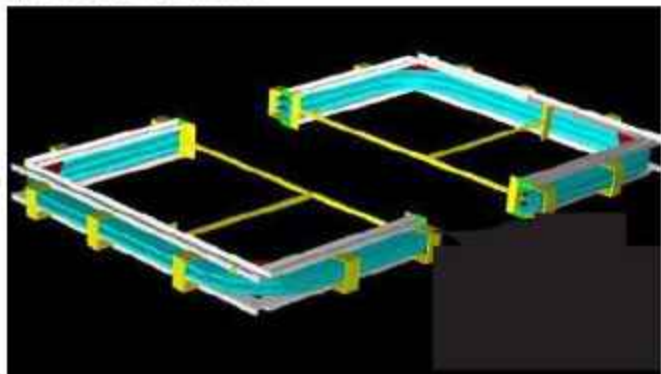


ROUND CORNER EXPANSION JOINT PROVIDED BETWEEN DUCTS WITH FLANGES.



SPLITTING THE EXPANSION JOINTS

The expansion joints are shipped as a single piece for size up to 2000 mm. For the sizes above 2000mm expansion joints are shipped in split condition. Splits joints are assembled at site prior to installation.



flexican durga fab. pvt. ltd.



Order Specifications

Company :

Item No./EJ TAG No.		Unit	
1	Sr No.		
2	Location		
3	Installation		
4	Type		
5	Matching Pipe (OD x THK)	mmxmm	
6	Design Pressure	Kg/cm ² g	
7	Design Temperature	°C	
8	Flow Velocity at operating condition	M/Sec	
9	Required product cycle life	Cycles	
10	Axial Compression (design)	mm	
11	Axial Elongation	mm	
12	Lateral Deflection(design)-Principal	mm	
13	Lateral Deflection(design)-Transverse	mm	
14	Angular Rotation	Deg.	
15	Manufacturing free length	mm	
16	Bellow center distance	mm	
17	Axial spring rate	Kg/mm	
18	Lateral Spring rate	Kg/mm	
19	Angular spring rate	Kg/mm	
20	Min. Flange/Lug Material&Thickness	mm	
21	Bellow Material		
22	Spool Pipes/End pipe material		
23	Internal Sleeve Material		
24	External cover Material		
25	Hinge plate/Gimble Ring Material		
26	Hinge Pin material		
27	No. Of Tie Rods		
28	Tie Rod/Limit Rod with nuts		
29	Spherical washer		
30	Codes/Standard applicable		
31	Other requirements- PI attach Piping Diagrams, if any		



Regd. Office & Factory :

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Unit 2 - 725 GIDC Industrial Estate, Makarpura Vadodara - 390010.

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*What nobody can **flexi...can***