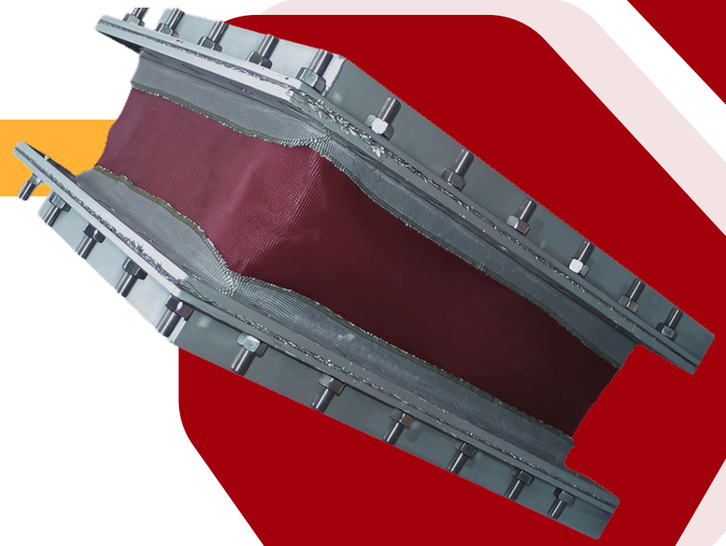
Fabric Expansion Joint

totflex



Overview

Totflex fabric expansion joints are advanced flexible connectors designed to absorb combined thermal, mechanical, and installation-induced movements in ducts and piping systems transporting hot gases, air, or corrosive media. Totflex joints ensure safety, uptime, and long-term reliability in power, process, and heavy industries.

Fabric Material Selection

Layer	Material Options	Function
Gas Seal	PTFE, FKM, EPDM, Fluoroelastomer	Gas-tight, chemical resistance
Insulation	Glass fiber, Mineral wool, Ceramic blanket	Thermal barrier, protects seal layer
Reinforcement	Stainless steel mesh, Aramid, Glass fiber	Mechanical strength, durability
Outer Cover	PTFE or Silicone-coated Glass fabric	Weather, UV, abrasion protection

Movement Capabilities

- **Axial:** Compression and expansion along the duct axis
- **Lateral:** Sideways movement perpendicular to axis
- **Radial:** Circumferential expansion/contraction (diameter change)
- **Angular:** Bending or misalignment between flanges
- **Torsional:** (If required) Limited twisting motion

Cuff/End Types

- Clamped (direct to duct)
- Bolt-on/Flanged
- Weld-in
- Endless or split for field closure
- Special cuffs for high pressure or temperature available.

Construction Criteria

Totflex fabric expansion joints are engineered for durability and tailored to suit a wide range of industrial needs.

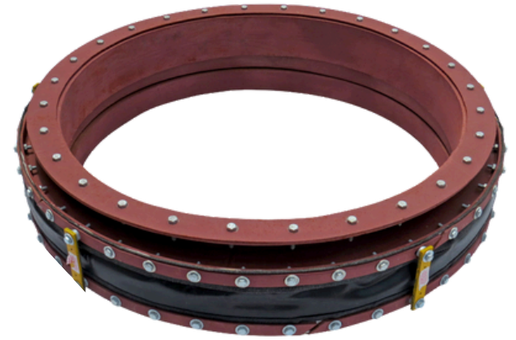
- **Designs:**
  - Single-layer for clean air and moderate temperature
  - Multi-layer for high-temperature, chemical, or abrasive service
- **Frame/Flange Materials:**
  - Carbon steel (painted/galvanized)
  - Stainless steel (304/316)
- **Accessories:**
  - Insulation bolsters
  - Metal liners
  - Dust bags
  - Weather covers
- **Compliance:**
  - Built to FSA, EJMA

Shapes & Geometries

- **Standard:** Round, Rectangular, Oval
- **Special:** Snouts, elbows, transition shapes, or fully custom per application

Technical Specification

Parameter	Standard Value	Optional/Custom
Temperature Range	−35°C to +575°C	Up to +1000°C (with special design)
Pressure Range	−0.35 to +0.35 bar	Higher on request (consult Totflex)
Diameter Range	DN100 up to DN10,000+	No practical upper limit
Length	Project-specific	As required
Movement Axial	Up to 215 mm	More with special design
Movement Lateral	Up to 85 mm	More with special design
Radial/Angular	**Consult Totflex for combined/large-diameter movement solutions**	



Application Areas

Power Plants
FGD and DeNOx units, boiler ducts, turbine exhaust, and ash handling lines.

Cement and Minerals
Kiln and cooler connections, dust collector ducts, and high-temperature transitions.

Steel and Metals
Furnace and converter off-gas, process gas lines, and pollution control.

Chemical and Petrochemical
Scrubber inlets/outlets, reactor vents, and corrosive gas ducting.

Incineration and Environmental
Combustion gas, filter housings, and variable-temperature stack transitions.

Pulp and Paper
Lime kiln and recovery boiler ducts, bleaching ventilation.

Marine and Offshore
Engine exhausts and boiler stacks on vessels or platforms.

Industrial HVAC
Large-scale air handling and custom OEM duct connections.

Advantages

Totflex fabric expansion joints deliver reliability where it matters most—under demanding process conditions.

Designed for Real Movement
Handles axial, lateral, radial, and angular movements—protecting your ductwork from fatigue and stress failures.
Unmatched Chemical and Thermal Defense
Built to withstand extreme heat and corrosive process gases thanks to tailored multi-layer construction.
Low System Stress
Transmits minimal force to connected equipment, helping you avoid costly downtime from mechanical strain.
Precise, Custom Engineering
Every joint is sized and layered for your application—no off-the-shelf compromises, just the right fit.
Fast Installation, Simple Maintenance
Flexible, lightweight design cuts down on install time and makes future inspections straightforward.
Quality You Can Trust
Certified to ISO, PED, FSA, and EJMA standards, with material and test traceability on every order.