

Textile expansion joints types

FLEXEL ENERGY

FLEXEL ENERGY is a multi-layer fabric structured expansion joint fabricated by means of adding different layers of materials, forming a unit with a very low thermal and acoustic conductivity that, acting as an obstacle to the flow of heat from the inside to the outside of the element, forms a barrier that eliminates acoustic transmission through the duct.

FLEXEL ENERGY expansion joints absorb thermal expansions, vibrations and misalignments, freeing the system from stresses and strains in operation. Multilayer expansion joints should not be lagged with operating temperatures in excess of 160 °C, in order to avoid concentrations of heat that might damage the external layer.

FLEXEL ENERGY expansion joints may work in a range of temperatures from -20 °C to 550 °C, depending on their construction, for all types of low pressure and high temperature air circuits as well as for dry or semi-wet combustion gas circuits.

Their main field of application centers on the following industries:

- Furnaces
- Boilers
- Cement industry
- Pulp industry
- Waste treatment plants
- Chemical industry
- Petrochemical industry
- Ships
- Refineries

The construction of **FLEXEL ENERGY** expansion joints, from the gas side to the external layer, is carried out as follows:

- The layer in contact with the circulating gases is a glass fiber layer of different thicknesses and weight depending upon the operating temperature.
- One or several layers of glass fiber or ceramic fiber (depending on the design temperature) act as thermal insulation, protecting the rest of the layers.
- A 0.2 mm layer of waterproofed virgin PTFE acts as a chemical barrier, preventing the leakage of acid condensates to the exterior.
- An external weathering resistant cover layer. This is a specific silicon-coated glass fiber cloth with special resistance to material aging as a result of exposure to solar radiation, ozone, cold, heat, acid rain, and external chemical agents. In the case of **FLEXEL ENERGY S** series expansion joints, the glass fiber is laminated with a variable thickness PTFE film, enabling it to withstand the most extreme conditions and making it resistant to high pressures.
- A reinforcement in the flange area made of glass fiber provides the expansion joint with an extra mechanical and thermal resistance in this critical area where pressure and heat is transferred from the metallic frame.

The **S** option is a quality offer reserved for Projects and Clients for which the security of reliable and maintenance-free operation for many years is a top priority.

The difference is found in the cover layer, which is made from a PTFE melted glass fabric material, with a subsequent process of multidirectional lamination. This layer is the key element that distinguishes the **FLEXEL ENERGY S** expansion joint, providing it with an extraordinary resistance to chemical, thermal and mechanical attack.

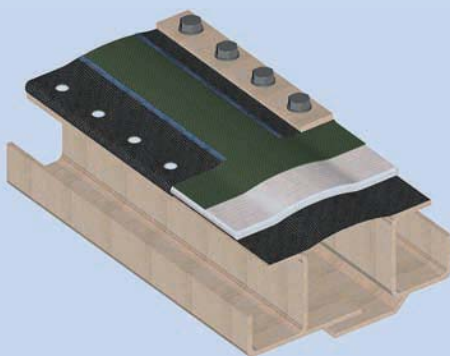


Fig. 2D: Flexel Energy 400 S

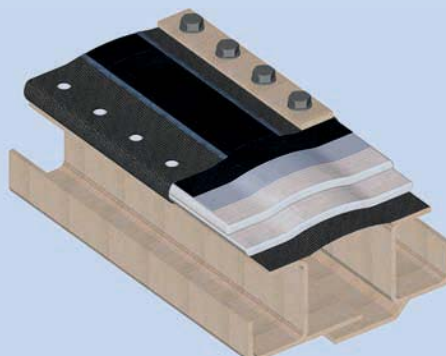


Fig. 2E: Flexel Energy 550

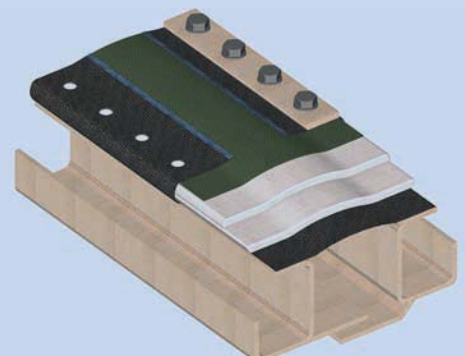


Fig. 2F: Flexel Energy 550 S

FLEXEL ENERGY	250	300	400	550
Max. temperature	250 °C	300 °C	400 °C	550 °C