Press release

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06 / 2020

Textile fire protection solutions by Frenzelit meet fire protection target EI

The highest level of insulating fire protection

When it comes to fire protection concepts for large buildings, insulating fire protection (fire protection target EI) is the most effective, but also the most demanding implementation option. Textile fire protection solutions by Frenzelit – the specialist for gaskets, technical textiles and high-temperature-resistant insulation – meet the protection target EI. With the right structure it is possible to achieve EI60 fire protection.

The three main fire protection targets are defined as follows: The protection target E stands for integrity, meaning that a fire cannot spread from room A to room B. Protection target EW (radiation control) provides a maximum value of radiation for the side not exposed to fire (15 kW/m² at 1m). Fire protection target EI deals with insulation, that is the temperature rise on the unexposed face may not exceed 140 °K. The accompanying number indicates the duration it took to exceed the specification, e.g. EI30 = 30 minutes, EI60 = 60 minutes, EI120 = 120 minutes.

isoGLAS® FTI multilayer fabric composite

A fire protection curtain that corresponds to the recommendations of Frenzelit has a multilayer structure and is made from a combination of special fabrics, coatings and needlemats. It is comprised of two parts – a cover module, primarily for aesthetics, and a functional module that provides the essential insulation properties. It has a symmetrical design with a cover module on either side and two functional modules in the middle. The cover modules are fabric layers with an aluminum foil lining on one side. The functional module is the core and consists of a composite of fabric – with a steel-reinforced coating on one side and an additional aluminum foil lining – and a specially designed needlemat.

This fabric has an intumescent coating based on expanded graphite. If the ambient temperature exceeds 160 degrees Celsius, the coating of the functional module begins to expand from its initial thickness of roughly 1.6 mm to approximately 40 mm. Frenzelit uses a relatively thin textile material that can be wound on a shaft to save space; in case of fire it swells to provide shielding. The thickness of the overall structure of the curtain is approximately 2 cm – and 10 to 10.5 cm when swelled up in case of fire. “In the development of this expanded graphite layer it was very important to us that a compact, stable foam is created to prevent the loss of cohesion among individual graphite particles, which is typically what happens when they are heated. The foam prevents this,” explains Peter Jahn, Research & Development at Frenzelit. “We also had to achieve a certain expansion height to ensure the necessary insulation effect.” Frenzelit GmbH supplies the fabric composite isoGLAS® FTI to customers in reels. Customers make the actual fire curtain and appropriate structure themselves in series production.

Advantages of textile fire protection

“The demand for fire protection concepts with a protection target of EI for insulating fire protection is rising,” says Manuel Thüroff, Key Account Manager at Frenzelit. “Fire protection concepts that do not have EI as the protection target are required to include fire hazard-free zones since they do not have any insulating effect and this could result in spontaneous combustion of flammable objects on the side not exposed to fire. But unused space is expensive. Our insulating fire protection materials enable our customers to achieve fire protection classes that do not require any fire hazard-free zones. This even makes it possible to utilize the space directly in front of roll-up doors.”

Frenzelit’s fire protection materials are suitable for interior areas of buildings such as hospitals or malls where the individual partitions can be insulated very effectively with textile roll-up doors, in warehouses to subdivide different areas, and even in elevators to prevent fire from spreading freely through the elevator shaft through special insulation. Retrofitting is a common application that is much easier to implement with

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textile solutions than heavy and bulky steel solutions. Frenzelit can help customers develop custom curtain solutions and provides expert advice.

Other uses

Another use of this fire protection material is to protect electrical cables in large buildings that are usually mounted in brackets on walls and ceilings. Frenzelit's fire protection materials can extend the functional period of cables until a fire is put out – for instance, in order to operate ventilation systems longer.

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Images:

Image 1: Textile fire curtains are compact, flexible and can achieve high insulating fire protection when designed properly. Image: © Frenzelit GmbH

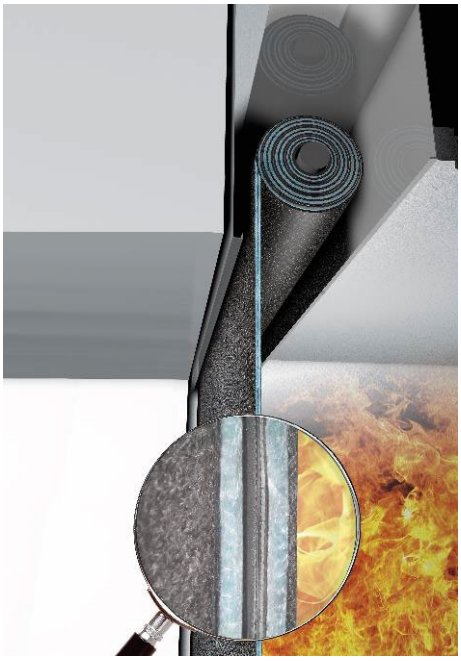

Image 2: isoGLAS® FTI by Frenzelit is a multilayer fire protection fabric that can be used to achieve EI60 fire protection. Image: © Frenzelit GmbH

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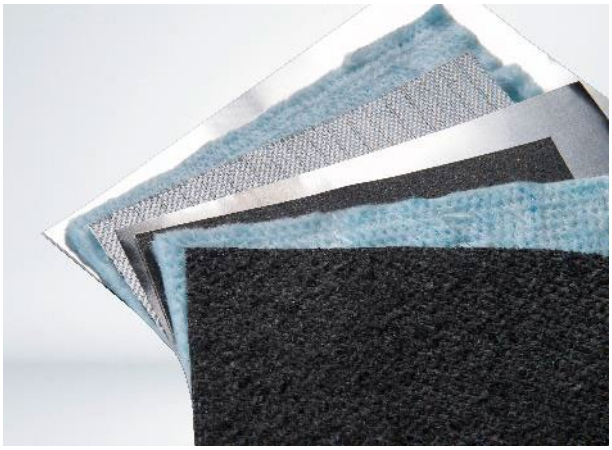

Image 3: The individual layers of the isoGLAS® FTI fabric composite consist of various special fabrics, coatings and needlemats.
Image: © Frenzelit GmbH

About Frenzelit

Frenzelit GmbH develops, produces and sells gaskets and gasket materials, technical textiles for insulation, seals and filtration systems and expansion joints for plant engineering. The two strategic divisions “Industry” and “Mobility” are aligned to meet the unique needs of Frenzelit GmbH’s customers. Around 500 employees work at the Bad Berneck and Himmelkron plants. The family-owned company from Upper Franconia operates internationally with its own location in North Carolina, USA and has a global presence with additional subsidiaries and sales offices in the Czech Republic, China, India and Dubai. Frenzelit has been successful in the marketplace since 1881 and is certified according to IATF 16949 and ISO 9001 (Quality Management, ISO 14001 (Environmental Management) and ISO 50001 (Energy Management).

For questions, contact: pr@frenzelit.com

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