

Press release for the Techtexil Fair,
Frankfurt, 16. – 18-06.2009



Low-e fabric – soft coating meets high requirements

The term **low-e** stands for reduced emission. Low-e fabric has a low emission ratio. Fabric with this kind of surface radiates a low amount of heat into the environment and reflects heat radiation from the environment to a large extent.

The aim of our low-e coatings is to reduce the emission ratio for wavelengths from 3 µm to 50 µm. Furthermore these coatings should be transparent in the visible spectral range from 0.4 µm to 0.8 µm.

The term **textile architecture** involves the use of glass or textile fabrics in construction and therefore allows the realization of new architectural concepts. Given their versatile architectural and structural potential, these fabrics can be integrated both in new and old buildings. Based on these features, many roof constructions on large halls, such as sports arenas or airport buildings, have already been installed.

Sufficient daylight can penetrate buildings while low-e - i.e. a low emission coating - significantly reduces the heat input or heat loss of the building. Measurements of uncoated fabric have shown an emission ratio of **0.95** while low-e coated fabric has a ratio of **0.35** only.

This reduces the cooling load of the building and saves energy in summer. This in turn allows the size of air conditioning systems to be reduced. In the same way, heat energy requirements are reduced in winter because irradiation of the interior is reflected back and heat loss to the outside is reduced.

To achieve the desired low-e characteristics, materials with metallic or semi-conductive properties are used and applied using a special process. This has fulfilled the aim of achieving a high degree of flexible colouring. **Creative room designs** are possible as architects no longer have to rely on the silver aluminium coating resp. vaporization which is commonly used today.

These low-e textiles are the result of developing low-emission coatings in the context of the specific BMWi partnership "ENOB – Energy-Optimized Building". Patent applications have been filed for the respective processes.

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