

ment with respect to its bulk properties. Compared with its predecessors and competing bicomponents, the developer claimed ES-Delta II offer manufacturers several advantages:

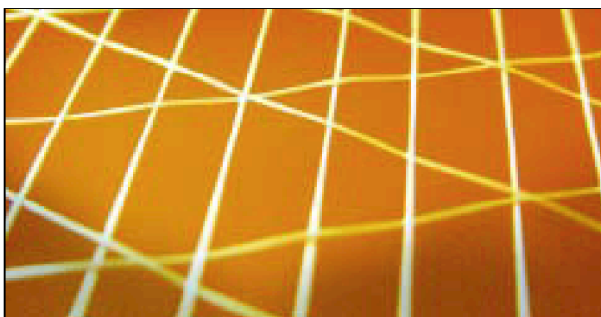
- after oven bonding the fibre network is rigid and strong, resulting in a larger void space for each unit volume;
- the space within the structure can provide air for insulation, a reservoir for fluids, a large surface area, and bulk for stabilization or filling, among other applications;
- the fiber has a higher temperature resistance, thereby lowering the thermal shrinkage of the fabric;
- the combination of polyethylene and polypropylene makes the fibre suitable for bonding without the need for adhesives and allows for bonding to all synthetic and natural fibres;
- when carded and bonded in a hot oven, the resulting nonwoven has approximately 30% more bulk than those made from previous generations of fibres.

Bafatex Bellingroth

Bafatex uses its own machinery to make unique scrims, particularly ones with diagonal wefts. Any kind of yarns can be used, the company said, though polyester and viscose are popular, and these are laid in up to six directions. Moreover, when one scrim is then laid over another, this results in as many as ten directions for the yarns. Additionally, the company develops a variety of binders depending on the requirements of a specific application.

In Frankfurt Bafatex described several innovations:

- more flexible, more rubber-like materials;
- nonwoven-scrim combinations—many kinds of nonwoven can be used, natural and man-made, and these can be applied to one or both sides of the scrim;
- multi-coloured scrims for decoration;



The six- to ten-dimensional yarn arrangement of Bafatex's scrims gives a star-shaped reinforcement.



Applications for Bafatex's scrims include aircraft seating where, in this case, the polyester filament scrim is combined with a unidirectional carbon prepreg.

- materials combined with fragrances;
- with the aid of a specially developed binder and impregnation technique, scrims that customers can print on.

Bafatex said that it was also developing a number of other products as part of confidential agreements with other parties, such as a scrim resistant to high temperatures for aerospace applications with a US partner. Other applications for the company's scrims include noise-suppression in automobile engines, reinforcements for high-performance sails, carpet backings, roofing (combined with aluminium and polyethylene films for insulation and sealing), reinforcement for sports tracks, and aircraft seats.

Johns Manville

Vice-president and General Manager of the High Performance Nonwovens business Fred Stephan said that Johns Manville had introduced six products for *Textextil*: