Novel nonwovens by foam forming

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DESIGN DRIVEN VALUE CHAINS IN THE WORLD OF CELLULOSE DWoC DESIGN DRIVEN VALUE CHAINS IN THE WORLD OF CELLULOSE DWOC



Stepping out to new application areas

- Includes ultra-thin, layered or very thick nonwovens
- Multi-scale raw materials enable
 - technical textiles
 - commodity products
 - composite applications
 - interior decoration
 - hybrid products





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Bridging across the length scales with raw materials

Filaments

Staple fibres

Natural fibres

Polymers







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Modern methods

- Foam quality is chosen based on application and used raw materials
 - possibility to vary air content, bubble size, viscosity,...
- Nonwoven properties are controlled by fibre entanglement







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Results

- Density 150–300 kg/m³
- High extensibility
- Strength 0.2–2.8 MPa
- Homogenous structures even below 10 g/m²
- Layering by one forming operation only
- Embedded functional fibres

Tekes

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Scale up: SAMPO pilot at VTT Jyväskylä

Making foam & mixing fibres





