

## NEEDLE BONDING

Cellulosic fibers produced by Lenzing, including Lenzing Viscose<sup>®</sup>, Lenzing Lyocell<sup>®</sup> and Tencel<sup>®</sup> creates strong, stable and absorbent needle bonded fabrics. Needled substrates produced with Lenzing fibers and their blends with synthetics are used in wide range of applications including wipes, coating substrates and for artificial leather.

Lenzing produces a range of cellulosic fibers ideal for needle bonding applications. Lenzing Viscose<sup>®</sup>, Lenzing Lyocell<sup>®</sup> and Tencel<sup>®</sup> can be used as 100%, in blend with other Lenzing fibers or with synthetic fibers to produce soft, absorbent, strong and stable needle bonded fabrics. Specific fabric characteristics e.g. strength, stability, softness, thickness and absorbency can be engineered by selection of appropriate fiber type and proportion in the blend. The balance of strength, absorption rate and capacity can be further enhanced for a particular end-use by the choice of appropriate needle bonding parameters.

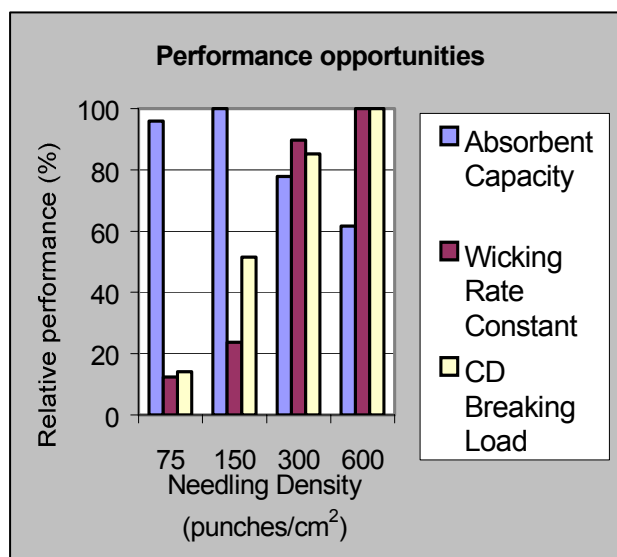
Fabrics produced with Lenzing Viscose<sup>®</sup> combine softness with high absorbency. Needle bonded fabrics produced from Lenzing Viscose<sup>®</sup> are widely used for medical, hygiene, wiping, coating & other applications.

At moderate needling densities, TENCEL<sup>®</sup> and Lenzing Lyocell<sup>®</sup> fibers generate high fabric strength & stability, without compromising the fabric thickness. Use of TENCEL<sup>®</sup> and Lenzing Lyocell<sup>®</sup> fibers in blend with synthetics can also boost the dry & wet strengths of cellulosic/synthetic fabrics.

Higher strength can be valuable in itself, but this also offers the potential to make softer, lighter products or to reduce the level of non-absorbent binding materials.

The high wet modulus of these fibers greatly improve the wet resiliency of needle bonded fabrics. This is particularly advantageous in applications where liquid retention is important.

Lenzing fibers are available in a range of titer and staple lengths. Some of these are specifically tailored for needlebonding applications.



Needled substrates produced with Lenzing Viscose<sup>®</sup>, Lenzing Lyocell<sup>®</sup>, Tencel<sup>®</sup> and their blends with synthetic fibers are used in wide range of applications including medical, hygiene, wipes, coating substrates and for artificial leather.

Use of Lenzing cellulosic fibers improves the porosity and absorbency and generates a smooth surface. This combined with high strength and modulus of Lenzing Lyocell<sup>®</sup> & TENCEL<sup>®</sup> makes the substrate particularly suitable for use in high value added products like artificial leathers.