MICREX®

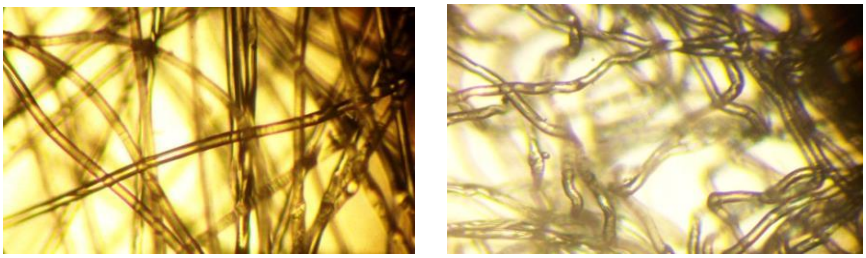
MICREX®/Microcreper™
Technical Note #118
Microcreping™ Filter Media

The Micrex Process (a.k.a. Microcreping) can be used to enhance the utility and value of nonwoven substrates (wet laid, spunbond, spunlace, composites), papers and aramids utilized in filtration by:

- Increasing surface area. A crepe pattern or pleating effect is a traditional use for wet creping technology for paper. Micrex can impart these same characteristics on a range of substrates which before could not be processed – and at significantly lower cost. Increased surface area translates into improved filter performance. Further, these Microcreped substrates can subsequently be pleated for two levels of surface area increase.

Spun bond polypropylene Microcreped for increased surface area

Increasing bulk. Microcreping traditionally delivers increased bulk. An industry standard polypropylene spunbond when compacted 15% will more than double in thickness. This increase in bulk means increased dust holding capability on a per square unit basis.



Microphotographs of polypropylene fibers before and after Microcreping

- Adding conformance, extensibility or stretch to a filter media. For example -- being able to shake extensible media utilized in a caking application.

In the design of any nonwoven product, trade-offs have to be carefully made:

- Material selection is absolutely critical to the success of the Micrex Process. In fact, some materials are ill-suited for Microcreping to begin with. Spunlace constructions on the other hand perform particularly well. See our technical note – TEC 116 Substrate Design for more information about material selection.

- Microcreping can in many cases make a substrate more open. One useful technique is to utilize a substrate which in an uncreped state may not meet the requirements of a particular application, and through processing obtains the desired attributes.

For success, it is absolutely critical to have a close understanding between how the material is Microcreped, and how that impacts filter performance. For example, by attempting to maximize one attribute (e.g. stretch) Microcreping can very well render the substrate useless for filter media. Another example -- what works wonderfully for a bag filter may fail completely in a canister.

Below are three pictures illustrating a series of trials on an industry standard polyester spunbond.

A. Uncreped *B. Microcreped—melting* *C. Microcreped - optimum*

Picture A shows uncreped material. In Picture B the material was Microcreped with a high degree of heat-set to maximize stretch and recovery of the web. This caused the material to melt impairing air flow. Picture C shows the same material, Microcreped at a slightly lower temperature, doubling the loft of the web.

At Micrex we understand that the process of developing new products is iterative and welcome the opportunity to refine The Micrex Process informed by customer test data.