

DeSolite Supercoatings™

What are optical fiber coatings and why are they important to fiber optic and cable networks?

Optical fiber coatings are one of the critical, yet least well-known, components of today's high-speed fiber networks. In fact, there would be no high-speed Internet today without a high-performance fiber coating systems.

Fiber coatings have three very important functions:

- Allowing optical fiber and cable makers to physically work with very delicate strands of glass fiber that are about the size of a human hair
- Allowing fiber to withstand the rigors of deployment and environmental stresses in the field
- Allowing fiber to carry signal with as little interruption or distortion as possible



Today's optical fiber networks are expected to last as many as 20-30 years in the field, while handling increasingly greater through-put demand. Because optical fiber coatings play an important role in protecting fiber from environmental field stresses as well as ensuring signal reliability, fiber coating quality is a key consideration in assessing the long-term reliability of any network.

What are DeSolite Supercoatings™?

DeSolite Supercoatings™ are the newest generation of optical fiber coatings, engineered for greater signal reliability through improved microbend sensitivity, as well as more robust field performance, especially in temperature extremes. These advance materials are protecting today's network investments with the following performance properties:

- Superior low microbend performance, from -60°C to 85°C
- Low attenuation
- High reliability in temperature extremes, especially low-temperature environments

What is microbending?

Among all of the performance risk factors today's fiber optic network operators must address, microbending within optical fiber presents an ongoing challenge. Microbending occurs when random bends occur in places where the fiber axis has very small deformations and can cause attenuation and ultimately signal transmission losses.

Microbending attenuation losses arise from distortions of the fiber axis that can result from non-uniform external forces, such as a fiber being forced onto cabling materials, fiber-to-fiber contacting points, or fiber being pressed on any rough surface.

The global trend in fiber coating innovation is to improve microbending performance without sacrificing production line speeds and to minimize signal attenuation over wider temperature

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extremes. DSM is the only Fiber Optic Materials supplier to provide next-generation UV-curable fiber coatings with the best microbending reduction technology for reliable, long-term network performance.

DeSolite Supercoatings™ significantly improve fiber's microbending sensitivity even at the fastest production line speeds. This ensures the best economics of high speed fiber production while offering superior attenuation performance. Benefits to telecom customers include:

- Savings from reduced usage of expensive repeaters and lower network power requirements
- Increased flexibility of deployment with extra capability for low cost additional line connections for future subscriber expansion
- Higher reliability at all temperature extremes including the seasonal cycles that wear down the networks resulting in expensive repairs

Who is DSM Desotech?

DSM Desotech is the world's leading developer of UV-curable optical fiber coatings, which are critical components of the optical cables that make up today's high-speed fiber networks.

DSM Desotech produces two-part fiber coating systems, consisting of primary coatings which ensure the reliability of the signal being carried and secondary coatings which protect fiber from outside environmental stresses.

With more than 40 years experience in fiber coatings development, the company holds more than 120 U.S. patents in UV-curable technology, with other patents in Europe, Asia-Pacific, Australia and Canada. DSM Desotech operates globally, with research and manufacturing facilities located in the U.S., Europe, China and Japan. It is headquartered in Elgin, Ill., USA. DSM Desotech is a business unit of DSM Resins, based in the Netherlands, and is part of the global DSM family – a world leader in life sciences and material sciences.

More information can be found at: www.supercoatings.com

What is the global family of DSM companies?

Royal DSM N.V. creates innovative products and services in Life Sciences and Materials Sciences that contribute to the quality of life. DSM's products and services are used globally in a wide range of markets and applications, supporting a healthier, more sustainable and more enjoyable way of life. End markets include human and animal nutrition and health, personal care, pharmaceuticals, automotive, coatings and paint, electrical and electronics, life protection and housing. DSM has annual net sales of EUR 9.3 billion and employs some 23,500 people worldwide. The company is headquartered in the Netherlands, with locations on five continents. DSM is listed on Euronext Amsterdam. More information can be found at: www.dsm.com .

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