

Case Study

Fiber-optic cable sheathing made from Pocan® B 1700



Figure 1 Structure of a fiber-optic cable

The Berlin-based company [Glasfaserkabel GmbH & Co. KG](#) manufactures various types of fiber-optic cabling. Various sizes and grades of fiber-optic cable are produced in Berlin for data transfer applications.

When used in fiber-optic cables, glass fibers are extremely delicate. The absorption spectrum of glass fiber is particularly vulnerable to chemical changes caused by reactions to hydrogen, which significantly cuts transparency and therefore conductivity in a certain wavelength range.

The glass fibers are bundled together according to grade and a co-extrusion process is used to sheath them with two different plastics. LANXESS natural-colored extrusion grade Pocan B 1700 is used for the outer sheath, with the desired colors being added in the extruder.

Apart from its application as fiber-optic cable sheathing of the type manufactured at Glasfaserkabel GmbH & Co. KG, this grade of Pocan can also be used for films and various semi-finished products.

Material: Pocan® B 1700

Manufacturer: Berliner Glasfaserkabel GmbH

Industry: Electrical/electronics

Its outstanding processability, hydrolysis resistance and excellent chemical resistance to e.g. filling gel and paraffins are all of key importance for use in fiber-optic cable sheathing.

Hydrolysis resistance is required for several specifications of fiber-optic cable and is demonstrated by testing real wires.

Another key property is shrinkage. Post-shrinkage needs to be extremely low, i.e. less than 1 ‰. With wire lengths of 25 to 50 km per coil, this is of vital importance. As Pocan B 1700 exhibits isotropic shrinkage behavior, it easily meets this requirement. In addition, it also offers other impressive properties such as:

- Good tensile strength
- Good kink resistance
- Excellent dimensional stability
- A low coefficient of friction
- No hydrogen outgassing



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