Case Study

Pocan® B 4215 for surge arresters

Figure 1 Surge arrester DEHNguard® M TT 275 FM made from Pocan® B 4215

Material: Pocan® B 4235

Molder: DEHN + SÖHNE, Germany

Industry: Electrical/Electronics

Lightning is formed in thunderclouds when strong upcurrents of air separate positive and negative charges, leading to an electrical discharge – commonly known as lightning. Every square kilometer in Germany is struck by lightning on average four times a year, an annual total of around one million lightning strikes. In fact, each year lightning causes millions of euros worth of damage and frequently even results in personal injury or death. Before lightning discharges, voltages equal to several 100 million volts occur between the thunderclouds and the earth. In a fraction of a second, currents can be generated which, in rare cases, can amount to several 100,000 A.

DEHN + SÖHNE GmbH + Co. KG have been developing products for lightning protection, surge protection and grounding since the 1920s. The family-run company has developed two product series, Red/Line and Yellow/Line, providing perfectly matched surge protection devices. The Red/Line series from DEHN + SÖHNE includes protection devices for installation in switchgear, meter stations, distributors, cable ducts, sockets and terminals. All materials used in these products are subject to very strict requirements.

The same applies to Pocan® B 4215 from LANXESS Deutschland GmbH, which is characterized by the following outstanding properties:

- Fire properties
  Pocan® B 4215 is classified as V-0 to UL94V. Classification 5VA is even possible with wall thicknesses greater than 3.5 mm. It also achieves the highest possible GWFI (glow wire flammability index) value of 960 °C.
- Electrical properties
  Pocan® B 4215 achieves the highest possible HAI ranking (high amp arc ignition) with PLC classification 0.
- Long-term thermal stability
  Even with the thinnest walls, RTI (relative temperature index) values are ≥ 130 °C. The IEC ball pressure test value is 210 °C.
- Dimensional stability
  In contrast to similar applications based on polyamide, Pocan® B 4215 does not absorb water, which gives it a very high level of dimensional stability.

Rheological properties

Glass fiber-reinforced Pocan has a particularly high level of flowability, which allows long flow paths and complex geometries.
