

REPLACEMENT OF THERMOSETS IN THE ELECTROMECHANICAL INDUSTRY



Thermosetting materials have played a leading role in the history of applications related to transport, management and use of electricity.

Since the time of the first synthetic resins, products such as bakelite and melamine resins, to which epoxy resins and polyester were subsequently added, have been widely used as insulation and safety materials.

Modern markets, however, require simpler, safer and more flexible solutions during the converting process, which also offer recycling opportunities in the post-industrial stage and possibly also in the post-consumer one – that is at the end of the product's life cycle.

For this reason, the attention of designers and technicians in the electrical and electronic sector gradually shifted towards the most advanced thermoplastic compounds able to provide advantages typical of thermosetting materials, especially in terms of dimensional stability and strength, as well as ease of use and low environmental impact.

Telergon, a leading Spanish company operating in the electromechanical sector and specializing in the manufacture of manual and motorized switches and changeover switches, has chosen a thermoplastic material for the production of changeover switches and bypasses of the latest generation.

The housings of the most recent devices, in fact, have been manufactured with LATER 4 G/30-V0HF1, a LATI self-extinguishing and structural PBT-based compound.

This choice has considerable strengths, such as, first, the base resin, a polyester that, unlike conventional polyamides, is completely anhygroscopic, thus ensuring dimensional stability, strength and dielectric strength even in very humid environments such as the Equatorial and Asian ones.

The material also features high self-extinguishing properties, UL-certified for low thicknesses without the use of halogen and red phosphorus as required by the most stringent market requirements in terms of respect for the environment and human health.

As regards safety during operation, reliability is ensured by extraordinary electrical performance, with tracking resistance greater than 600 V and a high dielectric strength even in extremely humid environments.

This picture is completed by mechanical strength and dimensional stability typical of glass fiber reinforced compounds.

The range of halogen and red phosphorus free LATI self-extinguishing compounds includes products meeting even the most demanding designers' requirements thanks to the available formulations based on PA6, PA66, PBT and PPA reinforced with mineral fillers or glass fiber up to 50%.