

Silicone Vulcanization Process

MDT Staff



ENGEL North America will introduce their new UV vulcanization process for silicone molding at the upcoming Plastec West show, February 12th -14th, 2013 in Anaheim, CA. On display will be a 110 ton ENGEL emotion all-electric machine with an integrated ENGEL viper 6 robot, equipped with UV vulcanization for LSR molding.

ENGEL North America, member of the ENGEL Group, a world leader in the design and manufacture of injection molding machines and parts-handling automation, will demonstrate the UV vulcanization process by producing a 2-component bottle stopper on an ENGEL e-motion 310/110 LIM injection molding machine using a mold and dosing system from partner Elmet and UV curing silicone from Momentive Performance Material.

ENGEL has opened the door to new opportunities in multi-component technology, introducing a new process for silicone vulcanization at low temperatures. The enhancements to silicone rubbers in the past two years have opened the door to new applications in multi-component technology for this material class. While conventional silicone rubbers require high temperatures for cross-linking, the new types vulcanize with exposure to light in the ultraviolet wavelength range at room temperature. This enables silicones to be combined with a wide range of thermoplastics using two component and multi-component injection molding. Even

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temperature-sensitive materials such as polypropylene can now be processed with silicone in a single step.

UV vulcanization requires mold cavity inserts that are permeable to light and UV lamps integrated in the mold for irradiation. For the application running at Plastec West, ENGEL partner firm Elmet (Oftring, Austria) utilizes translucent plastic inserts for UV light and integrates UV lamps into the mold for irradiation.

Reducing cycle times and energy consumption

In the process being demonstrated, polypropylenes are over-molded with liquid silicone from Momentive Performance Materials. The irradiation time for the vulcanization of the silicone components is around 20 seconds. In the conventional high-temperature process, silicone parts with a similar wall thickness need more than a minute for crosslinking. Using UV vulcanization not only facilitates new applications, but also reduces the cycle times and energy consumption associated with silicone processing.

Something Extra

At the show, ENGEL Machinery West is also introducing a challenge to area customers – give them your mold for a free mold trial and they guarantee to give you a more repeatable and consistent molding process. ENGEL is so confident in their new IQ weight control software that they are willing to bet on it. They will run free mold trials (on qualified molds) to prove that they can provide you with better part quality. Staff will be on hand in the ENGEL booth to discuss the new software and promote the challenge.

ENGEL North America

717-764-6818; www.engelglobal.com/na [1]

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