

TECH UPDATES

Custom Molder Converts Parts to Thermoset Process

Xenia, OH—Converting parts to thermoset injection-molded materials is a specialty of Ashton Plastic Products, Inc. (APP), a custom plastic molder that uses injection, compression, and transfer molding techniques. The company's expertise with thermoset resins has enabled APP to successfully convert "many high-heat and electrical applications" to the thermoset injection molding process, according to Richard E. (Dick) Kelch, president of the company. In so doing, APP has realized considerable cost savings for its customers.

"The new glass-filled phenolic resins have opened new markets for thermoset molded parts as substitutes for metal and fiberboard applications because of the high strength values that can be attained," Mr. Kelch explains. "Applications for phenolic thermoset parts have also become more attractive in electrical appliances, cookware, portable equipment, current-carrying devices, and switching mechanisms."

Thermosets are preferred for high-temperature applications because they do not burn, melt, or lose their shape to the extent demonstrated by many thermoplastic resins. When subjected to temperatures of 300 degrees F and higher, thermosetting plastics retain more of their original dimensions and strength values.

Ashton Plastic Products molds general-purpose phenolics, special engineered phenolics, and melamine thermoset materials. According to Mr. Kelch, applications for phenolic thermoset parts have become more appealing because improvements in resins have allowed molders to injection mold these resins with relative ease. Coupled with injection molding's advantages over compression and transfer molding, the molder has the ability to control cycle time and improve the integrity and cost structure of the molded part. Although cycle times average slightly more than thermoplastic molding cycles, complicated parts with molded tolerances close to those of machined metal parts are now possible with thermoset injection molding. Runner and molding scrap, however, remain a hurdle for thermoset molders.

"Injection molded thermosets are a very cost-competitive alternative to some thermoplastic materials," says Mr. Kelch. "Thermoset plastics conserve the country's energy. The energy requirements for thermoplastic are twice as much as [the amount] needed to mold phenolic plastic."

APP has provided cost savings to its customers by successfully converting parts from thermoplastic materials, replacing aluminum die-castings, stainless steel castings, and parts previously manufactured of fiberboard, with glass-filled phenolic plastic. The company uses injection presses, including rotary and shuttle presses, ranging from 75-ton to 350-ton. For more from Ashton Plastic Products, Inc., **circle E6**.