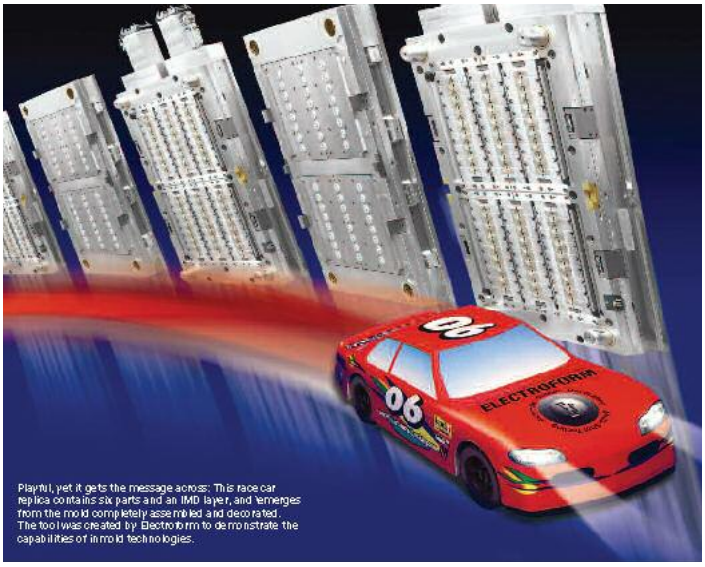
IMAGINATION...
WITHOUT LIMITS.

IMX: THE NEW RACE TO DO EVERYTHING IN THE MOLD

Injection Molding Article May 2008.

Can this set of technologies elevate molding to new heights of economy and productivity? Most definitely. Will it be the answer for everyone? Not if they're wise.– Michelle Maniscalco



Playful, yet it gets the message across: This race car replica contains six parts and an IMD layer, and "emerges from the mold completely assembled and decorated. The tool was created by Electroform to demonstrate the capabilities of in mold technologies.

What does it take to stay competitive these days? The question rings in the ears of most in the IM industry, while the answers aren't quite so forthcoming. One potential candidate: a group of inmold finishing technologies we label as IMx. Inmold painting, coating, cutting, assembly,multimaterial, andmore are being investigated, and in some cases highly touted, as a solution to rising costs and competitive pressures.

To find out if these labor-, time-, and cost-saving strategies are the right answer for you, we've polled those on the leading edge of this technology area. Most all agreed that IMx may not be the solution for every application, but these industry insiders also told us when and why inmold finishing can be the most astute choice. We'll also bring you up to date on where these technologies are being used.

CAVITIES SEE MORE ACTION

You may recall the first time you witnessed an inmold-assembly or in-mold-painting workcell in action. Perhaps you were one of the NPE 2006 attendees who flocked around the Progressive components (Wauconda, IL) booth to see moldmaker Electroform's exhibit, a two-shot Engel press that assembled and decorated a race car replica, all in a tool that the Rockford, IL firm built in less than eight weeks. The full development, including design and prototyping, took 17 weeks.

Even a decade ago, however, more than just molding a single part was taking place inside the cavity. Technically speaking, the first two shot part represented the birth of inmold assembly. Shooting two materials together certainly fits the definition of the term: the part emerges finished from the mold, without the need to bond, weld, snap together, or otherwise assemble it in a secondary operation.

Of course, inmold assembly that puts several parts together within the tool and uses two or more materals involves a great deal more than a relatively simple overmolding operation. But it helps to remember that complex inmold assembly grew from this technique.

Inmold decorating and labeling, known as either IML or IMD, are more familiar and older members of the IMx family that have found extensive proponents in automotive, packaging, and consumer goods markets. Inmold cutting of parts that are created by backmolding onto a textile, film, or other layer is a more recent addition to the group. Think automotive door panels, for instance, or housings for consumer electronics.

WHEN INMOLD ASSEMBLY MAKES SENSE

WadeClark, president andCEOat Electroform, believes there are many benefits to inmold technologies, but it's not the easiest route. "The complexity of inmold assembly should not be underestimated," he says, "and molders need to have a full understanding of what's needed before undertaking projects of this nature." Some of the advantages of inmold assembly and other inmold processes, according to Clark, include the ability to fabricate more consistent products with better fit and performance that are not subject to warp and shrinkage issues. "Quality issues are virtually eliminated with these methods. For example, when you switch to inmold decorating or assembly, the challenge of maintaining part orientation disappears. This is not the case with secondary decoration and assembly."

Customers who have made the switch also save money on handling, inventory, and logistics, Clark explains. Choosing a moldmaker experienced in IMx technology is critical to achieving these gains, he adds.

What do potential adopters need to know? "Always prototype first to ensure you have chosen the right materials for your application," he advises. "Besides proving out the product, the main reason to prototype is this—the molds and automation involved can become highly complex, and making changes to these systems can get expensive once the process is under way." If you're thinking about investing in a workcell for inmold assembly, Clark says, make sure you have the orders to support that investment. "It doesn't always have the flexibility to switch to manufacturing other types of products efficiently."

Finally, make sure you consider the true labor cost involved. According to Clark, inmold technologies require less direct labor but more indirect labor. "While you may be able to reassign three shop floor techs as a result of an inmold project, someone has to maintain the tooling for preventive maintenance, and you'll need highly skilled engineers that understand automation to keep the cell operating—and the time it takes to train these engineers can be underestimated."

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