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# Industrial Molds Group

## February Newsletter

2011

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Engineering Corner

### Amerimold 2011

Use the link below to register for free for the Amerimold 2011 Show in Rosemont, IL. Industrial Molds will again be exhibiting, so stop by our booth.

<https://register.rcsreg.com/r2/amer2011/ga?promo=313INDL>



**Better Collaboration + Better Communications = Better Relationships**  
By Tim Peterson, VP Industrial Molds Group

I hate to admit this, we have had costly mistakes. By this I mean verbal communications that create misunderstandings and result in mistakes.

In an effort to become a better supplier and improve ourselves as well as our relationships with our customers, and to create a more disciplined organization at Industrial Molds, we just simply need to be more diligent in our communications. No one can afford to absorb a mistake and the time delays that go with them.

If decisions that are made with regard to new tooling or ECOs, are put in writing, it means that - hopefully - we've

all done our due diligence and have an understanding of what is going to be done and how much it will cost.

The relationship between the supplier and the customer can become adversarial at times, rather than cooperative. And, that's never a constructive way to do business. A good supplier/customer relationship needs to be more collaborative from the start. I'll admit that sometimes I don't know the answer when trying to define the optimum way to build a mold. Will putting a vent pin here work? Maybe, maybe not.

Sometimes our customers provide us with good information and input on how they believe a mold should be built. Will that work 100% of the time? Maybe. Maybe not.

For most custom moldmakers, every mold is a new and different animal. Every mold requires R&D. In fact, up until you get good parts, just about everything we do is R&D. We sometimes get asked to build another mold for the same part, only "make it better" or "change this one area." Now, we're back to R&D even on the simplest mold.

We draw upon the expertise of many people here are Industrial Molds to build the best molds we can build, and that will help our customers produce quality parts with fast

cycles to reduce cost-to-manufacture. We have a wealth of experience among the team at Industrial Molds; a lot of proprietary intellectual property in the minds of our engineers and moldmakers. That's why our customers choose Industrial Molds.

And that's why we're trying to become better and discipline ourselves with respect to communications, and get everything in writing. With the tight margins that all manufacturers work with, there's no room for error. We're striving hard to get away from verbal communication for information transfer. We won't stop talking to you on the phone, but that conversation then needs to be confirmed in writing.

That's why our Customer Surveys are important. We're always looking for ways to improve, ways that we can become a better supplier, and lower costs for you and for us. If we have a cost driver in our company that our customers don't value, then we'll get rid of it. But it takes input from you, our customers, to help us get there. We need to work together. We need to communicate and collaborate so that we'll all be successful.

**NOTE: The time frame for you to fill out our online Customer Survey has been extended, so be on the lookout for the email**

**with your individual survey link  
and take our Customer Survey  
so that we can be a better  
supplier to you!**

## **Engineering Corner -- Design for Manufacturability - With Joe Hansen, Account Manager**

We hear a lot about Design for Manufacturing but what is it exactly? Defining Design for Manufacturing must include several aspects of the process from part concept to finished product. In the world of plastics, Design for Manufacturing, means taking into consideration the part design, the configuration of the part in the mold, the design of the mold to accommodate the molding of the part including achieving optimum cycle times, and how the resulting part will come out of the mold, i.e. as a finished part or one that needs secondary operations to complete.

How the part is designed determines the type of mold that will be designed and built. The mold must be designed in such a way that it will accommodate the molding process. "Any time you fail in getting manufacturability, it generally has to do with the part design," says Joe Hansen, Account Manager at Industrial Molds. "A complex part design requires a robust mold to provide optimum manufacturability. At Industrial Molds Group, we strive for the most robust tool, capable tool possible."

For example, a simple example in which part design is an obstacle to manufacturability, is a plastic part which has a hook or latch feature. "If you can develop the part to allow for a window through the part, you can build your mold as a straightforward 'open-and-close' mold with no side actions or slides," Hansen notes. "However, from an aesthetics standpoint, the OEM doesn't want a window in the part to accommodate the latch or hook feature. That's when you need to ask yourself 'how important is this feature?' Putting a window in the part with a telescoping core of steel to allow for open-and-shut action is an example of design for manufacturability."

Where complex parts are involved, Design for Manufacturability might mean taking a different route than originally planned. For example, an extremely complex part that was originally designed to be molded in one piece with a very complex tool using lots of actions might be more manufacturable if designed as two components, either using two molds or two separate inserts, and welding the two pieces together in a secondary operation. "The cost over the long term might be more for the one, extremely complex mold with lots of actions, where two molds would be more cost effective long-term, and the parts more manufacturable," says Hansen. "If the part is complex, the tool will be complex, and typically the maintenance will be higher."

Speaking of maintenance, somewhere in this equation you need to consider design for preventative maintenance - the ease of disassembly and assembly, which means designing the mold so that it can be easily maintained or minor repairs done in the press to minimize downtime when maintenance is needed.

"Design for in-press maintenance is the optimum way to go," says Hansen. "Make

sure that your parts are accessible from the parting line."

Hansen explains that when Designing for Manufacturability, the first way you look at it may be more obvious, but the second way may be more cost effective over the long term. It often requires the moldmaker to crunch the numbers to see which method creates the optimum Design for Manufacturability. "The way the customer wants to go might not be the best way to go for manufacturability when all things are considered," says Hansen. "Manufacturing the mold in and of itself isn't the only consideration. In design for manufacturability, both, the part and the mold have to be considered. Certainly you want the best process - the widest process window - so you need good venting and optimum cooling."

Cooling technology has come a long way particularly with respect to conformal cooling, which Industrial Molds uses quite often in the molds it builds. Conformal cooling began being used for very thin-walled parts, but has become good for complex, thicker-walled parts. "We use it most often with high-temperature, engineering-grade plastics, which is another consideration for Designing for Manufacture the materials chosen."

A final, but major consideration, when designing for manufacturability, is understanding that each part is different - parts are all custom. "There's a tendency in the industry to see the design for manufacturability rules for a complex component in the same way as the buttons on the front of your shirt," Hansen says. "What are you molding? A button? Or a complex medical or automotive component? In the industry there's often a discounting of the expertise of tool makers in trying to apply blanket procedures in design for manufacturability around every part. It's critical to remember that every part has to stand on its own, with respect to form, fit and function when designing for manufacturability."

**For more information on Designing for Manufacturability please call 815-397-2971 and ask to speak to an Account Manger.**

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