

COMPANY

Primera Plastics, Inc.

LOCATION

Zeeland, Michigan, United States

SOFTWARE

Autodesk® Simulation Moldflow®

Molding a stronger future in plastics

Primera Plastics uses Autodesk Simulation Moldflow to sharpen its competitive edge

Autodesk Simulation Moldflow software tells us how long we have to keep the part in the injection mold. With more accurate predictions of cycle times, we have much more confidence in our quotes.

—**Scott Leatherman**
Project Engineer
Primera Plastics

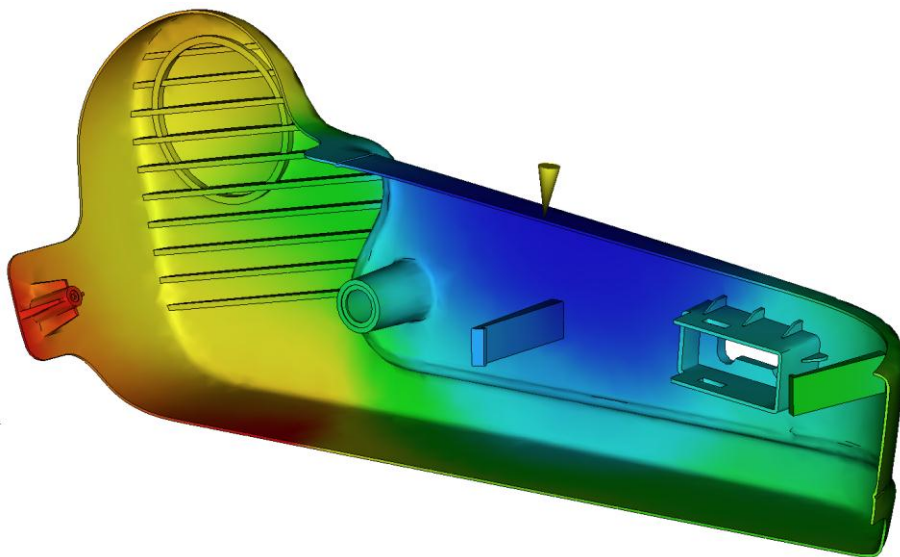


Image courtesy of Primera Plastics, Inc.

Project summary

An old barn outfitted with two injection-molding machines gave Primera Plastics, Inc., its start in 1994. From these humble beginnings, the company has grown into a top manufacturer of precision-molded plastic products, operating 30 injection-molding presses in its award-winning facilities in Zeeland, Michigan. Primera Plastics produces custom plastic parts for a range of international customers, including premier furniture manufacturers and automotive original equipment manufacturers (OEMs).

To deliver competitively priced, high-quality plastic parts quickly, Primera Plastics relies on Autodesk® Simulation Moldflow® software. Using the Autodesk solution enables Primera Plastics to produce more accurate quotes for prospective customers and optimize injection mold designs prior to manufacturing. With help from Autodesk software, Primera Plastics also can:

- Estimate and optimize production cycle times
- Improve part quality and aesthetics
- Deliver more customer quotes with greater accuracy

The challenge

To win business in Michigan's struggling economy, Primera Plastics must bid competitively—and deliver high-quality, aesthetically pleasing plastic parts in the shortest possible time. The company bases its bids, in large part, on projected production costs and cycle times, which can be difficult to estimate accurately.

"Before Autodesk Simulation Moldflow, we approximated cycle time based on part volume and our previous experience," says Scott Leatherman, a project engineer at Primera Plastics. "And once we bid, we were locked into a quote, so we always estimated conservatively to reduce our risk."

In addition, because many of the parts Primera Plastics manufactures are used in automotive interiors and office furniture, high quality and overall aesthetics are critical. "A vast majority of the plastic parts we produce must look good," says Leatherman. "If a part is manufactured to specifications and dimensionally correct, but has an unintended visual defect, we're in trouble."

With Autodesk Simulation Moldflow, Primera Plastics can save months of production time—and thousands of dollars

The solution

Using Autodesk Simulation Moldflow software, Primera Plastics can perform simulations to develop more accurate quotes when it receives requests for plastic parts. Engineers run a range of simulations to study the flow of melted plastic, evaluate various runner systems and gate configurations, determine the most efficient cooling systems, and predict volumetric shrinkage. “With Autodesk Simulation Moldflow, we can virtually explore a range of issues before we deliver a quote and start manufacturing a part,” says Leatherman.

One of the biggest problems that can arise with quoting is under- or overestimating cycle times. “If you underestimate cycle times, you’ll cut into your profit, but if you overestimate, you might not get the business,” says Leatherman. Using Autodesk Simulation Moldflow, Primera Plastics can more accurately predict how long it will take for a plastic part to reach ejection temperature and identify when the part will start to warp. “Autodesk Simulation Moldflow software tells us how long we have to keep the part in the injection mold,” explains Leatherman. “With more accurate predictions of cycle times, we have much more confidence in our quotes.”

More precise molds

The cost of creating injection molds often plays a major role in the total cost of manufacturing a plastic part—in some cases, up to 75 percent. “If the mold isn’t designed correctly, it can wreak havoc on the entire production process,” says Leatherman. “And if the estimated cost for the mold is wrong, we can end up sacrificing our already thin profit margins.”

As a result, Primera Plastics must effectively communicate the exact tooling specifications necessary to mold a particular part to the third-party vendors it uses to create its molds. “A great

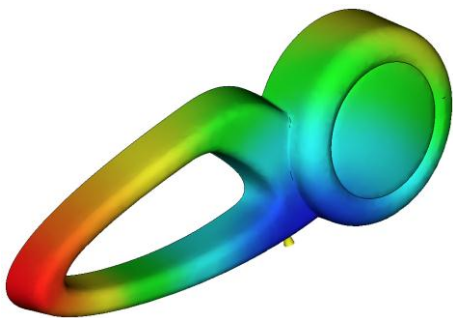


Image courtesy of Primera Plastics, Inc.

deal of time and money is wasted if we have to go back to our tooling vendors after the mold is produced,” says Leatherman. “But with the results of Autodesk Simulation Moldflow in hand, our vendors can accurately design the molds we need. Before a mold is built, we have confidence it will be optimized for our injection molding requirements.”

More predictable results

Autodesk Simulation Moldflow also helps Primera Plastics find and fix potential defects, such as short shots, air traps, and weld lines well before manufacturing begins—helping the company speed production times and lower costs. “With Autodesk Simulation Moldflow software, we can pinpoint exact areas of concern, such as an incorrect draft wall or variations in part thickness,” explains Leatherman. “It lets us address possible defects inexpensively during the design phase, rather than later during production.”

More effective customer communication

Using the insight gained from Autodesk Moldflow simulations, Primera Plastics can communicate more effectively with customers about optimizing plastic part designs and the injection molding process. “With Autodesk Moldflow, we rise above competitors who are not able to conduct the same level of validation before production,” says Leatherman. “We’re able to tell our customers if we find a specific area of concern—and help them optimize their products and reduce their costs.”

The result

With help from Autodesk Simulation Moldflow, Primera Plastics can create more accurate and competitive quotes, protecting the company’s thin profit margins. The solution also helps Primera Plastics optimize parts for the injection molding process, so it can more efficiently manufacture plastic parts and avoid costly production delays and part defects.

“Thanks to Autodesk Simulation Moldflow, we can save months of production time—and easily, thousands of dollars,” says Leatherman. “We’re more confident in our quoting because we can study every aspect of the injection modeling process before we begin manufacturing. Autodesk Simulation Moldflow is definitely helping us maximize profit. It’s a valuable tool.”

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—Scott Leatherman
Project Engineer
Primera Plastics



Image courtesy of Primera Plastics, Inc.

For more information

To find out how Autodesk Simulation Moldflow can help you validate and optimize plastic part and injection mold designs and reduce manufacturing defects, visit www.autodesk.com/moldflow.