DASSAULT SYSTEMES

SOLIDWORKS

CARLISLE FOODSERVICE PRODUCTS

ACCELERATING INJECTION-MOLDED PRODUCT DEVELOPMENT WITH SOLIDWORKS SOLUTIONS

After enjoying productivity gains by transitioning to SOLIDWORKS 3D design software, Carlisle FoodService Products realized additional efficiency improvements by adding SOLIDWORKS product data management (PDM) and injection-molding simulation solutions to its product development effort.

CARLISLE FOODSERVICE PRODUCTS

Challenge:
Reduce cycle time, reliance on outside consultants, and prototyping costs associated with the development and manufacture of increasingly complex injection-molded products.

Solution:
Implement SOLIDWORKS Premium design and analysis, SOLIDWORKS Plastics injection-molding simulation and analysis, and SOLIDWORKS PDM Professional product data management software solutions.

Benefits:
- Anticipated 12-15 weeks of annual time savings
- Projected reducing consulting costs by $20,000 per year
- Saved additional money through reduced cycle times
- Improved development workflows with PDM

Carlisle FoodService Products is a leading manufacturer of foodservice, sanitary, and healthcare products and equipment. With award-winning brands like Dinex® healthcare foodservice products, DuraLast™ table coverings, and Sparta® brushes, the company is committed to designing and manufacturing professional grade products with the people who have to use them every day in mind. Carlisle products provide real value and facilitate smooth-running, profitable operations.

Many of Carlisle's products are manufactured using plastics injection-molding techniques. Until 2010, the foodservice products manufacturer used Pro/ENGINEER® 3D design software to design its products and the molds from which they are made. However, as competitive pressures compelled Carlisle to boost productivity and throughput, and shorten development and manufacturing cycles, company management decided to investigate easier-to-use, more affordable, and more flexible 3D design software, according to R&D Engineer Brad Tilman.

"The company decided to switch over from Pro/ENGINEER to SOLIDWORKS® 3D design software for several reasons," Tilman explains. "Ease of use was an important requirement, as was cost. We also liked the fact that SOLIDWORKS provides a range of integrated design and engineering solutions that we can add as we need them. We added SOLIDWORKS Plastics software and SOLIDWORKS PDM Professional in 2013 to improve product design for manufacturability, reduce the volume of prototype molds required, and streamline our development processes and workflows."

Carlisle standardized on SOLIDWORKS Premium design software because it is easy to use, provides critical mold development and analysis tools, and includes photorealistic rendering and SOLIDWORKS eDrawings® communications tools. The company added SOLIDWORKS Plastics and SOLIDWORKS PDM three years later to gain additional productivity benefits.

"SOLIDWORKS software is ideally suited to the type of products that we design and manufacture," Tilman stresses. "For example, I run a draft analysis on every single part that I design, which ensures that we have sufficient draft for manufacturability well before development of the injection mold."

BRINGING INJECTION-MOLDING SIMULATION IN-HOUSE

Carlisle added SOLIDWORKS Plastics injection-molding simulation and analysis software to bring this function in-house, lessen the company's reliance on outside injection-molding consultants, and improve development and production efficiency. "The complexity of our designs continually increases, so we need to be able to handle all aspects of mold analysis internally," Tilman notes. "For example, I designed a cup-lid holder for use in a dishwasher that was fairly complex, with ribs, a crazy flow pattern, and a two-drop gate on the mold.

"With SOLIDWORKS Plastics software, I ran some successful mold-filling simulations to validate that the part could be manufactured, as well as where the weld lines would be," Tilman continues. "I've also run some successful simulations of cooling channels on a mold to understand the cooling of a part. Ensuring that material will flow in and fill out the mold without being pressure-limited in the machine and checking where the parting lines are is vital to everything that we do."

"SOLIDWORKS software is ideally suited to the type of products that we design and manufacture."

— Brad Tilman, R&D Engineer

FASTER AND MORE COST-EFFECTIVE MOLD DEVELOPMENT

Since implementing SOLIDWORKS Plastics software and bringing injection-molding simulation and analysis in-house, Carlisle is already realizing the cost savings potential. By completely eliminating outsourced flow studies, Carlisle projects a savings of $20,000 or more in 2016. This equates to 12 to 15 weeks of time saved because the company no longer experiences long lead times for analysis completion. The software may also help the foodservice products manufacturer reduce production cycle times for many of its products.

"Reducing cycle time is critically important when you are manufacturing at high volume," Tilman points out. "With this capability, we can efficiently explore the science of gating, such as what's the effect of using a fan gate, a double fan gate, an edge gate, etc. This will help us to work towards our cost saving initiatives and goals each year. With SOLIDWORKS Plastics software, we can predict how molds for our products will fill, then make and validate modifications that reduce cycle times."

STREAMLINING WORKFLOWS WITH EPDM

By adding SOLIDWORKS PDM Professional, Carlisle has streamlined development workflows while tightening revision controls. "PDM is great because it not only gives you a vault to put everything in, it also keeps someone else from corrupting your work," Tilman says. "In addition to design and validation data, our workflow contains processes for project tracking, quoting documents for sales, and the way that the quote was calculated.

"With SOLIDWORKS PDM Professional, we have a system that streamlines our processes rather than trying to re-engineer our processes," Tilman adds. "By leveraging PDM's revision control and automated email notification capabilities, our processes are faster, better managed, and more successful in helping us improve our product development and manufacturing goals."

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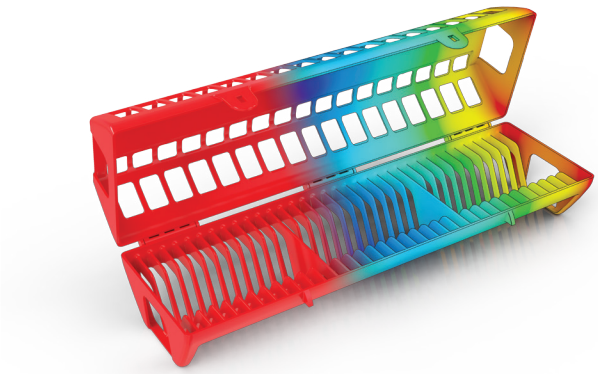

With SOLIDWORKS Plastics injection-molding simulation software, Carlisle FoodService Products have brought its injection-mold analysis function in-house, lessening the company's reliance on outside injection-molding consultants while improving mold development and production efficiency.

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