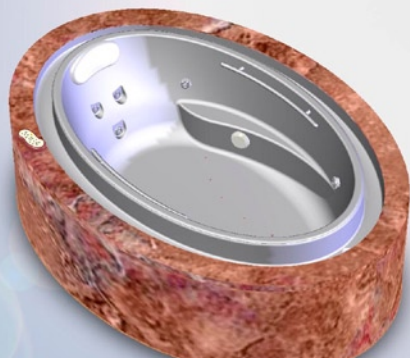


# LASCO Bathware, Inc.

SCULPTING INNOVATIVE BATH AND SHOWER FIXTURE SURFACES WITH SOLIDWORKS



With SolidWorks surfacing capabilities, LASCO designers can more efficiently produce the curvy, sweeping, ergonomic shapes of their bathing fixtures.

→ LASCO Bathware, Inc. is the largest manufacturer of bathware in the United States, producing nearly a fourth of all bath and shower fixtures sold nationally. Founded in 1965 and headquartered in Anaheim, California, the company offers the most products in its industry, with hundreds of bath and shower models in a variety of sizes, styles, and colors. LASCO invests in new design and manufacturing technologies to assure the highest levels of product quality and customer service. Through rigid testing and inspection protocols at its eight manufacturing facilities, the company maintains its commitment to develop bath and shower fixtures of the highest quality.

LASCO Bathware, Inc. is America's leading manufacturer of bathware, producing almost 25 percent of all bath and shower fixtures sold in the United States. Until the mid-1990s, the company used AutoCAD® 2D design tools to develop its products, sold predominantly to wholesalers for use in new construction. However, customer demand for products offering greater styling and more ergonomic shapes prompted LASCO to move to 3D design, according to Matt Thomas, product design engineer.

"LASCO was an early adopter of 3D design because of the company's need for complex surfacing capabilities," Thomas explains. "As the market moved toward more curved, ergonomic shapes – matching bathtub geometry more closely to the contours of the human body – the need for 3D surfacing capabilities increased tremendously. It took too much time and effort to develop these types of products using 2D techniques. We needed a 3D CAD package with both solid and surface modeling capabilities to continue LASCO's track record as an innovator in its market space."

After evaluating different 3D solid modeling and surfacing packages, the company chose SolidWorks® 3D CAD software because of its ease of use; advanced surfacing capabilities; and design visualization, communication, and presentation tools. With eight seats of SolidWorks Office Professional and one seat of SolidWorks Office Premium software, LASCO also values the software's integrated draft analysis tools for mold development and COSMOSWorks® Designer analysis capabilities.

## Faster, better, more complex geometry

LASCO designers use SolidWorks surfacing capabilities to design the curvy, sweeping shapes of their bathing fixtures, which require one of three different mold-related processes for production. The fiberglass-reinforced process (FRP) requires a gel-coat spray of various resins and laminates onto a pop-off mold. The acrylic process uses a vacuum-form mold to pull a thin sheet of acrylic down onto a mold. The fiberglass-impregnated resin process utilizes a sheet of fiberglass positioned in a mold and shaped through heat and compression, like a complex waffle iron.

With SolidWorks draft analysis tools, LASCO engineers can determine if there are any issues that can affect whether a part will pull away from the mold. Combined with complex surfacing tools, these capabilities help LASCO engineers not only to reduce scrap and rework but also to cut the time it takes to produce a mold by 60 percent. "The traditional method to develop molds took about 10 to 12 weeks," Thomas explains. "Using SolidWorks, we can create a mold in three weeks, and go from a napkin drawing to a CNC-machined pattern in a week."



- Cut mold/pattern development time by 60 percent
- Shortened product time-to-market by 50 percent
- Improved design styling and ergonomics
- Leveraged analysis to maintain strength, durability, and consistency

- LASCO Bathware, Inc. is America's leading manufacturer of bathware, producing almost 25 percent of all bath and shower fixtures sold in the United States. Until the mid-1990s, the company used AutoCAD 2D design tools but decided to move to a 3D CAD system in order to meet customer demand for greater styling and more ergonomic shapes.
- The company chose SolidWorks 3D CAD software because of its ease of use; advanced surfacing capabilities; and design visualization, communication, and presentation tools. LASCO also values the software's integrated draft analysis tools for mold development and COSMOSWorks Designer analysis capabilities. By deploying SolidWorks, LASCO has cut mold development time by 60 percent; reduced scrap, rework, and material costs; improved design styling and ergonomics; and lowered photography costs by using photorealistic renderings created with PhotoWorks.

### Analysis of product performance, new material applications

In addition to using SolidWorks design capabilities, LASCO uses COSMOSWorks Designer software in conjunction with its rigid product-testing regimen to validate design performance, as well as to analyze new material applications and product innovations. "Our products must meet various plumbing, building code, and ANSI testing requirements," notes Thomas. "In the past, we relied solely on physical testing, such as maximum deflection tests or ball-drop tests, to make sure we met the load rating on our shower pans. We still do physical testing, but COSMOSWorks software lets us use displacement and stress studies to thin out certain areas and save money on material.

"We also use COSMOSWorks Designer software to evaluate new material applications," Thomas adds. "It helped us complete a static study on the use of a thin sheet of acrylic with a secondary layer of foam to determine if it could pass our deflection standard."

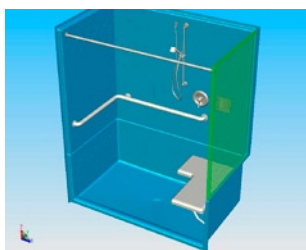
### Greater use of design data

By moving to SolidWorks software, LASCO has more opportunities to utilize 3D product design data for other functions, including design communication, sales presentations, and marketing initiatives. The company uses integrated PhotoWorks™ software to create photorealistic renderings of its product designs for presentation purposes and utilizes eDrawings® files for communicating both internally and externally.

"After we develop a new concept for a whirlpool or tub, we send an eDrawings file to our Marketing Department," Thomas explains. "We showed them how to use eDrawings, which has proven to be very valuable for obtaining their input and conveying our design intent."

Using PhotoWorks photorealistic rendering capabilities, LASCO was able to secure an order for custom-made shower pans from a large homebuilder based on renderings alone. In its catalog, the company plans to use renderings instead of vignette photographs, which require special lighting and construction of display units. By eliminating photography costs, LASCO will garner additional savings.

Using SolidWorks software, LASCO has cut mold/pattern development time while reducing scrap and rework at the same time.



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