

Roman Limited

RAISING THE BAR ON SHOWER AND BATH DESIGN WITH SOLIDWORKS



By implementing SolidWorks 3D CAD software, Roman Limited has realized greater flexibility and agility in product development, particularly with molded components.

- Compressed design cycles by an average of 50 percent
- Eliminated prototype mold development
- Reduced the number of recalls and returns
- Launched a new high-end product line

Roman Limited is the UK's leading and most innovative shower manufacturer. As the market for shower enclosures and accessories moved from one dominated by standardized products to one in which consumers prefer different styles and options for customizing bath and shower systems, the company needed greater flexibility and agility in product development. In an effort to design a wider variety and an increased output of products in less time, the company decided in 2001 to upgrade its AutoCAD® and TurboCAD® 2D design tools to a 3D CAD system.

"Our market is fashion-driven, which means we must be able to respond quickly. We believed that by moving to 3D, we would not only be more efficient and cost-effective, but also more innovative in product design," explains Christopher Ward, design manager in Roman Limited's Research and Development Group. "We saw moving to 3D as the best means to address increasing customer demand for greater variety. Because we had used Autodesk® software in the past, we naturally began using that company's 3D tools: first, Mechanical Desktop® and then Autodesk Inventor®."

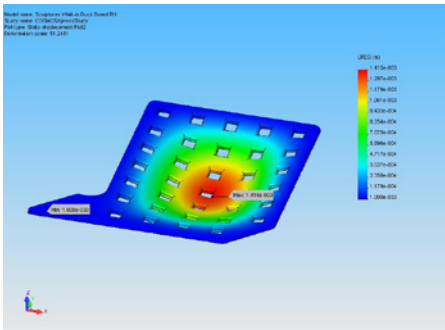
However, after using Autodesk Inventor Series software for over a year, the company decided to benchmark other 3D CAD systems against it because the engineers were not satisfied with the software's capabilities. "We had difficulties using Inventor formold development and also for supporting design configurations. So we wanted to make sure we did not buy a new CAD system that did the same thing," Ward recalls. "We wanted to check our existing system against other packages to ensure we would realize an improvement before making a move."

Roman Limited ran performance and ease-of-use benchmarks of the leading 3D CAD systems – including Inventor, Pro/ENGINEER® Wildfire™, Rhino®, Solid Edge®, and SolidWorks® – against 20 different modeling criteria. Following the benchmark, the company selected SolidWorks 3D CAD software because it was the easiest to use, had advanced surfacing capabilities, included mold design and analysis tools, produced high-quality images and renderings, supported design configurations, provided direct integration with important add-on tools, and offered outstanding local training and support.



“Using SolidWorks Simulation, we know our designs are structurally sound, which results in fewer recalled or returned parts in the field.”

Christopher Ward, Design Manager



Integrated analysis tools, including SolidWorks Simulation finite element analysis software, have helped Roman Limited cut weeks from its design cycles while improving product quality.

Supporting custom-design configurations

Roman Limited implemented SolidWorks software in 2004, following a comprehensive training session with representatives of reseller CADConnect. The company's engineers were immediately able to use design tables in SolidWorks software to support multiple product-design configurations from a single model. In addition, they used the software to develop and launch the company's innovative Sculptures high-end product line. "SolidWorks software makes our lives a lot easier," Ward stresses. "We can develop a single model and use design tables to input five or six different volumes to create product variations automatically."

Design configurations are a lot more powerful in SolidWorks software," he adds. "We can even bring in legacy design data, develop multiple configurations, and take the files directly into EdgeCAM® software to work up our CNC code for machining. There is no need to bother with STL or IGES files because we can work directly with SolidWorks files."

Mold development tools save time and money

By transitioning to SolidWorks software, Roman Limited has dramatically improved its mold development efforts and has completely eliminated the development of a prototype mold from its process. Ward says that since implementing SolidWorks software, the company has compressed its product design cycles an average of 50 percent.

"SolidWorks takes you step by step through the mold design process," Ward notes. "Using SolidWorks mold design and analysis tools, we can make sure that all the draft angles on our shower trays are correct, can create part lines, and can account for shrinkage before cutting a mold. With SolidWorks, we have been able to speed up the whole process, taking weeks out of our design cycle."

Design analysis improves product quality

One reason Roman Limited has been able to eliminate prototype molds, while improving product quality, is the insight provided by integrated SolidWorks Simulation analysis software. "When we tried out SolidWorks SimulationXpress, we immediately saw the benefits of using analysis and acquired SolidWorks Simulation to analyze our shower assemblies. We need to examine a variety of stresses, such as what happens when a child tries to swing on a shower door or how we can optimize wall thicknesses for material usage," Ward explains.

"Using SolidWorks Simulation, we know our designs are structurally sound, which results in fewer recalled or returned parts in the field," he adds.



Dassault Systèmes SolidWorks Corp.
300 Baker Avenue
Concord, MA 01742 USA
Phone: 1 800 693 9000
Outside the US: +1 978 371 5011
Email: info@solidworks.com
www.solidworks.com



Roman Limited
Whitworth Avenue, Aycliffe Industrial Park
County Durham DL5 6YN
UNITED KINGDOM
Phone: +44 (0)1325 311318
www.roman-showers.com
VAR: CADConnect, UNITED KINGDOM