Outdoor Technologies Inc.

STREAMLINING VINYL FENCING AND DECKING DEVELOPMENT WITH SOLIDWORKS

Using SolidWorks configurations capabilities, OTI can create an entire family of fencing, decking, or railing products from a single base design.

- Reduced design cycles by 66 percent
- Increased throughput fourfold in less time
- Streamlined development of extrusion dies
- Improved product visualization and communication

Outdoor Technologies Inc. (OTI) manufactures vinyl fencing, decking, and railing products. The company originally used AutoCAD® 2D design tools, but believed it could increase productivity and improve product visualization for its customers by moving to a 3D CAD system. OTI initially chose the Autodesk Inventor® 3D CAD package in 2003. Because the company had used Autodesk® software, it believed upgrading to Inventor represented the most economical option due to discounted pricing, according to Stan Hathorn, engineering/technical manager.

"At first, we believed Inventor software would meet our needs," Hathorn recalls. "But after using Inventor for six months, we became dissatisfied, especially when we tried to use it to develop extrusion dies, which are specialized pieces of machinery that we use to manufacture our products. Our extrusion dies involve complex geometries that require the use of lofts and sweeps. Inventor could not do the operations we needed and would crash frequently. We also were not satisfied with the way Inventor handled files, configurations, bills of materials (BOMs), and assembly operations. After encountering one problem after another, we decided enough was enough and began to look at other 3D CAD packages."

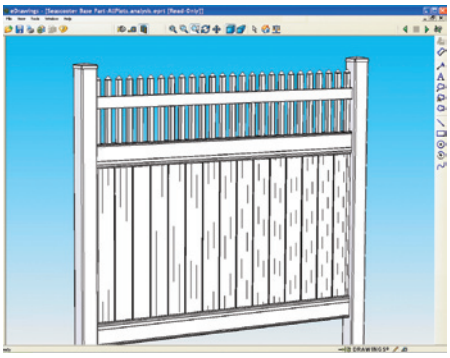
The company evaluated SolidWorks® and Pro/ENGINEER® 3D CAD software before purchasing a trial seat of SolidWorks. "We went with a trial license to make sure we were making the right decision," Hathorn notes. "We fell in love with SolidWorks software because it's a much more powerful and easier system to use."

OTI selected SolidWorks Office 3D CAD software, adding two seats to its initial trial license, because of the software's ease of use, stability, assembly, design tables, configurations, modeling, and automated BOM-generation capabilities.

SolidWorks

“With SolidWorks, it takes about a third of the time to complete our designs.”

Stan Hathorn, Engineering/
Technical Manager



Implementing SolidWorks software enabled OTI not only to accelerate the development of its extrusion tooling but also to reduce product design cycles by 66 percent.

Accelerating extrusion tooling development

Since implementing SolidWorks software, OTI has reduced its design cycles by 66 percent, while accelerating the development of its extrusion tooling. “With SolidWorks, it takes about a third of the time to complete our designs,” Hathorn explains. “SolidWorks has the modeling capabilities we need and makes design changes easier, which streamlines development.”

In addition to handling the lofts and sweeps, which OTI needed to model its extrusion tooling, SolidWorks provided faster, more automated approaches for other assembly operations. “With Inventor, we had to do our sweeps in segments; and once we got the sweeps together, we needed to bore bolt holes through the entire assembly,” Hathorn says. “In Inventor, it was difficult to bore a hole through all the parts in an assembly. But in SolidWorks, we were able to do this in less than a minute. With Inventor, we had to bore holes on each component individually, which added a lot of repetition and time.”

Automated configurations

The company has realized additional benefits by using SolidWorks assembly configuration capabilities for creating product families from a single design, as well as for making design changes quickly and easily. “Most of our product lines come in different lengths and sizes, so configuration capabilities are critically important,” Hathorn explains. “We prefer the SolidWorks approach, which uses a Microsoft® Excel spreadsheet to create design tables that are controlled by the properties we set in the Configuration Manager. Design tables are a tremendous resource for our company.

“For example, if we need to make 150 configurations of a model in SolidWorks, all of the configurations are contained in one file. In Inventor, we would have 150 different files. Design changes are much easier in SolidWorks, because we only need to make one change to the original design in order to change all 150 configurations,” he adds.

Having the ability to make design changes quickly and easily in SolidWorks software has enabled OTI to complete four times the amount of work that it did in Inventor – and in less time. “After six months, we were unable to complete the product designs for our existing products in Inventor,” Hathorn adds. “But with SolidWorks, we completed the designs in a streamlined and efficient manner.”

Enhancing communication with eDrawings

SolidWorks software is also helping OTI achieve its original goal of improving design visualization and communication through the use of SolidWorks eDrawings®. “The ease of communication with eDrawings is a huge benefit,” Hathorn stresses. “We make eDrawings for everything, including communicating with executive management, facilitating customer reviews and approvals, and supporting our production personnel on the shop floor. eDrawings have made a difference in the way we operate on a day-to-day basis.”

Before implementing SolidWorks, OTI published drawings of its products for distribution to customers in book form. Now the company ships a CD-ROM containing eDrawings of its products to customers, providing both 2D drawings and 3D models.

SolidWorks

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

OUTDOOR TECHNOLOGIES INC.

Outdoor Technologies Inc.
1576 Magnolia Drive
Macon, MS 39341
Phone: 1 800 736 5143
www.otivinyl.com
VAR: Concepts in Production,
Amory, Mississippi