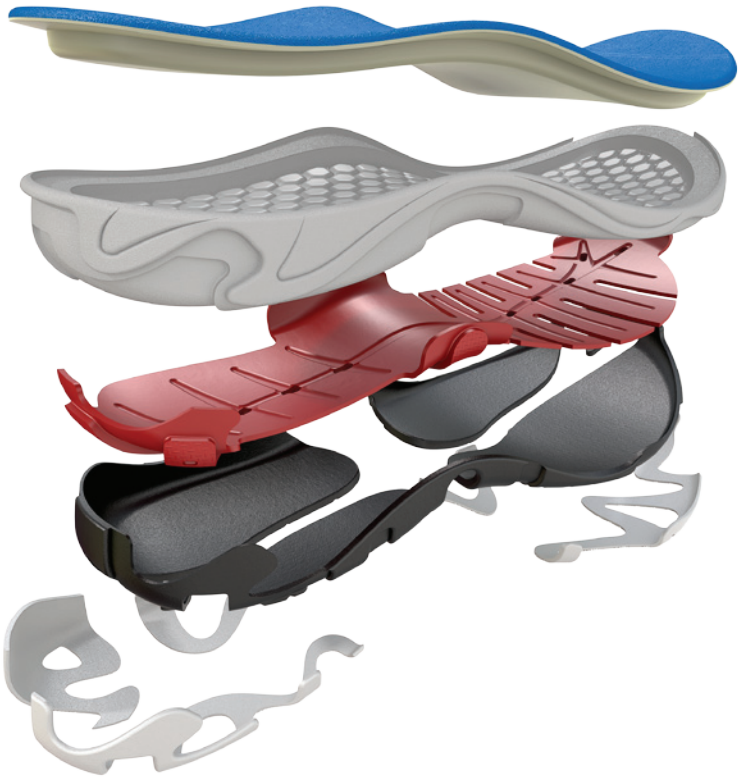
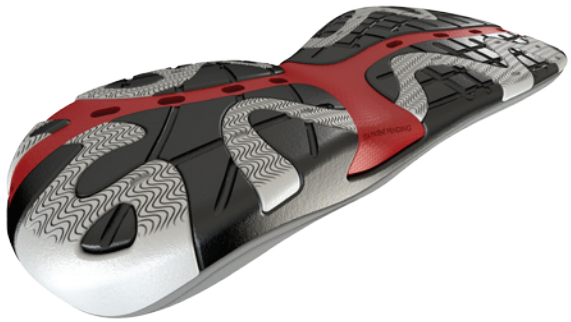
WOLVERINE WORLDWIDE, INC.

Winning the footwear development race with SolidWorks Premium





With SolidWorks Premium software, Wolverine Worldwide has grown its product line while saving time and cutting costs simultaneously.

Few companies can say that they have the world at their feet, but that's exactly the case at Wolverine Worldwide, Inc. Leveraging a diverse business model that spans 190 countries and various footwear categories, Wolverine has come a long way since G.A. Krause founded the company more than 125 years ago. Today, the Michigan manufacturer produces more than a dozen footwear brands—including well-known names like Hush Puppies®, Merrell®, and Wolverine®—and has grown to become a global enterprise.

Product development is an integral part of Wolverine's success. Not content to make just one type of shoe, the company relies on its designers to create products ranging from work boots and occupational safety footwear to casual shoes and outdoor hiking boots. Until 2001, Wolverine utilized a different 3D CAD system to develop its products. However, usability and cost issues, and management's plans to grow the company's product offering, prompted Wolverine to evaluate other 3D design platforms, according to CAD/CAM Manager Chris Petersen.

"With shoe grading, we often need to utilize a nonuniform scale," Petersen explains. "We experienced some issues working with nonuniform scales in the previous CAD system, which, combined with the price of the software, prompted us to reevaluate our design environment. Wolverine needed a system that was easier to use, had a better price point, and was consistent with our product expansion and productivity goals."

Wolverine chose SolidWorks® Premium software because it provides greater value at a lower price and includes integrated surfacing, visualization, and simulation tools. "For us, everything we do involves surfacing: from the soles to the inserts to the metatarsal guards," Petersen stresses. "SolidWorks Premium gives us the surfacing capabilities on which we rely to produce complex patterns and textures, as well as the visualization tools that we need to make prototyping more efficient."

Challenge:

Accelerate and expand product development while simultaneously increasing innovation and controlling costs.

Solution:

Implement SolidWorks Premium design and analysis software to improve product development efficiency.

Results:

- Shortened design cycles by 60 percent
- Cut development costs by 50 percent
- Reduced material usage by 50 percent
- Expanded product line by 200 percent

SOLIDWORKS

Faster design changes, shorter development cycles

Since implementing SolidWorks Premium software, Wolverine has doubled the number zof products that it manufactures while simultaneously compressing design cycles by 60 percent. Petersen attributes these productivity gains to having access to a complete set of integrated modeling tools and the ability to make frequent design changes with SolidWorks without experiencing setbacks or delays.

"Footwear design begins with the shoe last, an anatomical representation of a foot made from plastic," Petersen explains. "We frequently have to work with changes to the last. Before we used SolidWorks, last changes could take days and were almost like starting over. With SolidWorks, we use the Deform command to quickly create the new shape of the last. Now, major changes can be made to our designs in a matter of minutes."

Saving material, improving quality, reducing costs

SolidWorks Premium enables Wolverine to scrutinize its designs more thoroughly, resulting in material savings, better performance, and lower development costs. In one case, Wolverine designers used SolidWorks Premium's simulation capabilities to increase the strength of its steel-toed boots, providing increased protection against impacts. In another example, the footwear manufacturer took advantage of material properties in SolidWorks to save material on its Harley-Davidson brand of heavy-duty motorcycle boots. Wolverine was able to reduce rubber usage on the boots by 50 percent—roughly one pound per pair—maintaining performance while improving comfort.

"As a pioneer in shoemaking, Wolverine was an early adopter of rapid prototyping technologies," Petersen points out. "We make a lot of models and prototypes of our shoes, and SolidWorks has helped us to make greater use of virtual models. For instance, there was one occasion when simulating prototypes in SolidWorks, instead of making physical prototypes, saved between $10,000 and $15,000. Overall, we have cut our development costs by 50 percent."

Visualization and configurations advance footwear innovation

In addition to saving time and money, SolidWorks Premium software is helping Wolverine introduce innovations in footwear design. The Wolverine iCS™ (Individual Comfort System) allows individual wearers to dial in the fit and comfort level of their shoes using an adjustment wheel contained in the heel. Wearers can enhance inner support, boost outer support, increase firmness, or add cushion.

"With design configurations, we modeled each shoe position for our iCS footwear from the base design," Petersen notes. "This saved time and let us show the concept completely. We also benefit from the design visualization tools in SolidWorks, including RealView, PhotoView 360, and eDrawings®. Every model we create becomes a PhotoView 360 rendering, and eDrawings serve as living blueprints, which we use heavily."

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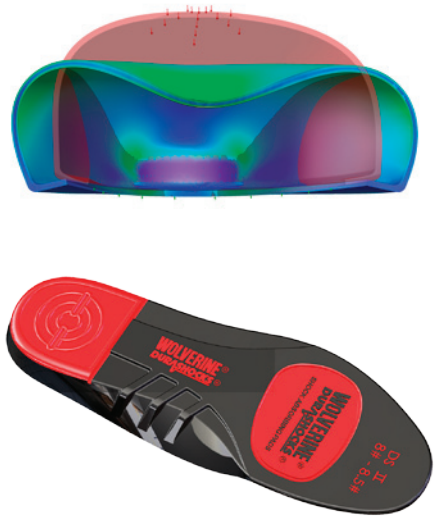

The combination of SolidWorks Premium's design and simulation tools enables Wolverine to reduce material usage while maintaining strength and performance.

WOLVERINE®

Wolverine Worldwide, Inc.
9343 Courtland Drive, NE
Rockford, MI 49351 USA
Phone: +1 616 863 4222
www.wolverineworldwide.com
VAR: DASI Solutions,
Grand Rapids, MI, USA

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

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