

3D printing helps global shoe maker cut time-to-market by up to 1/3

By switching from CNC tooling to 3D printing for producing shoe patterns, DSM's global footwear manufacturing customer managed to do it in 1/3 of the original time while cutting costs by 27%.

Customer

Global Footwear Manufacturer

Challenges

- Shorten the gap between development and production
- Reduce manufacturing costs
- Help improve brand competitive advantage

Solution

- Somos® Momentum
- Stereolithography 3D printing

Benefits

- Cuts time to produce shoe pattern to 1/3 of the original time; cost by 27%

- Makes it easier to change design mid-process
- Makes it easier to review and test pattern design
- Helps leading sports shoe brands respond to market competition faster



“Our partnership with DSM and the use of its additive manufacturing materials enables us to transform the speed, efficiency and cost of development and production. Importantly, it gives our global brand customers greater flexibility in the design process and is helping bring products to market faster while gaining greater competitive advantage.”

Global Footwear Manufacturer



Challenges

One of the world's largest footwear manufacturers, a DSM Additive Manufacturing customer, who makes products for many leading footwear and sports brands, was under pressure to shorten time-to-market and increase design flexibility. The footwear manufacturer had been using traditional CNC tooling to make shoe patterns (the blueprint for a shoe size, dimensions and curves) and was interested in 3D printing as a fast, low-cost alternative to CNC. There was concern, however, that 3D printing may not be the best solution due to quality and material strength, as well as unknown cost savings.

The company looked for a partner that could help determine whether or not 3D printing would be the best approach. After a thorough review of the market, the company reached out to DSM, a world leader in additive manufacturing materials.

Solution

DSM worked with their new customer to understand its business needs and challenges. After testing multiple products, the customer decided Somos® Momentum, an additive manufacturing material that DSM developed specifically for the footwear industry, was the best fit.

The features and properties of Somos® Momentum, such as durability and flexibility, challenge the perception that 3D printing does not suit high-volume product design and manufacturing. In addition, Somos® Momentum supports digital texture finishing to replace the traditional post-production chemical etching method, making the material more environmentally friendly.

A spokesperson for the global footwear manufacturer says, "DSM Somos® Momentum is a new breed of material that is changing the way 3D printing is used in manufacturing. Materials like this are shedding the old problems of 3D-printed material as a compromise between strength, resistance and usability. Instead they are multi-featured and have properties that are increasingly closer to injection mold materials. That, along with fast, low-cost production that makes testing easier and more efficient, are helping to shorten the design-to-manufacture process."

The company used Somos® Momentum to make a pattern for a pair of sneakers, replacing the CNC tooling method. After testing and reviewing the pattern made with Somos® Momentum to ensure correct size and shape, the part was used to make a metal tool, which then was used to produce the shoe pattern. The company is now using Somos® Momentum as its main material for making molds for shoe patterns. To date, Somos® Momentum has been used on multiple patterns for products such as trainers and casual shoes available in retail stores around the world.

Benefits

Somos® Momentum has helped the shoe manufacturer to reduce pattern production to one-third of the original time and cut product development costs by up to 27 percent. Instead of producing one pair of footwear patterns a day using CNC tooling, they can produce four through 3D printing with Somos® Momentum.



Other properties of Somos® Momentum that have helped to improve pattern mold development are dimensional stability and the ability to hold fine detail. The pink color of Somos® Momentum helps make the material easy to work with and quality check.

By switching to 3D printing instead of CNC tooling, and using DSM's Somos® Momentum, the shoe manufacturer found a more efficient, flexible and less costly process to develop their shoe patterns. In addition to these benefits, it also allows the company, and especially its customers, to make quick changes and react more effectively to market pressures.

NOTICE: Somos® is a registered trademark of Royal DSM N.V. Somos® is an unincorporated subsidiary of DSM Inc. The information presented herein is believed to be accurate. However, DSM expressly disclaims any product warranties which may be implied including warranties or merchantability and/or fitness for a particular purpose. Purchasers are responsible for determining the suitability of the product for its intended use and the appropriate manner of utilizing the product in purchaser's production processes and applications so as to ensure safety, quality and effectiveness. DSM reserves the right to change specifications of their products without notice. © 2019 DSM. All rights reserved.

www.dsm.com/additive-manufacturing

0026-01