



INDUSTRY FOCUS

Rapid Prototyping

The Right Style

The Timberland Company has transcended its humble work-boot origins to become one of the most desirable designer brands. That's why it's important for its engineers and marketers to collaborate closely in the development of every product, from initial concept to prototype to sample and, ultimately, volume production.



Traditionally, Timberland hired professional modelmakers to turn 2D CAD drawings into 3D prototypes in wood or foam. But as these prototypes typically took a week or more to create, it increasingly affected the company's ability to swiftly respond to market demand in bringing new product to market. To overcome this, over the last few years it has invested in Z Corporation's 3D printer technology to reduce the design process: a ZPrinter 310 in 2003, followed in 2005 by a Spectrum Z510 high-definition 24-bit colour, 600 dpi resolution system.

The Spectrum Z510 accepts CAD files from 3D mechanical design software to produce physical models affordably and quickly. The performance has made a substantial impact on Timberland's efficiency and spending. Aside from reducing prototype unit costs by 97%, a model that used to take a week to make now takes 90 minutes, enabling engineering and marketing employees to collaborate more often and more closely. And printing out rapid colour prototypes onsite has enabled Timberland to compress its typical design cycle from three weeks to two.



Toby Ringdahl, Computer Aided Design Manager, Timberland Company, commented: "In our industry, the pressure is always intense to quickly and affordably turn the marketer's vision and the consumer's taste into reality that performs well, feels good and looks great. Z Corp. printers have done exactly that for us, compressing our design cycles, lowering our costs and helping us produce better products for our customers."

Giddy Up

Following a decision by Vale Brothers to use plastic to refresh part of its equestrian products, the company approached Plastics West Midlands with the concept of introducing soft grip areas to its latest brush. And when the question of plastics expertise arose, Faraday Plastics became involved.



The initial tasks involved design assistance and rapid prototyping of specific items within the range. These prototypes were then used at exhibitions and other forums to gain feedback and levels of market interest. As a result of the development work, Vale Brothers decided that a major expansion of its production capability was needed.

The investment in production, assisted by financial support from Advantage West Midlands under the Selective Finance or Investment fund, has increased regular output by 300%, producing up to 3,000 brushes a day. And thanks to the innovations provided in the polymer and polymer colouring field, the range has expanded to a greater choice of brush colours and bristle designs.



Design Innovation Award

Kinneir Dufort (KD) recently partnered US based Pelham Sloane in the development of the patented, and winner of an award for design innovation at the CES show in Las Vegas, PS1500 all-in-one computer. The first in a series of next-generation computers, PS1500 incorporates all of its entire workings behind an LCD screen. At just under 8cm deep, it delivers high performance in an efficient footprint full of aesthetic appeal.



KD's in-house rapid prototyping team created fully functioning units within three weeks. An initial SLA build, corroborated with the internal metal-work and electronics, was used to make silicon tools so that five pigmented

polyurethane 'looks-like, works-like' models could be produced. As these exhibition prototypes resulted in Pelham Sloane gaining significant commercial interest in the new product well in advance of volume production, it kick-started an accelerated design development programme. For this, KD completed manufacturing data in just five weeks.

Custom Mouldings

When Arcom Control Systems needed production quality plastic prototypes for the promotion, development and testing of its new wireless tracking product, the company approached Martello Limited to produce over 20 sets of custom mouldings from Thin-Rim™ polyurethane resins.

Used for monitoring and real time tracking of fixed, as well as moving assets and human resources, the 5-inch square by 1-inch thick battery powered device's main casework mouldings are protected by rugged corner buffers, which Martello simulated by using robust elastomeric resins.



The four top buffers were combined with a sealing gasket as a single piecepart and the base buffers were produced from a 4-impresion tool to minimise costs. All of the polyurethane piece parts were produced from silicone rubber moulds, generated from SLA masters built and finished by Martello to replicate the surface texture of the ultimate production item.

The prototypes were produced as fully pigmented parts that resembled injection moulded pieceparts both visually and mechanically – ideal for testing and demonstration purposes. Kevin Nicholas, Project Manager at Arcom Control Systems, commented: "I am very pleased with the parts produced by Martello and particularly impressed by their quality and attention to detail."



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