

: visi shoes

One step ahead in tool for footwear design

Compared with the tools it replaces – clay, wax and wood or traditional manual 2D or 3D design software – incorporating the fully integrated CAD CAM tool VISI Shoes into product design and development can provide significant benefits to many companies, especially in the shoes tool making sector.

Design quality improvement

The system transforms the way products are developed. By combining a parametric environment with a powerful modeling tool, users can quickly create complex soles and heels, previously only possible through time-consuming surfacing manual modeling. These digital forms – soles and heels – can be used directly within an integrated process to obtain, with just a few clicks, the final manufactured mold tools of each graded size.

Reduction in product development time

Success in the footwear business is largely driven by styling and design but strictly connected with the capability of reducing dramatically the time to market. Yet being cost competitive frequently requires efficient use of offshore production partners. Balancing these elements is difficult for both brand OEMs and manufacturers they work with. As with most products design and development starts with a marketing brief that sets design requests, cost parameters, involved subjects etc. 2D design work takes four to six weeks using mostly pencil or pen on paper and/or 2D drawing programs. Design typically produces a set of drawings depicting the approved design in top, front, and side aspects, with sectional slices also possibly included. This information is then passed to a modeling group to turn into 3D product models that can be more effectively evaluated and approved.

The first step - creating midsole/outsole models - is usually in clay or resin. Once

a design model is sent downstream, engineering and development work turns it into a prototype capable of being manufactured. Many manufacturers use digital tools for engineering and then they start by recreating the model in CAD up to when the CNC tool paths are generated from the model; at last grading to all sizes is only done after production prototypes are approved. This can take from 15 to 60 days, averaging 30 days for the whole process not including possible requirement to ship physical patterns via airfreight. 3D models using surface modelers may take 10 to 30 days and average 17. By taking advantage of its reverse engineering module and its complete automation, VISI Shoes can cut modeling (starting from a 2D drawing, a bitmap or scanned data) to one to four days, with an average 3, also including the machining paths generation. Besides, by working with parametric solid models, also production partners using different systems can make manufacturing-related changes in a very short time.

Reduction in design and manufacturing costs

After initial production samples are complete, it may take several iterations between OEM and manufacturer to solve production problems consistent with intended design. As the system re-builds automatically the model after every modification with VISI Shoes at both ends it can be done far more quickly and accurately. Once production prototypes are approved by the OEM, manufacturers grade the model into

Time to market
dramatic reduction

Integrated environment

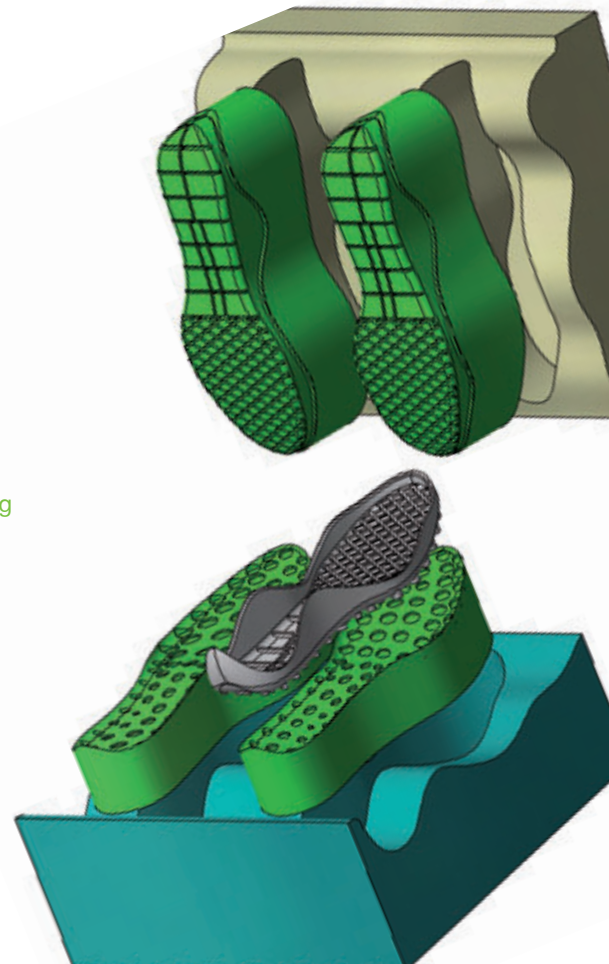
Entire process of heel
and sole design

Concurrent engineering

Streamlined geometry
handling

Automatic mold
tool design and
manufacturing

Powerful tool for
heel makers



Physical Model



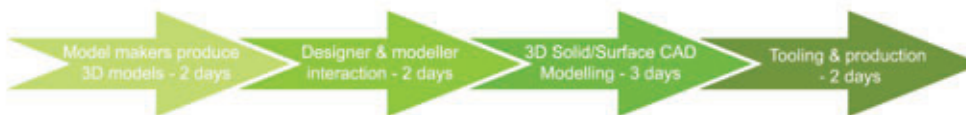
Total : 30 days

Traditional CAD/CAM



Total : 17 days

CAD/CAM 2nd generation - Visi Shoes



Total : 9 days

This means to speed remarkably up the sizes needed for manufacture. Several leading companies do this with software that works directly from STL; VISI Shoes, on the contrary, allows the grading also on 2D and 3D geometry process and above all to obtain (and easily edit) the mold tool geometry and the related CNC paths for each size. On average it is said to be up to 40% more productive than a traditional surface CAD and up to 60% more so than physical modeling. The data used are from a variety of OEMs and manufacturers and covers many benchmark jobs.

Companies around the world have chosen VISI's solutions because they offer:

Integrated environment

Integration has always been the key word in the successful Vero history. Now VISI Shoes integrates the powerful tools of combined surface/solid modeling included in VISI Modeling with a brand new parametric environment specifically dedicated to sole/heel modelers and manufacturers where the user can find all the CAD/CAM tools (wrapping, surface unfolding, 3D grading with fixed area management, ribs and tread patterns, NC automatic generation and

many others) required by the shoes world.

Concurrent engineering

Several iterations between designers, modelers and mold makers are often needed to converge on the "right" model to be passed on to tooling and production. In VISI Shoes using an intuitive and easy-to-use interface all the geometrical parameters are fully editable and graphically displayed within a parameter tree; any variation requested by each of the involved subjects is possible by simply editing the geometry contained in the parameter tree and the model is automatically rebuilt.

Streamlined geometry handling

The data acquisition from pictures, digitizers, robotic arms etc. is definitely easy, fast and accurate within the VISI solution for reverse engineering. The automatic edge recognition from point clouds or STL is a unique tool which make possible to obtain, with just a few clicks, the geometry needed for an as fast and accurate sole/heel modeling.

Automatic mold tool design and manufacturing

The mold tool design is produced automatically from the sole design for each requested size. Cavity plates

and shoe punches are generated as separate solid models and, through the integrated CAM solution, all the geometrical entities are ready for pre-defined NC processing.

Powerful tool for heel makers

VISI's heel solution includes powerful functions for easily achieving the 3D heel model from just some 2D drawing curves. The module for heel allows easy modifications to the heel design by simply managing curves and surfaces within the parametric tree. It's also possible to grade the 3D heel model through user defined or standard grading parameters. The mold ready heel tip is besides achieved automatically – user driven control over extension or extrusion operations.

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