

# Slim line

A new process can enable cost effective tooling of low volume products



is the Thin-Rim resins, which have been developed over many years of research by Martello. The polyurethane resins mimic common thermoplastics such as ABS or polypropylene and are uniquely formulated to the firm's specification. There is also a range of elastomeric resins, which mimic rubber in various grades of Shore hardness.

Specialist versions of the resins such as UV stable or V0 rated flame retardant have also been developed. The application for the process is for production housings, caseworks, custom components, keymats and over-moulds as well as units for market trials and field testing of new designs.

Tolerances of the parts range between 0.1 to 0.2mm or 0.1 per cent to 0.2 per cent, whichever is greater. Typical costs for a master pattern and mould tool could be £600 for one part with piecepart prices between £10 and £35 each, dependent on part size, complexity, volume and wall thickness. Timescales for tooling are typically two weeks.

One of the extra benefits of tooling using master patterns is that modifications to the design can usually be made quickly and inexpensively, enabling up-issues to be put into production without expensive re-tooling costs.

An example of a product that is made in this way is the Eureka - a leak detector that is used outside in the field and has been in production for over ten years. The Thin-Rim process has proved suitable for many products with expected call offs of up to 200 parts per annum. ■

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**S**OME products are difficult to produce cost effectively in low volumes. The tooling costs alone prohibit the use of injection moulding and there can be problems with sinkage marks for certain designs. Specialised products sold in small quantities in high-end markets are good investments if they can be economically produced. So what's the solution?

Martello, a small business in the south of the UK, has developed a process called Thin-Rim which can provide a low cost answer for a wide range of products.

## Techniques

The process is a development of prototyping techniques and incorporates CNC and vacuum casting technology. Traditionally, SLA masters have been used to create silicone rubber mould tools to produce polyurethane resin pieceparts with the moulds only lasting

for 30 to 35 parts off a tool.

However with the Thin-Rim process, patterns are created using CNC data, which gives durable and more accurate masters to provide production quality pieceparts. The patterns are painted with the required surface finish, which is then replicated onto the parts by the silicone rubber moulds. The incorporation of the split surfaces into the core and cavity patterns means that the creation of the moulds is easier and more economic, and provides a significant cost saving for the customer, as Martello absorb the cost of repeat silicone rubber moulds. For low volume production work, where pieceparts are required regularly per annum, this has proved a viable route to market for many types of component parts and complete case-works.

The extra ingredient that gives the parts the quality necessary for the market place

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