


RM case study

Case name	Personalised Manufacturing – Custom made sports car	
Dimensions in mm (L x W x H)		
Application	Car headlights	
RM process	FDM	
Software	3-matic and Magics	
System		
Material	ABS	
Lead time (hours/days)		
Costs		
Surface finish	Painted - metalised	
Mechanical properties		
Thermal properties		

Any additional info

RP technology for personalised one-off cars



Fused Deposition Modelling opens a whole new world of possibilities for us. Using this technology to produce parts instead of injection moulding, allows us to make design changes on the move, by simply updating the file. Immediately, parts are ready for production.

Zagato, Italy

Imagination, creativeness, exclusivity...



Zagato is a design consultancy and engineering service bureau situated just outside Milan. The company was established at the end of World War I by Ugo Zagato. Zagato differentiated itself from the competition by using aircraft industry construction techniques in the expanding market for passenger vehicles. Zagato's cars were advanced in design and became synonymous with lightweight and excellent aerodynamics. The creation of a series of legendary racing cars, such as the Alfa Romeo 1500 then followed. In the 1940s, Zagato was very much active in this field of GT cars, which at the time was a new

racing category. In addition to the cars that are now officially produced in small series, the company also builds exclusive one-offs for illustrious marques like Ferrari, Maserati, Alfa Romeo, and Aston Martin.

For one of these exclusive projects, Zagato partnered up with Materialise, who specialises in personalised manufacturing.

Collector's item



Yoshiyuki Hayashi's custom-made sports car. The headlights are powered by Materialise.

Yoshiyuki Hayashi, a Japanese car collector, commissioned the design of a one-off sports car to Zagato's design team. Zagato has designed a completely new car of which every single component is custom-built.





When only a limited series or one single copy of your product is required, starting up a whole production line could never be profitable. Rapid Prototyping & Manufacturing solutions provide an affordable solution here!



One of the headlights made in FDM technology: ABS material, painted and metalised

For this specific sports car, Materialise assisted in building the headlights. Analysing the specific requirements of the customer, we decided to have the two headlights built with Fused Deposition Modelling. The FDM technology produces superior parts. The great advantage is the durability of the material used, the stability of the mechanical properties over time and the quality of the part.

RM case study

	<p>The 2 headlights were "printed" on the FDM machines using ABS as material. Afterwards, they were finished with a primer, painted and metalised. All this within 5 days!</p> <p>After this project, Zagato has requested similar headlights for other new car designs. For this, Materialise advanced one of their other low volume manufacturing techniques: vacuum casting. This is the ideal solution when you need a small series for a limited audience. You can start with a limited amount of your design and re-order on the move.</p> <p>Thanks to Materialise we discovered a new type of manufacturing end production components in a fast way: Fused Deposition Modelling. This opens a whole new world of possibilities for us. Using the FDM technology to produce parts, instead of injection moulding, allows to make design changes on the move, by simply updating the file, and this consequently gives more freedom in terms of design and shape. Immediately, parts are ready for production.</p> <p><i>Zagato</i></p> <div style="display: flex; align-items: flex-start;">  <div data-bbox="772 721 1428 976"> <p>Materialise owns the world's largest RP capacity based in one location and treats these technologies as real production techniques. This puts us in pole position to practice Rapid Manufacturing. At Materialise, we think this is an unfortunate wording. The use of Rapid Prototyping techniques to make end products is just one, yet important method in what we like to label Personalised Manufacturing. In addition, our more conventional technologies like rapid tooling and vacuum casting can contribute to Personalised Manufacturing</p> </div> </div>	
Contact info	name	Bart Van Der Schuren / Jurgen Laudus
	organisation	Materialise
	website	www.materialise.com
	email	prototype@materialise.be
	telephone	+32-16 39 66 11
		
	<p><i><optional space for pictures></i></p>	

RM case study