

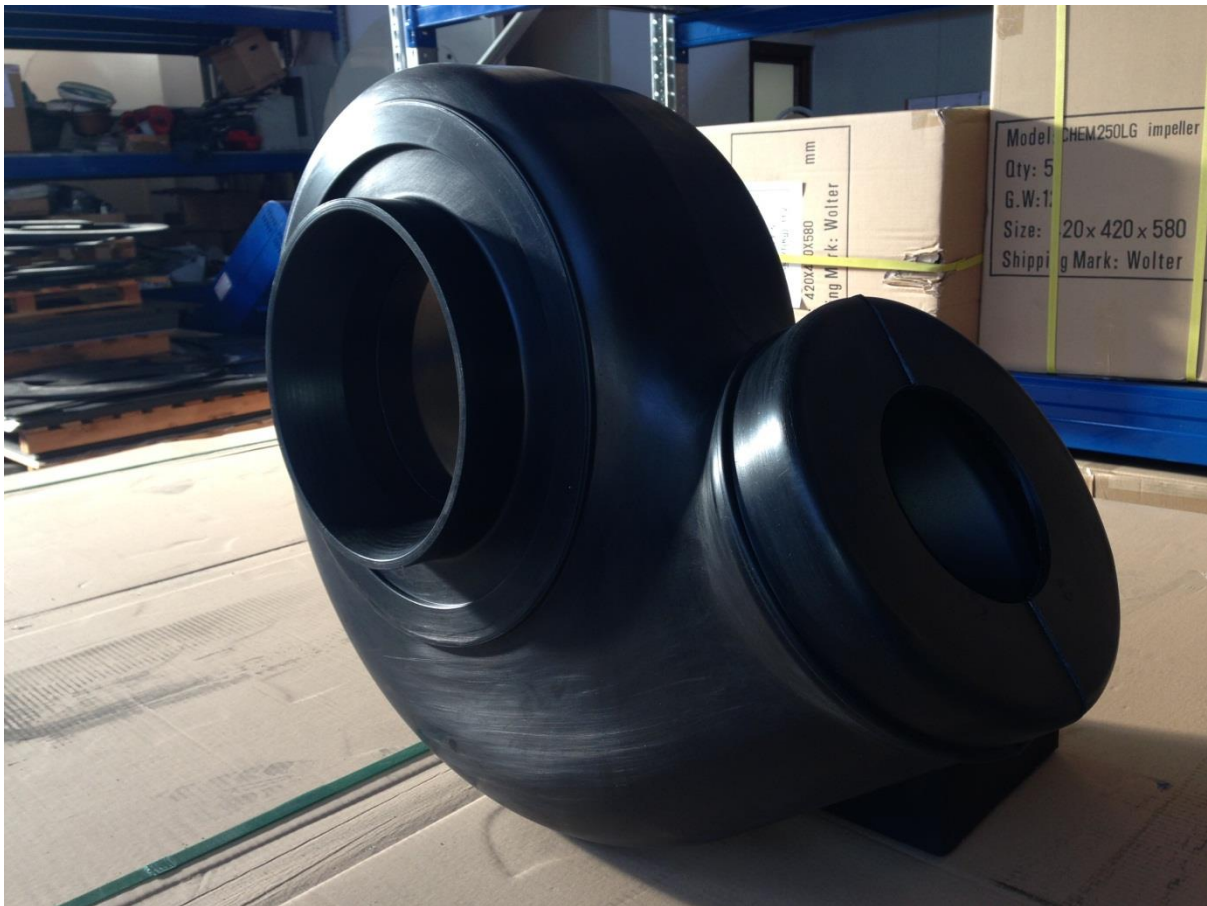
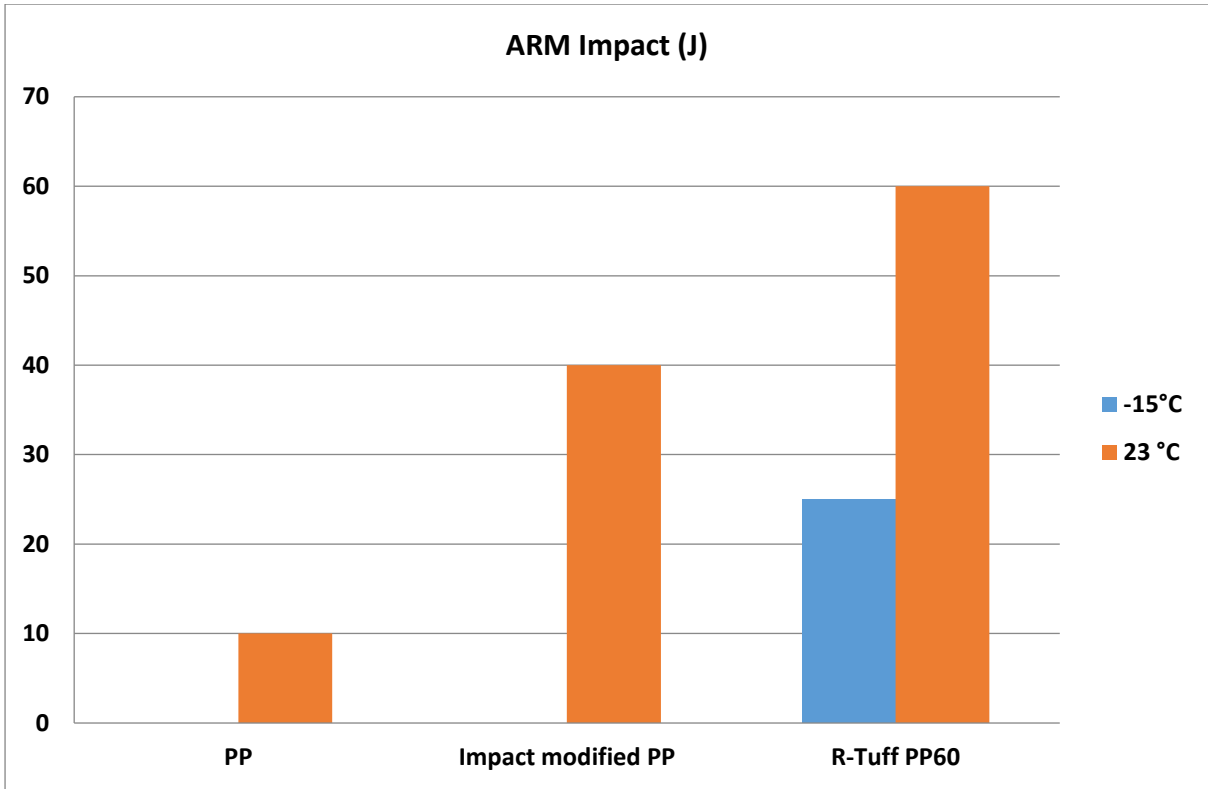
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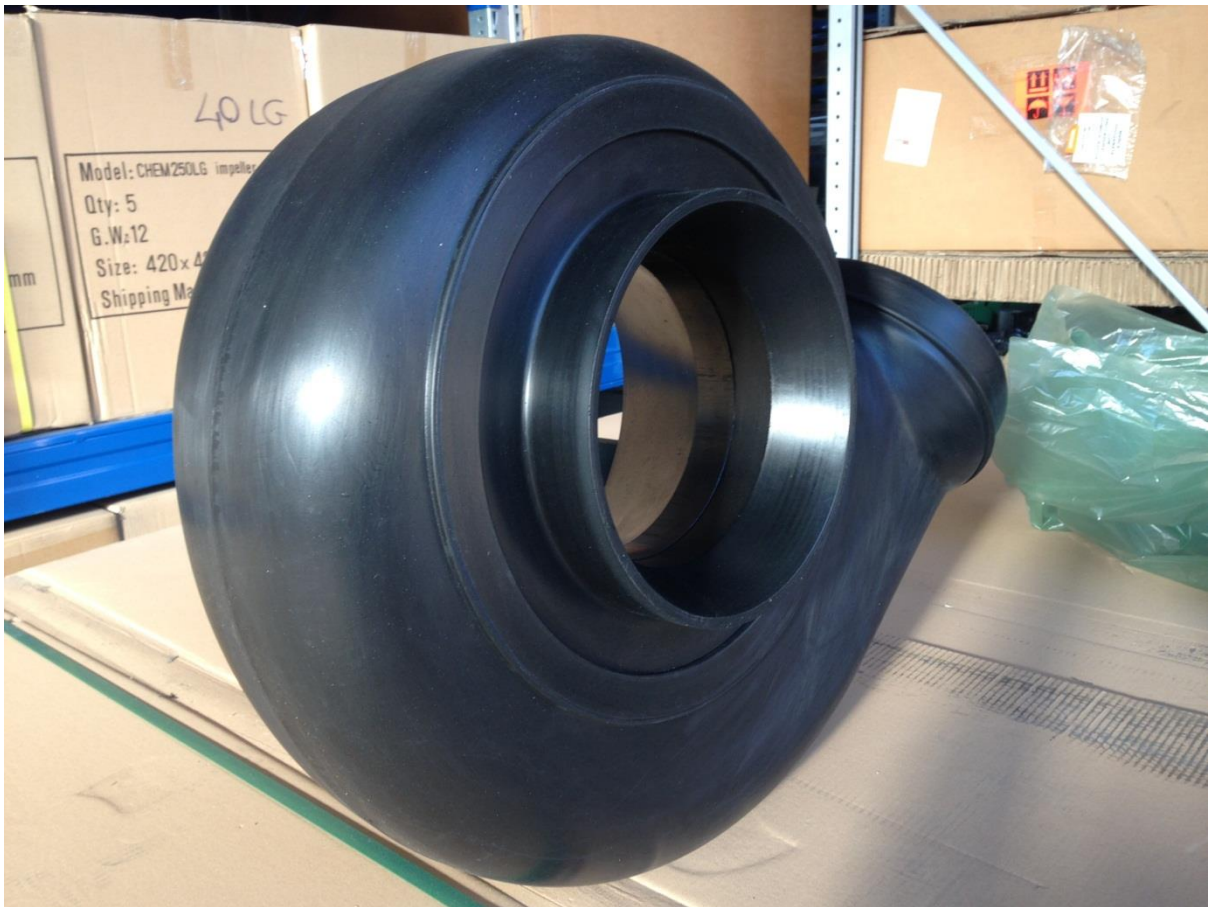
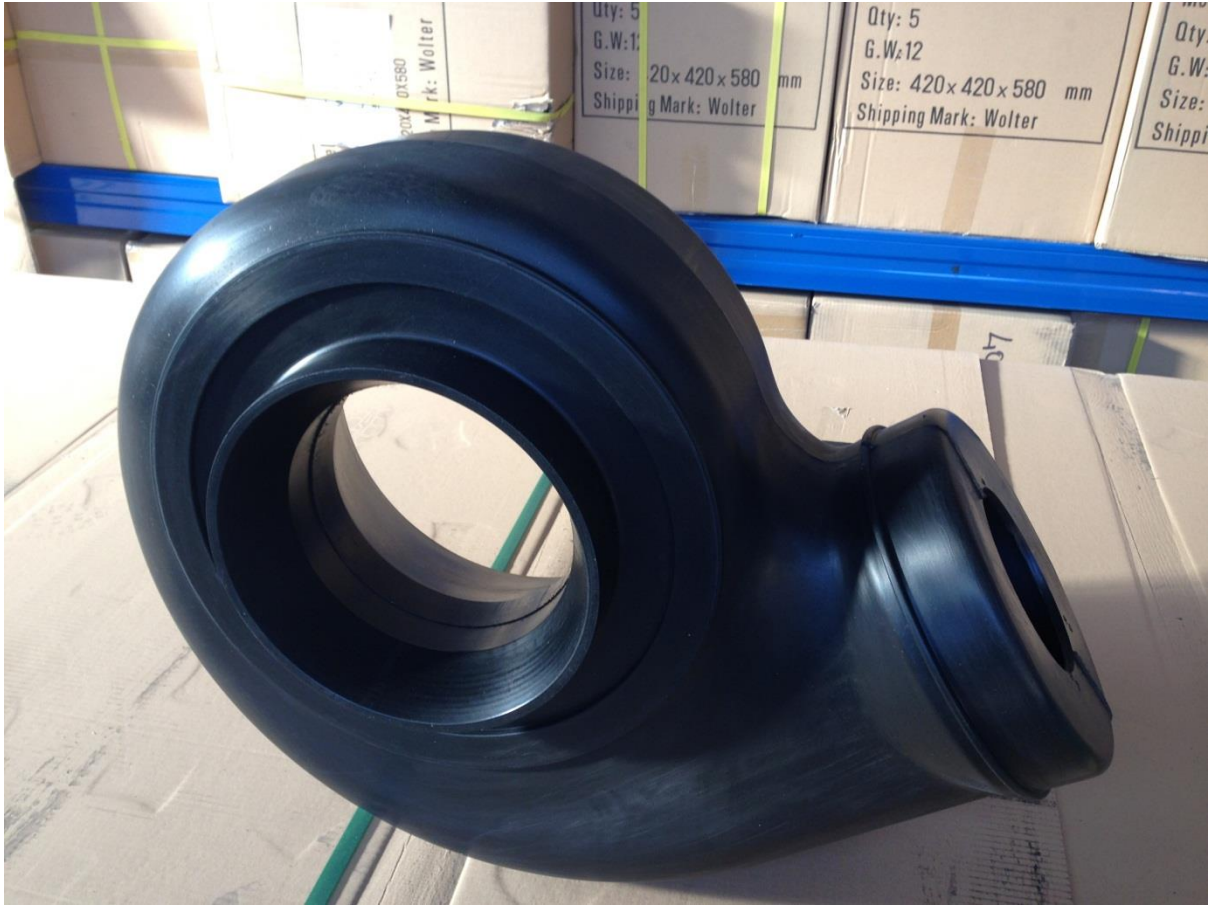
The most popular scientific test carried out on rotational moulded products is the impact test based on a falling dart method, which was developed by ARM in America. We used this to compare this with other materials.

Standard rotational moulded test mouldings were made with a 5 mm wall thickness and were produced at the optimum moulding condition on our Ferry carousel RS1.90 rotomoulding machine. The oven temperature was fixed at 250 °C. The rotational moulded products were then cut and standard plaques were prepared. The plaques (125 x 125 mm) were then conditioned at -15 °C and plus 23°C for 24 hour before being impact tested.



The graph you can see shows the results. The impact performance of R-Tuff PP60 compared with a conventional rotational moulding polypropylene is very significant and the material has 50% better performance than an impact modified polypropylene. What is also unusual is that the material has some impact strength at minus 15 degrees, whereas traditionally rotomoulded polypropylene grades have been glass-brittle at temperatures below freezing.

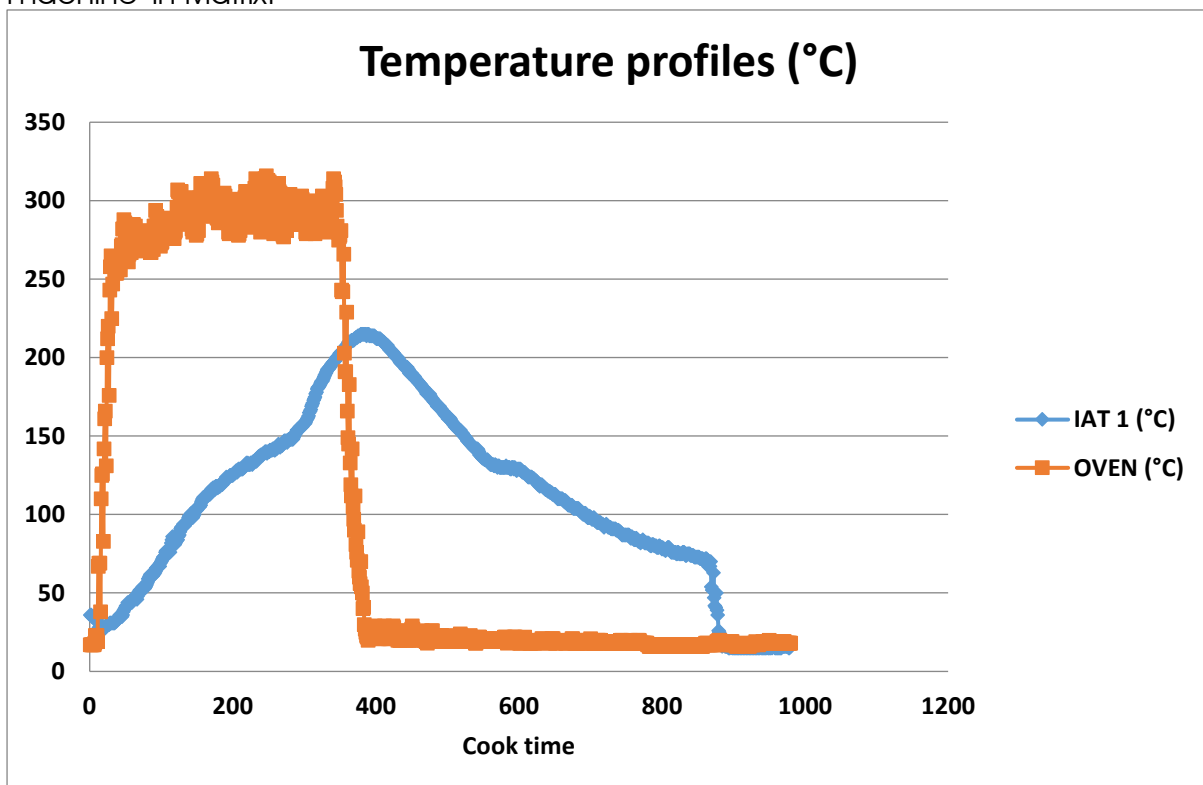




And what about processing window?

One of the popular misconceptions regarding polypropylene we repeatedly see is its alleged poor mouldability and poor impact strength. Rotomoulding PP has inherited an image of a difficult material to be processed with a very narrow operating window. This can be true in some cases but it is also true that there are several PP chemistries which could surprise even experienced moulders. Injected moulded products for automotive applications are dominated by PP as much as rotational moulded products are dominated by PE. So there are many PP grades which could be developed to suit our rotational moulded process.

Below we have reported temperature profiles recorded at our carousel Ferry machine in Matrix.



So by listening to our customer and by working with them in close co-operation on their specific product we have developed a new material that is now in commercial use and we have a happy customer!

We see that there are many opportunities for this new powder and polypropylene is very widely used in many other plastics processes and we see an immense number of applications for it in rotomoulding.

Polypropylene is typically used in automotive components (under bonnet applications), containers for hot water, lighting systems and furniture. Applications where high temperature resistance, stiffness, scratch resistance and good flow characteristics are required.

We all know how dominant polyethylene is in our industry because of a number of characteristics like low viscosity (which makes this polymer ideal for a process with no pressure), impact resistance, chemical resistance and durability. It is well known that polyethylene cannot be the solution to every technical problem due to inherent limitations such as a lack of high temperature resistance and lack of stiffness. Expanding the horizon of rotomoulding by learning how to use materials such as polypropylene (PP), polyamide (PA), fluoropolymer (PVDF) and polycarbonate (PC) can add value to rotomoulded products and expand the product range rotomoulders can offer which can help you to penetrate new and potentially lucrative markets.

We believe this industry needs more advanced and higher performance polymers so that it can continue to compete with other processes and can continue to grow. In Matrix we are doing everything we can to help rotomoulders who would like to embrace the future and we welcome you to contact us about any new difficult projects you have. The best way forward is to work with you, your customer and Matrix Polymers

		<p>The rotomoulder</p>
<p>Matrix Polymers</p>		<p>End user</p>