Bayer MaterialScience

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News Release

BayVision® – automotive glazing made of polycarbonate

Makrolon® AG2677 from Bayer MaterialScience used in X-Bow wind deflector

Newbury, January 15, 2009 – Setting new standards in the small, but elite segment of radical, lightweight sports cars, is the X-Bow (pronounced crossbow) from KTM, Europe's second largest motorcycle manufacturer and global market leader in off-road vehicles.

Its technology, derived from the world of professional motor sport, dispenses with today's standard comfort features, instead utilising standalone wheels, transparent technology and a stripped concept of no roof, doors or windscreen. The X-Bow offers drivers a unique adventure, aided by a 70 millimetre high transparent wind deflector which conducts most of the wind flow up and over the driver. This component is injection moulded by Germany company, plastic-design GmbH, from Makrolon® AG2677 polycarbonate from Bayer MaterialScience AG.

Ulrich Grosser, automotive glazing design specialist, Bayer MaterialScience AG, explained: "Our polycarbonate is customised for automotive glazing, so it's the material of choice. Unlike glass it can reliably meet all the complex requirements relating to design, safety and lightweight construction."

Affordable mould technology suitable for series production

The advantages of polycarbonate were so overwhelming that investing in an injection mould was cost-effective despite the relatively low production volumes. Bayer MaterialScience has pooled all of its activities relating to polycarbonate automotive glazing in its BayVision® competence brand. The BayVision team also contributed to the economical component design by helping the project partners engineer affordable mould technology suitable for series production.

“With BayVision, we offer partners a comprehensive and efficient package of know-how for materials, engineering methods and processes,” said Volkhard Krause, head of the Bayer MaterialScience Automotive Glazing team.

Measuring 110 centimetres in width and 27 centimetres in height, the curved wind deflector is coloured transparent gray. It boasts a complex three-dimensional geometry that fits seamlessly into the car's design. Unique features of the deflector include a section, angled along a curve, that transitions up to the actual wind deflector, and a top edge that is rounded for safety and other reasons. It would have taken a great deal of time and money to achieve these features in glass.

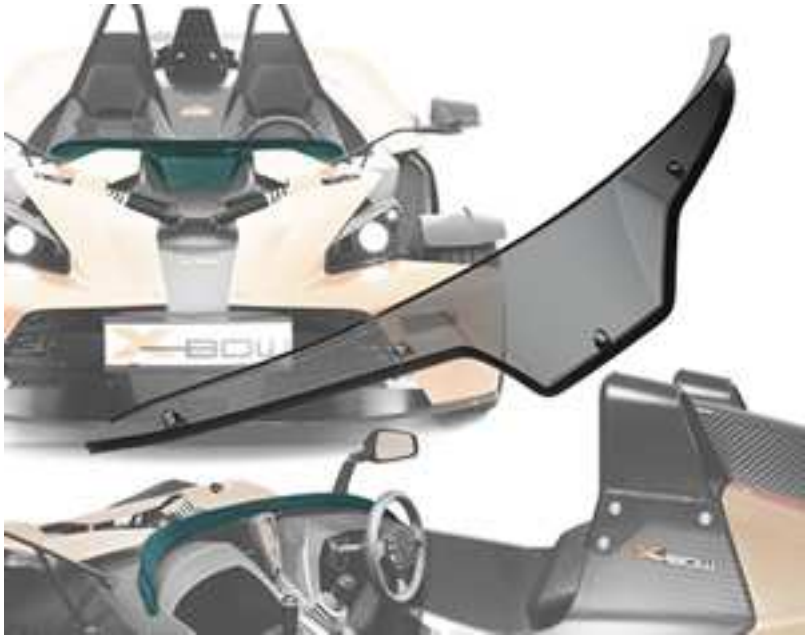
Another argument in favour of polycarbonate is that the resulting component is over 40 per cent lighter. Furthermore, the high impact strength of the thermoplastic, which is consistent over a wide range of temperatures, ensures that the component will not injure the driver by splintering or rupturing in the event of a crash, e.g. from head impact.

BayVision – custom service for optimum component performance
Specialists from the Automotive Glazing team also helped to engineer the component. They calculated the optimum position of the screw connections whereby the wind deflector is attached on the monocoque-style (single-shell) carbon fibre chassis.

“The polycarbonate and the carbon fibre matrix have very different coefficients of thermal expansion, and that presented us with quite a challenge,” said Christian Polley, automotive glazing project manager at plastic-design.

“What's more, the anchoring points had to be designed so they hold up reliably over the vehicle's entire service life, despite deformation of the deflector due to vibration and wind forces during driving. The deflector also had to be quick and easy to replace in the shop.”

As part of the BayVision service, Bayer MaterialScience conducted mould flow analysis to minimise component stresses and material orientation, shift flow lines to non-visible areas and determine the right size of the injection moulding machine. The project partners also received extensive support on issues relating to the abrasion coating – eg choosing the right wetcoat and the most suitable coating method.



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Note to Editors

About Bayer MaterialScience:
With 2007 sales of EUR 10.4 billion, Bayer MaterialScience is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life. The main segments served are the automotive, electrical and electronics, construction, and sports and leisure industries. At the end of 2007, Bayer MaterialScience had 30 production sites and employed approximately 15,400 people around the globe. Bayer MaterialScience is a Bayer Group company.

For more information visit www.bayermaterialscience.com or www.bayer.co.uk

More photographs of the X-Bow can be downloaded from www.ktmcarpress.com

Forward-Looking Statements

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