

MERCEDES FRONT END IN FABRIC-REINFORCED GMTex™ FROM QUADRANT PLASTIC COMPOSITES IS AN ALL-ROUND FIRST

New application for the composite marks entry of Tier One into GMT processing

LENZBURG, SWITZERLAND – June, 2007 – Important weight savings, crash performance, high thermal stability and corrosion resistance were key factors in Mercedes-Benz's decision to choose Quadrant Plastic Composites' GMTex™ fabric-reinforced thermoplastic composite for front-end module elements in its S-Class luxury coupé.

The three-part module is used to retain the radiator and the headlamp housings, and also holds the latch for the hood. Weighing a total of just 3.4 kg, it replaces a ten-part sheet steel assembly weighing around 5 kg. Parts are moulded and assembled by ISE (Innomotive Systems Europe) in Hainichen, Germany, a long-established Tier One supplier to the global automobile industry.

ISE specializes in the development and production of innovative structural and protection systems, including roof systems, body and frame modules, and closing systems. Its core manufacturing competence is in steel and aluminum. This is the first time it has developed and produced parts in plastics composites. It called on Quadrant Plastic Composites experience and expertise to bring it quickly up to speed in GMT technology.

The application marks a return to front ends for Quadrant Plastic Composites, after an absence of some seven years. Automotive Product Manager Karl-Heinz Kalmbach says the company built up experience in GMT front ends before car makers and Tier Ones began switching to alternative technologies such as plastics-metal hybrids.

"OEMs are now turning to the GMTex™ solution because of its excellent quality-to-cost ratio," he says.

Early GMT products were made using chopped strands of glass in a polypropylene matrix. GMTex™ is superior to these because it also contains high-strength fabric made from commingled glass and polypropylene fibers.

“This solution is undergoing validation at several other customers,” says Kalmbach. “This first serial application is helping us a lot to convince more OEMs to use the technology.” More serial applications have in fact already been decided, but remain confidential.

The new application is the result of a common development between Mercedes Benz, ISE and Quadrant Plastic Composites. The car maker had originally planned to make the assembly in metal, but performance in terms of stability and stiffness was not satisfactory, which would then have required incorporating an unacceptably high number of parts to solve these problems.

During the development of the GMTex™ module, Quadrant Plastic Composites was able to provide design support and prototype testing, as well as materials development to help meet Mercedes Benz’s demands covering diverse aspects, ranging from mechanical properties, through surface aspects, to fixing technologies.

The parts are made from two new grades of GMTex™, X121F42 4/1 0/90° and X101F52 4/1 0/90°, both containing fabric reinforcement. The first yields parts with improved surface quality, while the second contains more glass and has better mechanical properties, necessary around the hood latch area.

Flow moulding is used to make the parts. This is a form of compression moulding that uses a tool with shear edges. Some holes are created during the moulding process, others are machined afterwards. Steel bushings and metal inserts, specially developed for optimized assembly stability, are pressed in after moulding. Total cycle time is around a minute.

About Quadrant Plastic Composites

Quadrant Plastic Composites is the world's leading manufacturer of glass mat thermoplastic (GMT) composites. The semi-finished sheet form is processed into sophisticated components, primarily for the automotive industry, using large-volume pressing processes; these components satisfy the highest safety standards, as well as featuring low weight compared to materials such as metal.

Learn more about Quadrant Plastic Composites at www.quadrantcomposites.com

About the Quadrant group

Quadrant, a global leader in high-performance polymer materials in the form of semi-finished and finished products with locations in 18 countries, generates annual sales of over CHF 800 million. The specialty engineering thermoplastics and composites manufactured and marketed by more than 2'400 employees worldwide are superior in performance to metals and other materials and are used in a growing number of applications, primarily in the capital goods industry. Together with leaders in a wide range of customer markets, Quadrant is continuously developing new areas of application. Thanks to its clear strategic orientation and focus, Quadrant has generated substantial added value for customers and shareholders since it was established in 1996 and is well prepared to continue expanding its market leadership in future.

Learn more about Quadrant at <http://www.quadrantplastics.com>

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Photo caption:

Mercedes-Benz chooses Quadrant Plastic Composites GMTex™ fabric-reinforced thermoplastic composite for front-end module elements in its S-Class luxury coupé.
(Picture Quadrant, QPCPR001)