COMPRESSION MOLDED LFT EXTERIEUR BODY PANELS – POTENTIAL OF PAINTLESS FILM MOLDING

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ABSTRACT

Long Fiber reinforced materials in automotive applications are growing rapidly. Direct technologies such as the Dieffenbacher LFT-D process with in-line compounding show the most significant growth rate. Major advantages beside the economical attractiveness are the flexibility in material combination. Different types of fibers as well as the continuously variable fiber content in combination with engineering plastics open up new potential applications.

The realisation of external body panels utilizing paintless film molding open up new possibilities for LFTs. A cooperation between BASF AG, Dieffenbacher GmbH + Co. KG together with Fraunhofer Institut für Chemische Technologie investigated the combination of glossy surface films backcompression molded with LFT based on styrenic copolymers. Major focus is the utilization of compression molding in order to provide a technology for a uniform mold filling of large surface area parts avoiding fiber damage and gate marks at the injection point. The short cycle time and the low wall thickness provided by compression molding is attractive as well.

The presentation will give an overview about the necessary equipment modification regarding the Dieffenbacher LFT-D-ILC technology to enable Class-A appearance as well as an overview about mechanical properties achieved by utilization of different matrix materials depending on glassfiber content.