



Dolphin Process **Serial Production as of 2010**

Düsseldorf/Germany– October 2007. The patented Dolphin Process, which was introduced at the Schwertberg, Austria-based injection moulding machine manufacturer's Spring Symposium 2006 is approaching maturity for serial production. The method gives injection moulders the ability to produce automotive interiors with a soft touch surface thanks to a combination of injection moulding and foaming. Dolphin was demonstrated to the experts by automotive supplier Johnson Controls at this year's IAA in Frankfurt, Germany, within the scope of a feasibility study.

In cooperation with plastics manufacturer BASF, Ludwigshafen/Germany, and P-Group, Ferrara/Italy (represented by P-Group Deutschland GmbH, Filderstadt/Germany) and mould maker Georg Kaufmann Formenbau AG, Busslingen/Switzerland, ENGEL has been able to develop the Dolphin Process to market maturity in the shortest possible time. Dolphin first injection moulds a PBT-GF carrier. The soft-touch surface is completed by foaming with TPE-E using ENGEL's foammelt technique. Thanks to extremely granular process controls, the surface of the moulded part appears to be completely closed, like a compact skin, and the visual quality is perfect.

The Dolphin Method offers a number of advantages in comparison to conventional multiple layer foam part manufacturing techniques. It is faster, more economical, and it reduces complexity. In addition to this, Dolphin is a single-step approach that offers obvious advantages with respect to space requirements while at the same time reducing the logistics overhead.



Feasibility Study at IAA

At this year's IAA, automotive suppliers Johnson Controls demonstrated the method within the scope of a feasibility study on manufacturing arm rests for a compact executive model. 2010 will probably be the first year to see the Dolphin Method deployed in serial production. This would mean a lead time to serial maturity of just three and a half years since the new approach was first presented in 2006.



Fig. 1: Armrest for automobile interior, manufactured using Dolphin technology

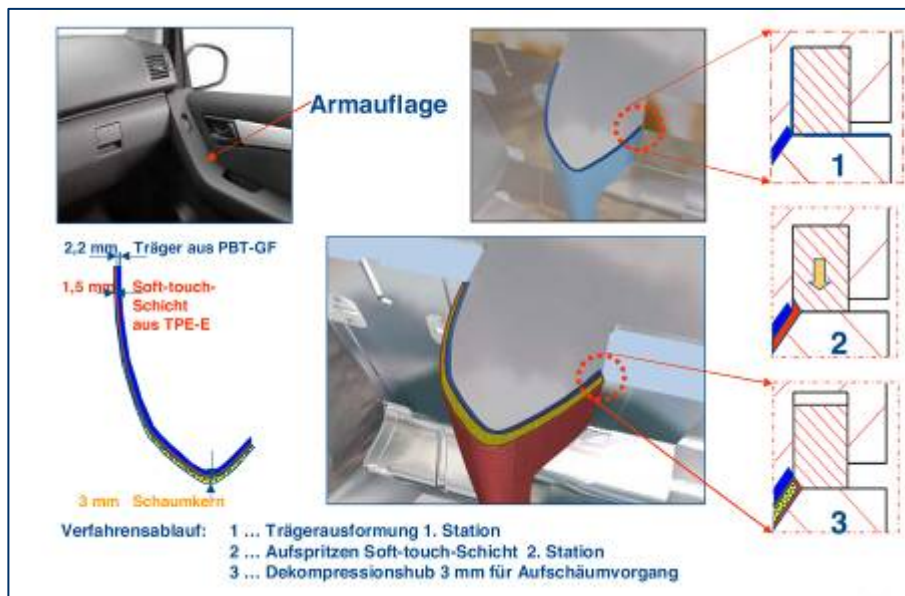


Fig. 2: Procedure: Dolphin technology



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Engel Austria GmbH

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