Mercedes C-Class

Case Study

The case

Daimler Chrysler is highly regarded within the automotive industry for its development of high-quality, differentiated vehicles that set new trends. Its new C-Class (BR 204) model is no exception, with Daimler Chrysler looking to introduce a significant change in the design of interior components in order to create both a high quality perception and an economy of scale.

The challenge

To achieve the desired effect required for the C-Class, Daimler Chrysler specified a new concept in automotive interiors – the creation of a unique, equal grained surface finish for all injection moulded interior trims.

Exceptional surface aesthetics and durability were top priorities. Achieving outstanding scratch resistance with minimised MAR effect and a low gloss was a formidable challenge given the precise nature of the grained surface on all visible parts.

Finally, to create consistent parts with optimised surface quality using straightforward injection moulding, the chosen material had to provide high dimensional stability, be in mass coloured, ready to use and offer ease of processing.

The solution

The challenge was met with Daplen™ EE188HP, a polypropylene-based TPO especially developed by Borealis for use in automotive interior parts requiring excellent scratch resistance, low gloss and very good processing behaviour.

Borealis worked closely with Daimler Chrysler and the component parts moulders to ensure its tailor-made one-material solution would deliver the high quality interior required.

Equal gloss-, colour effect and scratch resistance were achieved for all visible component parts in the interior. The ready-to-use material, coloured in the five different colours specified by Daimler Chrysler, allowed for easy colour matching between the grained trims and PUR skins within the interior.

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Borealis' technical mould design support, in combination with the high dimensional stability and wide processing window achieved with Daplen EE188HP, increased the component part quality and optimised the overall optical effect and performance of the finished interior.

The high level of impact resistance offered by Daplen EE188HP ensured all interior trim components fulfilled the necessary crash test requirements.

The product

Daplen EE188HP:

is a talcum filled polypropylene compound.

Benefits of Daplen EE188HP

- Excellent scratch resistance
- Very low gloss
- Superior stiffness/impact balance
- Ease of processing
- Low density – weight reduction
- High quality aesthetics and dimensional stability of component parts

Daplen EE188HP	Physical properties (typical values)
MFI [230°C/2.16 kg]	13
E-Modulus [MPa]	1,900
Notched Impact 23°C [kJ/m²]	22
HDT B [°C]	105
Mould shrinkage [%]	0.95

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