

## Case Study

### Pedal bracket made by the hybrid technology with Durethan® BKV 30 H2.0



Figure 1 Pedal bracket for the C-Class

Daimler AG, headquartered in Stuttgart, Germany, is a leading manufacturer of premium-class cars and the world's largest producer of utility vehicles. With its comprehensive range of vehicles, extending from small cars to heavy trucks, Daimler is represented in virtually every country of the world.

In close cooperation with LANXESS, the company has now developed the world's first pedal support bracket made by the hybrid system (Figure 1). The part carries the brake pedal, and with manual transmissions, the clutch pedal, too.

The hybrid technology is a system patented by LANXESS for joining together plastic and metals. It can be regarded as a pioneering achievement in plastics processing.

Through the combination of Durethan®, i.e. glass fiber-reinforced polyamide, with steel, the design team at LANXESS has succeeded in making the

**Material:** Durethan® BKV 30 H2.0

**Manufacturer:** Daimler AG, Hamburg

**Industry:** Automotive

safety-related subassemblies built into many vehicles not only more rigid but also lighter in weight. The plastic ribs seen in Figure 1 prevent premature buckling or collapsing of the galvanized steel should it be subjected to excess stress. The high elasticity modulus of the metal allows an intricate overall design, while its ductile behavior prevents any fracture or collapse of the part in the event of a crash.

In the application shown here, there was a saving of

- approx. 10 % in weight, and
- approx. 10 % in cost

compared with an all-plastic solution.

Manufacturing the pedal bracket by the hybrid system also offers the ability to integrate other functions, such as the brake light switch, clutch master cylinder etc.

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Page 2 of 2 | Edition 05.05.2008 | TI 2007-026 EN

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