



Press Info

LUVOCOM® high-performance compounds as replacements for metal

The current trend is very much towards replacing light alloy and metal parts by plastic. And it is not always the price that plays the main role but also important criteria such as savings in weight and the accompanying economies in energy (even extending to the ecological balance sheet), the degree of freedom offered in design and the corrosion resistance of plastics.

In substituting metals it is essential not only to consider plastics-oriented parts design but also the thermomechanical material properties of the plastics. To date, the move from metal to plastic had often failed because of the high requirements placed on the dimensional stability and above all on the inadmissible factor of creep in plastics, also known as settling behaviour or relaxation. It is particularly temperatures above the glass transition temperature (T_g) that lead to increased creep in the plastic. This is the reason why mainly high-temperature plastics with an elevated glass-transition temperature have become established for substituting metals. Highest T_g values are found in amorphous materials, which additionally offer both less pronounced and more isotropic shrinkage and expansion characteristics due to the structure of their macromolecules. As well as exhibiting enhanced settling properties, such materials thus make it possible to produce parts with significantly greater dimensional stability.

Modifications with efficient reinforcing materials such as carbon fibres enable the properties of these materials to be improved still further. By using an optimized manufacturing process, LUVOCOM® engineers have succeeded in developing high-performance compounds that achieve elastic moduli of up to 40 GPa and flexural strengths of up to 500 MPa. This opens up a large number of possible new applications for users.

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LUVOCOM® high-performance thermoplastics from Lehmann & Voss & Co., Hamburg are used in a wide range of industries to produce finished goods that function reliably even under very difficult conditions. Already in production for more than 25 years, LUVOCOM® materials are mainly formulated to individual customer requirements. They have exactly defined properties and are based on five product families: electrically conductive, lubricant-modified, carbon fibre reinforced, high-temperature resistant and thermally conductive materials. The service provided by the LUVOCOM® team includes support in parts design and material specification; suitable samples of semi-finished goods can be supplied for small initial series or first models. Detailed information is available at www.luvocom.com