



Photo: Evopro

Simplicity with composites: Electric buses featuring the new lightweight concept operating in Budapest city center

LIGHT TRAVEL TRANSPORTATION

Self-supporting composite structure for public service buses

With a combination of Long Fiber Injection (LFI) process from KraussMaffei and InMold primer the Nanotechnology Center of Composites (NCC), the Russian lightweight construction research center in Moscow, produced a tailgate module in a self-supporting composite structure for a public service bus. This modular bus concept won the 2016 JEC Innovation Award.

In addition to low weight and corrosion resistance, the advantage with this production line is that the body blocks can be individually combined to produce vehicles which can be modulated. Production is therefore possible in large series for different utilization purposes. A compelling approach which not only impressed the jury for this year's JEC Innovation Award, but also the Budapest Bus Company. Electric buses with this concept have been operated in Budapest since March 2016.

Ready to paint

One important feature of this public service bus is the very large two-tone tailgate. It is 2.2 meters wide and 1.4 meters high. NCC relies on the system competence of KraussMaffei in this case. "The customer's requirements were clearly defined. The customer asked for a substantial weight reduction and Class A surface quality together with a rigid, high-strength component. A

quick color change and, thus, a wide range of colors were also requested. All of this had to be achieved in short cycle times and with cost-optimized production," says Wolfgang Hinz, Product and Sales Manager in the Composites/Surfaces Business Unit and the responsible Project Manager at KraussMaffei.

A joint decision was taken with the customer to use a combination of the Long Fiber Injection (LFI) process and the InMold primer process. This has one advantage: the surfaces prepared perfectly for individual painting are produced directly and fully automatically in the mold. The cycle times can therefore be minimized, and first-class surfaces from high gloss to matt and a wide range of colors are possible.

As you like it

The LFI system has been successfully used in production since delivery in 2015. In terms of component weight, Hinz points out, the

LFI process scores with a low density of up to 55 percent. Other advantages of the LFI process are the high fiber volume content of up to 50 percent, which ensures high strength, and the high degree of flexibility in choosing fiber lengths. This permits a wide range of component designs, for example of ribs or function integration.

In the last step compression molding takes place without material flow and there is a reaction in the closed mold. The finished components are then removed and are now ready immediately for additional clear coating or final individual coating with no intermediate treatment or additional pretreatment necessary.

Further information:

Petra Rehmet,
Spokesperson for the brand
KraussMaffei, München,
phone +49 (0) 89 / 88 99-23 34,
petra.rehmet@kraussmaffei.com,
www.kraussmaffei.com