



Carbon carrier for buses receives innovation award

Munich, March 12, 2015

The engineers of MAN and Munich Composites have won the JEC Award 2015 for light carbon-fibre spring carriers

The MAN Predevelopment Division joined forces with the carbon fibre specialist Munich Composites to develop an air spring carrier made from carbon fibre-reinforced composite material (CFC) for buses. The project was awarded the JEC Innovation Award Europe in the "Transportation" category.

JEC is the largest industrial association for composite materials. The award is used to distinguish outstanding developments made of fibre-reinforced composite materials and was handed over to the MAN developers Norbert Elbs and Susanne Rüksamen, and to Martin Stoppel, Commercial Director Munich Composites, on 10th March at the largest carbon fibre industrial fair in Paris.

The aim of the joint project was to achieve significant weight savings for the rear axle beam with a length of approximately 1.60 metres. The current vehicle construction standard is to use steel beams. They are joined to the air spring suspension bags, which support the weight of the bus. Each rear axle has two air spring carriers, each with a weight of 83 kg. The carrying structure of the air spring carriers has a weight of approximately 53 kg. The prototype for this support structure with a CFC hollow profile is about 70 percent lighter and would thus increase the payload of a bus by one passenger. Following prototype development, the components now have to prove their road capability in stringent practical trials. In addition, economic efficiency also has to be evaluated.

At the same time the aim of the project was to develop a technology to manufacture such components on an industrial scale. At Munich Composites, the production process is highly automated: The carbon fibres are braided around a core with the aid of a radial braider. Several robots work together to pull the component core through the radial braider at exactly the right angles. The injection process for epoxy resin is also fully automated. It can thus be guaranteed that each component will be of the same high quality.

The MAN Group is one of Europe's leading industrial players in transport-related engineering, with revenue of approximately €14.3 billion in 2014. As a supplier of trucks, buses, diesel engines, turbomachinery, and special gear units, MAN employs approximately 55,900 people worldwide. Its business areas hold leading positions in their respective markets.

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