



Wednesday, 6th of May 10:00–10:45 AM

Solutions for weight reduction in Buses and Rail Vehicles

Abstract

Weight reduction is a critical factor to achieve Energy Efficiency objectives in Transportation. The restrictions in CO₂ emissions, the progressive electrification of vehicles and the operating costs optimization have a strong influence in the increasing need to make lighter vehicles. In the mass transit market, electric Buses use heavy batteries that require a much lighter bus structure and interior trimming to compensate battery overweight and reduce its energy consumption; Rail operators often have to pay for usage and wear of rail tracks, which is proportional to rail car weight. In this Lightweight trend, Bus and Rail vehicles have to be designed with innovative materials and connections, or upgraded with lighter materials like composite or honeycomb panels.

3M has a wide range of solutions to help Bus and Rail manufacturers to reach their Lightweighting objectives. 3M Solutions help to design lighter materials and connect these materials to others, creating multi-material assemblies that do not lessen overall safety for passengers. Even though using lighter materials, it does not sacrifice strength: our solutions make the vehicle lighter but equal in strength or even stronger than traditional vehicles. Many 3M bonding solutions also reduce noise and vibrations that a thinner and lighter material can generate: these advanced bonding solutions help to improve passenger experience and comfort. Among many other 3M solutions, 3M Glass Bubbles contribute to reduce the weight of plastic parts and sheet molded composite panels, and 3M vehicle wrapping solutions help reducing weight of paints and multiple interior parts.

Agenda

- ▶ Introduction to Lightweight in Transportation
- ▶ Assembly of lightweight materials using innovative 3M adhesives and tapes
- ▶ Design and manufacturing of Lightweight panels using 3M solutions
- ▶ Other 3M solutions for Lightweighting

Access

- ▶ Skype or any other application is not required – you just need web browser
- ▶ **Sign up** is required – please register to receive more interesting information
- ▶ At the end of the lecture there will be time for a Q&A
- ▶ All material presented will be shared with participants
- ▶ An FEA workshop certificate can be provided upon request
- ▶ Contact info: Marcin Domanski mdomanski@mmm.com +48 883-343-380

Lecturer

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European Adhesive Engineer certified by the European Welding Federation

Chemical Engineer from the Chemical Engineering Institute of Toulouse (France)

23 years of experience in Adhesives for Transportation and General Industry Applications

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