

VEHICLES & TRANSPORTATION



With ever more stringent emissions requirements placing additional demands on the design of mass transportation such as buses and rail borne vehicles, composites offer a cost-effective route to achieving substantial weight reductions on the load bearing structure of the vehicle. For buses particularly, the use of composites allows payload levels to be maintained or improved whilst accommodating more complex hybrid or electric drivetrains for the same axle weights.

In addition to the potential weight reductions, composites also bring advantages such as improved corrosion and fatigue resistance and reduced part count, which when combined with Gurit's extensive composite engineering and manufacturing experience can deliver a lightweight structure that integrates directly with the existing vehicle architecture.

Gurit has worked on the global structural design of buses (and components for rail vehicle structures) through to the detail design of components. Our in-depth knowledge of composites allows us to produce robust design details and line-replaceable structural elements allowing easy maintenance in service. Below is a taster of some of the projects Gurit has undertaken.

SAMPLE OF VEHICLES & TRANSPORTATION PROJECTS UNDERTAKEN BY GURIT



2014

Klang Valley Mass Rapid Transit Scheme Train Seats

As part of the largest public transport project in Malaysia, Gurit worked in collaboration with dk Composites (Malaysia) for the KVMRT project (Klang Valley Mass Rapid Transit) to produce composite manufactured train seats.

Gurit's Composite Engineering team provided the engineering design and verification of the composite seats and leaning bars, aluminium support structures and bolting details that form the seating system.

Wrightbus, New Bus for London (NBfL)

As well as supplying materials to the project, Gurit worked in a joint development team with Wrightbus' structural engineers to develop the overall laminate design and connection details to the steel chassis and aluminium body side and roof panels. Gurit provided guidance on the material properties and allowable stresses so that Wrightbus' engineers could incorporate the composite structure into their existing Finite Element Model of the bus.

2011



Windjet

The Windjet was constructed in an attempt to gain World Speed Records on land, ice and water, using wind powered vehicles. After successfully breaking the British land speed record of 113.4mph, this second generation vehicle was built to travel on both land and ice. The unusual design of the vessel and Gurit's high-performance structural materials enabled the team to make a strong, lightweight vehicle that can cope with a myriad of weather conditions, whilst travelling at high speeds.

2003



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