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DECREASED MONORAIL WEIGHT MEANS DUAL SUCCESS FOR DK COMPOSITES AND DIAB

Founded in 1997 to prefabricate advanced domes for Malaysian buildings, DK Composites now serves the transportation and marine sectors in addition to working with architecture. Among its products are award-winning monorail components with DIAB materials at their core.

DK Composites, situated in Melaka, Malaysia, is a diversified composite manufacturer with a 10 000 m² production facility. Since 2007, the company has supplied interior and exterior components to Scomi Rail, a leading provider of urban monorail systems in Malaysia and beyond. At present, DK has deliveries underway for two Scomi Rail projects: the new Mumbai Monorail and a fleet expansion for the Kuala Lumpur Monorail.

For the Mumbai Monorail, which will serve an estimated 125 000 passengers daily, DK has been asked to develop a train ceiling. This component must comply with the British BS 6853 FST (fire/smoke/toxicity) standard, vehicle category 1a.

After a period of research and development, DK decided on a phenolic/glass prepreg system, sandwiching a core of DIAB Divinycell P100 foam. Widely used in rail applications, the Divinycell P (/en-GB/Products-and-services/Core-Material/Divinycell-P) series was a natural choice, thanks to its excellent mechanical properties and FST performance. In fact, DIAB was specifically recommended by the prepreg supplier as the right choice for PET foam.

The resulting train ceiling provides the desired FST performance, yet it weighs 50% less than a traditional aluminum composite panel. As a result, it saves more than 400 kg per train carriage.

For the Kuala Lumpur Monorail, which was Malaysia's first monorail system, Scomi Rail has asked DK to develop a new train nose for the ongoing fleet expansion. The project encompasses two nose cabs, a driver floor and four skirts per train, all of which must meet the BS 6853 FST standard, vehicle category 2.

The laminate chosen for the noses is an epoxy/glass prepreg system, this time sandwiching a core of DIAB Divinycell P (/en-GB/Products-and-services/Core-Material/Divinycell-P)150 foam. Chosen for reasons similar to those in the Mumbai Monorail project, the foam yields a nose cab that is 30% lighter than its predecessor, a polyester cab that was laid up by hand. At the same time, it provides better FST performance.

The results of these two projects have impressed not only Scomi Rail, but also decision makers in the JEC Innovation Program, who presented DK with an Innovation Award in the rail category at JEC Asia 2012. With DIAB as a core solutions partner, DK is leading the way as the Malaysian rail business booms.

www.dkcomposites.com (<http://www.dkcomposites.com>)

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