Construction Sector Group Publication
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Composites UK Trade Association

Reading Area Signalling Renewals

Overview

Glass-fibre reinforced polymer stagings and POS refuges for railway infrastructure.

Details

Location	Reading
Description	GFRP – Stagings and POS refuges for railway infrastructure.
Client	Siemens Rail Automation.
Date of project	January 2014
Where FRP composites are used and why	The stagings are part of a Patented Modular Staging Solution developed by iLECSYS Rail Ltd, that utilises metallic corner nodes to effectively deliver loads from the superstructure in to the foundation. Many projects have incurred large additional costs and delays due to designers applying steel design principles to GFRP. The whole system is installed using smaller equipment than with steel and did not require any large plant, which greatly reduced the cost and also disturbance to train operations. iLECSYS Rail used a particular Shire Pile by Shire Structures Ltd to install the stagings, as this solution is had portable. Without the Shire Pile the GFRP stagings would not be commercially viable and without GFRP the Shire Pile would not be viable to use with higher loads from steel. An example of a symbiotic design and a fully composite solution, using steel where steel is appropriate and vice versa with GFRP. The turnkey solution also extends to the electrical signalling infrastructure with iLECSYS Rail also supplied to the project. iLECSYS were brought in due to a failed install and design by another company with GFRP of unknown quality and origin, with a sub-standard design and install. iLECSYS Rail undertook all work from pile design and manufacture through to staging design and installation. The solutions range from signal drop down areas, through to refuge areas and stagings for equipment housing.
Specific design details	Range from 1.00m x 2.75m to 2.00m x 2.00m, depending on application.
Type of composite used	Fiberline Pultruded GFRP – E23 – BS EN: 13706 Parts 1/2/3.
Performance in service	Only recently installed but have been approved and signed off by Network Rail and handed over to the RAM Team, Route Asset Manager.
Project partners	Shire Consulting and Fiberline Composites.

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