

St Austell Railway Bridge



Details

Description	Three span bridge over railway across a cutting.
Client	Network Rail
Date of project	2007
Where FRP composites are used and why	The GRP main span has a weight of five tonnes, replacing the previous structure which weighed approximately 26 tonnes. This great reduction in load allowed reuse of the existing piers with minimal works. The bridge was fabricated off site and erected during a single 8 hour overnight line closure.
Type of composite used	Pultruded GRP ACCS panels enclosed by shaped moulded panels with interior liner anti vandal plates
Development and proving trials	<p>Due to the light weight of the structure, some special consideration was required. Movement of the bridge under dynamic loading from pedestrians and aerodynamic loading due to trains was considered and it was shown to be within pedestrian comfort limits.</p> <p>Dynamic testing carried out on a different bridge (Goring) to determine modal properties, UK train buffeting loads appear to be an order of magnitude lower than those recommended in EN 1991-2.</p> <p>Testing was carried out at the following levels:</p> <ul style="list-style-type: none">• Pultrusion testing• Adhesive testing• Moulded component testing• Complete structure testing (static and dynamic)
Project partners	Parsons Brinckerhoff, Pipex, Edmund Nuttall
Key publications	Shave J et al, St Austell Footbridge: The First FRP Structure on the UK Rail Network, ACIC 2009, Edinburgh

Contact