

Airshaft Lining Panels



Overview

Fibre reinforced polymer lining of Victorian brick-built airshafts above railway tunnel.

Details

Location	Balcombe, West Sussex.
Description	Balcombe Tunnel is 1034m long, built in the 1830s on the Brighton mainline from London. Water seeping through the brick linings into the airshafts would flow down and undermine the track. A prefabricated FRP lining system was designed and installed to manage the flow of ground water.
Client	Network Rail.
Date of project	June 2015
Where FRP composites are used and why	The installation of an FRP solution was selected as the sections could be fabricated to a specific shape, were lightweight and easy to fit. The end product was waterproof and resistant to corrosion.
Specific design details	This lining solution was designed to manage the water by lining the shaft and back-filling with a waterproof grout that allows the water to seep into a drainage system then be pumped out. The design of curved panels includes fixing details incorporated into the laminate, from which the sections can be secured easily from inside the shaft while maintaining a smooth inner surface.
Type of composite used	The curved sections were moulded using spray lay-up of glass fibre reinforced polyester resin.
Performance in service	Previous airshafts were lined using the same method in 2007. There have been no call-backs or reports of problems and Network Rail was keen to use the same method on this later project.
Project partners	Principal Contractor – BAM Nuttall Limited FRP Designer and Fabricator – Construction Composites Limited

Contact

Email: info@compositesuk.co.uk

Web: compositesuk.co.uk/construction-sector-group