

Sicut Composite Railway Sleepers and Bearers



Details

Location	Stonebridge Park (London Underground Depot)
Description	Replacement of hardwood timber AV8 turnout with Sicut composite bearer layout, prefabricated at Lillie Bridge Depot.
Client	London Underground
Date of project	2014
Where FRP composites are used and why	Sicut's composite sleeper are not only delivering excellent value to London Underground, they are also delivering wider economic, social and environmental benefit. Manufactured in the UK, they are delivering European employment and export opportunities; they providing a meaningful contribution to the significant plastic waste crisis facing Europe, offering an understandable end use for waste plastics for consumers; and they are reducing Europe's demand for dwindling tropical hardwoods and for creosote treatments for unsustainable applications such as railway sleepers. Sicut composite sleepers are also recyclable at end of life, providing a 'closed loop' solution for the plastic waste stream.
Specific design details	The Sicut composite bearers dimensions used were 152mm x 304mm, with lengths ranging from 2.6m to 5.0m. The same AV8 layout designs were adopted as those for a standard timber layout. Handling and installation (drilling, cutting and fastening) requirements were the same as those adopted for timber bearers and no additional training was required for prefabricators or for site installation teams.
Type of composite used	The Sicut composite bearers were manufactured using Sicut's unique recycled plastic composite technology, proven over the past 20 years to provide a more durable, tougher, longer lasting (50+ years) and environmentally friendly solution when compared to hardwood and treated softwood sleepers. Sicut's patented technology has been used to manufacture railway sleepers and bearers that have been installed in over 18 countries worldwide in a range of environments, enduring over 2 billion cumulative MGT of traffic.
Performance in service	The Stonebridge Park AV8 turnout has been in daily use in one for London Underground's busiest depots since April 2014. The layout it replaced had hitherto been manufactured from tropical hardwood bearers, and had historically be replaced every 7-10 years, due to bearer degradation. The Sicut composite bearers have shown no degradation over the past 4 years, giving customer confidence of a useful service life of the layout of over 50 years. London Underground's whole life cost model study concluded that switching from timber to Sicut composite bearers would deliver a 50 year whole life cost saving of over £700k for this one turnout alone. (report available on request).
Project partners	London Underground and Sicut Enterprises Ltd.
Further Information	Further project and technical information is available at http://www.sicut.co.uk

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