

Emy Circuit

From: Kane White
Sent: 27 May 2026 17:33
To: Emy Circuit
Cc: Jean Mulovi
Subject: SWDR Condition 27 Request for further information

Good afternoon, Emy,

Following your request for further information in relation to SWDR Condition 27, specifically regarding the selection of Ekki timber in comparison with a fibre-reinforced polymer (FRP) composite boardwalk solution, please find our response below.

Standards and Approvals

The use of FRP composite materials in this type of application is not covered within established highway or structural design standards and would therefore require a Departure from Standard (DfS). This introduces additional approval complexity, programme risk, and uncertainty.

In contrast, the use of Ekki hardwood is well-established within relevant design standards and industry practice, providing a compliant and lower-risk solution from an approvals perspective.

Design Life and Whole-Life Cost

While manufacturers of FRP systems often quote indicative design lives of up to 75 years, compared to approximately 50 years for Ekki timber, the proposed timber solution has been specifically designed to maximise durability.

The Ekki timber deck is supported on a screw pile and elevated frame arrangement, ensuring that the timber is not in direct ground contact. This significantly reduces moisture exposure and decay risk, meaning the in-service life is expected to be comparable for this application.

From a capital cost perspective, the FRP solution is approximately 25–30% more expensive than the Ekki timber option. When considered against the expected service life and maintenance regime, the difference in whole-life cost between the two solutions is considered marginal, with the timber option offering better value overall.

Timber Specification

All timber elements will comprise Ekki hardwood specified as follows:

- Strength Class: D70 to BS EN 338
- Strength Grade: HS to BS 5756
- Durability Class: Class 1 to BS EN 350

All timber will be sourced from FSC (Forest Stewardship Council) certified suppliers, or an equivalent certification scheme, with full chain of custody certification to ensure sustainability and traceability.

Environmental Considerations

Environmental impact is a key consideration given the scheme's proximity to an Environment Agency (EA) Main River.

FRP composites are polymer-based materials and their long-term environmental performance in fluvial environments remains subject to uncertainty, particularly in relation to degradation mechanisms and the potential release of microplastic particles over time.

The EA has previously expressed concern regarding the use of plastic-based materials in similar contexts such as erosion protection due to the potential for long-term environmental impact.

The use of Ekki timber avoids this risk entirely, providing a natural material solution with no associated microplastic generation.

Based on the above, Ekki timber is considered the preferred and appropriate solution over FRP composite for this application.

Kind regards,

Kane White CEng MICE

Major Schemes Project Manager
Highways & Transport

3Cs Champion – Bringing Care, Clarity & Confidence to my writing 

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