

GRATE EXPECTATIONS

You might not know what it is, but Fibre-Reinforced Polymer (FRP) is making a difference for thousands of trail users.

Rail trail users who've been caught in heavy rain couldn't help but be thankful for the increasing use of FRP perforated decking. Instead of slithering across bumpy wooden planks, steel grating or slick concrete, we can now cruise over FRP panels that provide a relatively smooth surface with minimal chances of slipping or falling thanks to the grit applied to the surface during manufacture.

Common in pit covers and industrial settings where electrical conductivity, corrosion or hazardous liquids are OHS issues, FRP has been embraced by councils as they try to reduce maintenance costs on rail trails. The Bourne Creek Bridge on Victoria's Bass Coast Rail Trail is a classic example of this material replacing timber.

The coastal bridge, at Kilcunda in Gippsland, is under frequent assault from wind-blown sand, driving rain and salt spray. Its wooden deck needed frequent attention. Thanks to FRP, Bourne Creek remains a photographers' favourite, and the iconic side view of the timber trestle does not reveal its synthetic-surface secret.

"The early signs are very good and the strength-to-weight ratio is fantastic," Bass Coast Shire transport projects officer Joel Dickson says. It also doesn't leach chemicals into waterways like treated timber.

But what is FRP, you ask? According to one of Australia's major suppliers,

Terra Firma Industries in Melbourne, the term covers a wide range of products, including those described as "fibreglass". Using a variety of resins with a glass, carbon, basalt or aramid-fibre mesh weave laid into the mould, it can be engineered for use in the substructure of bridges, walkways and staircases, as well as decking. "We can engineer it to suit the load requirements," says Terra Firma's marketing manager Maggie Reid.

The grating can be specified in a range of mesh patterns, colours and grit levels (low for bare feet at the beach, medium for shared paths like rail trails and heavy for industrial applications). Most of it comes from the US, China or India. "When it comes to FRP mesh structural grating, I'm not aware of any Australian manufacturers although Terra Firma and others manufacture some smaller FRP components here," Reid says.

"The majority of our grating, rebar [reinforcing rod], handrails and profiles etc. are manufactured as sheets/lengths in China but fabricated into finished products (stairs, platforms etc) here." Contrary to what you might believe, FRP carries a BAL 40 bushfire rating (the second highest bushfire attack level in Australia) and can be specified to carry horses right up to maintenance and emergency vehicles. It's light, therefore easy to transport to remote locations, and doesn't spark so it can be cut on-site without fire precautions.

Wolter Kuiper

Top: Northern Rivers RT. Photo: S. Brown

Middle: Bass Coast RT. Photo: D. McCrohan

Bottom: Belgrave RT. Photo: W. Kuiper

