

GEOfabrics

TrackTex – Solving Mud Pumping for the Rail Industry Worldwide

Since the costly issue of mud pumping was identified by the rail industry, decades of research have gone into developing solutions, which have evolved over time.

Problem areas of ballast contamination in trackbeds cause a real headache for rail operators and contractors alike. But solving the issue often has a considerable impact on day-to-day operations and budgets, due to demanding track possession times and frequent maintenance intervals.

Re-ballasting has often been adopted as a solution. However, this is a short-term answer and over time, the problem returns – again and again. The cost implication of regular, repeated maintenance is significant but can be avoided by employing a specialist solution. There are three targeted methods that have been used over the years to tackle mud pumping:

Sand Blankets

Traditionally, mud-pumping was treated with the installation of a 300mm thick sand blanket. While this

proved very effective at preventing the migration of fines, the installation of a sand blanket requires significant excavation – and consequently a large volume of material needing to be imported and exported. This makes for a slow and expensive installation – a challenging exercise to complete within a given possession window.

Geotextiles

As geotextiles were developed during the 1970s, the performance they offered led to the suggestion that they would become the replacement for sand blankets. However, following extensive testing it was established that the pore opening size of these geotextiles was not sufficiently small to prevent the pumping of fines into the ballast. Further research in the 1980s showed that geotextiles could be used to reduce the sand blanket thickness, but not to totally remove it and the associated costs.

Geocells

The stiffening effect created by geocells is designed to stabilise the ballast – which may help prevent

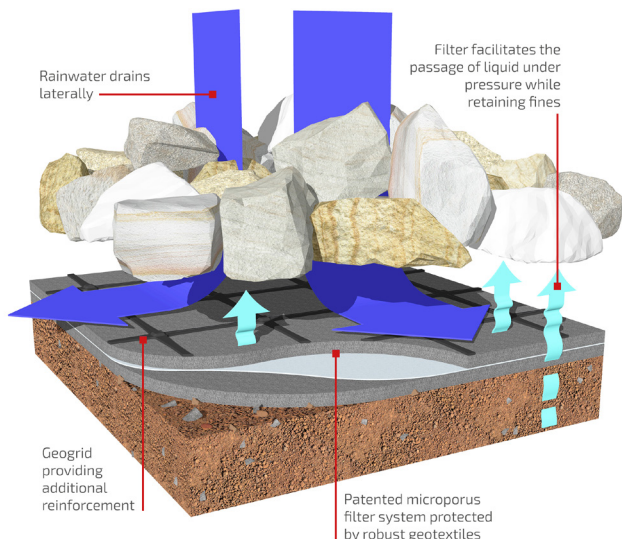


pumping. However, without a physical barrier, fines are still likely to migrate into the ballast over time. As with sand blankets, the installation of geocells requires excavation so it's a slow and labour-intensive process. Future ballast cleaning and tamping works may also be hindered as the geocell sits within the ballast build up.

TrackTex – A Specific Rail Industry Solution

While all these solutions are effective in part, they don't meet the complex needs of the rail industry in full. And that's where TrackTex comes in. A solution designed specifically to tackle mud pumping, TrackTex has been developed by GEOfabrics in conjunction with material scientists and network operators.

This patented, anti-pumping geocomposite is the result of more than a decade of research by trackbed engineers – and its unique filter system actually improves trackbed quality over time. TrackTex has also been proven to significantly increase maintenance intervals – by more than 25 times – and offers much faster installation times than traditional methods. So not only does it solve the complex problem of mud pumping but it offers a range of time and cost benefits, too.



A Trusted Global Solution

The rail industry has been actively using TrackTex since 2010 – and enjoying the significant cost savings that come with it. In fact, both private and state-owned rail operators across the world have already installed TrackTex as a spot treatment.

There's now more than eight million square feet of TrackTex installed across Europe, Australia and the United States to date – a statistic which speaks volumes about its efficacy. Site monitoring across a number of key sites has also resulted in clear evidence of the success of TrackTex. It's now accepted as the most cost-effective way of preventing and correcting mud pumping failure by many rail operators.

Jim Herbert, Commercial Director at GEOfabrics explains: "Anecdotal evidence suggests as much as 60% of a rail maintenance budget is spent on just 5% of the network, as problem areas need repeated remedial work. TrackTex represents the culmination of years of research into effective remedies for mud-pumping. The unique microporous filter at the centre of TrackTex provides a barrier to rainfall and migration of fines, yet allows pore water pressures to dissipate under loading. This means that the subgrade actually improves over time. Customers report that this can extend maintenance intervals by more than 25 times, giving them significant financial benefits."

Learn more [here](#).

TrackTexTM
Anti-Pumping Geocomposite

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- Improved track quality
- Durable in extreme conditions
- No specialist equipment required
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