Directory

Track & Infrastructure

GEOfabrics®

Solving Trackbed Maintenance Problems with Geocomposites

There are many problematic ground conditions that exist beneath railway tracks. As a result, track stabilisation, track geometry and trackbed maintenance are major headaches for the rail industry, worldwide.

It's true that a range of solutions have evolved over the years – but many come with cost, time and environmental implications, which are far from ideal.

The Issue

The passage of trains applies dynamic loads to soil beneath the tracks. This results in intense compression and decompression cycles, which can lead to fracturing of the foundations – to the point of collapse. Some of the most widely used methods for solving track stabilisation on railroads involve geocomposites. TrackTex, for example, is used in place of sand blankets to prevent mud pumping.

While sand blankets are successful in curing subgrade erosion, achieving the optimum 300mm layer requires a large volume of excavation. This in itself is expensive and incurs further costs for soil disposal. There's a requirement for extensive materials to complete the work and the disruption to services causes loss of revenue, too. So, while sand blanketing is still used today, it's an expensive, slow and unsustainable process.

Geosynthetics: A Solution with a Proven Track Record

Geosynthetics have been used for a number of functions in track construction and rehabilitation for almost half a century. When properly specified and installed, they have been proven to significantly enhance the performance of the trackbed, reducing maintenance costs and increasing design lifetime.

Combined in multiple layers, or with the addition of another material, geosynthetics are known as geocomposites. These products provide enhanced benefits, as they reduce required material volumes and speed up installation. With careful design they can provide drainage, protection, reinforcement, filtration and barrier functions while replacing expensive and scarce mineral resources.

GEOfabrics – Experts in Geocomposites for the Rail Industry

GEOfabrics has developed a range of class-leading geosynthetics and composites, specifically geared up to tackling the issues faced by rail operators. These include TrackTex for anti-pumping and RK4 for rail filtration and confinement. Products are performance-tested at their state-of-the-art facility which includes a UKAS-accredited laboratory, as well as independently by external bodies.

For example, the TrackTex testing regime included real-time rail loading, simultaneously and cyclically applied to the replicated track construction through three hydraulically powered ram actuators. The rams were programmed to load the installed track dynamically to simulate anything from an empty passenger train to a fully loaded freight train, or an ultra-high-speed train of the future. Trafficking frequencies were modelled, too. GEOfabrics materials have been used in live rail for many years. So whichever solution a customer opts for, they can feel reassured that it's been tried and tested by experts.

Free Education Seminars for Businesses

Rail companies across the globe can benefit from GEOfabrics' expertise in this field through the continuing professional development (CPD) sessions they offer. Delivered by GEOfabrics rail specialists, seminars give businesses greater insight into the use of geocomposites – and how they can solve the challenges they face.

These free-of-charge professional development hours (PDH) are designed to give companies a good understanding of how and where geocomposites provide the most effective performance. Training is usually in person at an organisation's premises but can also be delivered remotely as a webinar. Sessions can be tailored to meet the training needs of those involved in trackbed maintenance, across all levels of experience. Attendees will gain a good understanding of how to specify and use geocomposites to treat trackbed issues. All workshops are certified by GEOfabrics and count towards professional development hours requirements.

Jim Herbert, Commercial Director at GEOfabrics explains, *"Our Technical Sales Team have many examples of clients who use our geosynthetics in their rail schemes reporting reduced costs, faster installation and dramatically extended maintenance cycle times. We offer these training sessions to help clients understand how they can enjoy these benefits on their future projects."*

Contact GEOfabrics for more information or to schedule a session, remotely or in person

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GEOfabrics®

Free professional development seminars

Geocomposites: Solving the track stabilisation headache

A one hour overview of the use of geocomposites as a solution to trackbed maintenance problems that includes:

- Why use geosynthetics and geocomposites?
- Cost, time and sustainability benefits
- Installation and best practice
- Product development and testing
- Counts toward PDH and CPD requirements

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Contact GEOfabrics for more information or to schedule a session, remotely or in person at info@tracktex.us

GEOfabrics®
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