GEOfabrics

Ballast Protection Improvement

Christiansburg, Virginia

Project Description

In September 2014, three 82-foot rolls of TrackTex™ Anti-Pumping Geocomposite were supplied to Norfolk Southern along a section of their track for a demonstration test on the Whitethorne District of Virginia. TrackTex™ was installation along a section of track that ran through Narrows, WV through Roanoke, VA. One roll was also installed at a repeat mud spot in a 2˚ curve at MP V265.2. This section of track had been undercut the year before (2013), but the mud had returned.

The intent was to determine whether TrackTex™ would be able to provide an increased form of ballast protection in these known trouble areas. The initial test sections were inspected repeatedly to determine if there was an enhanced performance of the ballast and noticeable erosion control protection. The final inspection was performed roughly 2 and 1/2 years after the initial installation with extremely positive results.

TrackTex™ is a multilayer composite with a unique microporous filter media protected by specially engineered protective nonwoven geotextiles. The filter is an orientated microporous polymeric film with a series of microcells and interconnecting pores, characterized by its relative strength, and ability to transmit vapor.

Project Information	
Owner	Norfolk Southern – Virginia Division
Engineer	Norfolk Southern – Virginia Division
Technical Description	- Product: Tracktex - Units: 3 Rolls - Dimensions: 82’ft x 12.7’ft
Installation Date	Sept 2014

The initial test sections were installed in 2014, and by December 2016, several mud boils had developed in the low-side shoulder of the track which were then removed by an excavator. Photos were then taken during an inspection in April 2017 that showed the clean crib ballast.

It was determined after the two and half year inspection that the Tracktex that had been placed was very effective. It completely covered the limits of a very weak substructure. Within its 25 meters were a low spot and a saturated subgrade. East and west of the Tracktex, the track surface was good, ballast was clean, and there was no evidence of water seeping from the roadbed.

It was concluded that the installation of the TrackTex had prevented the subgrade from fouling the ballast section, and by more effectively distributing the vertical loads to that subgrade, it has greatly extended surfacing cycles and the life of the ballast.