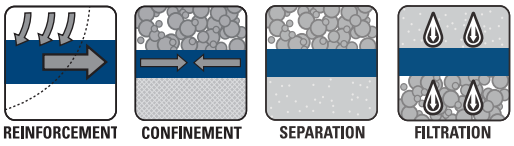
TENCATE Mirafi®



Case Study

application	Subgrade Stabilization & Base Course Reinforcement
location	Port of Tampa, FL
product	Mirafi® RS580*i* & BXG12
job owner	NexLube Operating LLC
engineer	Golder Associates
contractor	Dallas 1 Construction
date of installation	June 2012

TenCate develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

NexLube needed to expand their container yard capacity for their Port of Tampa, Florida facility. The expansion lot had existing weak dredge sludge spoils at the surface that extended to some depths that would not support the anticipated container loads. The Engineer, Golder Associates, was interested in limiting the potential for deep undercut and stabilization of these soft soils using TenCate Mirafi® geosynthetics.

THE DESIGN

Using the AASHTO 1993 flexible pavement analysis method and additional stability analysis for punching the weak foundation soils, a two layered geosynthetic reinforcement scheme was chosen to stabilize the site. Due to its high tensile modulus at low strains and excellent soil interaction and filtration & drainage capacity, TenCate Mirafi® RS580i* woven geosynthetic was chosen to stabilize a compacted layer of limerock base aggregate material over the soft dredge deposit soils. A second reinforcement layer of Mirafi® BXG12 geogrid was chosen for use mid-layer of the base course aggregate to provide lateral restraint to the upper part of the gravel layer and additional load support for this flexible pavement area.

THE CONSTRUCTION

To create the new container yard area, the contractor cleared and grubbed the surface of the dredge spoils to the subgrade level. Next, Mirafi® RS580i was laid on the subgrade soil and overlapped three feet to accommodate the very soft subgrade conditions. Then, a twelve inch layer of limerock base aggregate was placed and compacted over the Mirafi® RS580i

Condition of the soft Dredge spoils subgrade at time of construction.

Placed panels of Mirafi® RS580i geotextiles.

Next, a layer of Mirafi® BXG12 was placed over the surface of the compacted gravel using two foot overlaps. Finally, twelve inches of limerock base aggregate was placed and compacted over the geogrid layer. The final asphalt pavement surface was then placed and compacted.

The installation of TenCate Mirafi® geosynthetics went smoothly during construction and exceeded the contractor's expectations. The contractor pointed out that the TenCate geosynthetic reinforced gravel was much more stable than it would have been otherwise.

THE PERFORMANCE

The newly created container storage area is performing well, as expected. The contractor and the owner are very happy with the ease of installation and the performance of Mirafi® RS580i and BXG12 in the new pavement area. The engineer is very pleased with the installation process, the performance of the geosynthetics to date, and is happy with the simplicity of design process using TenCate geosynthetics in roadway applications.

Placing lift of Limerock Base aggregate over panels of Mirafi® RS580i.

Leveling the compacted lift of Limerock Base aggregate on Mirafi® RS580i before placing Mirafi® BXG12.

Finished flexible pavement surface.

*Patent Pending

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365 South Holland Drive
Pendergrass, GA 30567
Tel 800 685 9990
Tel 706 693 2226
Fax 706 693 4400
www.mirafi.com

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