



SEPARATION



DRAINAGE

Case Study

application Concrete Bond Breaker
location Dublin, GA
product Mirafi® 1450BB

job owner GADOT
engineer GADOT
contractor GC-APAC (concrete cutting, removal & pouring). SUB-Everett
Dykes Grassing (roadbed prep & geotextile install)
date of installation August 2013

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

This project required the complete removal of the existing concrete lanes and asphalt shoulders in both the east and west bound lanes of I-16 from mile marker 39 to mile marker 69 in Dublin, GA. Once the existing roadway was removed and the newly stabilized roadbed preparations were complete, the installer placed an interlayer which reduces reflective cracking and in turn promotes longer lasting pavement resulting in a cost savings. Additionally, the use of an interlayer also eliminates the need for notching the base pavement section, thus saving on additional labor and equipment costs.

THE DESIGN

The GADOT decided to use a geosynthetic bond breaker for an unbonded overlay in this application. Mirafi® 1450BB meets and exceeds specifications for nonwoven interlayers for separating cementitious pavement layers and is specifically designed as a separation layer for unbonded concrete layers in lieu of hot mix asphalt separation layers. The use of Mirafi® 1450BB results in faster installation over traditional asphalt bond breakers; it also reduces cost on materials over traditional hot mix layer. The physical configuration of the material improves water drainage between pavement layers carrying water away that infiltrates into pavement.

THE CONSTRUCTION

There were four project specific widths of Mirafi® 1450BB fabrics utilized during the installation of this project. Each specific width was laid in four mile intervals on both the east and west bound lanes concurrently. According to the contractor this method of placing the geosyn-

thetic is the most expeditious and economical way to prep, pour, cure, and get a roadway ready for traffic to drive on. The installation began with the inner shoulder, followed by the inner left lane, the outer right lane was next and the outer shoulder was last to be laid.



Roadway with narrow asphalt shoulders prior to removal.



Roadway with narrow asphalt shoulders prior to removal.



Removal of the existing concrete roadway.



Soil cement and Mirafi® 1450BB.

THE PERFORMANCE

The use of Mirafi® 1450BB separates the base from the concrete roadway which will help extend the service life of Interstate I-16 by moving harmful water away from the roadway. The installer and general contractor mentioned this was the first time they used a bond breaker and were very happy with the ease of installation and the performance of Mirafi® 1450BB in the new roadway. They also mentioned that with a savings of roughly \$7.50 per sq. yd. and with 1,400,000 sq. yds. of bond breaker used, the tax payers and the state of Georgia will save approximately \$10,500,000. Field installers were able to lay down the fabric and secure it using only two men. According to the installer the time it takes to put in the hot mix versus Mirafi® 1450BB is similar, but the thickness tolerance verification and additional costs of all the vehicles and man hours tilts the favor in the geosynthetic direction.



Paving of new wider cement shoulder over Mirafi® 1450BB.



Roadbed covered with Mirafi® 1450BB ready for cement paving.



Cured concrete shoulder

TenCate Geosynthetics Americas assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate Geosynthetics Americas disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, materials, or information furnished herewith. This document should not be construed as engineering advice.

Mirafi® is a registered trademark of Nicolon Corporation.

© 2015 TenCate Geosynthetics Americas

0615

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

