



## Case Study

**application** Subgrade Stabilization  
**location** Lakeland, Florida  
**product** Mirafi® 500X, HP570, BXG12

**job owner** Retail Facility  
**engineer** Locrane Engineering  
**contractor** Earthmovers, Inc.

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 retail facility is located in Lakeland, Florida where sandy soils are usually prevalent. However, this site had phosphate slime in the soils that needed to be removed and replaced, or bridged over. This was accomplished utilizing geosynthetics. In this case, a separator fabric, a high strength polypropylene and a bi-axial geogrid we used. The facility was designed to be a parking lot for the retail structures, and in order to reduce settlement, reduce construction costs, and make the system last longer, the geosynthetic combinations were chosen.

### THE DESIGN

The design engineering firm originally specified a different biaxial geogrid in this application. Due to the wet conditions that existed at the site, a high strength geotextile that could separate, filter and reinforce (Mirafi® HP570) was needed in addition to a light weight woven separator fabric (Mirafi® 500X) and a biaxial geogrid (Mirafi® BXG12). R.H. Moore and Associates along with Earthmovers were instrumental in getting the Mirafi products approved by the engineer as functional equivalents. The purpose of the geotextiles and geogrid was to minimize undercutting in the parking areas as well as reducing fill material requirements and removal of the undercut material offsite. The use of our Mirafi® geosynthetic products allowed work to continue and saved time and construction costs for the project.



Aerial view with building.

### THE CONSTRUCTION

Construction began in the Summer of 2005 and will be completed in Summer of 2007.

Earthmovers sub-contracted the installation of the geotextile to another installer who seamed the material together for a more continuous coverage, bridging over the phosphate slime subgrade. The engineer called for three layers of geosynthetics – Mirafi® HP570, Mirafi® 500X and Mirafi® BXG12. This was a cost savings versus having to remove, haul off and replace the existing subgrade.

**THE PERFORMANCE**

The Mirafi® geosynthetics made a difference to the bottom line. The option to construct utilizing geosynthetics saved both time and money and allowed the designer and contractor more flexibility. Also, the products were readily available for installation whenever the contractor needed them. The geosynthetic stabilization system will provide a long, stable subgrade for the retail facility in Lakeland, Florida, for many years to come.



Close-up of geotextile..



**Left:** Aerial picture before construction.



**Right:** Aerial picture during construction.

**WARRANTY** TenCate Geosynthetics North America assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate Geosynthetics North America 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 TenCate Geosynthetics North America.

© 2010 TenCate Geosynthetics North America

09.10

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

