



SEPARATION



FILTRATION



DRAINAGE



EROSION PROTECTION

## Case Study

application	Filtration & Separation
location	Titan Stadium- Oshkosh, WI
product	Mirafi® FW402 & Mirafi® 170N

job owner	UW Osh Kosh
engineer	Rettler Corporation
contractor	Phenco, 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

A new state of the art artificial grass multipurpose field was to be constructed over an existing natural grass football field. The width of the new field would be more than double that of the existing field and was enlarged to also accommodate a full size soccer field and a new nine lane running track. Stormwater drainage is an extremely important consideration when designing a project that utilizes this new type of artificial surface. The challenge was to design the field cross section to provide maximum drainage for stormwater, provide adequate structural stability for construction equipment and facilitate deployment of the artificial surface.

### THE DESIGN

To provide separation and filtration Mirafi® FW 402 was specified by the design engineer to be used between the drainage layer and sand layer. Mirafi® FW402 is a woven monofilament polypropylene geotextile fabric. It was chosen because it has both the high strength needed for durability and a high percent open area for long term clogging resistance that also promotes a high water-flow rate. Its high tensile strength was essential to support the anticipated equipment loads that occur during construction and deployment of the artificial surface.

### THE CONSTRUCTION

The existing field was stripped of top soil and excavated to a depth of 1.2-1.5 m (4-5 ft). There were several soft soil areas where poorly compacted fill materials had been previously used. These areas were undercut and stabilized using

Mirafi® 170N nonwoven geotextile. The subgrade was sloped to several main drainage areas where a storm sub-drainage system was installed to move the storm water out and away from the field. The drainage layer consisted of between 22.86 cm (9 in) and 0.6 m (2 ft) of a graded stone base course which was installed over the surface of the subgrade soil.

Mirafi® FW402 was placed on top of the drainage layer to provide filtration and separation between dissimilar materials. The edges of adjacent geotextile panels were overlapped to provide full coverage over the area. This was followed by placement of 10-15 cm (4-6 in) of manufactured sand similar to the gradation that is used in bituminous asphalt pavement appli-



Backfill deployment on Mirafi® FW402 geotextile.



Instillation of Mirafi® FW402 geotextile.

applications. The sand layer provides a solid platform on which to construct the new field as well as provides a cushioning stratum beneath the artificial surface. The artificial field surface was then deployed over the sand layer using four-wheel ATV's.

**THE PERFORMANCE**

A total of 11,700 m<sup>2</sup> (14,000 yd<sup>2</sup>) of Mirafi® FW402 were used on this project to provide separation, filtration and drainage, and stabilization. The construction went smoothly and the new multipurpose field was completed in time to be used at the start of the Fall 2004 football season.



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 Nicolon Corporation.

© 2010 TenCate Geosynthetics North America

03.10

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

