



Erosion Protection



Soil Reinforcement

Case Study

application	Steepened Slope
location	I-695 @ I-83S in Maryland
product	Mirafi® MMESH & Miragrid®

job owner	MDSHA
engineer	Soil Reinforcement Design, Inc.
contractor	Facchina Construction Company, 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

In widening I-695 at I-83S, MDSHA required the slope adjacent to an off ramp to be steeper than 2:1 due to the delineated environmental impact at the toe of the slope. The required slope face angle meant that geosynthetic reinforcement was needed to build the structure and the face also needed to be protected against erosion both short term, prior to vegetation and long term.

THE DESIGN

The initial design called for the slope to be reinforced with a uniaxial geogrid and the face of the slope be reinforced with biaxial geogrid - erosion control blanket combination. Mirafi® submitted our Miragrid® geogrids for the slope reinforcement and MMESH to replace the combination of secondary reinforcement and erosion control blanket, since MMESH provides both the biaxial strength and erosion control needed for the project.

THE CONSTRUCTION

A Mirafi® representative was at the project during startup and guided the Contractor during the initial installation procedure. This allowed the contractor to complete the job without subsequent construction issues. Mirafi® products were installed during a rainy period and our MMESH product retained enough soil at the slope face, that soil loss was negligible.



Preparing the drainage fabric behind the slope.



Close-up of temporary form used for the face.



Slope nearing the finished grade.

THE PERFORMANCE

Thanks to Mirafi® MMESH, the slope took on an immediate natural look with its green color. After just one growing season, the slope has a high concentration of vegetative growth.

References:

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Above: Overlap required between primary reinforcement and face wrap.

Below: Compaction of soil at the face of the slope for vegetation.



Completed slope with vegetation.

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