

Hydromulch Thrives

Application establishes vegetation in demanding highway rehab project

By Jeff Salem

Nestled into the South Carolina Department of Transportation's (SCDOT) recent \$60-million rehabilitation of a 15-mile stretch of Interstate 385 was a very difficult erosion control assignment. More than 300 acres of steep slopes would need vegetation established quickly to keep soil from eroding in areas dissected by two dozen streams. Furthermore, much of this had to take place during winter and spring with heavy rains throughout construction—not exactly an ideal scenario for such a large erosion control application.

The erosion control work had to follow a tight eight-month time frame, further complicating matters. With a project that typically would take two years to complete, that meant there was no room for second chances. The state of South Carolina mandated that the project be fast-tracked because the stretch of interstate being revamped

was so well traveled (about 21,900 vehicles travel I-385 each day) and more than \$34 million in savings would be realized with a condensed construction schedule.

The interstate was closed to one direction of traffic to hasten construction, which began in January 2010. It was the first time an entire direction of traffic was closed on an interstate in the state's history. In addition, the contractor tapped to handle the project, McCarthy Improvement Co., faced a \$50,000-per-day fine for each day the roadway remained closed to traffic past mid-August.

Specifications

On top of the time crunch, McCarthy Improvement also had to contend with strict control product specifications and performance expectations. In January, SCDOT had initiated new hydromulch specifications

for all state highway projects. The size, cost and importance of the I-385 project called for the most stringent of the state's four hydromulch categories to be used: fiber-reinforced matrix.

Project officials trusted the job to Profile Products LLC's Flexterra high-performance flexible growth medium (HP-FGM).

"There were no ifs, ands or buts. The Department of Transportation said the road will be open no later than Aug. 15," said Tris Waystack of ACF Environmental, the distributor that supplied HP-FGM on the project. "They had to align themselves with people and products that were going to work the first time, and that's what they did."

"The state considered the project very sensitive and high profile," said Austin Childers, regional manager for Profile Products. "Flexterra HP was approved by the SCDOT for that category."

Childers said the project started with



Left: SCDOT's \$60-million rehabilitation of a stretch of I-385 called for an arduous erosion control task to keep soil from eroding in areas dissected by two dozen streams. Right: Vegetation is applied to 300 acres of steep slopes, much of it during the heavy rains of winter and spring.

Flexterra FGM but later stepped up to the new and improved formulation to establish vegetation and prevent soil erosion on the more than 300 acres within the construction right-of-way. The solution's wet-bond strength and ASTM-documented functional longevity make it stand out, he said.

"It's going to hold up against more rainfall and stronger downpours," Childers said. "There were several creeks and streams in the area, and we wanted to make sure we didn't release any sediment into these water bodies."

Waystack noted that the products utilized to establish vegetation had to work right the first time because of the stringent timelines to which the contractor was bound. Each working day, the contractor prepared (cat-tracked) the slopes to be revegetated. Then, the seeding crew treated the slopes before the close of day. This minimized the amount of slopes potentially exposed to storm events and allowed McCarthy Improvement

to progress along the I-385 alignment in a highly controlled fashion.

"The contractor had such a tight time frame that as they were spraying Flexterra, others were putting up guardrails," Waystack said. "The contractor knew there was no way at all they could come back and redo anything. If the product failed, it was going to be extremely difficult to finish on time."

Application

HP-FGM is hydraulically applied and designed to immediately bond to soil, even under wet conditions, making it an ideal solution for controlling erosion on the exposed rolling hill slopes within the I-385 project corridor. In independent ASTM lab tests, the medium was shown to be 99% effective; vegetative establishment was documented to grow eight times faster than with bare soil and twice as fast as with rolled erosion control blankets. The solution also is faster and less expensive to use

than blankets, as no fine grading is required to smooth the slopes before application. HP-FGM is entirely biodegradable and manufactured from 100% recycled wood fibers and naturally derived biopolymers.

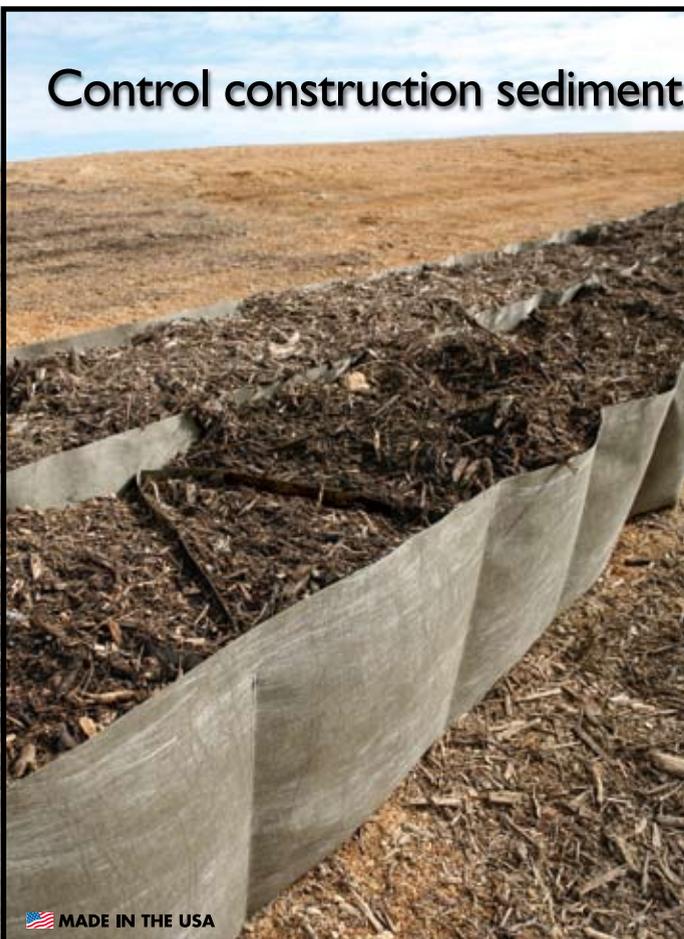
A two-step application technique was chosen to best prevent soil from possibly eroding into the numerous waterways and to maximize vegetative establishment over the entire 300 acres to be treated. This method employs the placement of seed, fertilizer and agronomic amendments with a small amount of HP-FGM in a first application, followed by a separate layer to achieve the specified application rate in the second pass.

First, the product was mixed with ACF Environmental's SlopeShield, a specially designed erosion control grass seed mix, and fertilizer. Next, workers applied it.

"You get that seed-to-soil contact with that first tank load that's so important," Childers said.

After the first pass, McCarthy

Control construction sediment and erosion on your projects!



 MADE IN THE USA

The TYPAR® Geocells system retains project fill material and soil particles while allowing water to filter through. Simply expand one of the lightweight units, fill it with ballast material, and you're on the way to controlling storm water at your construction site.

- Made of time-proven TYPAR geotextile fabric
- Honeycomb style for custom sizes, configuration
- Easy to construct
- Well-suited for irregular terrain
- Stable, strong and durable

For the sediment and erosion solution that is cost efficient and project effective, try the TYPAR Geocells system today!

TYPAR®
GEOCELLS

For more info, call 800-441-2760
or visit www.TyparGeotextiles.com

TYPAR® is a registered trademark of Fiberweb, Inc.

Write in 771

Improvement went back and applied the remaining solution two separate times in opposing directions to cover and protect the first layer of grass seed that was applied previously.

An Early Finish

Aside from a few localized, concentrated flows after particularly heavy rains, the application was unscathed and allowed the project to finish early.

The interstate was reopened to motorists on July 23, almost three weeks ahead of schedule. Those involved with the project said the contractor's precise use of the hydraulic erosion control solution helped the work to be completed on time.

When all was said and done, according to Waystack, the technology stood up to all the potential pitfalls of the project—the tight time frame, heavy rains, sheer amount of application—and delivered on its promise to keep soil out of the streams and produce vibrant vegetation adjacent to the new interstate improvements. **SWS**

Jeff Salem is public relations associate for Swanson Russell. Salem can be reached at jeffs@swansonrussell.com or 402.437.6409.

For more information, write in 793 on this issue's Reader Service Card or visit www.estormwater.com/lm.cfm/st011107.

The Polymer Specialists

For the *ultimate* in storm water sediment removal and erosion control, use Earth Chem's proven polymer products. Sediment Control Tablets and Gel Logs contain a proprietary blend of coagulants and flocculants, with enough power to clean up the dirtiest storm water.

800-764-5726

www.earthchem.com • earthchem@aol.com



EARTH CHEM

Write in 772



©2011 PLASTIC PIPE INSTITUTE



CORRUGATED PLASTIC PIPE.

PROVEN THE BEST CHOICE.

100 Year Service Life

Superior abrasion and corrosion resistance, and water-tight joint performance

Ease of Installation

Lightweight, longer pipe lengths, simplified joining, and jobsite compatibility

Globally Accepted

Tested and proven as a reliable drainage and sewer system solution

Greater Cost Efficiencies

Lower installed cost requiring less labor and equipment

 **PLASTICS·PIPE·INSTITUTE®**

www.plasticpipe.org/drainage

Write in 773