

Geotextiles solve erosion problems



These before-and-after photos, taken at a golf course in Meridian, Miss., illustrate the effectiveness of geotextiles in repairing an eroded creek bed. Once in place, the matting is invisible.

An increasing number of golf course superintendents are turning to lightweight, easy-to-handle geomatrix materials to manage areas pestered by soil erosion.

Usually constructed of woven nylon, geotextile matting provides turf roots in sloped areas with a secure reinforcement against the damage caused by wind and heavy rain.

Golf course superintendents who have tried geotextiles wonder how they ever got along without them. The typical scenario is one in which supers get tired of endless complaints from disgruntled golfers.

After heavy rain, they would have to suffer endless questions and comments on the unplayable condition of

one or two especially eroded and unsightly areas. Cart paths also fall prey to erosion after heavy rain. Inadequate drainage can worsen the problem, as can a creek that can't always handle the large volume of stormwater.

Skip Lambert, staff agronomist with Turf Services, a division of Erosion Control Systems, Inc., sug-

Fabrics stabilize, need little or no care

Jim Kirchdorfer of the Golf Development Co., Louisville, Ky., and agronomist Louis Miller, recently installed Supac, a geotextile made by Phillips Fibers Corp., a division of Phillips 66. The Louisville supplier was Irrigation Supply Co., Inc.

"We were basically looking for two main functions," says Kirchdorfer, "separation and stabilization."

Kirchdorfer has found bunkers especially tough to maintain. "You want to keep your sand nice and clean, and you don't want to infiltrate your drainage system," he explains.

"A correctly installed geotextile does this nicely."

Kirchdorfer says the geotextile stabilized weak areas besieged by heavy wheel traffic, and lessened erosion. The Supac geotextiles are made from polypropylene, a petrochemical-based polymer. They are chemically and biologically inert, will not decompose in soil due to bacterial or fungal action, and are unaffected by acids, alkalis, oils and most chemical solvents.

Materials are available in weights from four to 18 ounces per square yard; Each roll 15 feet wide and 150 feet long. □

Where to find geotextiles

ACF, Inc.

Circle No. 301 on Reader Inquiry Card
Akzo Industrial Systems.

Circle No. 302 on Reader Inquiry Card
Atlantic Construction Fabrics, Inc.

Circle No. 303 on Reader Inquiry Card
Belton Industries, Inc.

Circle No. 304 on Reader Inquiry Card
Conwed Fibers.

Circle No. 305 on Reader Inquiry Card

Dewitt Co.

Circle No. 306 on Reader Inquiry Card
E. I. DuPont de Nemours & Co.

Circle No. 307 on Reader Inquiry Card
Jonathan Green, Inc.

Circle No. 308 on Reader Inquiry Card
Hoechst Celanese Corp.

Circle No. 309 on Reader Inquiry Card
Hydro-Turf & Assoc.

Circle No. 310 on Reader Inquiry Card

North American Green, Inc.

Circle No. 311 on Reader Inquiry Card
Phillips Fibers Corp.

Circle No. 312 on Reader Inquiry Card
Proseed USA, Inc.

Circle No. 313 on Reader Inquiry Card
Reemay, Inc.

Circle No. 314 on Reader Inquiry Card
Warren's Turf Nursery, Inc.

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gests superintendents try the Enkamat three-dimensional nylon geomatrix matting. The soil-reinforcement matting, from Akzo Industrial Systems, Asheville, N.C., is placed on a sloped surface and covered with soil or sod. Vegetation takes root around the nylon fibers of the flexible geomatrix, making the soil almost impervious to damage by heavy water flow.

Once in place and covered by vegetation, the matting is invisible, adding an aesthetic appeal not available with traditional erosion control materials, according to Akzo.

Following an engineering survey at a golf course in Meridian, Miss., a proposal to stabilize the erosion in a two-phase project was approved by the club membership.

Phase I, which was initiated during the summer, was designed to take care of the most immediate concern, stabilizing the upper slopes of the ditch.

Taking action

The ditch was enlarged, straightened and the top slope dressed. The Enkamat, in widths from three to 15 feet, was rolled into place, cut and anchored with 10-inch wooden

Geotextile matting will secure roots in sloped areas against damage caused by wind and heavy rain.

stakes. Sod was installed on top of the matting. More than 4,800 square feet of matting and 54,000 square feet of sod were used.

"We used Tifton hybrid bermudagrass sod with roots that can grow to a depth of two feet in a year," says Lambert. "The matting serves as a root supporter, permanently anchoring the grass."

Phase II of the project will be put into action next year, and will involve laying Enkamat in the lower sections of the ditch.

According to Lambert, there are several advantages to using the nylon geomatrix rather than rip rap or concrete.

"It would have cost twice as much to use rip rap, and three times as much to use concrete to line the ditch," says Lambert. "We don't have rip rap in this part of the country, which means we would have to truck it in. Our experience has also shown that rip rap can be washed out in

heavy storms.

"Concrete is expensive," continues Lambert, "and water can get underneath it and cause it to crack. We would have had to worry about balls ricocheting off concrete or rip rap and hitting someone. You can't hit a ball out of a ditch covered with concrete or rock either."

Club members were also worried about what an endless stream of heavy trucks hauling in concrete would do to the course and cartpaths.

"Rip rap and concrete can also be unsightly," says Lambert. "Once we lay sod on top of it, you will never

see the matting. The result will be a channel lined with lush grass that will be pleasant to look at."

The maintenance crew found grass along the highly eroded creek banks difficult to mow. Once the grass takes hold in the matting, they will be able to go right up to the edge with the riding mower. Before, the area had to be cut by hand.

"These improvements will enhance the appearance of the course and along with some additional drainage improvements, reduce significantly the number of days the hole is unplayable," says Lambert. **LM**

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