

TOUGH MARKETPLACE

Woven, nonwoven, or spunbound? Polypropylene or polyester? The nation's landscape fabric manufacturers are so convincing in their claims that a customer really doesn't know who to believe.

by Heide Aungst, associate editor

Geotextiles, commonly known as landscape fabrics, are becoming popular in the green industry.

But popularity can breed contempt.

Manufacturers of the weed control fabrics are becoming increasingly competitive. So much so, that it's difficult to know who to believe. Or, to know exactly which product does what.

Though no one seems to have exact statistics, industry leaders are clearly Du Pont, Duon, Dewitt and Warren's. Others, however, such as Easy Gardener, American Woven Fabrics, and Atlantic Construction Fabrics, are also making strides.

Polyethelene, a plastic film, was perhaps the first landscape "fabric" used underground to block weed growth.

Associated Bag Company of Mil-

waukee, Wis., still produces a "black plastic mulch" which many homeowners use. Don Belanger, Associated Bag's operations/products specialist, says his clientele is primarily industrial, not "in the plant growing business."

The creation of "breathable" fabrics, which let air and water through, has cut into the polyethelene business considerably. The only advantage plastic has is its cheap cost.

Polypropylene seems to be the most popular fabric. Its biggest disadvantage is that it can break down under the sun's ultraviolet (UV) rays. Some products are UV stabilized, which helps ward off (but doesn't guarantee against) degradation. And spraying a product for UV stabilization can increase its cost.

Polyester products are more expensive than polypropylene, but tend to last longer. Polyester is also strong,

making it more suitable as a ground cover, for erosion control or for weed control.

Woven, nonwoven, spunbound?

Another difference in fabrics is in the manufacturing process. Is it woven, nonwoven, or spunbound (a subclass of nonwoven)?

Mirafi Inc. claims it was the first company to manufacture and market a nonwoven geotextile in the United States. In 1977, Mirafi introduced woven fabrics for ground stabilization.

Although landscapers use Mirafi's products for drainage and soil reinforcement, the company has not concentrated on fabrics for weed control. Most of Mirafi's geotextiles are used by civil engineers.

Nonwoven fabrics are made through one of several processes. One process is spinbinding in which con-

Continued on page 58

A worker lines a trench with Warren's Terrabond before the gravel and pipe is put in place, thus preventing soil and gravel from mixing.





Du Pont's Landscape Fabric is used to prevent weed growth around newly-planted shrubs.

tinuous fibers are spun onto a machine and are either glued together with resins, melted together with heat or chemicals, or mechanically needle-punched together.

Another nonwoven process is the staple method in which short fibers are bound together through one of the previously mentioned methods.

Companies will banter between themselves over which process is the best for a nonwoven fabrics.

For example, Du Pont's consumer literature states that nonwoven needle-punched materials are inferior because "under strain these loops tend to slip, resulting in a material that is not highly stretch-resistant."

It continues, saying that the thickness of needle-punched fabrics increases the possibility of soil getting into the fabric structure and reducing permeability. It can also retain water, resulting in buckling and cracking.

Reading that could convince just about anyone that heatbonded nonwoven fabrics are the way to go. But Warren's *Field Manual and Specification Guide* states that "heatbonding fibers causes indentation in the fiber, causing stress concentrations, resulting in lower tear and puncture strengths, as well as causing the fabric to be board-like, thus reducing the fabric's conformability significantly..."

The basic question, however, is whether woven or nonwoven is the best fabric overall.

'A double-knit suit'

Polyester products are "never woven" "unless you're talking about a double-knit suit," says Emory Hunter of War-

ren's, the leader in polyester fabrics.

Manufacturers of polypropylene products openly disagree over whether woven or nonwoven is better. Some companies even make both.

Jim DeWitt says the woven material is "far superior in suppressing weed growth."

The reason, he says, is because nonwoven fabrics are inconsistent in their make up, making it easier for weeds to find a way through.

"The woven fabric not only stops weeds, but allows sufficient air and water to get through for a healthier landscape," DeWitt says. "To prove that, we put out the Filterbond."

Filterbond takes a back seat to woven Weed Barrier.

American Woven Fabrics produces a woven fabric similar to DeWitt's Weed Barrier. Tom Lyons of American Woven Fabrics says woven fabrics are better because of the strength gained through the weaving of the materials.

What's the difference between the two fabrics?

Both companies say their product has more needle-punch.

So, who's telling the truth? Such claims are all part of the competition heating up in the industry.

Despite the argument over which process of creating a nonwoven material is best, nonwoven manufacturers do agree their products beat woven materials hands down. For one thing, the strength of woven materials is limited in two directions, length and width.

Du Pont's Landscape Fabric, introduced in 1984, appears to lead the market in retail use. Its Typar is used

primarily in the construction industry.

The Landscape Fabric is a lighter weight Typar. Dupont regional representative Rob Ebbets says spunbound fabrics allow water and air to pass through, without allowing weeds to break through. Woven fabrics, he points out, have much wider gaps for weeds to creep through the weave.

Nonwoven fabrics are lighter, so they cost less.

Nonwoven cost less

"Nonwovens can be cut to any shape," Ebbets says. "Wovens must be cut along the axis of the weave."

Tom Blunk says that Du Pont may lead per square yard in retail sales because of the lighter weight and, therefore, lower cost, but Blunk sells more to landscapers.

Duon's needle-punched surface helps mulch to stay in place on top of the fabric, Blunk says. Another advantage is that water passes through the material quicker than a smooth spunbound fabric.

"There's a high surface tension on the fibers," Ebbets explains. "But once you get it in the ground and dirty, water will flow right through it. In fact, it will flow faster than through soil."

A.C.F.'s Rit-a-Weed is available in three weights the light (2 oz.) and heavy (4 oz.) weight are nonwoven needle-punched polypropylene fabrics. The medium (3 oz.) weight is a woven needle-punched polypropylene product.

David Butler, A.C.F. branch manager, says the company markets both to stay competitive. "The woven has more tensile strength than the nonwoven for driveway applications," Butler says. "Since Blunk's has a nonwoven, we produce the heavy product to compete."

How is the competition? "We feel like we're selling just as much," Butler says.

Blunk says he hasn't seen Rit-a-Weed to compare it to Duon.

The competition doesn't stop there. Easy Gardener is making a dent with its Weedblock, the only molded nonwoven polypropylene.

"The advantage is uniform porosity," says Dick Grandy of Easy Gardener. "Every part of the fabric is the same."

The drawback of Weedblock is that it can't be used as a soil separator, as can many other products. Most landscape fabrics not only block weed growth, but can be used as a layer between gravel and soil in drains or under decks. Many also help stabilize the soil and slow erosion.

"Most of the fabrics were not developed for use in landscaping," Grandy says. "Because we did, we have the advantage, but we can't be used effectively for soil separation."

Texas A&M University has been studying the use of Weedblock for five years. In that time, Grandy says, they've had to use a chemical only once, and that was for nutgrass. "They've saved an enormous amount of time and labor cost," he says.

The Polyesters

Warren's has little competition in the polyester market. Warren's products are made from Trevira, a registered name for the type of polyester used. Warren's markets three major products: Terrabond, used for weed control, soil or sand/gravel separation and erosion control; Terracover, used to cover and protect turf in sports complexes; and Terrashield, a blanket to cover greens and tees.

Terrabond and Terrashield are made of continuous spunbound fibers. Terracover is made with short staple fibers which create a tighter, denser fabric ideal for a stadium cover or bench tarp.

In fact, Steve Wightman of Den-

ver's Mile High Stadium has successfully used Warren's geotextiles to protect the turf during rock concerts.

K.I.M. International produces Earthblanket, a Trevira polyester similar to Warren's Terrabond. It is marketed for home use, however, while Terrabond is primarily commercial. Earthblanket is light green in color.

Material color seems to be a real issue among polyester fabric manufacturers. Hunter emphasizes that Terrabond is gray, which won't cause snowblindness in a sandtrap, as might American Enka's white polyester Stablenka.

Stablenka is not a major competitor of Terrabond since it is usually used in conjunction with Enkamat for erosion control.

Bidim, made by the Quline Corp., is similar to Terrabond, and in fact shares the patent with Trevira.

Quline's Bobby Digh says the only difference is that "we play with the filament size and are slightly stronger."

Which is best?

Digh considers his biggest competitors the polypropylene products

manufactured by major oil companies such as Amoco and Phillips.

Polyester, he says, has an advantage since it is chemical resistant and can be used to line places such as hazardous waste landfills. But most polypropylene manufacturers don't view polyester products as major competition yet.

Which geotextile is best to use depends on the application. Polyester works well as a ground cover, soil stabilizer or lining. Polypropylene will usually save some money, but its weight must be taken into consideration if it's being used for something other than weed control.

Which is the best for weed control? Every company has done its own tests or had a university run tests, but it seems there are no completed objective tests using all the materials on the market.

Perhaps Dupont's Ebbets best sums it up: "Nobody does tests on how they work to control weeds. Instead they play games with weights and fibers. People want to know if it works and if it does, how much does it cost, and can I trust it?"

If someone does such a test, please let us know. **WT&T**

A CRISIS SITUATION

Soil erosion is becoming a national crisis, particularly in the agricultural industry.

But farmers aren't alone in their concern for the loss of a natural resource, topsoil. Landscapers are also realizing the severity of the problem.

Geotextiles have become a popular solution. Not only do geotextiles control weeds, but they can slow erosion as well.

But the fabric has to be strong to stabilize the soil.

For example, DuPont's Landscape Fabric doesn't work as well as its heavier Typar. Varying strengths of Typar are used for erosion control in applications such as river and lake banks, coastlines, highway and railroad cuts, and ocean and bay shores.

Polyester products, such as Warren's Terrabond, are often used as a drain lining, soil/gravel separator, or for erosion control on banks.

But several companies specialize in products which control erosion. Many erosion-control materials also help seeds to germinate, creating a natural soil stabilizer with the root systems.

American Enka's Company's Enkamat is considered a geomatrix



Workers install Enkamat to prevent erosion of a pond's bank.