



# DuraFlo EEBS™ by Envylawn®

## **ENVIRONMENTALLY ENGINEERED BACKING SYSTEM**

### **WHY DURAFLO?**

Our driving ambition is to develop a synthetic turf program that is as environmentally friendly as possible. That mission begins with a close examination of the components that make up our turf products, and the goal of providing long-term options for turf disposal other than the landfill! From cradle to grave, Envylawn® has developed the most environmentally friendly product on the market today!

### **PROVEN TECHNOLOGY**

We have spent the last 6+ years developing our DuraFlo EEBS™ backing system, designed specifically for our synthetic turf products. However, the basic technology itself is not new. In fact, hot melt polyolefin adhesive systems have been used globally in the heavily regulated geotechnical engineering field for the better part of a decade. These geosynthetic products are designed to be installed underground, providing strength and support to engineered soil structures for 100 years and beyond. Furthermore, the specialty carpet industry uses this technology to add value to molded automotive carpets, modular carpets and more. So, the technology is tried and true. Now, we have developed the process specific to the synthetic turf market.

### **THE MANUFACTURING PROCESS**

The process incorporates an all polyolefin system which includes:

- A polyethylene adhesive applied to the back of a tufted greige synthetic turf
- A polypropylene nonwoven geotextile is then applied as a secondary backing reinforcement.
- A brief, low-temperature bonding method, without fillers or other bonding agents, completes the process.

No other processes are needed to achieve the required tuft bind, permeability or any other performance properties needed. This process, and the combination of polyolefin components, allows a number of advantages over traditional urethane backing systems.

### **ENVIRONMENTALLY FRIENDLY**

Because DuraFlo is an all polyolefin backing system, and all other components of the turf product (grass fiber and primary backing) are polyolefins<sup>1</sup> as well, the Envylawn product line is 100% recyclable. A closed-loop system can be created, where reclaimed Envylawn, minus the infill, can be recycled into the adhesive application process.

The nonwoven geotextile secondary reinforcement is produced partially with postindustrial recycled polypropylene fibers.

We are able to recycle all our waste from the manufacturing process of our polyolefin Envylawn products. We actually get paid for our waste!

## **SOFT AND PLIABLE**

Urethane is a stiff product that gets much stiffer in colder temperatures. This can lead to wrinkles in the turf that may not be recoverable. Furthermore, a turf's ability to lay flat and conform to the base is critical to a quality installation. The DuraFlo system can help installers combat this issue because wrinkles dissipate quicker and EnvyLawn drapes to the contours of the base.

## **DIMENSIONALLY STABLE**

Polyolefins absorb almost no moisture, as compared to other backing adhesives such as urethane and latex, which absorb as much as 5% to 6% of their mass. Absorbing and releasing water leads to expansion and contraction of the turf product as ambient conditions change. With the DuraFlo system, this creeping effect is negligible, and therefore makes a more stable turf system and puts less stress on seams. Furthermore, our process is relatively tension free, unlike other backing methods. Tension in the manufacturing process creates memory in the turf. Once the turf sees this tension (stretching), it is more likely to creep and move. In addition, the nonwoven geotextile secondary backing component of DuraFlo is produced in a manner that the fibers are arranged in a random manner, giving isotropic properties for strength and elongation. This adds yet more dimensional stability.

## **PERMEABLE**

The DuraFlo process does not need a hole-punch system to create permeability, as do most urethane systems. In fact, with the damaging hole-punch process, EnvyLawn products with the DuraFlo system are more than twice as permeable as compared to traditional urethane backed product. Perhaps more importantly, our DuraFlo system is far less likely to clog than a hole-punched urethane backed product.

## **OTHER BONUS FEATURES AND BENEFITS (Pros & Cons)**

Lighter weight. Without sacrificing tuft bind strength, the DuraFlo system is approximately 10 oz. per square yard lighter than a comparable urethane backed product. This makes it easier for the installers to handle (lighter in weight) and helps reduce freight costs.

DuraFlo is produced at lower temperatures than other backing systems, reducing the risk of streaking due to differential yarn bulk or texture.

Our nonwoven geotextile secondary back acts as a weed barrier, reducing the chances of weeds emerging through the installed turf.

Product Development. We are only beginning to understand the development possibilities with the DuraFlo system. Stay tuned!

## **Pros**

- “Green” Approach, Environmentally Friendliest Turf on the Market!
- Stability
- Ability to relax / reduce wrinkles
- Drainage – does not require the damaging hole punch process

## **Cons**

- Change – Just have to adapt to the new backing! A breeze for experienced installers!
- Visibility of stitch rows (may be a bit harder to see through the geo-textile backing (using water in a spray bottle to wet the seams will help reveal the rows, allowing for better visibility). Once you get used to the slight difference you will never look back!

## **Notes:**

<sup>†</sup> Products with nylon thatches do not qualify as 100% polyolefin, however, some recyclers will still be able to take this product and separate during the recycling process