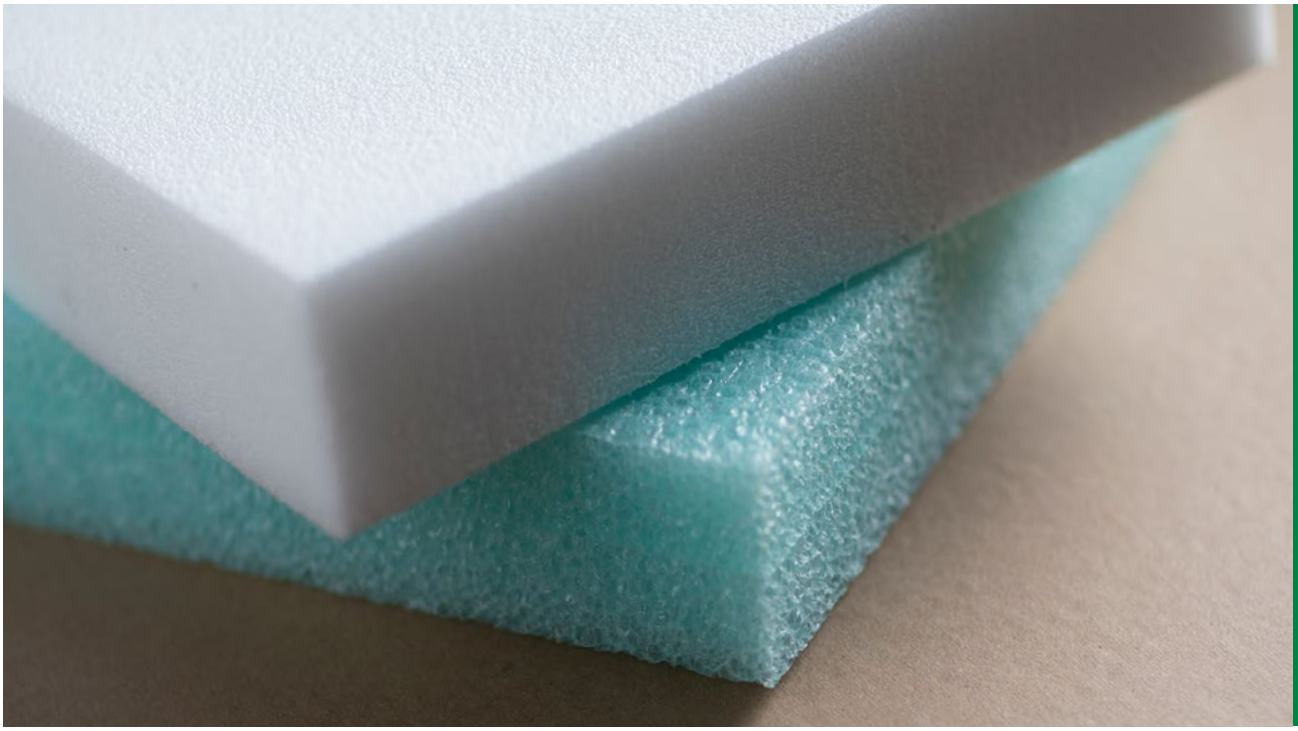
Sustainabiltiy

Case Study

Pregis helps partners close the loop by enabling the swift recycling of polyethylene engineered foam



Pregis Foam Densifier Program | Pregis PolyPlank® Foam for Fabrication

Pregis®

Overview

Pregis provides its fabricator partners with **Pregis PolyPlank Foam**, which is then converted into custom packaging solutions alongside other offerings made of wood, plastic, and other substrates.

To make it easier for Pregis fabricator partners to recycle scrap foam, Pregis offers a Foam Densifier Program, which helps turn foam pieces into dense logs of pure polyethylene, making them more efficient to transport in mass and more attractive to recyclers. The densification turns a 2,500-pound truckload of waste into a 40,000-pound truckload of highly-desired recyclable material.

Densifier at work!
youtu.be/so7ISQUefWc

Challenge

Engineered polyethylene foam is not often perceived as a sustainable product, especially relative to fiber-based packaging materials like corrugated, wood, or molded pulp. However, the sustainability benefits are significant because of its ability to be precisely engineered for protection, practically eliminating damage. Engineered foam is one of the most robust and customizable methods of protecting items, and when the foam is collected and recycled correctly, pure polyethylene remains a high-value material for recyclers.

Circularity of foam plank

Solution

Pregis is a growth-minded business partner that routinely seeks ways to support foam fabricators, ensuring they are successful, profitable, and innovative in their businesses. This case is no different. Through Pregis' Foam Densifier Program, Pregis assisted a partner in their journey to contribute to the circular economy by substantially increasing the circularity of foam plank.

Collect, recycle, reincorporate

"We have customers that initially feel better about paper or wood because they think it is better for the environment," explains the fabricator. "Even before the Densifier Program, we were recycling scrap, but explaining how recycling works didn't always eliminate the misconception. Now we have recycling data and visible evidence that helps illustrate the advantages of engineered foam and makes its use much more compelling. In addition to the high degree of customization and robust protection, it is really clear the material is being handled appropriately."

The Pregis Foam Densifier Program manages scrap polyethylene foam collection, recycling, and reincorporation. Fabricators collect foam scrap and load it into the machine, transforming loose scrap into logs. These logs are easy to carry, store, and load onto a truck. More polyethylene goes to the recycler on each truck as logs than loose foam scrap by a ratio of 20:1.

More scrap per truckload

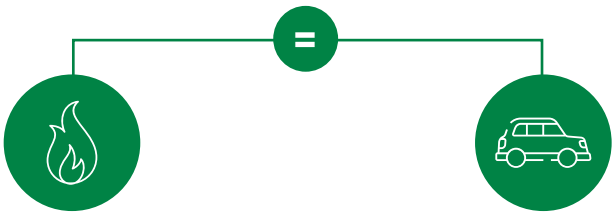
This is a densified polyethylene foam log. Once it is densified, the log is easily moved, stored and transported.

Most importantly, it's easier for a recycler to granulate.

Recyclers can now routinely process the logs without additional work -- closing the loop as quickly as possible -- with fewer trucks and no additional personnel. By removing 20 times the truck trips from the road, and all of the personnel and effort those trips would have cost, the savings and environmental value of this activity is significant.

By using the COMPASS® tool for life cycle assessment to evaluate environmental impact, including transportation and end-of-life processing, the calculated annual savings for this specific fabricator is a 170 percent reduction in greenhouse gasses. This reduction is the equivalent of 335 metric tons a year which also equals the energy use of 42 homes for a year or 72 cars driven for one year.

170 percent reduction in greenhouse gasses



Energy use of 42 homes in a year

72 cars driven for one year

The Densifier Program is a game-changer for fabricators who want to offer polyethylene foam plank because it provides maximum protection for fragile and high-value items. Engineered precisely and using only the right amount of material, foam is the substrate that boasts the most minimalistic and efficient material usage. With its protective performance (coupled with the densifier) fabricated foam can be considered a sustainable solution.

Just by virtue of its effectiveness as a protective packaging solution, foam eliminates costly damages and results in less landfill waste and emissions from reships.

For an added environmental benefit, Pregis also offers fabricator partners **PolyPlank Renew™ Foam** which is made with a minimum of 60% post-industrial content and can be extruded in many thicknesses and densities. This product can also be densified and recycled.

As a result of this program, the fabricator offers its customers the highest-performing custom foam plank packaging solutions that enable the circular economy.

For more information on extruded or laminated polyethylene foam plank, contact us today.

Maximum protection for fragile and high-value items

Minimalistic and efficient material usage

Eliminates costly damages

Manufacturing

Case Study

Solving customer challenges with foam solutions:

Foam Industries provides a Pregis PolyPlank® custom-engineered solution to help customer ship premium kayaks efficiently and damage-free.

Pregis PolyPlank® polyethylene foam plank provides foam fabricators with endless options for producing custom-engineered cushioning solutions for their clients.

Overview

“Jack, come over here. I need your help.”

That phone conversation started a new design project for Jack Nelson, VP of sales and marketing at Foam Industries, a Pregis fabricator partner. The family-owned and operated company works hard to provide innovative packaging solutions for a variety of customers and works equally hard to cultivate strong relationships with their clients.

Lightning Kayaks is a unique customer for Foam Industries, as the fabricator supplies a key component built into the kayak. Lightning Kayaks is known for manufacturing high-end peddle-driven kayaks with a wide, stable design that allows end users to sit high or stand to fish. Using 3D CAD designs, Foam Industries created a customized foam element that is sealed within the kayak and helps provide essential structure to the craft.

For this particular application, using foam is advantageous because if the kayak is damaged, a paper-based product would quickly saturate and fail.

But that’s not the reason Foam Industries was summoned over to Lightning Kayaks. The company planned to ship the kayaks in corrugated cartons, but when Nelson arrived at the plant, he discovered crushed boxes, even those stacked two high.

Challenge

The go-to-market plan for Lightning Kayaks is to individually ship kayaks to sporting goods stores. Once at the store, the associates unbox the kayaks and accessories and place the products either on display or in the back room. Compared to other e-commerce clients, the carton isn’t intended for the end user, so there is no need to protect the box.

Premium kayaks are heavy, and with all the gear, can weigh up to 95 lbs. Without the foam solutions, boxes were squashed when stacking two high. In the field, there could be times when the boxes are stacked four high. What would happen to the condition of the product once the shipper took over? It’s understandable why Foam Industries was called to help.

Solution

Pregis PolyPlank® polyethylene foam plank was the ideal shipping solution due to its structural integrity, dimensional stability, and compressive strength. Using 3D CAD drawings for each kayak model, the Foam Industries team customized foam pieces that followed the contours of the kayak, so it could safely nestle within the foam without abrasion.

This solution produced client wins on two different fronts.

The first win is efficiency. Foam Industries customized the protective foam layer to utilize only the exact amount of material needed, thereby optimizing the overall efficiency of the design. The foam didn’t cover the kayak from stem to stern, and instead small foam blocks were positioned strategically to protect key stress points.

The design also won points with the customer for budget efficiency. Following several prototypes, the final foam design fit a standard-sized teletray box, which allowed Lightning Kayaks to take advantage of volume discounts when ordering shipping cartons.

The second win is sustainability. Pregis PolyPlank foam offers significant sustainability benefits because it can be precisely engineered to meet design requirements. Thanks to the robust cushioning properties inherent to PE foam, utilizing the minimum amount of material can still achieve maximum product protection, safeguarding delicate and high-value goods from impact.

"There would be zero damage to the kayak if we built it with 100% foam, but we want to use just the right amount of foam to properly do the job," explains Nelson.

In the prototype run, a small number of kayaks were built with a deck less than specified. Instead of scrapping all items to the landfill, Foam Industries designed a specially modified support to enhance the rigidity of the structure which allowed quality testing to take place. This is yet another example where foam can be used with purpose, optimizing waste reduction efforts. Testing with the custom-designed support found no change in capacity, and the products passed.

Another component that doesn't get scrapped and sent to the landfill is the actual foam scraps from the design and manufacturing process. Foam Industries is part of the Pregis Foam Densifier Program, which contributes to the circular economy by substantially increasing the circularity of foam plank.

In this program, Foam Industries collects foam scrap and loads batches into the densifier, which transforms loose scrap into logs. These logs are easy to store, load onto a truck and transport to a recycler. More polyethylene goes to the recycler on each truck as logs than loose foam scrap by a ratio of 20:1. Not only is the densified scrap more attractive to area recyclers, it is far more efficient to transport, meaning less trucks on the road and fewer carbon emissions.

In conclusion, Pregis PolyPlank foam proves itself to be a highly versatile product that allows fabricators like Foam Industries to customize efficient protective solutions for their customers. "Pregis offers a consistent and predictable product," says Nelson. "Having confidence in a supplier's product makes it easier for us."

To learn more about PolyPlank foam for fabrication, contact Pregis today.

To learn how Foam Industries can support your packaging needs with customized solutions, contact a Foam Industries team member.

Maximum protection high-value items

Minimal & efficient material usage

Eliminates costly damages

Densified polyethylene foam log:
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