Weyerhaeuser makes breakthrough in thermoplastic composites

Weyerhaeuser — Weyerhaeuser Company [1], a global leader in cellulose fiber technology and sustainable forestry, today announced the launch of a proprietary, patent-pending form of thermoplastic composite that uses sustainably sourced cellulose fiber as a reinforcement additive.
Called THRIVE™ [2] composites, the product will initially be used in household goods and automotive parts. In addition, THRIVE can be used in a variety of composite plastic applications, including office furniture, kitchenware, small and large consumer appliances, and other industrial goods. THRIVE composites offer several advantages over materials reinforced with short glass fibers or natural fibers such as sisal, hemp and kenaf. The product is available in masterbatch form for custom compounders and ready-to-mold thermoplastic pellets for molders.

“THRIVE composites are economical and widely available, and they are low mass yet demonstrate excellent tensile strength and flexural properties,” said Don Atkinson, vice president, marketing and new products for Weyerhaeuser’s Cellulose Fibers [3] business. “These composites can improve molding cycle times up to 40 percent. Products made with THRIVE require less energy to produce and can reduce wear and tear on processing equipment when compared with those containing abrasive short glass fibers. These substantial benefits create significant advantages for companies looking to reduce their carbon footprints while enhancing performance and productivity.”

THRIVE composites are currently available as cellulose blended with polypropylene with both high and low melt flow indices. Because cellulose fibers are compatible with various “workhorse” polymers, Weyerhaeuser plans to expand the THRIVE line of products beyond polypropylene to a range of hydrocarbon and nonhydrocarbon polymers.

“THRIVE products readily absorb dyes and offer excellent flowability and thin-section fill, providing manufacturers with considerable design flexibility,” Atkinson said. “In addition, THRIVE [2] composites are produced using a proprietary process that allows control of the dispersion of cellulose fibers within the polymer matrix. This allows for a smooth surface finish, which opens up new opportunities for the use of natural fibers in composite plastics. Conversely, if manufacturers prefer the fibers to be visible, they have that option as well.”

In addition to enhanced design aesthetics, THRIVE products demonstrate consistent performance characteristics from batch to batch, which isn’t always the case with other natural fibers. And the cellulose fiber in THRIVE composites is sourced in part from some of the 20 million acres of forestland that Weyerhaeuser manages to third-party sustainability standards, ensuring a readily available global supply from a trustworthy source.

“Using composites with cellulose fibers makes sense,” said Dr. Ellen Lee, plastics research technical expert of Ford Motor Company. “Their excellent thermal stability allows us to extend the range of potential automotive applications for natural fiber materials. With increased use of these renewably sourced materials, we can significantly reduce the environmental footprint of our products while accruing a variety of benefits across our entire supply chain."

Weyerhaeuser will use its substantial pulp manufacturing facilities and well-established global logistics channels to produce and deliver the product to customers around the world. More information on THRIVE composites is available at www.THRIVEcomposites.com [2].

Weyerhaeuser Company, one of the world's largest forest products companies, began operations in 1900. We grow and harvest trees, build homes and make a range of forest products essential to everyday lives. We manage our timberland on a sustainable basis in compliance with internationally recognized forestry standards. At the end of 2011, we employed approximately 12,800 employees in 11 countries. We have customers worldwide and generated $6.2 billion in sales from continuing operations in 2011. Our stock trades on the New York Stock exchange under the symbol WY. Learn more at www.weyerhaeuser.com [4].

SOURCE [5]

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