

# Product Focus

**GREEN MATERIALS** Rapidly renewable, 100 percent recyclable, post-industrial, FSC-certified – these are the sustainable qualities found in the **insulation, finishes, and flooring** presented this month. To kick it off, we highlight a biocomposite made from an unusual source. *Rita Catinella Orrell*



Hitting the market next year, Greensulate organic insulation offers an R value of 3 per inch and is intended as a drop-in replacement for EPS used in cavity walls and SIPs (top left). EcoCradle protective packaging buffers can be shaped into any form, are 100 percent compostable, and are cost competitive with EPS (top and bottom right).

## New biocomposite offers an alternative to plastics and foams

While it may sound like something out of science fiction, Ecovative Design has developed a rapidly renewable material that could revolutionize the way buildings are insulated and products are packaged.

Founded in 2007 by Eben Bayer and Gavin McIntyre, Ecovative Design manufactures a material that harnesses the power of a filamentous fungi that grows rapidly on a combination of nonedible biowaste such as cotton burrs and rice hulls. "This particular phylum of fungi can digest things like lignin, which means from our production standpoint that we can take resources nobody wants or uses right now," says Bayer.

The materials are poured into forms and over 7 to 10 days a

fungus digests the biowaste, physically binding the aggregate, and creating a dense, strong network of mushroom roots (a single cubic inch contains 7 miles of fibers). Water is removed during the final processing stage in a low-temperature drying process. "The big distinction to make is that this material is not made of mold or anything like mold," says Bayer. "You can think of its performance as very similar to wood."


Greensulate rigid insulation, one of the two products developed from the material, is biodegradable and intended for above-ground applications, such as cores for structural insulated panels (SIPs), roof panels, or as interior insulation. The chemical-free composite's high silica content (from biowaste

such as rice hulls) give it a Class-A fire rating. The R-value is currently about 3 per inch, but the team is working to get the number up to 3.5 per inch, putting it nearly on par with EPS. The material passes ASTM mold-growth and moisture-retention tests, and features some natural antimicrobial properties.

To gain traction in the SIPs market, Ecovative is working with Timberline Panel sales manager Jeff Brooks to understand the necessary specification requirements. "As Eben and I have discussed, I think initially there will be a small segment of the market that will immediately embrace the green aspect of the product and others that will be leery of having a dead organism in their wall or roof," says Brooks. However, so far Brooks

hasn't seen any negative reactions when presenting the concept to architects and builders. Greensulate is currently being tested in a school gym in Vermont and at Rensselaer Polytechnic Institute in Troy, New York.

The company starts shipping its compostable EcoCradle packaging product at the end of the year, and intends to launch Greensulate at the end of 2010. "We have a triple-bottom-line philosophy," says Bayer, "do things that are good for people, good for the planet, and of course, make money." Ecovative Design, Green Island, N.Y. [www.ecovatedesign.com](http://www.ecovatedesign.com) **CIRCLE 200**

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