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Bio-composite materials

The new wave of building materials are made from fast-growing plant fibers.

By

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PLANT BASED: Bamboo flooring. (Photo: [lifebegreen](#)/Flickr)

Green building and construction does not need to stop with bamboo flooring. Bio-composites, or biodegradable composites, are the next generation of sustainable building materials. They combine plant fibers with natural resins and binders to make roof sheathing, fences, fireproof doors, and more. Traditional construction materials are energy- and resource-intensive. Buildings account for 40 percent of landfill waste, according to the U.S. Environmental Protection Agency (EPA). Bio-composites and other sustainable building materials help eliminate non-renewable waste, reduce raw material usage, and cut fossil-fuel consumption.



Many bio-composites use recycled materials or fast-growing plant fibers. In turn, they are recyclable or are designed to rapidly decompose. Bio-composites typically use natural binding agents, reducing the need for petrochemicals or other fossil-fuel products. Even more fuel is saved in the transportation of lightweight, locally sourced bio-composites. Like other sustainable building materials, bio-composites also help builders and homeowners earn Leadership in Energy and Environmental Design certification. The stamp of approval for green building and construction, LEED-rated buildings may also qualify for rebates and tax credits.

Bio-composite roofing

Several bio-composites are used in roofing. Sustainable bamboo can be pressed and mixed with resins to form light, strong and impact-resistant roofing panels. Roof sheathing can also be sustainable. Environ Biocomposites and other companies use wheat and other fast-growing fibers to make sustainable particleboard or plywood replacements. Environ said its Microstrand sustainable building materials are lighter and stronger than traditional wood products, and emit no volatile organic compounds. [Contact a local roofing contractor](#) for more information on [bio-composite roofing](#).

Bio-composite landscaping materials

Sustainable building materials are not confined to the house. Heartland Biocomposites is a Wyoming company that specializes in fences and decking made of wheat straw and recycled plastic. The wheat straw is an abundant agricultural byproduct. The plastic is non-biodegradable high-density polyethylene, used in milk jugs and detergent bottles. The faux wood is designed for high strength and minimal maintenance, avoiding the warping, splintering and fading of real wood. To discuss green outdoor projects, [contact a local landscaping contractor](#).