

# Choosing green building materials

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Special to this section

Choosing green building materials, often called sustainable, is a highly publicized yet often misunderstood area of green building. If you find yourself scratching your head and asking, "What is a sustainable material and why should I use one?" then read on.

First, sustainable materials are materials that serve our needs in the present without jeopardizing the ability of future generations to meet their needs.

All the answers, however, are not black and white because sustainable material selection involves investigation and trade-off. The process strikes a balance between a material's environmental impact and the traditional standards of cost, aesthetics, and performance. Impact must be evaluated over a product's life, including its source, manufacture, use and post-use. However, keep in mind that the use phase is usually the most significant because of the long life span of building materials.

To evaluate a material's sustainability, ask questions like: Can the material harm the installers or future occupants of the building? Is it durable? Can it help save energy once installed? Are there any pollutants or hazards created during its production? Where do the raw materials come from, and are they limited or nonrenewable? Is this product transported excessive distances? Is it recyclable? How will it be disposed of when its useful life is over?

Another question to ask is: why use sustainable materials? In addition to altruistic reasons such as protecting the environment, consid-



er health and safety reasons. Reducing the use of products that off-gas pollutants or toxins improves indoor air quality. And don't forget value—using sustainable materials can increase property resale values since more and more people are interested in healthy, non-toxic and energy-efficient environments. Also, using these materials makes financial sense because many of these products are initially cheaper to install or help reduce operating costs of the building.

To give you an idea of how to choose sustainable building materials, let's look at two types of insulation currently on the market.

Although all types of insulation save energy when properly installed, some products stand out because their impact is less harmful than others. For instance! one new fiberglass product is made by fusing two different types of glass together, which results in a curving, twisted fiber that is naturally springy. Fewer fiber particles get into the air or on the installer's skin because the fibers are stronger and less likely to break. These twisted fibers

also don't require a chemical binder. The absence of the formaldehyde binder eliminates the need for expensive pollution control equipment at the manufacturing plant. The manufacturer has also eliminated all other chemicals, including color.

Cotton batt insulation is another sustainable insulation choice. Produced from scraps of denim and T-shirt mills, it is 95 percent post-industrial recycled fiber—a positive use of an industrial waste product that would otherwise be landfilled. The embodied energy—the energy consumed during production—is lower because of the use of recycled fibers.

Using these fibers saves natural resources by reducing the amount of cotton that must be cultivated, harvested, and transported. It is 75 percent cotton and 25 percent polyester, is non-irritating to the touch, and is free of formaldehyde binders.

Sustainable materials selection requires balance, compromise and awareness. Investigating environmental impact and selecting materials is just one facet of developing an environmentally responsible building project. A thorough understanding of this process helps provide for the present generation without compromising the ability of future generations to meet their needs.

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