

2003 BuildingGreen Top-10 Products

Described below are the Top-10 Green Building Products for 2003, selected by the editors of GreenSpec® and Environmental Building News™. These are all products that have been added to GreenSpec during the past year, though some may have been on the market longer. They are listed in the order of their appearance in the CSI organizing framework. There is additional information on these products in the online edition of GreenSpec, which is available by subscription as part of the BuildingGreen Suite (www.BuildingGreen.com).

EnvironOxide pigment

[\[view GreenSpec listing\]](#)

EnvironOxide™ is an iron oxide pigment recovered from abandoned coal mine drainage. Iron Oxide Recovery, Inc. developed a process of extracting iron oxide from settling ponds and constructed wetlands that are used to contain the mine runoff. From the extracted iron oxide, Hoover Color Corporation produces a range of earth-tone pigments that are nontoxic, nonbleeding, and weather-resistant. The pigments can be used as a colorant in a wide range of building products, including concrete, cement block, paint, wood stain, and brick. For general information, contact IOR at 412-571-2204; for sales, contact Hoover Color. Iron oxide pigments made from EnvironOxide must be specifically requested.

What makes this product green?

- Post-industrial recycled material
- Reduces material use
- Restores ecosystems

Product contact:

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Hoover Color Corporation
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www.hoovercolor.com

Media and extraction process contact:

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Iron Oxide Recovery, Inc.
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Phone: 412-571-2204

BioBase 501 soy-based foam insulation

[[view GreenSpec listing](#)]

BioBase 501 is a low-density, open-cell polyurethane, spray-foam insulation derived in part from soybean oil. The insulation performs like petroleum-based open-cell polyurethane foam, but the polyol component of the two-part polyurethane consists of approximately 40% soy oil. The open-cell foam is installed at a density of 0.5 lbs/ft³ using carbon dioxide as the blowing agent. It expands to 100 times its liquid volume. The product has an R-value of 3.7/in. (R-13 at 3.5") and is applied with customized equipment by certified installers. In addition to being derived from a renewable agricultural product, BioBase 501 costs significantly less than conventional open-cell polyurethane insulation, because the petroleum-based polyol that the soy oil replaces is quite expensive.

What makes this product green?

- Rapidly renewable products
- Reduces energy loads

LEED Credits:

- EA Prerequisite 2 - Minimum Energy Performance
- EA Credit 1 - Optimize Energy Performance
- MR Credit 6 - Rapidly Renewable Materials

Mentioned in *EBN*: **September 2003**

Product and media contact:

Grant Swede
Bio-Based Systems
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MemBrain "smart" vapor retarder

[[view GreenSpec listing](#)]

MemBrain™ is a unique vapor retarder made from a polyamide (nylon-6) film. The transparent film changes permeability according to relative humidity, varying from less than one perm at 20% relative humidity (R.H.), as would be found during winter months in a cold climate, to more than 10 perms at 70% R.H. and over 20 perms at 95% R.H. Thus, use of the MemBrain vapor retarder can protect against condensation in the winter, while allowing for the drying of the building envelope in the summer, when humidity levels are typically much higher. The 2-mil-thick, high-tensile-strength sheeting is stronger and more durable than

standard 6-mil polyethylene. MemBrain is intended for use in heating and mixed climates; it is not suitable for cooling climates with high outdoor humidity or in buildings with high constant indoor relative humidity, such as spaces with swimming pools or spas. Interior finish materials and cavity-fill insulation must also be highly permeable (for example, unfaced fiberglass and vapor-permeable paints).

What makes this product green?

- Blocks introduction and spread of pollutants

Mentioned in *EBN*: **July 2003, November 2003**

Product and media contact:

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CertainTeed Corporation
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Fax: 610-341-7571
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American Pride latex paint

[[view GreenSpec listing](#)]

Southern Diversified Products has commercialized a line of high-performance, low-odor interior latex paints called "American Pride." Developed by polymer science researchers at the University of Southern Mississippi, the paint contains latex that utilizes acrylated castor oil as the building block. While some oil-based paints are derived from biobased materials such as linseed oil, this is the first latex paint to utilize biobased materials in this novel way. American Pride does not contain volatile organic compounds (VOCs) and thus has virtually no smell, allowing interior painting while a building is occupied. American Pride is the second paint to be certified by Green Seal under its new paint standard. According to Green Seal and painting experts interviewed by *EBN*, the paint performs well compared to other high-end interior latex paints, while being priced competitively with them. American Pride's flat white has a scrub rating of 880 strokes (ASTM D2486-89), while its eggshell white withstood 2,600 strokes. The paints are currently for sale at individual dealers throughout Mississippi and by special order in other parts of the country. A supplier in Mississippi interviewed by *EBN* has sold thousands of gallons of American Pride for both residential and commercial projects since December 2002. "The coverage is just unbelievable," this paint store manager told *EBN*.

What makes this product green?

- Rapidly renewable products
- Releases minimal pollutants

LEED Credits:

- IEQ Credit 3 - Construction IAQ Management Plan
- IEQ Credit 4 - Low-Emitting Materials

Mentioned in *EBN*: **February 2003**

Product and media contact:

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Keim Mineral silicate paints

[\[view GreenSpec listing\]](#)

Mineral silicate paints are not new, but they will be new to many in North America, including most of those in the green building industry. Keim Mineral Systems invented mineral silicate paints in Bavaria (Germany) in 1878, and Keim paints are used around the world today. The binder is potassium silicate dissolved in water (sometimes referred to as "waterglass"). This is combined with inorganic fillers and natural earth oxides to produce an inorganic "liquid stone" finish through a process of petrification. Unlike conventional coatings, mineral silicate paints do not form surface films that can flake off; they soak into and permanently bond with the substrate, providing tremendous life expectancy. Durability in excess of 100 years has been reported, according to Keim. Other features include absence of VOCs and odor, excellent permeability to moisture, natural and nontoxic ingredients, absolute noncombustibility, resistance to acid rain, and natural resistance to fungi and algae. The paint is appropriate for stucco, plaster, concrete, brick, other mineral surfaces, and some metals; it is not suitable for wood, plastics, or any flexible surface. Available in both exterior and interior products, with hundreds of standard colors and thousands of custom colors available, Keim mineral silicate paints are most commonly used today in the restoration of historic buildings. Keim Mineral Systems carries ISO 14001 certification. Cost is significantly higher than conventional paints.

What makes this product green?

- Durable or low-maintenance product
- Reduces construction impacts
- Releases minimal pollutants

LEED Credits:

- IEQ Credit 4 - Low-Emitting Materials

Mentioned in *EBN*: **October 2003**

Product and media contact:

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EnviroGT wall and corner guards

[[view GreenSpec listing](#)]

In commercial and institutional buildings, wall and corner guards are made almost exclusively from vinyl (PVC). InPro Corporation, a large manufacturer of these products, has introduced a non-PVC product, EnviroGT, which is made from 100% post-industrial recycled high-density polyethylene (HDPE) and, where wood is used, FSC-certified ash. Model G5100 Wall Guard has exposed ash on the top surface; Model G5000 has no exposed wood. The G160 Corner Guards are made from 100% post-industrial recycled HDPE. The company also offers recycled-HDPE handrails, and they plan to introduce a similar wall-base product in 2004.

What makes this product green?

- Alternative to PVC
- Certified wood
- Post-industrial recycled material

LEED Credits:

- MR Credit 4 - Recycled Content
- MR Credit 7 - Certified Wood

Product contact:

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Media contact:

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Case Systems laboratory casework

[[view GreenSpec listing](#)]

Case Systems is one of the largest U.S. manufacturers of high-pressure-laminate laboratory casework used in schools, scientific laboratories, and healthcare facilities. In 2003, the company switched its entire manufacturing process from wood-fiber particleboard to straw-based particleboard (the Dow BioProducts WOODSTALK™ product). As a result, the casework has improved moisture resistance and does not offgas formaldehyde (as does conventional particleboard produced with urea-formaldehyde binder). Case Systems' standard product is made with PVC edge banding, though ABS banding is available as an option. There was no change in product pricing with the transition to straw-based particleboard.

What makes this product green?

- Agricultural waste material
- Releases minimal pollutants

LEED Credits:

- MR Credit 4 - Recycled Content
- MR Credit 6 - Rapidly Renewable Materials
- IEQ Credit 4 - Low-Emitting Materials

Mentioned in *EBN*: **November 2003**

Product and Media contact:

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Mirra office chair

[\[view GreenSpec listing\]](#)

The Mirra chair is an ergonomic, attractive, and reasonably priced office chair. It was designed by Studio 7.5 Berlin, utilizing Herman Miller's new Design For the Environment (DFE) protocols now governing all new product development for the company. The protocols were developed in cooperation with McDonough Braungart Design Chemistry (MBDC) in Charlottesville, Virginia, using proprietary MBDC principles. The Mirra chair has a minimum number of components, with 96% of the chair's content specifically designed for recycling. Made from relatively benign materials, including polypropylene (the back), and nylon-6 (the base), each part is labeled for future disassembly and refurbishing or recycling. At its release in June 2003, color options for Mirra included 2 finishes, 10 seat colors, and 8 back colors.

What makes this product green?

- Designed for disassembly or recycling
- Alternative to other hazardous components
- Alternative to PVC
- Releases minimal pollutants

Mentioned in *EBN*: **June 2003**

Product contact:

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Hot Water D'MAND system

[\[view GreenSpec listing\]](#)

In a typical American home, 9,000 gallons of water per year are wasted by homeowners waiting for hot water to reach bathroom and kitchen fixtures. This

problem has gotten worse as homes have gotten bigger and water-pipe diameters have increased. When continuous-recirculation systems are installed to provide instant hot water (an increasingly common practice), water waste is eliminated, but the energy penalty is very great. Several products now provide a solution--through on-demand water circulation. The newest such product is the Taco D'MAND® System, introduced in mid-2003. Like the ACT Metlund D'Mand System introduced in 1991 (whose technology was licensed by Taco), this is an electronically activated water-pumping system that quickly delivers hot water to a fixture, while returning water that has been sitting in the hot-water pipes back to the hot-water tank. This is done either through a separate plumbing line (in new construction) or via the cold-water supply pipe (in retrofit applications). The D'MAND pump is activated by pushing a button near the fixture, or by remote control, and it switches off when hot water reaches a temperature sensor at the fixture. Because the water flow in the pipe is regulated by the pump rather than by the delivery rate of the faucet or showerhead, hot water is delivered very quickly--usually within 15 seconds. Aside from speeding hot water delivery and saving water, the D'MAND system can also save energy, especially if it is used in place of a continuous re-circ system.

What makes this product green?

- Conserves water
- Uses energy efficiently

LEED Credits:

- EA Prerequisite 2 - Minimum Energy Performance
- EA Credit 1 - Optimize Energy Performance
- WE Credit 3 - Water Use Reduction

Mentioned in *EBN*: **May 2003**

Product and Media contact:

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TOTO EcoPower faucets

[[view GreenSpec listing](#)]

Sensor-activated controls are increasingly common on faucets, toilets, and urinals in commercial restrooms. While the primary driver is usually sanitation,

sensor controls on faucets can also save a significant amount of water. These sensors are typically powered either with batteries that require regular replacement, or with hard-wired AC power (which most contractors shy away from, because both plumbing and electrical trades are required for installation). In 2003, the Japanese plumbing manufacturer TOTO introduced a unique hydro-powered sensor-activated faucet to the U.S. market. This EcoPower faucet uses a tiny hydropower generator to keep a manganese dioxide lithium battery charged. Being battery-powered, it does not require hardwiring to the building's electrical system, and the labor and environmental impacts of regular battery replacement and disposal are greatly reduced. TOTO estimates the battery will last 10 years with an average of 5 uses per day and as long as 19 years with high usage. The EcoPower faucet uses 0.17 gallons in a standard 10-second cycle and consumes 1.0 gallon per minute when running--both well below the federal standard and standard practice. EcoPower is available with a standard or gooseneck spout.

What makes this product green?

- Conserves water
- Uses energy efficiently

LEED Credits:

- WE Credit 3 - Water Use Reduction

Mentioned in *EBN*: **January 2003**

Product contact:

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