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Behind the Logos
Understanding Green Product Certifications

THE MORE SELF-EVIDENT A product's attributes are, the less they need to be verified with certification. Lumber doesn't need certification of its wood content, for example, but certification is helpful for distinguishing forest products that were sustainably harvested in responsibly managed forests, since their origin isn't immediately evident. Similarly, a manufacturer of furniture that doesn't emit formaldehyde benefits when an accredited third party verifies its product's performance and gives it a seal of approval. When green products are visually indistinguishable from their conventional cousins, "the only way you're going to peel away the onion is by certification," says Brandon Tinianov, Ph.D., P.E., of Serious Materials, a manufacturer.

The "UL" symbol of safety from Underwriters Laboratories and the Good Housekeeping Seal of Approval have influenced purchasing decisions for decades. But more recently, the environmental movement has created a new market for certifications. The success of major certification programs like Energy Star or the Forest Stewardship Council (FSC), which are responsible for some of the best-known green building product certifications today, has required growing public awareness of ecological problems, interest from buyers in purchasing environmentally friendly products, and the willingness of manufacturers to comply with a standard, among other things.

This article starts with a bird's-eye view of the certification world and then provides overviews of many green product certification programs, beginning with single-attribute certifications, those developed to address specific environmental claims such as sustainable forestry and indoor air quality. Later, the article looks at multiple-attribute programs that consider broader factors and at programs that provide even more comprehensive information.

The pyramid skylight in an Elkhart, Indiana, elementary school uses Kalwall composite glazing with insulating Nanogel silica aerogel. Nanogel has been certified for low manufacturing impacts in Cradle to Cradle and evaluated for its performance through the GreenSpec Directory. Photo: Bill Lempke

Certification Basics

A standard is a set of guidelines and criteria against which a product can be judged. A certification says that a product meets those criteria. In the green building product arena, numerous certifications follow this general outline, but in widely varying ways.

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Quote of the month:

"I relish getting a certification; I dread getting 20 certifications."

Brandon Tinianov, Ph.D, P.E., of Serious Materials, a product manufacturer

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gies. The latest partners in this effort, Wal-Mart and the U.S. Conference of Mayors, are working with CCI to bring the benefits of the purchasing consortium to the 1,100 member cities of the Conference of Mayors. Among the organizations tapping into this purchasing power is the New York City Housing Authority (NYCHA), which has announced a partnership with CCI and the U.S. Department of Housing and Urban Development (HUD) to retrofit its more than 2,600 public housing buildings. NYCHA, the largest public housing authority in the U.S., will work with CCI and HUD to update its central heating plants, replace some hot water tanks with on-demand water heaters, upgrade lighting fixtures, and reduce overall electricity consumption by 15%. More information is available at www.clintonfoundation.org/cf-pgm-cci-home.htm or at www.nyc.gov/nycha.

The two-story residential units at the Vento in Calgary, Alberta, open onto a shared courtyard, providing residents with access to the outdoors. The balconies also provide shading for the lower levels of the units. Photo: Busby, Perkins + Will

Canadian Multifamily Project Earns LEED Platinum—The Vento, an urban infill mixed-use project in Calgary, Alberta, designed by Perkins + Will for Windmill Development Group, earned a Platinum rating in the Canada Green Building Council's LEED Rating System, making it the first multifamily residential project to do so. Twenty two-story townhouse suites are situated above ground-floor retail spaces in the project, which also contains two affordable housing units. Heat-recovery ventilators, high-performance windows, and occupancy sensors for lighting help conserve energy, making the building 47% more efficient than required by the Model National Energy Code, according to modeling. Decks on the units provide shading from unwanted solar heat gain. Rainwater and graywater are collected and used for flushing toilets and irrigation; the project uses approximately 50% less potable water than a comparable development built to code.

Product News & Reviews

Beneficial Bacteria Reduce Urinal Water Use

Even as lower gallon-per-flush standards have reduced the water use of conventional urinals in recent years, both ultra-low-flush urinals and waterless models have opened possibilities for even greater water conservation. Although urinals that use 1.0 gallon of water per flush (gpf; 6 lpf), or even more, meet relevant codes, these models are now obsolete, environmentally speaking. Yet the expense of replacing them and the perceived risk of installing urinals with newer technology may be too great in many buildings. Now a product using beneficial bacteria promises to convert conventional urinals to virtually waterless operation while also reducing their odor and maintenance needs.

The Ecoblue Cube is a two-inch-square (50-mm-square) block intended to sit on the drain of a standard urinal. It slowly releases bacteria, which multiply and form a biofilm that lines the bowl, trap, and pipes. The bacteria metabolize uric acid, the culprit behind urine odor and uric scale. By reducing or eliminating this odor, the bacteria also eliminate the need to flush after every use. Depending on how the urinal operates and drains, flushing may be necessary just once a day, during regular cleaning.

Lewis Kitts, director of buildings and grounds for the public school in Jamestown, Rhode Island, began using the Ecoblue Cube with eleven 1.6-gpf urinals in March 2006. Kitts' staff altered the existing manual flush lever so that maintenance personnel can use a simple device to

flush, but occupants cannot. Staff flush the urinals twice a day, and clean them daily, as they did prior to using Ecoblue, Kitts said. Using the product, the urinals are "easy to clean and smell good, performance is good, and water use is way down," said Kitts, whose water bills indicated a 24,000-gallon (91,000-l) savings during the nine months since he started using the Cubes. In addition to saving water, using the Cubes is significantly cheaper than replacing standard urinals with ultra-low-flush or waterless models, "not to mention that you can go back to using water anytime you need to," said Kitts.

Damian Cox at Ecoblue, the U.S. distributor, said that the product was invented in 1998 in Great Britain, where it has been used successfully in a variety of settings, including military institutions. The Ecoblue Cube uses the bacterium *Bacillus subtilis*, which is common in soil and has numerous uses, including production of the fermented soybean food product natto and remediation of certain radioactive waste. "It outcompetes the odor-forming bacteria, maintains the hygiene of the urinal, and breaks down organic scale," said Cox. The Cube also releases a fragrance that masks any odor from the urine itself prior to its breakdown.

Photo: Ecoblue

The Ecoblue Cube, shown here by the drain, can convert conventional flushing urinals to near-waterless operation, while avoiding some of the pitfalls of waterless urinals.

The Cube is designed for use with flushing urinals, because flushing clears the debris and sediments that are not digested by the bacteria. Urinals that flush based on a sensor can be adjusted to flush less often, and flush levers can be removed from manual-flush urinals, as in Jamestown. Ecoblue sells the cubes in buckets of 50, at about $8 per cube, said Cox. Since conventional cleaning products will kill the bacteria (they can be quickly reestablished), Ecoblue sells a cleaning product that contains the same bacteria and helps maintain the bacterial biofilm during cleaning. It costs $208 per gallon ($55/l) as a concentrate and is used in a diluted form. A single cube lasts about 1,000 uses, according to Cox, and the Ecoblue Cube breaks even in terms of cost when water is priced at $6–$8 per thousand gallons (3,800 l).

In facilities with urinals that frequently clog due to uric scale, the cost picture may be even better. By metabolizing uric acid, according to Cox, the Cube prevents buildup of scale, which is common in flushing and waterless urinals alike. Uric scale in the drain line is a persistent source of odor even in a well-maintained bathroom, and it can clog waterless or flushing urinals, causing emergency calls to the plumber. Paul Charman, senior conservation planner at the Arizona Department of Water Resources, said that Falcon waterless urinals there had developed odor problems. Ecoblue replaced the urinal cartridges and placed Ecoblue Cubes in the bowls of four of them. Subsequently, Charman told *EBN* that janitors "[had] to use hardly any water to clean the urinals, and it's gotten rid of the odor problems," and he would expand use of the Cube to more urinals. According to Cox, Cube installations like these can extend the life of waterless urinal cartridges indefinitely and eliminate the need for the special trap-sealing fluid. Use of the Ecoblue cleaning fluid can also reduce odor from uric scale buildup surrounding urinals.

On the downside, when *EBN* staff tested the Ecoblue Cube in our nine-year-old Waterless-brand urinal, some staff complained about the perfume odor from the Cube (although they appreciated the removal of odor from uric scale that had accumulated in the drain and around the cartridge). Our bathroom is very small and lacks continuous ventilation, likely concentrating the perfume. In response EcoBlue offered a Cube with less perfume, which reduced the concern. Overall, the product promises cost savings and environmental benefit with little downside.

– Tristan Korthals Altes

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PlybooPure is Formaldehyde Free

Most bamboo flooring and panel products are made with urea-formaldehyde (UF) glue. Citing tests based on European standards (none have yet been certified to the Greenguard or FloorScore standards in the U.S.), most bamboo manufacturers claim that their products have very low formaldehyde emissions, but few can honestly claim zero added urea-formaldehyde. By January 2008, however, bamboo flooring pioneer Smith & Fong will be shipping PlybooPure—a line of bamboo flooring and panel products made with a polyisocyanurate binder (similar to the glues used in agrifiber products) in place of UF.

With its partners in China and Taiwan, Smith & Fong has spent over