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# CRADLE TO CRADLE CERTIFICATION

## MBDC Establishes a New Certification Program for Products

BY STEVE BOLTON

**I****N 1995**, "green" architect William McDonough and chemist Michael Braungart made tangible their revolutionary idea for the environmental design of products: Move beyond minimizing waste in product manufacturing and use by eliminating the very concept of waste itself. Working together, these innovative thinkers created the first product to be considered Cradle to Cradle,<sup>™</sup> a compostable upholstery fabric. • The men helped develop a fabric that is safe for human health and the

environment during its entire life cycle and can become agricultural mulch following its use. This used fabric also can be a source for new fabric; the mulch produced from used ramie, wool, safe

dyes and additives can be used to grow new ramie and crops to feed the sheep that produce new fabric.

The fabric embodied McDonough and Braungart's vision that products could be designed as cradle-to-cradle nutrients.



Steelcase Inc.'s Think<sup>™</sup> chair has been certified Cradle to Cradle<sup>™</sup> Silver.

PHOTO COURTESY OF STEELCASE INC., GRAND RAPIDS, MICH.



Solutia Inc.'s Ultron<sup>®</sup> nylon 6,6 fiber has been certified as Cradle to Cradle<sup>™</sup> Technical Nutrient.

PHOTO COURTESY OF SOLUTIA INC., KENNESAW, GA.

Victor Innovatex Inc.'s Eco Intelligent<sup>®</sup> Polyester fabric has been certified Cradle to Cradle<sup>™</sup> Technical Nutrient.

PHOTO COURTESY OF VICTOR INNOVATEX INC., SAINT-GEORGES, QUEBEC, CANADA



# Setting an Example

One of the first building materials to undergo the Cradle to Cradle™ Certification process is Moon Township, Pa.-based CENTRIA's Formawall™ Dimension Series® insulated metal composite panels.

McDonough Braungart Design Chemistry (MBDC) is working with CENTRIA and its suppliers to assemble ingredient data for every material contained within the panels. MBDC will characterize the human health and environmental effects of each material and the overall panel product based on 19 criteria, such as carcinogenicity, mutagenicity, endocrine disruption, acute and chronic toxicity, persistence and bioaccumulation in the environment, and heavy metal and organohalogen content, as well as the results of published scientific research from the U.S. Environmental Protection Agency, National Institutes of Health, National Library of Medicine, National Cancer Institute, International Agency for Research on Cancer and other sources.



CENTRIA's Formawall™ Dimension Series® panels with Duracast® Textured Finish transformed a warehouse into a contemporary medical research office building at Central Parke, Norwood, Ohio. CENTRIA currently is seeking Cradle to Cradle™ Certification for the panels.

PHOTO COURTESY OF CENTRIA, MOON TOWNSHIP, PA.

Next, MBDC will evaluate the potential for the panels to flow within a perpetual technical metabolism of manufacturing, use and recycling. To complete the certification assessment process, MBDC will review data about water use, effluent water quality, renewable energy use and working conditions at CENTRIA's manufacturing plant. Based on the results of these evaluations, the Formawall panels will be certified Silver, Gold or Platinum. To learn more about these panels, visit [www.centria.com](http://www.centria.com).

"CENTRIA is committed to providing environmentally responsible materials," explains Rich Guinn, vice president of business development for CENTRIA. "The cradle-to-cradle process helps CENTRIA identify, develop and improve products to meet strict sustainable requirements while positioning our products in the market with an identifiable certification system."

## CRADLE TO CRADLE CERTIFIED PRODUCTS

### GOLD

#### ZODY™ OFFICE CHAIR

- Certified with specific seat fabrics
- Contains up to 98 percent recyclable materials and up to 51 percent recycled content

*Haworth Inc., Holland, Mich., [www.haworth.com](http://www.haworth.com)*

### SILVER

#### TARTAN® TRACK

- Running track with possible use for other surfaces
- Environmentally preferred polyurethane substance and mercury-free

*Athletic Polymer Systems Inc., Corona, Calif., [www.tartan-aps.com](http://www.tartan-aps.com)*

#### THINK™ OFFICE CHAIR

- Contains 99 percent recyclable materials and up to 41 percent recycled content

*Steelcase Inc., Grand Rapids, Mich., [www.steelcase.com](http://www.steelcase.com)*

### TECHNICAL NUTRIENT

#### ECO INTELLIGENT® POLYESTER

- Fabric for use in office furniture and similar applications
- Antimony-free polyester manufactured with a nonheavy-metal catalyst

*Victor Innovatex Inc., Sains-Georges, Quebec, Canada, [www.victor-innovatex.com](http://www.victor-innovatex.com)*

#### ULTRON®

- Nylon 6,6 fiber for use in floor coverings and similar applications

*Solutia Inc., Kennesaw, Ga., [www.ultron.com](http://www.ultron.com)*

### BIOLOGICAL NUTRIENT

#### HYCRETE®

- Concrete additive to inhibit rusting and corrosion of rebar
- Permits concrete recycling following use

*Hycrete Technologies LLC, Jersey City, N.J., [www.hycrete.com](http://www.hycrete.com)*

#### CLASSIC WOOL FLANNEL

- Meets seating fabric performance requirements

*Pendleton® Woolen Mills Inc., Portland, Ore., [www.pendleton-usa.com](http://www.pendleton-usa.com)*



## CRADLE TO CRADLE

McDonough and Braungart's paradigm, Cradle to Cradle™ Design, is a unique approach to sustainability that perceives the safe and productive processes of nature's biological metabolism as a model for developing an equally effective technical metabolism for the flow of industrial materials. With this perspective, materials and product components can be designed for continuous recovery and reutilization within ecological or industrial cycles (biological nutrients and technical nutrients, respectively).

The fundamental elements of Cradle to Cradle Design are based on the following principles that drive these systems in nature:

### WASTE EQUALS FOOD

- Design materials and products that are food for other systems. In other words, the materials and products can be used over and over in biological or technical metabolisms.
- Design materials and products that are safe and have life cycles that leave a beneficial legacy for human health and the environment.
- Create and participate in systems to collect and recover the value of these materials and products following their use.

### USE CURRENT SOLAR INCOME

- The quality of energy matters. Use renewable energy.

### CELEBRATE DIVERSITY

- Water is vital for humans and all other organisms. Manage water use to maximize quality and promote healthy ecosystems while remaining respectful of the local impacts of water use.
- Use social responsibility to guide a company's operations and stakeholder relationships.

Utilizing biological and technical nutrients allows a company to eliminate the concept of waste. Recapturing materials encourages a manufacturer to integrate higher quality materials and focus on the full product life cycle; materials are not fully relinquished to

Pendleton Woolen Mills Inc.'s Classic Wool Flannel has been certified Cradle to Cradle™ Biological Nutrient.

PHOTO COURTESY OF PENDLETON® WOOLEN MILLS INC., PORTLAND, ORE.

customers when products are sold if the materials and their value are recaptured following product use. Product cycling among multiple life cycles also creates a mechanism for reconnecting with customers to market the next product generation and provides incentives for return sales.

In the 10 years since the compostable fabric was released, McDonough, Braungart and their consulting firm, McDonough Braungart Design Chemistry (MBDC), have assisted numerous clients across various industries to implement Cradle to Cradle Design within their products and operations. Working with these clients, MBDC has further refined and enhanced its cradle-to-cradle conception of sustainable design.

## CERTIFICATION

Expertise derived from its projects has helped MBDC launch its Cradle to Cradle™ Certification program to qualify products and materials based on the extent to which they embody the cradle-to-cradle ideal. This certification expands the definition of product quality by moving beyond the traditional measures of cost, performance and aesthetics to incorporate human health, environmental health and recyclability.

At the core of the certification process, MBDC assesses a product or material's ingredients and the complete formulation for impacts on human health and the environment throughout its life cycle. MBDC also evaluates the capacity for the product to be fully recycled or composted. Certification of a finished product further requires the evaluation of energy use quantity and quality, such as relative proportion of renewable energy, water-use quantity, effluent water quality and workplace ethics associated with manufacturing. If a candidate material or product is found to achieve the necessary criteria, it will be certified as a Cradle to Cradle™ Product or Cradle to Cradle™ Technical/Biological Nutrient.

Cradle to Cradle products earn one of three tiers of certification—Silver, Gold and Platinum—which reflect continuing improvement along the cradle-to-cradle trajectory. This certification encompasses all five categories of metrics—materials, nutrient (re)utilization, energy, water and social responsibility.

Cradle to Cradle Technical/Biological Nutrient products endure a binary, pass-fail evaluation for materials and simple products that are homogeneous in nature. This certification encompasses only the materials and nutrient (re)utilization criteria.

The program already has certified seven products. (For a complete list of certified products, see *eco-structure* Jan/Feb 2006 issue, "Cradle to Cradle Certified Products," page 57.) Each product is certified for one year, at which time a company can renew its certification subject to MBDC's assessment of any changed product characteristics.

## FOR THE FUTURE

Cradle to Cradle Certification allows a company to tangibly and credibly differentiate its product's sustainability attributes within the marketplace and among its stakeholders.

MBDC is developing a system and guidelines by which companies who have certified products can license the use of the cradle-to-cradle brand for marketing. Information about the certification process and currently certified products are available on the program Web site, [www.c2ccertified.com](http://www.c2ccertified.com).

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Haworth Inc.'s Zody™ office chair has been certified Cradle to Cradle™ Gold.

PHOTO COURTESY OF HAWORTH INC., HOLLAND, MICH.