

Memo

To: Kim McIntyre
From: Elliott Baum – Director Engineering
CC:
Date: Tuesday, October 30, 2007
Re: “Green” Information

Protecting the environment is an important part of our industry. The idea of “green” can no longer be considered just a “trend”. “Green” design not only makes a positive impact on public health and the environment, it also reduces operating costs, enhances marketability, and helps create a sustainable community.

In late 2004, the U.S. Green Building Council adjusted its LEED credit system to allow application to interior construction as well as new buildings. After 4 years of development the Leadership in Energy and Environmental Design approved a rating system for commercial interiors (LEED-CI). With this new design tool in place it is now possible to collect LEED points specific to commercial interiors and ultimately achieve LEED certification.

The challenge to manufacturers is changing not only do they need to entice with product design they must also incorporate new materials into those designs which meet the requirements for “green” products. From a specifier’s point of view, complying with the new LEED guidelines is not difficult. There has been an explosion of manufacturers that cater to this growing market.

LEED-CI is a voluntary, consensus-based, market-driven building rating system based on existing proven technology. It evaluates environmental performance from a “whole

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building” perspective over a building’s life cycle, providing a definitive standard for what constitutes a “green building”. LEED is based on accepted energy and environmental principles. It is a feature oriented system where credits are earned for satisfying each criteria. Different levels of “green building” certification are awarded based on the total credits earned.

Building “green” is a good idea not only for the environment but many communities offer incentive programs and special funding if there is LEED certification involved.

If you have further questions or would like more information please contact Elliott Baum, Director of Engineering @ (314) 772-4700 ext. 228.

Environmental Information and Specifications for the Io, Io Plus, and Telesto Tables

How Green are Berco's Tables?

Forbo Linoleum (Marmoleum) Table Top Surface

Forbo Linoleum is a sustainable material and meets LEED U.S. Green Building Council (USGBC) certification standards and the environmental quality standards of the Netherlands, Scandinavia, Germany, Austria and the United States. Linoleum is made from renewable raw materials such as Rosin, Wood flour, Cork flour, Linseed oil, Limestone, and Jute. Forbo Linoleum is completely biodegradable and does not release harmful substances or gases such as chlorine and dioxins.

Adhesive Used on the Marmoleum Surface and Paper Backer

Our adhesive meets the USGBC standards for certification under the LEED program rating system (requirements for Low-Emitting materials).

Product Data

- Total Volatile Organic Compound ~ 7g/L
- VOC Less water and exempt compound ~ 13g/L
- VOC Not concerned during curing ~ 13g/L
- Volatile Hazardous Air Pollutant ~ VHAP Content: Below Deminimus Levels.

Medex: Table Top Core Material

Medex is SCS certified for recycled or recovered wood fiber content and containing no-added formaldehyde. Used in place of sanded plywood and solid wood in non-structural applications, Medex gives you the versatility of a composite panel with the low emissions of solid wood.

Aluminum Extrusions Used for Pedestal Columns, Electrical Drawer, and Comfort Edge

The billets used to produce our extrusions consist of approximately 30% virgin aluminum and the remaining 70% consists of reclaimed

or scrap material. Aluminum is a virtually infinitely recyclable material. The 70% recycled material content exceeds the LEED standard for building materials set up by the USGBC. These extrusions are manufactured in a mill that is less than 500 miles away from Berco's manufacturing factory. LEED credit is given to building materials that are manufactured less than 500 miles from the final assembly location.

Aluminum Die Castings Used for Table Top Supports, Drawer Ends and Pedestal Base Plates

All of the die castings on this table are made from 70 – 80% reclaimed or scrap aluminum. This die cast aluminum, again, is an infinitely recyclable material. The 70 – 80% recycled content also exceeds the LEED standard for building materials set up by USGBC.

ABS Plastic DogBone and Connectors

ABS plastics have been used in Europe for years in manufacturing office furniture because of their lower impact to the environment. PVC (Poly Vinyl Chloride) has been used in the United States because of its ease of manufacturing. When burned in the landfill, PVC creates harmful gasses. ABS (Acrylonitrile Butadiene Styrene) does not emit toxic gasses when burned. When Berco chose the plastic for our IO tables, we knew that ABS would be the responsible choice.

Should you have any further questions related to our IO, IO Plus, or Telesto tables please contact us directly.

Elliott Baum
Director of Engineering
888-772-4788

Green Initiative

TOPS:

Forbo Linoleum

- Made of renewable raw materials (rosin, wood flour, cork flour, linseed oil, limestone & jute)
- 100% biodegradable
- Approved as a sustainable material by HOK
- Meets LEED certification standards

Adhesive

- PVA glue is a water based glue with low VOC's
- Meets USGBC standards for certification under the LEED system for Low-Emitting materials

Core

- SCS certified
- No-added formaldehyde
- Versatility of a composite panel with the emissions of solid wood
- Meets requirements for LEED-CI credits.

BASES (Telesto, IO, & IO Plus):

Bases and columns are made of 70-80% reclaimed or scrap aluminum (70% recycled material content exceeds the LEED standard for building materials)

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INTERNAL FACTORY:

- Primary packing material is corrugated cardboard made of 75% recycled content and is recyclable.
- Yearly training of employees to improve safety and health skills in the factory.
- Continuous reduction of VOC;s and HAP's emission levels.
- Annual reduction of hazardous waste generation levels.
- Indoor air quality and PPE programs for dust, chip and chemical exposure.
- Reclaiming of powdercoat overspray
- Recycling of aluminum and core off all.

LEED CREDIT INFORMATION FOR IO, IO PLUS, & TELESTO PRODUCT LINES

Credits for Materials and Resources

4.1 Recycled Content 10% (post-consumer + ½ pre-consumer)

Specifying IO, IO Plus, and Telesto w/Aluminum Die Castings used by Berco Inc. meets the requirements for credit under LEED 4.1 Recycled Content because the aluminum die castings used in manufacturing these products are of 70% - 80% reclaimed or scrap aluminum.

4.2 Recycled Content 20% (post-consumer + ½ pre-consumer)

Specifying IO, IO Plus, and Telesto meet the requirements for credit under LEED 4.2 Recycled Content because the core material and linoleum surface material have recycled content such that they constitute 20% of the total value of the material used in the project.

Credits for Local/Regional Materials

5.1 Regional Materials 20% Manufactured Regionally

Specifying IO, IO Plus, and Telesto w/Aluminum Extrusions used by Berco Inc. meet the requirements for credit under LEED 5.1 Local/Regional Materials because the billets used to produce our extrusions are manufactured within a 500 mile radius.

5.2 Regional Materials 10% Extracted Regionally

Specifying IO, IO Plus, and Telesto meet the requirements for credit under LEED 5.2 Local/Regional Materials because in addition to 5.1 these products use a minimum of 10% of combined value of materials extracted, harvested, or recovered as well as manufactured within a 500 mile radius.

Credits for Rapidly Renewable Materials

6.0 Rapidly Renewable Materials

Specifying IO, IO Plus, and Telesto w/linoleum tops manufactured by Berco Inc. meets the requirements of LEED 6.0 Rapidly Renewable Materials because Forbo Linoleum is made from plants that are typically harvested within a ten-year cycle or shorter for 2.5% of the total value of all building materials and products used in the project, based on cost.

Credits for Certified Wood

7.0 Certified Wood

Specifying IO, IO Plus, and Telesto w/linoleum tops manufactured by Berco Inc. meets the requirements of LEED 7.0 Certified Wood because Medex the product used for the core represents 69% of the total table volume and is SCS certified for recycled or recovered wood fiber content and contains no added formaldehyde.

Credits for Indoor Environmental Quality

4.5 Low Emitting Materials – Systems Furniture and Seating

Specifying IO, IO Plus, and Telesto w/linoleum tops manufactured by Berco Inc. meets the requirements for LEED 4.5 Low Emitting Materials because the PVA adhesive used to secure the linoleum and backer to the core has a total VOC (volatile organic compound) of 7 g/l.

Credits for Local/Regional Materials

5.1 Regional Materials 20% Manufactured Regionally

Specifying IO, IO Plus, and Telesto w/Aluminum Extrusions used by Berco Inc. meet the requirements for credit under LEED 5.1 Local/Regional Materials because the billets used to produce our extrusions are manufactured within a 500 mile radius.

5.2 Regional Materials 10% Extracted Regionally

Specifying IO, IO Plus, and Telesto meet the requirements for credit under LEED 5.2 Local/Regional Materials because in addition to 5.1 these products use a minimum of 10% of combined value of materials extracted, harvested, or recovered as well as manufactured within a 500 mile radius.

Credits for Rapidly Renewable Materials

6.0 Rapidly Renewable Materials

Specifying IO, IO Plus, and Telesto w/linoleum tops manufactured by Berco Inc. meets the requirements of LEED 6.0 Rapidly Renewable

Materials because Forbo Linoleum is made from plants that are typically harvested within a ten-year cycle or shorter for 2.5% of the total value of all building materials and products used in the project, based on cost.

Credits for Certified Wood

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Specifying IO, IO Plus, and Telesto w/linoleum tops manufactured by Berco Inc. meets the requirements of LEED 7.0 Certified Wood because Medex the product used for the core represents 69% of the total table volume and is SCS certified for recycled or recovered wood fiber content and contains no added formaldehyde.

Credits for Indoor Environmental Quality

4.5 Low Emitting Materials – Systems Furniture and Seating

Specifying IO, IO Plus, and Telesto w/linoleum tops manufactured by Berco Inc. meets the requirements for LEED 4.5 Low Emitting Materials because the PVA adhesive used to secure the linoleum and backer to the core has a total VOC (volatile organic compound) of 7 g/l.

Medex

The LEED-CI Credits which apply to this product in the evaluation of the use for Berco Inc. are as follows:

Credits for Materials and Resources:

4.1 Recycled Content 10% (post-consumer + ½ pre – consumer)

The intent of which is to reduce extraction and processing of virgin materials.

The requirement for this credit is that the materials including furniture and furnishings have recycled content such that the post-consumer content + ½ post-industrial content constitute at least 10% of the total value of the materials in the project. Mechanical and electrical components not included in this equation. **1 pt.**

4.2 Recycled Content 20% (post-consumer + ½ pre-consumer)

The intent of this credit being the same as 4.1.

However, the requirements are that the materials including the furniture and furnishings have recycled content such that post-consumer + ½ pre-consumer content constitute at least 20% the total value of the materials in the project. Mechanical and electrical components not included in this equation. **1 pt. in addition to 4.1**

Recycled Content- The value of the recycled content portion of a material shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total cost (\$) of the item.

Credits for Regional Materials

5.1 Regional Materials 20% Manufactured Regionally

The intent of which is to increase demand for materials and products that are extracted and manufactured within the region thus supporting regional economy and reducing the environmental impact of transportation.

The requirements are a minimum of 20% of combined value of construction and furniture materials and products be manufactured within a 500 mile radius. **1pt.**

Manufacturing – refers to final assembly of components of product that is installed.

Example: Hardware from Dallas, lumber from Vancouver, assembled in St. Louis. The final assembly location is St. Louis. (500 Mile radius).

5.2 Regional Materials 10% Extracted Regionally

Intent same as 5.1

Requirements are, in addition to 5.1 uses a minimum of 10% of combined value of construction and furniture materials extracted, harvested, or recovered as well as manufactured within a 500 mile radius of the project. **1 pt.**

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Credits – Indoor Environmental Quality

4.4 Low-Emitting Materials Paints and Coatings

Would not apply to the use of this product by Berco Inc. because it applies only to paints and coatings applied on-site.

Product states no added formaldehyde
Used in circumstances where moisture is a concern
Used in non-structural applications

Forbo Linoleum

The LEED-CI Credits that apply to this product in the evaluation of the use for Berco Inc. are as follows:

Credits for Materials and Resources

4.1 Recycled Content 10% (post-consumer + ½ pre-consumer)

The intent of which is to reduce extraction and processing of virgin materials.

The requirement for this credit is that the materials including furniture and furnishings have recycled content such that the post-consumer content + ½ post-industrial content constitutes at least 10% of the total materials in the project. Mechanical and electrical components not included in this equation. **1 pt.**

4.2 Recycled Content 20% (post-consumer + ½ pre-consumer)

The intent of this credit being the same as 4.1

However, the requirements are that the materials including the furniture and furnishings have recycled content such that post-consumer + ½ pre-consumer content constitute at least 20% the total value of the materials in the project. Mechanical and electrical components not included in this equation. **1 pt. in addition to 4.1**

Recycled Content- The value of the recycled content portion of a material shall be determined by dividing the weight of the recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total cost (\$) of the item.

6.0 Rapidly Renewable Materials

The intent of which is to reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.

The requirements are to use rapidly renewable materials and products made from plants that are typically harvested within a 10-year or shorter cycle, for 5% of the total value (\$) of all materials and products in the project.