

**LEED Product Review**  
**Powerpanel HD and H20**  
**Acrytec Panel Industries, Woodbridge ON**





October 26, 2015

Mr. Bruno Matteo  
Acrytec Panel Industries  
40 Gaudaur Road Unit #1  
Woodbridge, Ontario  
L4L 4S6

**Re: LEED Product Review – Powerpanel**

Dear Mr. Matteo,

We are pleased to provide you with our LEED Product Review for Acrytec Panel Industries. We hope the findings and solutions presented in this report will empower you to market a product that not only has lower ecological impacts and manufacture costs, but also is primed to be integrated into the LEED building certification process.

Our analysis indicates that the Powerpanel has features that will position it well for the LEED certification system. The rating system strives to balance environmental responsibility, resource efficiency, user comfort and well-being, and the economics of building. It includes all stakeholders in an integrated development process. This process results in a high-quality product that maximizes the owner's return on investment.

Identifying LEED-friendly product features, presented in more detail below, translates to increased product marketability, positioning the product for use in LEED buildings and other forward-thinking environmentally conscious projects.

Ecovert would like to thank Acrytec Panel Industries for the opportunity to further develop our professional relationship and assist you in identifying the strategies and solutions required to advance Acrytec Panel Industries in the green marketplace.

Best Regards,

Jim Lord BBA, FCIP, LEED AP, SMaRT AP  
Principal  
Ecovert Corporation



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## 1.0 Executive Summary

Ecovert was retained by Acrytec Panel Industries to conduct a LEED Product Review for its Powerpanel HD and H20 products. The objective of the LEED Product Review is to determine the product's applicability to the LEED Rating System and to put forth potential strategies for increased product applicability in green infrastructure projects.

The LEED Product Review of Powerpanel provides an in-depth analysis of findings from the product appraisal and documentation provided by Acrytec Panel Industries. In our report we have outlined the available LEED Rating Systems and the credits within these systems which pertain to building products. Our findings are intended to assist Acrytec Panel Industries in aligning its products with opportunities to gain points in a LEED system.

The LEED Rating Systems are rigorous standards that enable buildings to stand out through demonstrating their environmental excellence. The recommendations provided below identify opportunities for Powerpanel to contribute to LEED certification in building projects, but are not a guarantee; to achieve these benefits, product teams must work with the project's integrated design team to ensure LEED credit requirements are met.

## 2.0 LEED and Building Products

### 2.0 LEED Overview

Since the Canada Green Building Council's (CaGBC) inception in 2002, the LEED (Leadership in Energy and Environmental Design) rating system has become the industry standard for environmental building design. The LEED Rating System is a comprehensive, voluntary design and assessment tool which helps architecture, engineering, and construction professionals improve building efficiency and measure the sustainability of their projects.

LEED certification showcases environmental commitment and provides the necessary tools for an immediate, measurable impact on building performance. LEED promotes a whole-building approach to sustainability by recognizing performance in six key areas of human and environmental health: sustainable site development, water savings, energy efficiency, conservation of materials and resources, indoor environmental quality, and innovation in design.

LEED projects are unique as they incorporate economic, environmental and social goals into the building design, construction and operation. This approach can achieve a positive impact on triple bottom line – economic, environmental and social – asset performance.

Each program shares a common set of sustainable criteria for demonstrating excellence in sustainable buildings and is tailored to meet the needs of landlords and tenants. The following is a review of each program and an assessment of how these rating systems incorporate sustainable products.

### 2.1 Product Recognition in LEED

The LEED system recognizes that for a building to be truly sustainable, the products used within the building must also be environmentally and socially responsible. While there are a multitude of different products used in building construction and operations, the LEED system has identified key product attributes that contribute to a healthy and sustainable building. Products that excel in these attributes help buildings receive additional points toward a LEED rating. Each rating system – whether for new buildings, existing buildings, homes, etc – recognizes different product attributes. Some common sustainable product attributes recognized by LEED are:

- Low-emitting materials (low in VOCs, formaldehyde, particulates)
- Recycled content



- Locally sourced materials
- Greenguard-certified furniture
- Carpet and Rug Institute – Green Label Program-certified carpet
- FloorScore certified hard surface flooring
- Low-flow water fixtures

The following section describes each rating system in more detail, and outlines the rating system's requirements for sustainable products and the credits products may affect.

## 2.2 CaGBC LEED Rating Systems

### 2.2.1 LEED Canada for Green Building Design and Construction 2009

The CaGBC LEED New Construction and Core & Shell 2009 rating systems are designed to distinguish high-performance, environmentally efficient new construction or significantly renovated commercial and residential building developments.

LEED NC & CS 2009 Highlights for Products:

- Rewards buildings for including products with high recycled content, regional content, rapidly renewable material content, and certified wood content.
- Buildings receive credit for low-emitting products including paints, coatings, carpet, adhesives, sealants, and wood and laminate products.
- Technologies that reduce stormwater run-off, light pollution, water use, heat island effect, and erosion recognized.

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### 2.2.2 LEED Canada for Existing Buildings: Operation and Maintenance 2009

The CaGBC LEED EB:O+M 2009 rating system is designed to give owners of existing buildings an opportunity to validate excellence in best sustainable practices to compete with newer LEED NC buildings.

LEED EB:O+M 2009 Highlights for Products:

- Similar to LEED NC 2009 above, products reducing water use, heat island effect, stormwater run-off, and light pollution are recognized.
- Green Cleaning products emphasized.
- Continuous purchasing of sustainable products is encouraged.
- Credit for low-mercury lamps.

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### 2.2.3 LEED Canada for Commercial Interiors v1

The CaGBC LEED CI rating system is designed for tenants who do not have the ability to make alterations to base building systems and wish to pursue LEED certification.

LEED CI Highlights for Products:

- Similarly to LEED NC 2009 above, products reducing water use, heat island effect, stormwater run-off, and light pollution are recognized.
- Sustainable furniture receives credit.
- Like LEED NC 2009, LEED CI rewards buildings for choosing products with high recycled content, regional content, rapidly renewable material content, and certified wood content.

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- Buildings receive credit for low-emitting products, including paints, coatings, carpet, adhesives, sealants, and wood and laminate products.

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#### 2.2.4 LEED ND 2009: Neighbourhood Development

The CaGBC LEED ND 2009 rating system is based on principles of smart growth, New Urbanism, and green infrastructure and building, and targets neighbourhoods with many buildings rather than single plots.

LEED ND 2009 Highlights for Products:

- Points give credit for whole site initiatives (stormwater, heat island, light pollution).
- Recognizes recycled content in infrastructure.
- Combines infrastructure and green buildings – larger scale, greater opportunities for products.

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#### 2.2.5 LEED Homes

The CaGBC LEED Homes rating system allows homeowners to demonstrate their personal commitment to green building,

LEED Homes Highlights for Products:

- Several points available for environmentally preferable products.
  - Credit for surface water control, nontoxic pest control, reducing heat island effect, and reducing water use.
  - Increased opportunity for energy-saving products:
    - Windows
    - Appliances
    - Lighting
    - Insulation
    - Space heating equipment
-





### 3.0 Product Profile

#### 3.1 Overview

Acrytec Panel Industries has over 30 years experience working with interior and exterior coatings/cladding systems. Ecovert Sustainability Consultants have been retained to review the LEED contribution of the Powerpanel HD and H20 products.

#### 3.2 Product

The product is a cement-bonded, glass fibre-reinforced lightweight concrete board with a sandwich structure used as both structural and non-structural cladding,

The product's primary LEED-recognized attributes are its incorporation of recycled materials and its regionally-located manufacturing facility. The products also contains recycled content due to the content of steel chanel and panel. The breakdown of recycled content is as follows:

Component	% Component Represents of Total Product	% Post-Consumer Recycled Content	% Pre-Consumer Recycled Content
<b>Panels</b>	70%	6%	11%
<b>Steel Channels</b>	30%	69%	20%

Acrytec Panel Industries assembles the Powerpanel products in their manufacturing facility based in Woodbridge, Ontario. The products may contribute to regional content, depending on the location of the LEED project site and its proximity to the manufacturing facility. The panel component raw materials are extracted from Germany, while the steel channels component raw materials are extracted from large scrap yards located in Hamilton, ON. For that reason, only the steel component can contribute to the LEED regional credit.

## 4.0 LEED Synergies for Powerpanel

Our analysis of the Powerpanel suggests that the product features are compatible with a variety of LEED requirements and can contribute to multiple LEED credits over various rating systems. There are many opportunities to integrate the product with the LEED certification program, specifically with: LEED for New Construction/Core and Shell, LEED for Commercial Interiors, LEED for Healthcare, LEED for Schools, and LEED for Retail. The following credits apply specifically to the product:

Credit	Pts	Credit Name	Rating System	Relevance to Product
<b>LEED Canada for Green Building Design and Construction 2009</b>				
<b>MRc4.1, 4.2</b>	2	Recycled Content, 10-20%	LEED NC/CS 2009	Recycled content
<b>MRc5.1, 5.2</b>	2	Regional Materials, 20-30%	LEED NC/CS 2009	Regionally-sourced content
<b>LEED Canada for Commercial Interiors v1</b>				
<b>MRc4.1, 4.2</b>	2	Recycled Content, 10-20%	LEED CI v1	Recycled content
<b>MRc5.1</b>	1	Regional Materials, 20% Manufactured Regionally	LEED CI v1	Regionally-sourced content
<b>MRc5.2</b>	1	Regional Materials, 10% Extracted and Manufactured Regionally	LEED CI v1	Regionally-sourced content
<b>LEED 2009 for Healthcare: New Construction and Major Renovations [USGBC]</b>				
<b>MRc3</b>	4	Sustainably Sourced Materials and Products	LEED 2009 for Healthcare	Recycled, reused, or rapidly renewable content
<b>LEED for Schools 2009 [USGBC]</b>				
<b>MRc4</b>	2	Recycled Content, 10-20%	LEED 2009 for Schools	Recycled content
<b>MRc5</b>	2	Regional Materials, 10-20%	LEED 2009 for Schools	Regionally-sourced content

For recycled content credits:

- The sum of post-consumer recycled content plus 1/2 of the pre-consumer content constitutes at least 10% or 20%, based on cost, of the total value of the materials that make up Divisions 2-10 of the project. Include only materials permanently installed in the project.

- The recycled content value of a material assembly is determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

For regional materials credits, the total cost of the materials from Divisions 2-10 in the project must be:

- Building materials or products that have been manufactured and extracted within 800km (by truck) or 2400km (by rail or sea). Demonstrate that the final manufacturing and extraction site is within the applicable boundaries of the project site for these products.
- If only a fraction of the product/material is manufactured/extracted locally, then only that percentage (by weight) must contribute to the regional value. Should 80% of the product be extracted and manufactured within the applicable boundaries, then the entire product may be used in the calculations for regional materials.

## 5.0 Recommendations Synergies for Acrytec

In order to improve the LEED paperwork for your product we recommend that you include the percentage of recycled content in your product brochure as well as indicate your manufacturing/assembly address.