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## Scope and Key Points

This document is intended as an informational tool to address LEED questions from the market. The CaGBC LEED website at <http://www.cagbc.org/> and the LEED Canada for New Construction and Major Renovations (NC) 2009 have provided much of the LEED content for this document.

The evaluation encompasses the AL13™ Architectural Panel System™. AL13™ is an aluminum-faced composite architectural panel system, 3 mm overall thickness, with two core options: polyethylene or fire-rated mineral core. Aluminum face sheets are AA A3003-H24 Alloy, 0.5 mm thick. The finish is a 70% fluorocarbon coating, to AAMA 2605. Attachment framing is extruded aluminum, and is fitted, cut, assembled and installed at the project site.

Products are not LEED-certified, it is the project that is LEED-certified. The cumulative effect of a project's materials, methods and outcomes earn LEED project credit points, which may gain LEED project certification. Certification is at the sole discretion of the Canada Green Building Council, and is based on their review and evaluation of applications submitted by building owners for their projects.

There are two primary LEED Project Rating Systems applicable to AL13™ Architectural Panel System™, each of which contains similar credit categories:

- LEED Canada for New Construction and Major Renovations (NC) 2009
- LEED Canada for Core & Shell Development (CS) 2009

These two primary Rating Systems form the basis of this evaluation.

## Leadership in Energy and Environmental Design

Leadership in Energy and Environmental Design (LEED) is a rating system that is recognized as the international mark of excellence for green building in over 132 countries, including Canada and the United States. LEED certification provides independent, third-party verification that a building, home or community was designed and built using strategies aimed at achieving high performance in key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.



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There are a number of LEED® Canada rating systems available to meet the needs of different building and project types. Each LEED rating system consists of prerequisites and credits. Prerequisites are required elements, or green building strategies that must be included in any LEED certified project. Credits are optional elements, or strategies that projects can elect to pursue to gain points toward LEED certification.

With four possible levels of certification (certified, silver, gold and platinum), LEED is flexible enough to accommodate a wide range of green building strategies that best fit the constraints and goals of particular projects. As there are some differences between USGBC and CaGBC rating systems, potential applicants should carefully evaluate their situation before pursuing specific credits, and be clear about which rating system is being used. The LEED® Canada NC rating system applies to new construction and major renovations of commercial and institutional buildings, i.e., buildings regulated by Part 3 of the National Building Code. It also applies to retail, mid- and high-rise multi-unit residential buildings (MURBs), public assembly buildings, manufacturing plants, and other types of buildings.

Applicants with space that is not fitted out at the time of certification (e.g., intended for future lease) may wish to consider LEED Canada for Core & Shell Development. Alternatively, those projects with at least 50% of the building fit-up for certification may use the leased tenant space guidance for NC projects found in the LEED Canada Reference Guide for Green Building Design and Construction 2009.



## LEED Certification Process

LEED certification involves five primary steps:

- Determine which rating system you will use.
- Register your project. Registration to LEED provides projects with a declared intent to certify. After registration, a project may be referred to as a LEED Candidate or LEED Certification Candidate and the project will be listed in the USGBC's or CaGBC's public database (owners may choose to decline this profiling opportunity).
- Submit your certification application and pay a certification review fee. Fees differ with building type and square footage. Be sure to check out the Certification Process guidance document for all the details.
- Await the application review. Review processes differ slightly for each rating system.
- Receive the certification decision, which you can either accept or appeal. An affirmative decision signifies that your building is now LEED certified.



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## IV

### Products

Products are not LEED-certified. Products may contribute to an overall building project's LEED certification. Although CaGBC does not certify, promote or endorse the products or services of individual companies, products and services do play a role and can help projects with credit achievement.

## V

### Potential LEED Credit Contributions

This section lists potential LEED credit contributions under the following rating systems for the AL13™ Architectural Panel System™:

- LEED Canada for New Construction and Major Renovations (NC) 2009
- LEED Canada for Core & Shell Development (CS) 2009

There are six Credit categories within the LEED rating system and each Credit is divided into sub-credits. The AL13™ Architectural Panel System™ may contribute toward LEED certification under the following Credit categories.

## A1

### EA Prerequisite 2: Minimum Energy Performance

#### Intent

to establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.

#### Requirements - Option 1 Whole Building Energy Simulation

Demonstrate a percentage cost improvement in the proposed building performance rating compared with a reference building performance rating per the Model National Energy Code for Buildings (MNECB) using a computer simulation model for the whole building project.

#### Strategies and Considerations

AL13™ is available in a wide range of PPG colours and finishes. The PPG finish is applied to the aluminum with a continuous process, and baked at a temperature of 600°C. The quality of coating meets AAMA 2605 requirements. AL13™ also has the Spectrum Process™ available to provide any colour match required. Coatings, therefore, can be selected with Solar reflectance (TSR/SRV), Thermal emittance (TE), and Solar reflectance index (SRI) values that reduce cooling loads, depending on the wall surface area clad with the AL13™ system, and the colour selected.

While these colour considerations were developed initially for cool roof applications (sheet metal roofing), vertical applications utilizing identical “cool” colours may utilize these established values in computer simulation models. Conversely, dark colours can be selected and modeled when reducing heating loads is a higher priority; darker colours increase heat gain and conduction, and combine with wall insulation to reduce heating loads.

## A2

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### EA Credit 1 Optimize Energy Performance

#### Intent

to achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

#### Requirements - Option 1 Whole Building Energy Simulation

Demonstrate a percentage cost improvement in the proposed building performance rating compared with a reference building performance rating per the Model National Energy Code for Buildings (MNECB) using a computer simulation model for the whole building project.

#### Strategies and Considerations

Utilize the same strategies and considerations as for EA Prerequisite 2, except that colours and surface areas are selected and modelled to maximize efficiency beyond the levels required for EA Prerequisite 2.

Materials and Resources (MR)

## B1

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### MR Credit 1.1 (MR Credit 1 per LEED CS) Maintain Existing Walls, Floors, and Roof

#### Intent

to extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

#### Requirements

Maintain the existing building structure (including structural floor and roof decking) and envelope (the exterior skin and framing, excluding window assemblies and non-structural roofing material). A minimum of 55% building structure reuse, measured by surface area, is required for credit.

#### Strategies and Considerations

The AL13™ system is lightweight, cost effective, and simple to install. This makes AL13™ ideal for any retrofit application, encouraging a decision to keep a building. AL13™ can be easily installed over any existing exterior or interior wall.



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## B2

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### MR Credit 1.2

#### Maintain Interior Non-Structural Elements

##### Intent

to extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

##### Requirements

Use existing interior non-structural elements (e.g., interior walls, doors, floor coverings and ceiling systems) in at least 50% (by surface area) of the completed building, including additions.

##### Strategies and Considerations

The AL13™ system is lightweight, cost effective, and simple to install over an existing substrate. This makes AL13™ ideal for any retrofit application, encouraging a decision to keep a building and maintain existing interior walls by permitting the designer to install AL13™ as a finish for aesthetics and durability.

## B3

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### MR Credit 2

#### Construction Waste Management

##### Intent

to divert construction and demolition debris from landfill and incineration facilities. Redirect recyclable recovered resources back into the manufacturing process and redirect reusable materials to appropriate sites.

##### Requirements

Recycle or salvage non-hazardous construction or demolition debris, and demonstrate a minimum 50% or greater recycled or salvaged debris by weight or volume (but not both).

##### Strategies and Considerations

The primary material utilized in the AL13™ system is aluminum. Aluminum debris will be minimal, but of that generated, aluminum debris may be fully recycled and diverted from landfill and incineration facilities.

## B4

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### MR Credit 4

#### Recycled Content

##### Intent

to increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.



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Requirements

Use materials with recycled content such that the sum of post-consumer recycled content plus 1/2 of the pre-consumer content constitutes at least 10% or greater, based on costs, of the total value of materials in the project.

Strategies and Considerations

The AL13™ product system has parts produced at different facilities with varying volumes; this could mean that two identical orders to the same location could have different extrusion facilities involved, one of which uses virgin material, while the other uses recycled material. Upon special request, billet containing high pre- and post- consumer recycled aluminum content is available and can help contribute points towards recycled content; Refer to the following analysis for potential credits:

Breakdown of 3mm AL13™ Panel			% post-consumer	% pre-consumer
3mm ACM	% by Weight of Panel	recycle content	recycle content	Total = 100% post-consumer + 50% pre-consumer
0.5 mm skin	62.5 20 lbs	0	0	0
PE Core	37.5 12 lbs	20	80	60
3 mm panel	100 32 lbs	7.5	30	22.5

B5

MR Credit 5  
Regional Materials

Intent

to increase demand for building materials and products extracted, processed and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

Requirements

Use building materials or products that have been extracted, harvested, recovered and processed within 800 km (2,400 km if shipped by rail or water) of the final manufacturing site. Demonstrate that the final manufacturing site is within 800 km (2,400 km if shipped by rail or water) of the project site for these products. If only a fraction of a product or material is extracted, harvested, recovered, processed and manufactured locally, then only that fraction, by weight, can contribute to the regional value.

Strategies and Considerations

The AL13™ product system has parts produced at different facilities with varying volumes; this could mean that two identical orders to the same location could have varying or non-existent "local" content. Therefore, there is no guarantee whether or to what extent the AL13™ product delivered to any site will contribute towards LEED certification based on local content, but can provide data that can be used in developing the required calculations.



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## D1

### RP Credit 1

#### Durable Building

#### Intent

to minimize materials use and construction waste over a building's life resulting from inappropriate material selection or premature failure of the building and its constituent components and assemblies.

#### Requirements

develop and implement a Building Durability Plan in accordance with CSA S478 – Guideline on Durability in Buildings for the components within the scope of the Guideline for the construction and pre-occupancy phases of the building.

#### Strategies and Considerations

The AL13™ system is a pressure-equalized rain screen system, built using highly durable aluminum and coated to AAMA 2605 requirements. As a rain screen system, it meets or exceeds regionally-appropriate construction practices. The AL13™ panels are secured by the snap-lock fasteners. Panels are not welded or formed during construction. This allows for each panel to expand and contract across a broad temperature spectrum without causing buckling or oil-canning.

The product is easily deconstructed and can be reused or recycled, demonstrating advanced planning that includes the entire building lifecycle in the initial design. If individual panels are damaged, they can be easily be replaced, independent of the remaining system. This flexibility and ease of deconstruction and reuse permits a building to undergo unforeseen modifications at a later date without requiring the entire cladding system to be removed. Ultimately, the system is recyclable and reusable, with only minor additional materials needed for reuse at a different location.

The coating system meets AAMA 2605 requirements, providing a long lasting finish with little maintenance. AAMA 2605 is the highest industry standard available, ensuring ten-year colour retention and chalk resistance, and is likely to outperform this conservative estimate. AL13™ has a 30-year limited warranty on product and a 25-year finish warranty. You can order the AL13™ system in any RAL colour. Recoating later is easily achieved, encouraging a choice to retain the cladding; for example, a choice at some point to change the colour(s) or restore the finish will not require recladding.

## D2

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### RP Credit 2

#### Regional Priority Credit

##### Intent

to provide incentive for the achievement of credits that address geographically-specific environmental priorities.

##### Requirements

the applicant must identify LEED credits that have additional regional environmental importance. A project must achieve basic credit and then propose that credit as a Regional Priority credit. Up to 3 points may be proposed.

##### Strategies and Considerations

For a list of applicable credits, refer to the CaGBC website at [www.cagbc.org](http://www.cagbc.org), in the section on LEED tools.



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