

TECH TALK

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Alucobond Contribution to LEED Points

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Sustainability in the Building Products Industry

The architectural and construction industries have, for several years, moved towards a more environmentally conscious method of building design that incorporates energy efficiency, sustainable construction materials, reduction of environmental impact, and recycleability. The trend is generally labeled as “green” construction. A small but growing number of U.S. cities require green building methodology for new construction and many states and municipalities have adopted favorable policies, such as granting tax incentives, for green buildings. In 1998 and again in 1999, the U.S. Government issued executive orders that require Federal agencies to purchase environmentally friendly products and services, specifically including design and construction of new facilities. As a result, most Federal agencies (Navy, Army, Pentagon, CIA, etc.) now require sustainable construction practices. In addition, many architectural industry associations and magazines are promoting the benefits of green design through publications, awards, and symposiums.

Architects striving to meet the growing trend of environmentally sustainable buildings are asking for components that exceed the minimal environmental standards utilized in the past. This push for greener products within the building industry is the driving force for obtaining positive environmental recognition for Alucobond material.



Leadership in Energy and Environmental Design (LEED)

The LEED program is sponsored by the United States Green Building Council (USGBC) and is the primary environmentally focused building certification in the U.S. The goal of the program is to provide a standard for high-performance, environmentally sustainable buildings. **A specific building may be LEED certified, however, individual products used to construct the building are not certifiable by LEED.**

The basic structure of the LEED program is to issue points within various aspects of building design and construction. Once a designated number of points are received, the building may qualify for LEED certification as follows¹:

Certification Level	Points Necessary
Certified	26 - 32
Silver	33 - 38
Gold	39 - 51
Platinum	52 or more

There are six "Credits" within the LEED rating system and each Credit is divided into sub-credits. Points are awarded within the individual sub-credits and there may be more than one point available within a sub-credit. Brief descriptions of the Credits and sub-credits are as follows:

- **Credit 1 - Sustainable Sites** - one prerequisite is required and there are eight sub-credits including Erosion and Sedimentation Control, Site Selection, Development Density, Brownfield Redevelopment, Alternative Transportation, Reduced Site Disturbance, Storm Water Management, Heat Island Effect, and Light Pollution Reduction. **None of the points in this section pertain to standard Alucobond installations.**
- **Credit 2 - Water Efficiency** - there are three sub-credits including Water Efficient Landscaping, Innovative Wastewater Technologies, and Water Use Reduction. **None of the points in this section pertain to standard Alucobond installations.**
- **Credit 3 - Energy and Atmosphere** - there are three prerequisites that must be met and there are six sub-credits including Optimize Energy Performance, Renewable Energy, Additional Commissioning, Ozone Depletion, Measurement and Verification, and Green Power. **None of the points in this section pertain to standard Alucobond installations.**

¹ LEED-NC Version 2.1 Reference Guide page 6.



- **Credit 4 - Materials and Resources** - there is one prerequisite that must be met and there are seven sub-credits including Building Reuse, Construction and Waste Management, Resource Reuse, Recycled Content, Regional Materials, Rapidly Renewable Materials, and Certified Wood. **Alucobond may contribute to earning three points within this section.**
- **Credit 5 - Indoor Environmental Quality** - there are two prerequisites that must be met and there are eight sub-credits including Carbon Dioxide Monitoring, Ventilation Effectiveness, Construction IAQ Management Plan, Low Emitting Materials, Indoor Chemical and Pollution Source Control, Controllability of Systems, Thermal Comfort, and Daylight and Views. **None of the points in this section pertain to standard Alucobond installations.**
- **Credit 6 - Innovation and Design Process** - there are two sub-credits including Innovation in Design, and LEED Accredited Professional. **It may be possible for Alucobond to contribute to points within this section.**

Alucobond Contribution to LEED Points

Materials and Resources (MR)

As noted, Alucobond may contribute to three credits within the Materials and Resources section. Specifically, Recycled Content (MR Credit 4.1 and 4.2, each worth one point) and Regional Materials (MR Credit 5.1 worth one point).

MR Credit 4.1 and 4.2 - Recycled Content

MR Credit 4.1 and 4.2 requires that the recycled content be broken down into post-industrial and post-consumer content. MR Credit 4.1 awards one point if:

"the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 5% of the total value of the materials in the project."²

MR Credit 4.2 awards an additional point if a 10% level is reached using the same guidelines as MR Credit 4.1.

LEED provides a spreadsheet that performs the necessary calculation. The user must enter the total material cost and the percentage, by weight, of recycled material content. **The percentage, by weight, of recycled aluminum content for 4mm Alucobond is 26%.** This number should be entered into the post-

² LEED-NC Version 2.1 Reference Guide page 213.



industrial recycled content column of the LEED spreadsheet along with the cost of the material³.

MR Credit 5.1 Regional Materials

MR Credit 5.1 awards 1 point if:

Projects "use a minimum of 20% of building materials and products that are manufactured regionally within a radius of 500 miles."⁴

In this case, the word "manufactured" refers to the final assembly of components. As a result, fabricators located within 500 miles of the job site could qualify Alucobond for LEED contribution to MR Credit 5.1.

Innovation and Design Process (ID)

ID Credit 1.1 - 1.4 Innovation in Design

The Innovation in Design category is a catchall that allows Architects to submit innovative building features for up to four LEED points. LEED literature provides two examples of points that were awarded for innovative design ideas. One was for a water efficiency program that exceeded the Energy Policy Act of 1992 by 90%. The second was for a cable suspension roof that decreased the overall volume of the building by 20%, thus decreasing the HVAC requirements (when compared to standard roof construction).

Point awards for the Innovative Design Credit depend on the creativity of the Architect and acceptance of the idea from the LEED organization.

Summary

The LEED program has gained much recognition over the past several years and is now the premier sustainability design tool in the building industry. LEED focuses on constructing buildings that have minimal impact on the environment during construction, occupation and reclamation. LEED recognizes that utilizing recycled materials is an important part of minimizing environmental impact. This recognition is the driving force for using Alucobond material. The relatively high percentage of recycled aluminum ensures that Alucobond can provide a significant contribution to earning LEED points. In addition, the network of fabricators across the U.S. and Canada, provide regional manufacturing centers that decrease transportation costs and related fuel consumption and help to enhance local economies, both of which are deemed environmentally preferable in LEED documentation. A list of all Federal, State, and Municipal LEED users is available upon request from the Technical Services Department.

³ The cost should include Alucobond material cost, fabrication cost, and cost of all attachment components. Do not include costs of installation at job site.

⁴ LEED-NC Version 2.1 Reference Guide page 221.