



LEED FOR NEW CONSTRUCTION IMPACT

The following is intended to serve as an outline for contribution to the overall LEED Certification of a project when using Agribalance® spray polyurethane foam insulation manufactured by Demilec. Demilec's Engineering Department can be consulted regarding questions with the inclusion of this product in a project seeking LEED Certification. LEED for New Construction is designed primarily for new commercial office buildings, but may be applicable to other building types. Any structure defined as commercial by the applicable building code is eligible for certification as LEED for New Construction buildings.

The following credits will be addressed: EA1, MR6, IEQ4.1, IEQ7.1

EA Credit 1: Optimized Energy Performance (1-19 points)

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

Requirements: Select 1 of the 3 compliance path options. Project teams documenting achievement using any of the 3 options are assumed to be in compliance with EA Prerequisite 2: Minimum Energy Performance.

Recommended Option: Whole Building Energy simulation (1-19 points)
 Demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 (with errata but without addenda) using a computer simulation model for the whole building project. The minimum energy cost savings percentage for each point threshold is as follows:

| NEW BUILDINGS | EXISTING BUILDING RENOVATIONS | POINTS |
|---------------|-------------------------------|--------|
| 12% | 8% | 1 |
| 14% | 10% | 2 |
| 16% | 12% | 3 |
| 18% | 14% | 4 |
| 20% | 16% | 5 |
| 22% | 18% | 6 |
| 24% | 20% | 7 |
| 26% | 22% | 8 |
| 28% | 24% | 9 |
| 30% | 26% | 10 |
| 32% | 28% | 11 |
| 34% | 30% | 12 |
| 36% | 32% | 13 |
| 38% | 34% | 14 |
| 40% | 36% | 15 |
| 42% | 38% | 16 |
| 44% | 40% | 17 |
| 46% | 42% | 18 |
| 48% | 44% | 19 |

Agribalance spray polyurethane foam insulation will contribute to a more effective building envelope. The air seal created when using this product will tighten up the envelope allowing the HVAC system to more efficiently heat and cool the occupied space of the building.

Refer to the chart above for an outline of available points. Example: An increased efficiency of 12% above the baseline building performance will earn 1 point toward this credit for new construction, while a 48% increase over the baseline performance will earn 19 points.

MR Credit 6: Rapidly Renewable Materials (1 point)

Intent: To reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.

Requirements: Use rapidly renewable building materials and products for 2.5% of the total value of all building materials and products used in the project, based on cost. Rapidly renewable building materials and products are made from plants that are typically harvested within a 10 year or shorter cycle.

For Agribalance: 0.1 x \$_____ Total cost of the installed spray polyurethane foam job.

To earn 1 point from this credit, 2.5% of the total project value must be attributed to rapidly renewable content.

IEQ Credit 4.1 Low Emitting Materials – Adhesives and Sealants (1 point)

Intent: To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements: All adhesives and sealants used on the interior of the building (i.e. inside the weatherproofing system and applied on-site) must comply with the following requirements as applicable to the project scope:

- Adhesives, sealants, and sealant primer must comply with South Coast Air Quality Management District (SCAQMD) Rule #1168. Volatile Organic Compounds (VOC) limits listed below correspond to an effective date of July 1, 2005 and rule amendment date of January 7, 2005.

| ARCHITECTURAL APPLICATION | VOC LIMIT (G/L LESS WATER) |
|---------------------------|----------------------------|
| Plastic Foams | 50 |

To earn 1 point from this section, all adhesives and sealants used on the project must comply with SCAQMD 1168 as required by this credit.

Emission testing of Agribalance has identified Total VOC's (TVOC) at less than 0.5 mg/m³; this is more than a million times less than LEED's VOC limit for plastic foam.

| ANALYTE | 24 HR EMISSION FACTOR (Qg/m ² •hr) | 168 HR PREDICTED CONCENTRATION |
|---------|---|--------------------------------|
| TVOC | 1,400 | 0.41 mg/m ³ |

IEQ Credit 7.1 Thermal Comfort Design (1 point)

Intent: To provide a comfortable thermal environment that promotes occupant productivity and well being.

Requirements: Design heating, ventilating and air conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy (with errata but without addenda). Demonstrate design compliance in accordance with the Section 6.1.1 documentation.

Agribalance serves as both insulation and an air barrier. This results in a much tighter building envelope, less natural air changes per hour and subsequently less air infiltration. The HVAC equipment can then condition the interior air more efficiently providing a more comfortable space for occupants.