

LEED® Credits

An overview of how ceiling and wall systems contribute to LEED

Energy and Atmosphere

EA Credit 1 - Optimize Energy Performance

LEED NC - Energy and Atmosphere Credit 1.1 - Optimize Energy Performance

LEED CI - Energy and Atmosphere Credit 1.1

LEED NC & LEED CI Intent: Achieve increasing levels of energy performance above the baseline standard to reduce environmental and economic impacts associated with excessive energy use.

LEED NC Requirement: Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2004 OR Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide for Small Office Buildings 2004. OR Comply with the Basic Criteria and Prescriptive Measures of the Advanced Buildings Benchmark™ Version 1.1.

LEED CI Requirement: Reduce connected lighting power density below that allowed by ASHRAE/IESNA Standard 90.1-2004.

Armstrong Ceiling Systems Contribution:

To aid in reducing lighting power density which lowers energy and maintenance costs, Armstrong High Light Reflectance ceilings and systems provide the same level of illuminance with fewer luminaires. This will assist in reducing lighting and HVAC energy costs up to 25% in new or existing building structures where a High Light Reflectance ceiling is installed along with indirect lighting. Also steps to reduce the number of fixtures and reduce the wattage of lamps should be taken. The number of LEED credits awarded for such improvements are different for new and existing building structures. The TechZone™ Ceiling System combines High Light Reflectance ceilings with indirect lighting which contributes to EA Credit 1. Contact TechLine for our independent study, "Energy and Environmental Benefits of High Light Reflectance Ceilings."

Material and Resources

MR Credit 2.1, 2.2 - Construction Waste Management

Divert 50% & 75% from disposal

LEED Intent: Divert construction, demolition, and land clearing debris from disposal in landfills and incinerators. Redirect recovered resources back to the manufacturing process. Redirect reusable materials to the appropriate sites.

LEED Requirement: Recycle and/or salvage at least 50% or 75% (by weight or volume) of non-hazardous construction and demolition debris. Develop and implement a construction waste management plan quantifying material diversion goals.

Armstrong Ceiling Systems Contribution:

Armstrong is the first ceiling manufacturer with a closed-loop recycling program which redirects recovered ceilings back to the manufacturing process. Please contact your Armstrong representative or TechLineSM for more details on how this program can help you meet this requirement. More details & a recycling specification to include in your waste management plan can be found at www.armstrong.com/environmental. Since Armstrong products do not comprise 50-75% of the construction debris, they must be combined with other items to achieve this credit.

Material and Resources

MR Credit 4.1, 4.2 - Recycled Content

(10% & 20% post-consumer + 1/2 pre-consumer)

LEED Intent: Increase the demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

LEED Requirement: Use materials with recycled content such that the sum of the post-consumer recycled content plus one-half of the pre-consumer (post-industrial) content constitutes at least 10% or 20% of the total value of the materials in the project.

Armstrong Ceiling and Wall Systems Contribution:

Armstrong products contain 23-82% recycled content. Each product data page contains the total recycled content information. For specific post-consumer/pre-consumer breakdowns, contact Techline for exact percentages for your specific product. Techline can also supply the appropriate documentation needed for your LEED submittal packet. Depending on manufacturing location, certain products are available with a higher recycled content option. Armstrong products must be aggregated with all other recycled content materials in order to achieve this credit. Innovation credits are available for higher levels of recycled content used on LEED projects.

MR Credit 5.1, 5.2 - Regional Materials

LEED NC - 10% Extracted, Processed & Manufactured Regionally

LEED CI - 20% Manufactured Regionally

LEED NC & LEED CI Intent: Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

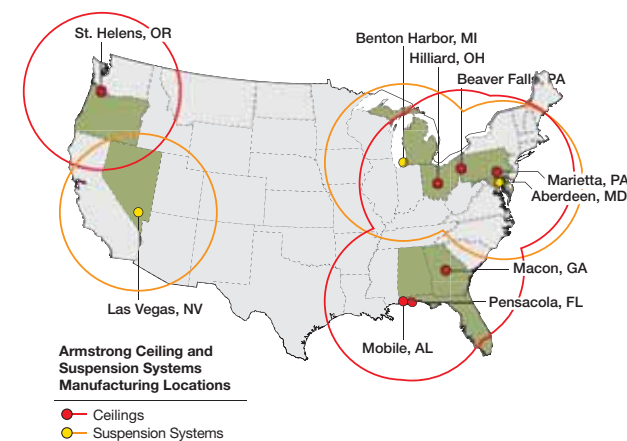
LEED NC Requirement: Use building products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for minimum of 10% or 20% (based on cost) of the total materials value. If only a fraction of the product is extracted, harvested or recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

LEED CI Requirement: Use a minimum of 20% of the combined value of all construction and Division 12 (furniture) materials and products that are manufactured regionally within a radius of 500 miles. An additional LEED Credit point can be earned if you use a minimum of 10% of combined value of products extracted, harvested, recovered or manufactured within 500 miles.

Armstrong Ceiling Systems Contribution:

Refer to the listing of Ceiling and Suspension plant locations (below) and to our map showing a radius of 500 miles from all of our plants. Contact TechLine to provide a regional materials value for each product for MR Credit 5.1, 5.2 LEED NC and MR Credit 5.2 for LEED CI. This is dependent upon the plant location where the product is produced. TechLine can also help identify the distance from other locations where specialty ceilings and walls are produced.

Armstrong Ceiling and Suspension System manufacturing locations (500 mile radius)



The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution.

Material and Resources

MR Credit 6.0 - Rapidly Renewable Materials

LEED NC & LEED CI Intent: Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.

LEED NC Requirement: Use rapidly renewable building materials and products (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.

LEED CI Requirement: Use rapidly-renewable construction and Division 12 (Furniture and Furnishings) 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 used in the project.

Armstrong Ceiling Systems Contribution:

Armstrong WoodWorks Bamboo Ceilings can contribute to the rapidly renewable calculation. Since this product is an assembly, take the rapidly renewable value of only the bamboo veneer to combine with other interior furnishings and finishes to achieve credit. Contact TechLine for a sample assembly calculation.

Indoor Environmental Quality

EQ Credit 4.1 to 4.5 - Low-emitting Materials

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

LEED Requirement: All of the adhesives and sealants used in the building must meet the requirements of the South Coast Air Quality Management District (SCAQMD) Rule #1168. Interior paints and coating applied on-site must meet the limitations and restrictions concerning chemical components set by several standards. Carpets must meet the Green Label Plus testing and product requirements. These credits pertain to adhesives & sealants, paints, carpets and composite wood.

Armstrong Ceiling Systems Contribution:

Armstrong Mineral Fiber Ceilings and Suspension Systems meet the State of Washington, and California Section 01350 requirements for low emissions. For additional information, refer to "The Basics of Formaldehyde & Interior Spaces" CS-3550, visit armstrong.com/ceilings/green or contact TechLine for specific product information.

Low emitting products can be used as a possible innovation credit.

EQ CREDIT 4.4 - Low-Emitting Materials

LEED NC - Composite Wood & Agrifiber Products

LEED CI - Composite Wood & Laminate Adhesives

LEED Requirement: Composite wood and agrifiber products, including core materials, must contain no-added urea-formaldehyde resins. Laminate adhesives used to fabricate on-site and shop-applied assemblies containing these laminate adhesives must contain no added urea formaldehyde.

Armstrong Wall Systems Contribution:

Unlike most composite wood or traditional millwork products used in interiors, Armstrong WoodWorks® Ekos™ Wall Systems meet these requirements. In addition, these products meet and exceed the State of Washington and California Section 01350 requirements for low emissions with no detectable formaldehyde emissions. For additional information, refer to "Formaldehyde Emissions & Interior Spaces - What You Need To Know About Choosing Wood Wall Systems" CS-3839.

Indoor Environmental Quality

EQ Credit 8.1, 8.2 - Daylight and Views

LEED Intent: Provide the occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

LEED Requirement: Achieve a minimum glazing factor of 2% in a minimum of 75% of all regularly occupied areas or achieve at least 25 footcandles. AND Provide daylight redirection and/or glare control devices to ensure daylight effectiveness.

Armstrong Ceiling Systems Contribution:

Armstrong High Light Reflectance ceilings can aid in extending daylighting into the space. A typical acoustical ceiling reflects just 75% of the light striking the surface, while a high light reflectance ceiling is engineered to reflect up to 90% of the light striking the surface. Recent independent studies have shown a 10-15% daylighting effectiveness increase. A separate study concluded that the High Light Reflectance ceiling could achieve the LEED credit with up to 12% less glazing than a ceiling with a reflection of 75%, when submitting for credit using daylight simulation results. For additional information, refer to "Energy Savings and Environmental Benefits of High Light Reflectance Ceilings" CS-3808.

Innovation and Design Process

Acoustic Performance

An Innovation Credit for Acoustics can be applied for demonstrating that the acoustical performance improvements of a building clearly enhance the indoor environment in ways consistent with the preservation of human health and maximization of occupant productivity. Credits based on acoustics will be evaluated on a case-by-case basis. Contact your Armstrong representative for details on solutions to achieve a balanced acoustical design.

LEED® for Schools

EQ Credit 4 - Low Emitting Materials Option 6 - Ceilings and Wall Systems

LEED Requirement: All acoustical ceiling systems and wall coverings must meet CA Dept. of Health Services Standard Practice for the Testing of VOC Emissions.

Armstrong Ceiling and Wall Systems Contribution:

Many Armstrong mineral fiber ceiling and wall systems will meet the Low Emitting Materials requirement for Ceiling and Wall Systems. Products are listed in our selector on page 234.

EQ Credit 9 - Enhanced Acoustical Performance for Schools

LEED Requirement: Minimum Acoustical Performance is required. Design classrooms and other core learning spaces to meet the Reverberation Time (RT) requirements of ANSI Standard S12.60-2002 (Annexes B-D (40 dBA.; 35 dBA). Also design classrooms and other core learning spaces to meet the Sound Transmission Class (STC) requirements of at least 35.

EQ Prerequisite 3 - Minimum Acoustical Performance is required. Design classrooms and other core learning spaces to meet the Reverberation Time (RT) requirements of ANSI Standard S12.60-2002 (Annexes B-D 45 dBA). Also design classrooms and other core learning spaces to meet the Sound Transmission Class (STC) requirements of at least 35.

Armstrong Ceiling and Wall Systems Contribution:

Many Armstrong Ceilings and Wall Systems meet these acoustical requirements. Visit armstrong.com/schools for product information for Classroom Acoustics and a reverberation tool to aid in product selection.