

LEED v4.1 Credit Guidance for Andersen® Products

LEED® for Building Design and Construction: New Construction and Major Renovations

About LEED® Certification

The U.S. Green Building Council's LEED® green building program is a preeminent program for the design, construction, maintenance and operations of high-performance green buildings. To obtain certification, building projects satisfy prerequisites and earn points toward different levels of certification. Prerequisites and credits differ for each rating system. Learn more at www.usgbc.org/LEED.

LEED v4.1 Credits

The latest version of LEED certification is LEED v4.1, which launched in March 2018. LEED v4.1 addresses credits in the following categories:

- *Integrative Process*
- *Location and Transportation*
- *Sustainable Sites*
- *Water Efficiency*
- *Energy and Atmosphere*
- *Materials and Resources*
- *Indoor Environmental Quality*
- *Innovation*
- *Regional Priority*

Information about how Andersen® products support earlier versions of LEED certification (e.g., LEED v3) is available at www.andersenwindows.com.

How do Andersen Products Support LEED v4.1 BD+C: New Construction?

Andersen® windows and patio doors can support project teams in pursuing the following credits in the **LEED v4.1 BD+C: New Construction** rating system. High-level summaries of each pertinent credit are included below and are drawn from the online credit guidance available at: <https://www.usgbc.org/resources/bdc-v41-credit-overview>. However, project teams should always refer to the official LEED v4.1 Reference Guide for full credit descriptions and guidance. The following guidance has not been reviewed for accuracy or endorsed by the USGBC®.

Integrative Process

- **Credit Requirements:** Beginning in pre-design and continuing throughout the design phases, identify and use opportunities to achieve synergies across disciplines and building systems. Use the analyses described in the rating guide to inform the owner’s project requirements (OPR), basis of design (BOD), design documents and construction documents.

Project teams may consider windows as part of performing a preliminary “simple box” energy modeling analysis before the completion of schematic design, in order to explore how to reduce energy loads in the building. **Basic envelope attributes** are one of the potential strategies that project teams can assess as part of the **Energy Related Systems** component of this credit; specifically, assessing insulation values, window-to-wall ratios, glazing characteristics, shading, and window operability.

Energy and Atmosphere

- **Minimum Energy Performance Prerequisite (Option 1-Whole Building Simulation):** Demonstrate an improvement of 5% in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1-2016, Appendix G, with errata (or a USGBC approved equivalent standard for projects outside the U.S.), using a simulation model.

Andersen® products that feature acceptable U-Factor and SHGC values can help to achieve the minimum required energy performance calculated in computer modeling for whole building energy simulation.

- **Optimize Energy Performance Credit (Option 1-Whole Building Simulation):** Establish an energy performance target no later than the schematic design phase. The target must be established as kBtu per square foot-year (kW per square meter-year) of source energy use.

Andersen products with acceptable U-Factor and SHGC values can help project teams exceed the minimum required energy performance calculated in computer modeling for whole building energy simulation. Points are awarded for building performance at specific percentage levels above the baseline requirement.

- **Renewable Energy Production Credit:** Use renewable energy systems to offset building energy costs. Calculate the percentage of renewable energy with the following equation:

$$\% \text{ renewable energy} = \frac{\text{Equivalent cost of usable energy produced by the renewable energy system}}{\text{Total building annual energy cost}}$$

Andersen products used in passive solar design and daylighting strategies may assist in reducing the total annual energy demand and resulting cost for the building and therefore aid in increasing the overall percentage of on-site energy production.

- **Green Power and Carbon Offsets Credit:** Engage in a contract for qualified resources that have come online within the past 15 years. The contract must specify the provision of at least 50% or 100% of the project’s energy from green power, carbon offsets, or renewable energy certificates (RECs).

Andersen® products utilized in building design to reduce heating/cooling/lighting requirements can help reduce overall need for grid power and therefore increase the percentage of power coming from “green sources,” as defined by the credit.

Materials and Resources

- **Construction and Demolition Waste Management Planning Credit:** Develop and implement a construction and demolition waste management plan.

Andersen packaging materials are recyclable or have minimal non-recyclable components, helping to reduce landfill waste disposed of during construction. Project teams can identify our recyclable materials, including cardboard, as one of their diversion targets for this credit.

- **Building Product Disclosure and Optimization – Environmental Product Declarations Credit (Environmental Product Declaration (EPD)):** Use at least 20 different permanently installed products sourced from at least five different manufacturers per the requirements in the LEED v4.1 Guide <https://www.usgbc.org/leed/v41#bdc>.

Andersen® is committed to product transparency and continues to expand our product offerings with Environmental Product Declarations. Please refer to our Environmental Documents page for current published EPDs <https://www.andersenwindows.com/professionals/documents/environmental/>.

- **Building Product Disclosure and Optimization – Responsible Sourcing of Raw Materials Credit (Option 2- Leadership Extraction Practices):** Use products that meet at least one of the responsible extraction criteria stated in the reference guide for at least 25%, by cost, of the total value of permanently installed building products in the project.

Wood products: Andersen 200 Series, 400 Series, A-Series (FSC-C016636) and E-Series (FSC-C107730) products can be manufactured with FSC® certified pine wood-based components. Products meeting these criteria are valued at 100% of their cost for the purposes of credit achievement calculation.

Recycled content: Andersen® A-Series windows, Renewal by Andersen® windows, and 100 Series windows and gliding patio doors have independent certifications for percentage of preconsumer recycled content based on NFRC sizes. A-Series doors and 200 Series, 400 Series, and E-Series products have recycled content information available upon request. Materials meeting definition of “preconsumer” content are glass and Fibrex® components. For the purpose of this credit, recycled content is the sum of postconsumer recycled content, plus one-half the preconsumer recycled content, based on cost. Products meeting recycled content criteria are valued at 100% of their cost for the purposes of credit achievement calculation.

- **Building Product Disclosure and Optimization – Material Ingredients Credit (Option 1- Material Ingredient Reporting):** Use at least 20 different permanently installed products from at least five different manufacturers that use any of the programs approved by the USGBC® and LEED v4.1 Guide to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

Andersen has Health Product Declarations (HPDs) for E-Series casement, awning, and auxiliary windows. We are committed to expanding approved material ingredient disclosures, please refer to our Environmental Documents page for current offerings
<https://www.andersenwindows.com/for-professionals/documents/environmental/>.

- **Construction and Demolition Waste Management Credit:** Recycle and/or salvage nonhazardous construction and demolition materials. Calculations can be by weight or volume but must be consistent throughout.

Andersen packaging materials are recyclable or have minimal non-recyclable components, helping to reduce landfill contributions during construction. Our recyclable materials, including cardboard, can help project teams achieve the waste reduction goals stated in either option allowed by this credit.

Indoor Environmental Quality

- **Minimum Indoor Air Quality Performance Prerequisite:** Project teams must meet the requirements for both ventilation and monitoring. Project teams using Naturally Ventilated Spaces must meet the requirements of ASHRAE Standard 62.1-2016 or a local equivalent, whichever is more stringent.

Inclusion of Andersen® operable windows in a building may assist project teams with meeting the requirements for Naturally Ventilated Spaces as described in this credit.

- **Minimum Acoustic Performance Prerequisite - Schools:** (Exterior Noise) For high-noise sites (peak-hour Leq above 60 dBA during school hours), implement acoustic treatment and other measures to minimize noise intrusion from exterior sources and control sound transmission between classrooms and other core learning spaces. Projects at least one-half mile (800 meters) from any significant noise source (e.g., aircraft overflights, highways, trains, industry) are exempt.

Inclusion of Andersen windows and patio doors may assist project teams with meeting the requirements of this prerequisite. Sound Transmission Class (STC) ratings and Outdoor/Indoor Transmission Class ratings (OITC) are provided by product at www.andersenwindows.com and in the Andersen Product Guide.

- **Enhanced Indoor Air Quality Strategies Credit:** This credit provides two options to enhance indoor quality, including specific strategies for naturally ventilated spaces (Options 1 or 2).

Inclusion of Andersen operable windows in a building can allow project teams to pursue Options 1 and 2 for naturally ventilated spaces. Option 1 requires that project teams demonstrate that the system design for occupied spaces employs the appropriate strategies in the CIBSE Applications Manual AM10, March 2005, Natural Ventilation in Non-Domestic Buildings, Section 2.4. Option 2 requires that project teams follow CIBSE AM10, Section 4, Design Calculations, to predict that room-by-room airflows will provide effective natural ventilation.

- **Low-Emitting Materials Credit:** This credit includes requirements for product manufacturing as well as project teams. It covers volatile organic compound (VOC) emissions into indoor air and the VOC content of materials, as well as the testing methods by which indoor VOC emissions are determined. Different materials must meet different requirements to be considered compliant for this credit. For manufacturers' claims, both first-party and third-party statements of product compliance must follow the guidelines in CDPH SM V1.2-2017.

Andersen® 100 Series, 200 Series, 400 Series, A-Series, E-Series, Heritage™, Weiland®, and Renewal by Andersen® products have been independently certified to achieve SCS Global Services Indoor Advantage Gold rating. This rating meets or exceeds CA section 01350

specifications. SCS Indoor Advantage Gold certification is accredited to ISO/IEC Guide 65 (please refer to <http://www.scsglobalservices.com/accreditations>). Certified products are listed at <http://www.scsglobalservices.com/certified-green-products-guide>.

- **Thermal Comfort Credit:** Project teams must meet the requirements for both thermal comfort design and thermal comfort control. Option 1 requires project teams to design heating, ventilation, and air-conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55-2017, Thermal Comfort Conditions for Human Occupancy, with errata or local equivalent. For Option 2, project teams must design HVAC systems and the building envelope to meet the requirements of ISO 7730:2005, Ergonomics of the Thermal Environment, and ISO 17772-2017, Indoor Environmental Input Parameters for Design and Assessment of Energy Performance of Buildings. The team must also provide thermal comfort controls for at least 50% of individual occupant spaces, as well as provide group thermal comfort controls for all shared multi-occupant spaces.

Operable Andersen® windows are an eligible control for thermal comfort under this credit. Andersen products and their certified thermal performance, utilized in the building design, can make sure 50% (minimum) of occupants have thermal control.

Daylight credit: Provide manual or automatic (with manual override) glare-control devices for all regularly occupied spaces. Project teams can select one of the following three options: (1) Simulation: Spatial Daylight Autonomy and Annual Sunlight Exposure; (2) Simulation: Illuminance Calculations; and (3) Measurement.

Andersen® products utilized in the building design can help provide daylight for 75% or 90% of regularly occupied areas.

- **Quality Views Credit:** Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area. View glazing in the contributing area must provide a clear image of the exterior.

Andersen products utilized in building design can help provide a direct line of sight to the outdoors for 75% of regularly occupied areas.

- **Acoustic Performance Credit :** (Sound Transmission) Meet the composite sound transmission class (STC_c) ratings listed in Table 1 of the reference guide, or local building code, whichever is more stringent.

Inclusion of Andersen windows may assist project teams with meeting the requirements of this credit. Sound Transmission Class (STC) ratings and Outdoor/Indoor Transmission Class ratings (OITC) are provided by product at www.andersenwindows.com and in the Andersen Product Guide.



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