

USGBC LEED v4.0

Guardian Glass and LEED v4.0

GLAZING CONTRIBUTIONS TO LEED CERTIFICATION

Few materials can make a building greener faster than high-performance glass. As one of the world's leading producers of architectural glass, Guardian can help projects earn LEED points.

To prepare for the upcoming release of the United States Green Building Council's LEED v4.0, Guardian has compiled the new and existing LEED Credits most likely to be impacted by glazing specifications on commercial projects. Below is a summary of these credits - Please contact Guardian at 866.482.7374 for more information.



LEED Category: Integrative Process (IPc1)

Credit: Integrative Process

LEED Points: 1 point

Intent: To support high-performance, cost-effective project outcome through an early analysis of the interrelationships among systems.

Requirement: Discovery; perform a preliminary "simple box" energy modeling analysis that explores how to reduce energy loads. Assess potential strategies such as massing and orientation in addition to basic envelope attributes.

Related Guardian Solution: Guardian offers the Building Energy Calculator as part of our comprehensive Glass Analytics suite of online tools. The Building Energy Calculator uses customized make-ups created in the Performance Calculator to compare energy cost, consumption and financial payback information based on hourly simulations of glazing options, building parameters and project location. This design tool can compare annual energy costs for a variety of exterior envelope scenarios.

LEED Category: Sustainable Sites (SSc5)

Credit: Heat Island Reduction

LEED Points: 1-2 points

Intent: To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

Requirement: Roof and nonroof measures can be added together to calculate compliance. Nonroof measures can be considered architectural structures or devices that provide shade and have a three-year aged solar reflectance (SR) of at least 0.28. If a three-year SR is not available, then it should be at least 0.33 at installation.

Related Guardian Solution: Guardian has 7 different coatings that have a SR of 0.33 or above. SNX 62/27, SN 68, SN 62, SN 54, SNR 43, AG 50 and AG 43 on either Clear or UltraWhite™. These products can be used to reflect solar energy and reduce the heat island effect.

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LEED Category: Energy and Atmosphere (EAp2 & EAc2)

Credit: Optimized Energy Performance

LEED Points: 1-18 Points (1-20 Healthcare)

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

Requirement: Whole-building energy simulation - Use energy simulation of efficiency opportunities versus past energy simulation analyses for similar buildings. Focus on load reduction and potential energy savings and holistic project cost implications related to all affected systems. Demonstrate a percentage of improvement compared with the baseline.

Related Guardian Solution: SunGuard Advanced Architectural Glass offers 14 coatings within the SuperNeutral®, High Performance and Solar Series providing a wide spectrum of beautiful, energy-saving choices, with varying degrees of light transmission and reflectivity. Most SunGuard Advanced Architectural Glass will meet the U.S. Dept. of Energy's "spectrally selective" definition: a light to solar gain (LSG) ration of 1.25 or higher. SunGuard LSG ratios can approach and exceed 2.0. Varying degrees of color and SHGC can be accomplished with the use of an array of tinted substrates such as CrystalGray® or low-iron UltraWhite™. All of these options focus on energy load reduction while not compromising on aesthetics.

LEED Category: Material and Resources (MRc2)

Credit: Building Product Disclosure and Optimization - Environmental Product Declarations

LEED Points: 1-2 Points

Intent: To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products from manufacturers who have verified improved environmental life-cycle impacts.

Requirement: Option 1 - Environmental Product Declaration (EPD) - Use at least 20% permanently installed products that meet the product-specific Type III declaration.

Related Guardian Solution: Guardian is developing a Type III Environmental Product Declaration. This is a third-party verification related to the preferable life-cycle impacts of our SunGuard Advanced Architectural Glass. Due to this product specific Type III EPD, the glass is valued as a whole product for purposes of calculation.

LEED Category: Material and Resources (MRc3)

Credit: Building Product Disclosure and Optimization - Sourcing of Raw Material

LEED Points: 1-2 points

Intent: To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically and socially preferable life-cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

Requirement: Option 1 - Use at least 20% permanently installed products that have a publicly released report from their raw material suppliers that define location and a commitment to long-term ecologically responsible land use, while reducing environmental harms and meeting all applicable standards.

Related Guardian Solution: Guardian is developing third-party verified corporate sustainability reports (CSRs) including environmental impacts of extraction operations and activities associated with Guardian's SunGuard Advanced Architectural Glass and the supply chain of raw materials. Due to this CSR, the glass is valued as a whole product for purposes of calculation.

LEED Category: Material and Resources (MRc4)

Credit: Building Product Disclosure and Optimization - Material Ingredients

LEED Points: 1-2 points

Intent: To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances.

Requirement: Option 1 - Use at least 20% permanently installed products that demonstrate the chemical inventory of the product with a Cradle to Cradle report.

Related Guardian Solution: Guardian is developing Cradle to Cradle V3 Silver Level certification for the end use of SunGuard Advanced Architectural Glass. With a C2C V3 Silver certification, the glass is valued as a whole product for purposes of calculation and would count toward Option 2: material ingredient optimization.

LEED Category: Indoor Environmental Quality (EQ)

Credit: Thermal Comfort

LEED Points: 1 point

Intent: To promote occupants' productivity, comfort, and well-being by providing quality thermal comfort.

Requirement: ASHRAE Standard 55-2010 - Design heating, ventilating, HVAC systems and the building envelope to meet applicable ASHRAE requirements.

Related Guardian Solution: There are several Guardian SunGuard Advanced Architectural Glass, products that are designed to optimize the SHGC and reduce glare that have a direct impact on the thermal comfort of the occupants.

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LEED Category: Indoor Environmental Quality (EQ)

Credit: Daylight

LEED Points: 1-3 points

Intent: To connect building occupants with the outdoors, reinforce circadian rhythms, and reduce the use of electrical lighting by introducing daylight into the space.

Requirement: Option 1 - Provide manual or automatic (with manual override) glare-control devices for all regularly occupied spaces. Demonstrate through computer simulations the percentage of regularly occupied floor area that achieves spatial daylight autonomy (sDA 300/50%) while direct overhead lighting does not exceed 25% of the connected lighting load within a space. Demonstrate that annual sunlight exposure (ASE 1000,250) of no more than 10% is achieved.

Related Guardian Solution: Guardian offers a variety of SunGuard coated glass products with light transmission from 8% to more than 78% that allows designers the ability to provide ample visible light to connect the occupants to the outdoors and enhance the experience of the space.

LEED Category: Indoor Environmental Quality (EQ)

Credit: Quality Views

LEED Points: 1 point (Healthcare - 2 points)

Intent: To give building occupants a connection to the natural outdoor environment by providing quality views.

Requirement: 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 clear image of the exterior, not obstructed by frits, fibers, patterned glazing or added tints that distort color balance.

Related Guardian Solution: SunGuard Advanced Architectural Glass offers a variety of products with high visible light transmission and high color rendering index providing more accurate color transmission through the glazing.

LEED Category: Innovation (IN)

Credit: Innovation

LEED Points: 1-5 points

Intent: To encourage projects to achieve exceptional or innovative performance.

Requirement: Achieve significant, measureable environmental performance using a strategy not addressed in the LEED green building rating system and/or achieve exemplary performance in an existing LEED v4 credit. Performance point is typically earned for achieving double the credit requirements or the next incremental percentage threshold.

Related Guardian Solution: Guardian Advanced Architectural Glass has the ability to meet or exceed local and/or national energy code requirements. Guardian has also tested product makeups for bird collision deterrence, which is pilot credit 55.

