



## **LEED Certification & Sustainable Building Design**

The Leadership in Energy and Environmental Design (LEED™) Green Building Rating System represents the U.S. Green Building Council's effort to provide a national standard for what constitutes a "green building." Through its use as a design guideline and third-party certification tool, it aims to improve occupant well-being, environmental performance and economic returns of buildings using established and innovative practices, standards and technologies.

*LEED Category: Energy & Atmosphere Credit 1: Optimize Energy Performance*  
*LEED Credit: 1-10 points*

### **Intent**

Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

### **Requirements for Credit 1 (1-10 points)**

Reduce design energy cost compared to the energy cost budget for energy systems regulated by ASHRAE/IESNA Standard 90.1-1999 (without amendments), as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11 of the Standard.

### **UPG Contribution**

We stock a variety of high-performance low-E products from several float manufacturers which can be paired with clear, tinted, or reflective glass to achieve the **lowest Solar Heat Gain Coefficient** (SHGC) performance. Some of these include: PPG Solarban 60, 70XL, z-50, or Sungate 500; Guardian SN-68, LE-40, LE-50, or AG-43; Pilkington Energy Advantage.

*LEED Category: Materials & Resources Credit 4.1 & 4.2: Recycled Content*  
*LEED Credit: 1-2 points*

### **Intent**

Increase demand for building products that have incorporated recycled content materials, thereby reducing the impacts resulting from the extraction of new materials.

### **Requirements for Credit 4.1 (1 point)**

Use materials with recycled content such that 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.

### **Requirements for Credit 4.2 (1 point in addition to MR Credit 4.1)**

Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project (meaning an additional percentage beyond MR Credit 4.1).

### **UPG Contribution**

Our float glass manufacturers recycle approximately 20% of their pre-consumer raw materials back into their float glass products. UPG recycles unused glass products resulting from cutting waste, broken or damaged during fabrication, or rejections due to high quality standards. Metal air spacers used for insulated glass units are made from 81% recycled aluminum.

*LEED Category: Materials & Resources Credit 5.1 & 5.2: Regional Materials*  
*LEED Credit: 1-2 points*

**Intent**

Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the regional economy and reducing the environmental impacts resulting from transportation.

**Requirements for Credit 5.1 (1 point)**

Use a minimum of 20% of building materials and products that are manufactured\* regionally within a radius of 500 miles.

\* **Manufacturing refers to the final assembly of components into the building product that is furnished and installed by the tradesmen. For example, if the hardware comes from Dallas, Texas, the lumber from Vancouver, British Columbia, and the joist is assembled in Kent, Washington; then the location of the final assembly is Kent, Washington.**

**Requirements for Credit 5.2 (1 point in addition to MR Credit 4.1)**

Of the regionally manufactured materials documented for MR Credit 5.1, use a minimum of 50% of building materials and products that are extracted, harvested or recovered (as well as manufactured) within 500 miles of the project site. (meaning an additional percentage beyond MR Credit 5.1).

**UPG Contribution**

The float glass manufacturers we source to are **located within a 500-mile radius of our glass fabrication facility**. A PPG float glass facility is located in Carlisle, PA. A Guardian float glass facility is located in Geneva, NY. A Pilkington float glass facility is located in Ottawa, IL. All three companies source raw materials regionally.

*LEED Category: Indoor Environmental Quality Credit 8.1 & 8.2: Daylight & Views*  
*LEED Credit: 1-2 points*

**Intent**

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

**Requirements for Credit 8.1 (1 point)**

Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks. Spaces excluded from this requirement include copy rooms, storage areas, mechanical plant rooms, laundry and other low occupancy support areas.

**Requirements for Credit 8.2 (1 point)**

Achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces. Examples of exceptions include copy rooms, storage areas, mechanical, laundry and other low occupancy support areas.

**UPG Contribution**

We stock a variety of high-performance and spectrally selective glass products from float manufacturers such as PPG, Guardian, Pilkington, AFG, Visteon and to help maximize natural light into the building while still providing excellent solar control.

*LEED Category: Innovation & Design Process Credit 1.1-1.4: Innovation in Design*  
*LEED Credit: 1-4 points*

**Intent**

To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED Green Building Rating System.

**Requirements for Credits 1.1, 1.2, 1.3, 1.4 (1 point each, up to 4 points total)**

In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements.

**UPG Contribution**

We can help you satisfy specific innovation credits by assisting you with product selection to **substantially exceed energy performance in your overall building design**. Products or processes that can contribute towards these credits include replacing a traditional air spacer with **warm-edge technology** to improve overall U-Value and Condensation Resistance Factor (CRF) or by providing a **specialized freight option using returnable steel rack transportation** versus wood crating to preserve natural resources.