

## LEED SUBMITTAL PACKAGE

Hartung Glass (which includes its commercial glass division, NWI Seattle) is one of the largest glass fabricators in North America and is dedicated to the principles of energy efficiency and sustainable environmental practices. In support of these principles, Hartung Glass places great priority on developing and refining its product offering to meet the highest standards of sustainable building design as outlined in the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.

LEED is a rating system created in 1998 that is administered by the United States Green Building Council (USGBC). It provides an objective, national standard for what constitutes a green building, and it offers a set of scientifically-based performance criteria for LEED project certification.

The LEED Green Building Rating System address eight energy and environmental topics (Hartung's solutions can help achieve points in the categories highlighted in **BOLD** below):

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

All **LEED v4** rating systems have four certification levels. Each is awarded by achieving a minimum number of points:

**Certified** – 40-49 points

**Silver** – 50-59 points

**Gold** – 60-79 points

**Platinum** – 80 points and above

Credit points that can be earned using Hartung Glass products are outlined below. Please note that the credits included are for certification under **LEED v4 Building Design + Construction (BD+C)**: New Construction. Other green building rating systems may have parallel/similar credits to which Hartung Glass Industries can contribute.

## **Sustainable Sites Pilot Credit 55 (1 Point)**

### ***Bird Collision Deterrence***

Through the use of silkscreen printed, digitally printed, acid etched or other specialty bird collision-deterrence patterned glass products, Hartung Glass is able to help contribute to the effort to reduce the injury and mortality rate of birds from in-flight collisions with buildings.

## **Sustainable Sites Credit 5 (Up to 2 Points)**

### ***Heat Island Reduction***

As a fully certified glass fabricator of Vitro Architectural Glass and Guardian Glass products, Hartung Glass has access to a myriad of low-e glass options offering a Solar Reflectance value of 0.33 or greater. The use of moderate to high solar energy reflecting glass in exterior glazing applications can help reduce the heat island effect.

## **Integrative Process Credit 1 (1 Point)**

### ***Integrative Process***

Early in the design process, members of the Hartung Technical Team can assist with connecting architects and specifiers with access to online tools and documentation that can be incorporated into energy simulation models to establish how the integration of certain glass products into a building design can impact the overall energy performance of a building.

## **Energy and Atmosphere Credit 2 (Up to 20 Points)**

### ***Optimize Energy Performance***

Hartung Glass offers a wide array of high-performance, spectrally-selective glass types that can be used in concert with warm edge spacer technology and low thermal conductivity gasses (like Argon and Krypton) to optimize thermal insulation efficiency in a glazing system. The strategic collective use of these products can result in reduced overall building energy consumption. Credits for this category can be earned by demonstrating that the use of Hartung Glass products will result in a simulation-validated percentage improvement in the energy performance of a building relative to an established baseline performance target (Performance Path), or through documented compliance to standards outlined in the ASHRAE Advanced Energy Design Guide (Prescriptive Path).

## **Materials and Resources Credit 2 (Up to 2 Points)**

### ***Building Product Disclosure and Optimization – Environmental Product Declarations (EPD)***

EPDs are used to better understand the life-cycle environmental impact of building materials and are required in this credit to encourage the use of products and materials that have environmentally, economically, and socially preferable life-cycle impacts. Hartung Glass can provide an industry-wide, generic environmental profile for flat glass from the National Glass Association as well as EPDs from Guardian Glass and Vitro Architectural Glass that have been verified in accordance with ISO 14025 and that conform to ISO 21930.

## **Materials and Resources Credit 3 (Up to 2 Points)**

### ***Building Product Disclosure and Optimization – Sourcing of Raw Materials***

This is another credit that serves to reward project teams for utilizing products for which life-cycle information is available. It also motivates projects to use materials that can be verified as having been extracted or sourced in a responsible manner, specifically cases where products consist of salvaged, refurbished, reused or recycled materials. Further incentive is placed on materials sourced within a 100-mile radius of the project site. Materials used by Hartung Glass do contain some recycled material; however, they will not contribute to the credit per LEED guidelines and USGBC definition. Per USGBC definition, any waste generated within the float manufacturing process is specifically excluded from contribution towards recycled content. Only content that has been returned to the float manufacturer from another source meets the definition of recycled content. Percentages, if any, of such vary by manufacturer and this information is proprietary.

## Materials and Resources Credit 4 (Up to 2 Points)

### **Building Product Disclosure and Optimization**

Credit points can be earned with the submission of qualifying certifications. A Health Product Declaration (HPD) can be submitted for projects featuring Guardian Glass products. A Cradle-to-Cradle Bronze certification can accompany projects showcasing Vitro Architectural Glass products.

## Indoor Environmental Quality Credit 5 (1 Point)

### **Thermal Comfort**

Following the guidance of Thermal Comfort Design – ASHRAE Standard 55-2010 or ISO and CEN Standards, we can use templates to create thermally-comfortable occupant spaces. Through the use of high-efficiency insulated glass units featuring glass product components that offer robust solar control properties, Hartung Glass can assist with creating comfortable interior spaces where heat and glare are kept at ideal levels.

## Indoor Environmental Quality Credit 7 (Up to 3 Points)

### **Daylight**

It's been proven that daylighting achieved through the use of windows and skylights in occupied spaces can serve to connect building occupants with the outdoors, reinforce circadian rhythms and reduce the use of electrical lighting. This credit can be earned by demonstrating through computer simulations or occupied floor area luminance measurements that 75% of regular occupied spaces have access to natural light.

## Indoor Environmental Quality Credit 8 (1 Point)

### **Quality Views**

Similar to the Daylight Credit (IEQc7), projects are incentivized for incorporating more vision glazing in their designs. To qualify for this credit, you must achieve a direct line of sight to the outdoors for 75% of all regularly occupied floor areas. Hartung's architectural glass products as used in interior walls and partitions, building fenestration elements and overhead glazing applications help to offer occupants the quality views encouraged by this credit.

## Indoor Environmental Quality Credit 9 (1 Point)

### **Acoustic Performance**

With numerous glass laminating and insulating facilities across North America, Hartung Glass is able to provide glass solutions to projects in the United States and Canadian landscapes with sound attenuation properties that function to promote occupants' well-being, productivity and communications. Hartung's laminated and insulated glass products can be used with relatively high STC ratings for indoor applications while also reaching high OITC ratings for exterior applications.

## Innovation Credit 1 (Up to 5 points)

### **Innovation**

Project teams can use any combination of innovation, pilot, and exemplary performance strategies to earn the 5 points available from this credit.