

Insul-Lite 275 Wall Systems



**1. Product Name**

Insul-Lite 275

**2. Manufacturer**

Crystal Structures, commercial division of Sunshine Rooms Inc.  
 3333 N. Mead  
 Wichita KS 67219  
 316.838.0033  
 CrystalStructuresGlazing.com



**3. Product Description**

**BASIC USE**

Crystal Structures, commercial division of Sunshine Rooms Inc. offers the Insul-Lite 275, a translucent wall system for the primary purpose of creating a cost effective method to build an energy efficient, structural wall that allows translucent (diffused) light to enter into a designated space. Typically used in large open buildings that are traditionally dark and difficult to illuminate. Commercial building applications include manufacturing and maintenance facilities, warehouses, schools, gymnasiums, and large hallways; often in clerestory configurations.

**BENEFITS**

Insul-Lite 275 panels can reduce energy and lighting costs while creating a comfortable ambience within a building. Panels come in widths of 23 11/16". Lengths and heights are customized to fit job site requirements. The polycarbonate panels are virtually unbreakable and

should be considered in high crime or heavy hail areas.

**COMPOSITION AND MATERIAL**

The glazing assembly consists of two mini-cell wall polycarbonate 10mm panels separated by our exclusive TriLock™ aluminum receiver for a combined 2 3/4" thick system. Unlike many other multi-wall polycarbonate systems that rely solely on friction between the polycarbonate panels and the receiver to keep out air and water, Insul-Lite 275 also uses gaskets to ensure a weather tight system.

The panels are co-extruded with a high performance UV coating on all surfaces to ensure excellent protection against UV rays. Standard color options are clear, white (opal), and bronze. Blue, gray and green are also available. Customers can mix and match the colors allowing them 6 standard daylight transmission ratings to select from and even more when considering the gray, blue and green options. The standard configurations are: clear/clear, clear/white, white/clear, white/white, bronze/clear, and bronze/bronze.

Prior to assembly the panels are sealed with anti-dust vent tape which reduces condensation and debris entering the panels. See daylight transmission tales within this spec sheet.

The TriLock™ receiver is extruded from 6061-T6 aluminum with a clear anodized finish. The exterior polycarbonate panel snaps into the receiver. This allows the exterior to be aluminum free in appearance, giving the building a very clean and modern effect.

The interior 10mm polycarbonate panel is held in place by an aluminum snap cap that can be provided in a finish to match the building fenestration.

Finish color options include Kynar, powdercoat or anodized.

All gaskets are UV stabilized Santoprene with a low friction surface composition that allows the polycarbonate to expand and contract within the framing system.

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With the gasketed TriLock™ receiver system, the greater the interior and exterior load pressure that is applied, the tighter the seal.

The perimeter frame is thermally broken aluminum to help support the superior R-value performance of the panel system.

**ACCESSORY FRAMING SYSTEM**

**LEED CREDITS**

Insul-Lite 275 wall panels are an ideal product for projects striving to achieve LEED Certification. The product is more energy efficient, durable, requires less maintenance than similar product. It contains pre and post consumer recycled content and is almost 100% recyclable. Achievable points include the following:

Sustainable Sites:

- SS Credit 7.1 - Reduce heat islands, non-roof
- SS Credit 7.2 - Reduce heat islands, roof
- SS Credit 8 - Light pollution reduction

Energy and Atmosphere

- EA Credit 1 - Optimize energy performance

Materials and Resources

- MR Credit 4 - Recycled and recyclable content
- MR Credit 5 - Local / Regional materials

Indoor Environmental Quality

- EQ Credit 4 - Low emitting materials
- EQ Credit 6 - System controls
- EQ Credit 7 - Thermal comfort
- EQ Credit 8 - Daylight and views

**Table 1 - ENERGY AND LIGHTING PERFORMANCE**

	Daylight Transmission	Solar Heat Gain	Shading Coefficient	U-Value
Insul-Lite 275				
Clear / Clear	54%	.52	.57	.18
White / Clear	29%	.29	.32	.18
Clear / White	27%	.29	.32	.18
White / White	18%	.30	.26	.18
Clear / Bronze	25%	.30	.33	.18
Bronze / Bronze	18%	.25	.27	.18

Please contact us for performance characteristics of panel options with blue, green or gray

\*Values are estimated for the center of panel, based on individual panel testing calculations and computer analysis.



Innovation and Design Process

- ID Credit 1 - Innovative design feature

**4. Technical Data**

**ENERGY & LIGHTING PERFORMANCE**

See Table 1 above

**STRUCTURAL & LOADING PERFORMANCE**

All systems will be designed to meet

or exceed the loading requirements called for per specific project. Contact our technical support department for additional information and assistance.

**TYPICAL APPLICATIONS & DETAILS**

These are samples, each project shall be evaluated and details created to meet the desired performance and characteristics of the project.

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**STORAGE AND HANDLING**

Store all materials in a dry, safe space protected from inclement weather. DO NOT store panels in direct sunlight or high heat conditions. Supported, sloped stacking recommended, but panels may be stacked up to 3' high on flat, even supported area. Do not remove packaging materials until you are ready to install the panels. Remove protective film after complete installation (pull film's edges back during installation). Do not open boxes using sharp knives, box cutters, etc.

**APPLICABLE STANDARDS & TESTING**

Polycarbonate panels have been tested to the following specifications.

- ASTM D638-03 - Tensile properties of plastic
- ASTM E84-01 - Standard flame spread test
- ASTM D635-98 - Standards for rate of burning
- ASTM G154-04 - Standard practice for operating fluorescent light and UV exposure
- ASTM E313-00 - Practice for accluating yellowness and whiteness
- ASTM E308-01 - Test method for computing colors of objects by using the CIE system
- ASTM E133-96 - Reflectance factor and color by spectrophotometer
- ASTM D790-03 - TEst method for flexural properties of unreinforced and reinforced plastics

Aluminum framing members and components have been extruded to meet or surpass the following standards and tests.

- ASTM B221 - Standard specification for aluminum

- extrusions
- ASTM B209 - Standard specification for aluminum extrusion in mill finish
- ASTM F593-01 - Standard specification for stainless steel screws
- ASTM D471-01 - Standard test method for rubber properties.

The Insul-Lite 275 system will meet or exceed the following specifications.

- ASTM E3331-00 Water penetration resistance
- ASTM E283-04 Air infiltration
- ASTM E330 - Uniform load and structural test pressure

**5. Installation**

**PREPARATORY WORK**

All areas must be clean, dry and structurally sound. All surrounding areas must be square, level, plumb and prepared as described within the job specific shop drawings that will be provided. The wall blocking must be designed to resist the transferred loads from the glazing system.

**INSTALLATION**

Install panels and system according to the job specific shop drawings. There shall be no cutting or drilling of the panels during the installation. Panels should be installed with the fluted cells in a vertical position. The general sequence of installation is as follows:

1. Install flashing at perimeter.
2. Install base frame after caulking accordingly.
3. Insert interior snap cap, apply tape and install interior.
4. Snap in gasketed TriLock™ receiver.
5. Install perimeter spacer
6. Snap in exterior polycarbonate into TriLock™ receiver.
7. Attach perimeter pressure cap and cover.
8. Be sure weep holes at sill are clear of debris and not caulked over.

Final cleaning shall be done using a mild soap and lukewarm water. Harsh chemicals and solvents should never be used on polycarbonate. See

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the maintenance section for more information.

**6. Availability and Costs**

**AVAILABILITY**

Insul-Lite 275 panels and systems are manufactured in Wichita, KS and are available throughout the world on a per project basis. Product(s) is designed, manufactured, packaged, shipped and installed per project specifications. Most projects are sold and installed by the company. To obtain additional information, please contact the company directly.

**COST**

Product is competitively priced. Design and structural capabilities of the product allow many projects to reduce related building costs in the areas of steel, masonry, lighting and etc. Contact the manufacturer for estimating and pricing.

**7. Warranty**

**POLYCARBONATE**

The polycarbonate panels are warranted by its manufacturer for 10 years against breakage and yellowing per ASTM 313-00

**RELATED COMPONENTS**

Panels are warranted for 10 years against delaminating and surface finishes of the framing system. Installations are warranted for 5 years against leakage as a result of improper manufacturing or installation. Contact the manufacturer for complete warranty information.

**8. Maintenance**

Polycarbonate panels should be cleaned using a mild soap and lukewarm water. Use only a soft cloth or clean sponge for cleaning tools. Do not scrub or scrap plastic with sharp or abrasive objects.

Many chemicals are harmful to the polycarbonate panels or the

UV coatings. Read the cleaning instructions carefully before cleaning.

Panels and system should be checked periodically to ensure the weepage system is working properly. In regions that have high dust and other airborne impurities we recommend regular cleaning schedules.

**9. Technical Services**

Complete technical and design assistance is available from the company.

**10. Filing Systems**

- Sweets Source
- Reed Construction Data / Smart Building Index
- Arcat

\*Additional information is available from the manufacturer