

Product Data Sheet

Canopy System – Crystal Structures

CSI Section: 08 44 33 – Sloped Glazing Assemblies

1. Product Name & Description

Product Name: Crystal Structures Canopy System

Description:

The Crystal Structures Canopy System is a high-performance, sloped glazing solution designed to provide durable, weather-resistant, and aesthetically pleasing coverage for entryways, walkways, and other architectural features. Utilizing multiwall polycarbonate panels, the system offers superior thermal insulation, impact resistance, and natural daylighting, enhancing both functionality and visual appeal. System also available in monolithic panel configurations.

2. Manufacturer

Manufacturer: Crystal Structures

Address: 3333 N Mead, Wichita, KS 67219

Phone: (316) 838-0033

Website: <https://www.crystalstructuresglazing.com>

3. Applicable Standards & Testing

- **ASTM E330** – Structural Load Resistance
 - **ASTM E331 / E547** – Water Penetration Resistance
 - **ASTM D635 / D1929** – Flammability / Ignition
 - **UL 94** – Plastic Flammability
 - **FM 4473 / UL 2218** – Hail and Impact Resistance
 - **AAMA 1503 / 2604 / 2605** – Thermal and Finish Performance
 - **UL 790 / ASTM E108** – Roof Assembly Fire Rating
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4. System Components

Panels

- **Material:** Multiwall polycarbonate with UV-resistant coatings. Monolithic with UV coatings
- **Thickness:** 10–40 mm depending on thermal and structural requirements.
- **Width:** Standard 4'–5'; custom widths available.
- **Length:** Continuous panels up to 40'; modular systems for longer runs.
- **Colors:** Clear, opal, bronze, or custom.
- **Thermal & Optical Performance:**
 - U-Factor: 0.22–0.35
 - CRF: ≥ 60
 - Visible Light Transmittance: 0.45–0.70

Framing / Support System

- **Material:** 6063-T5/T6 extruded aluminum alloy with thermal breaks.
- **Finish Options:**
 - Anodized: Clear, Bronze, Black (AAMA 611)
 - Painted: 70% PVDF (Kynar®/Hylar®) (AAMA 2605)
 - Custom colors available
- **Glazing Retention:** Pressure-plate and snap-cap system with EPDM gaskets and silicone sealant.

Drainage & Flashing

- Integrated internal gutter and weep system for water management.
- Flashing compatible with TPO, PVC, EPDM, BUR, and metal roofing or wall assemblies.
- Optional stainless steel or copper flashings for specialty or historic applications.

5. Performance Criteria

Property	Typical Value / Description
Water Resistance	No leakage @ 15 psf (ASTM E331/E547)
Structural Deflection	L/175 max (ASTM E330)
Fire Rating	Class B standard; Class A optional (UL 790)
Impact Resistance	FM 4473 / UL 2218 optional

6. Design & Fabrication

- Custom-engineered panels for project-specific spans, loads, and geometry.
 - Factory-fabricated modules ensure precision fit, thermal continuity, and clean sightlines.
 - Panels can be installed in vertical, horizontal, or sloped configurations.
 - Optional operable vents, shading tracks, or maintenance access integration.
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7. Installation

- Install per manufacturer's instructions and approved shop drawings.
 - Verify substrate and structural supports prior to installation.
 - Anchor panels per engineer-of-record specifications.
 - Flash and seal continuously per NRCA guidelines.
 - Field-testing recommended per ASTM E1105 for critical applications.
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8. Maintenance & Warranty

- Annual inspection of seals, gaskets, and framing recommended.
 - Clean with mild, non-abrasive cleaners.
 - **Warranty:**
 - 10 years – Structural frame and finish
 - 10 years – Panel integrity
 - Extended warranties available
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9. System Variants / Product Lines

- **Skyquest system:** for use in 4-25MM panel thickness.
 - **Thermal Sky 275+:** Enhanced thermal performance panel.
 - **Canopy Polycarbonate System:** 20 mm polycarbonate panels for walkways, canopies, and atriums.
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10. Typical Applications

- **Canopies**
 - **Walkways**
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11. Submittals & Engineering

- Product data and detailed drawings
 - Engineering calculations for spans, loads, and thermal performance
 - Finish and panel samples
 - Licensed structural engineer seal where required
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12. Ordering Information

Provide:

- Project name & location
- Panel dimensions and configuration
- Glazing type & finish
- Framing options & thermal requirements
- Curb / interface details
- Desired geometry