

Completing Your Specification for TRANSLUCENT METAL FRAMED SKYLIGHTS

Instructions:

Step 1. (The script highlighted in RED and enclosed in brackets is intended to be instructions for that portion of the specifications) After completing the task, which usually requires making a selection, delete the Red script from the specification.

Step 2. (Scripts highlighted in BLUE are selection items.) Change the item you want to use to BLACK text and delete all the other Blue text in that area of the specification.

Step 3. Add the project name at the top of each page and the correct page numbering system at the bottom.

Step 4. Delete this page from your new specification and copy and paste it into your master specification document.

Please call Crystal Structures/Sunshine Rooms at 1-800-222-1598 for any help with this specification or other issues regarding your skylight design, such as component sizing, special glazing requirements, or for drawing details.

Continue to Specification below -

SECTION 08 63 00

TRANSLUCENT METAL FRAMED SKYLIGHTS

Part 1 - General

1.01 Description of Work

- A. Furnish all materials, labor, and related services required to provide skylight(s) as specified on drawings and in this section.
- B. Work is limited to the skylight system only and includes the following:
 - 1. Structural aluminum framing and compatible flashing
 - 2. Glazing and all necessary glazing gaskets and tapes
 - 3. Installation shall be by a factory-approved installation company

1.02 Performance Requirements

- A. Deflection – All load-bearing members under any design load combination (including dead load) shall not exceed $L/120$ of its clear span
- B. Air Infiltration – Complies with testing per ASTM-E283-04 and shall meet or exceed $<0.01\text{cfm/ft}^2$
- C. Static Water Resistance – Complies with testing per ASTM-E331 and shall meet or exceed 527Pa (11.0psf)
- D. Wind Load – Withstands wind loads based on ANSI-A58.1/ASCE-7 guidelines and 90 mph wind, exposure C, per Uniform Building Code
- E. Plastic Self-Ignition Temperature: 650 deg F or more per ASTM D 1929
- F. Smoke-Developed Index: 450 or less per ASTM E 84, or 75 or less per ASTM D 2743
- G. Flame Spread Index: Not more than 25 per ASTM E 84
- H. Combustibility Classification: Class CC1 per ASTM D 635
- I. Color Tolerance: Passes IBC 2006 requirements per ASTM E 308, ASTM E 313 and ASTM G155
- J. Live/Snow Load – Withstands vertical roof loads based on ICBO/BOCA/SBCCI guidelines
 - 1. Dead Load: Minimum of 10 lbs. (Dependent upon thickness of specified glass)
 - 2. Live Load: 30 lbs. psf on horizontal projected areas or as required by the governing building code in which the structure is located, whichever is greater.
 - 3. Wind Load: 90 mph psf on vertical projected areas or as required by the governing building code in which the structure is located, whichever is greater
- K. Local building load requirements may supersede these minimums
- L. **Many skylight shapes exert horizontal thrust on support curbs or adjacent construction. Contact Crystal Structures during design phase if non-thrusting application is required.**

- M. Provide a pre-engineered weepage system that collects condensation and directs it to the exterior of the enclosure
- N. Provide a system that is pre-engineered to accept an insulated curtain and shading system which may be installed at a later date
- O. Provide a system that has a built in track that has been designed to attach accessories without drilling holes into the framing members.
- P. Provide a system in which all edges of the skylight (sill, ridge, gables, etc.) are insulated from the elements using foam board or fiberglass insulation at these locations.
- Q. 2 3/4" Polycarbonate Assembly Glazing Performance Requirements:

1.	Clear over Clear	
	Visible Light Transmittance	54%
	Shading Coefficient	.64
	Solar Heat Gain Coefficient	.56
	R Value	5.3
	U Factor	.19
2.	Opal over Clear	
	Visible Light Transmittance	32%
	Shading Coefficient	.54
	Solar Heat Gain Coefficient	.47
	R Value	5.3
	U Factor	.19
3.	Opal over Opal	
	Visible Light Transmittance	20%
	Shading Coefficient	.46
	Solar Heat Gain Coefficient	.40
	R Value	5.3
	U Factor	.19

(Call for other combinations that can include bronze, green and blue options)

Or As specified in Section 08800 "Glazing"
 {Add type, makeup and performance in that section}

1.03 Submittals

- A. Shop Drawings – Submit (list quantity) copies of complete shop drawings to the architect for approval prior to any fabrication
- B.
 - Or Submit electronic copies of complete drawings electronically by e-mail or downloaded to the projects cloud management folder
- C. Samples
 - 1. 2 ea. 12" structural glazing extrusions
 - 2. 2 ea. 12" x 12" glazing units

3. 2 ea. frame color samples
- D. Provide engineering showing the structural integrity of the system, stamped by an engineer licensed in the state where the project is located by the method listed above. (Note: Stamped shop drawings and engineering can be provided after the initial set of shop drawings have been returned with the architect's review or comments)

1.04 Warranty

- A. Skylight manufacturer shall warrant that the skylight system shall be free of defects in material and workmanship for a period of ten years
- B. Skylight manufacturer shall warrant structured polycarbonate glazing assembly for a period of ten years. The product will not undergo a loss in light transmission in excess of 6% of its original value or a change in yellowness index in excess of allowable values in accordance with ASTM 1003-95 and ASTM 313-73 standards respectively. Product failure also includes a loss of impact strength in the event of hail within the parameters of ASTM D-2658 standards.

Skylight manufacturer shall warrant the skylight frame finish shall be free of defects and shall not fade within acceptable trade standards: **(Select finish)**

1. Polycron (AAMA2603) – 5 years
 2. Class I Anodized finish - 10 years
 3. 2-Coat flouropolymer paint finish (AAMA 2604) -10 years
 4. 3-Coat flouropolymer paint finish (AAMA 2605) – 15 years
- C. Installer shall guarantee the system will be watertight for a period of five years

Part 2 - Products

- 2.01 A. Acceptable Manufacturers and Skylight Model:
Thermal Sky 275 Structured Polycarbonate Skylights by Crystal Structures, Commercial Division of
Sunshine Rooms, Inc.
3333 N. Mead
Wichita, KS 67219
800-222-1598
Fax 316-838-0839

Model: **(Select one or more as required)**

Ridgelites with glazed ends
Saddle Ridgelites without end walls
Hipped Ridgelites
Pyramids
Polygons
Sloped Glazing

Custom and Special configuration

- B. Substitute manufacturers shall not be considered unless they have been approved in writing no less than ten days prior to bid date. Only those manufacturers shall be considered as approved suppliers with products in strict conformity with this Section of the specifications and with the Contract drawings details. Complete details and specifications must accompany requests for approval from skylight manufacturer.

2.02 Materials

A. Structural Framing System

1. Frame: Primary glazing bars shall be 2 ¼” wide and either 3 ¼”, 5 ¾”, or 8 ½” deep. Structural engineering shall determine the size of glazing bar per application.
2. Structural aluminum members shall be extruded aluminum 6005-T5 or 6061 T6 alloy; non-structural members shall be 6063-T5
3. System shall be thermally broken throughout, including operable vents. Thermal break materials shall be polyurethane.
4. Framing system shall have built-in shades tracks that will allow the installation of the Comfort Glide insulated curtain or shade system at a later date. Add on shade tracks are not acceptable.
5. All primary framing members shall have a built-in accessory track which will allow for the addition and relocation of hanging banners, hanging plants, signs, light fixtures and other lightweight objects without the drilling of holes into the structural framing members.
6. All edges of the skylight shall be insulated with 1” foam panels behind the exterior flashings.
7. System shall utilize pressure glazing caps to secure the glazing and all caps and fasteners shall be covered with a snap in trim piece designed to cover all fasteners.
8. System shall incorporate Tear-Duct Weepage Control System™ by Sunshine Rooms, Inc. Internal and external moisture diversion channels shall be extruded in the aluminum bars to direct moisture to the outside of the unit. Condensation channels shall drain into a sloping sill and to the exterior of the skylight.
9. Color Selection: **(Select one)**
 - a. All exposed aluminum extrusions shall be finished with electrostatically-applied baked PPG Polycron enamel. Finish meets AAMA specification 2603. Choose from the manufacturer’s standard colors (bronze or white)
 - b. Or Class I anodized in a color selected by the architect
 - c. Or two-coat fluoropolymer paint in a color selected by the architect from manufacturer’s standard options

- d. Or three coat fluoropolymer paint in a color selected by the architect from manufacturer's standard option.
- B. Glazing: (Select either 1 or 2)
 - 1. Manufacturer's Recommendation:
Thermal Sky 275
2 ¾" Translucent multi-wall polycarbonate structural sandwich panel system with 2 layers of 16 mm polycarbonate and 12" X 24" internal grid.
- OR -
 - 2. Glazing: As specified in Section 08800 "Glazing"
- C. Fasteners
All fasteners shall be 18-8 stainless steel. Exposed fasteners are not acceptable.
- D. Gaskets
 - 1. Gaskets are to be 60-70 durometer Santoprene rubber.
 - 2. Gaskets shall be designed with four multi-fins
 - 3. Glass setting blocks shall be 90 durometer EDPM.
- E. Sealants
 - 1. Sealants shall be 100% silicone to match the color of the exterior frame. In the event the frame color is a custom or unusual color, all caulking shall be black.
 - 2. VOC Content: 8.1 g/L or Less

Part 3 Execution

3.01 Inspection of work area

- A. Inspect area to receive skylight to ensure that all conditions are in accordance with specification sheets and approved shop drawings.
- B. Verify that the flashed curb is in accordance with specification sheets and approved shop drawings.
- C. Inspect material upon arrival at the job site for condition and that the quantity of material is in agreement with the packing slip.
- D. In the event the jobsite is prepared incorrectly it shall be the responsibility of the general contractor or owner to repair site in a fashion acceptable to the skylight manufacturer that will allow for the proper installation of the skylight.

3.02 Installation

- A. Install in accordance with manufacturer's instructions.
- B. Align unit plumb, level, and flush with the adjacent surfaces.
- C. Installing contractor shall have at least 5 years experience in the installation of similar projects.

3.03 Cleaning and Protection

- A. Skylight and glazing shall be cleaned at the time of the installation by the installing contractor. Additional cleanings shall be the responsibility of the general contractor or owner.
- B. For additional cleaning, follow manufacturer's cleaning instructions.
- C. The General Contractor shall exercise caution to prevent alkaline substances, paint, acid, abrasive, or other substances or objects from damaging the finish or glass during and after the skylight installation. In the event skylight is damaged after the installation the general contractor or owner shall be responsible to correct any damage.

END OF SECTION