

SPECIFICATIONS SECTION 08620
METAL FRAMED VAULTED SKYLIGHTS

PART I - GENERAL

1.01 Summary

- A. The work of this Section includes unit skylights with the following configuration.
 - 1. Types: The design and configuration of the unit skylights include:
 - a. Continuous Vaulted skylight system
- B. Related Sections related to this Section include the following:
 - 1. Division 7 Built-up Roofing: Built-up Bituminous Roofing
 - 2. Division 7 Modified Bituminous Roofing: Modified Bituminous Sheet Roofing
 - 3. Division 7 Single Ply Roofing: Single Ply Membrane Roofing
 - 4. Division 7 Flashing and Sheet Metal: Flashing and Sheet Metal Material
 - 5. Division 7 Sheet Metal Roof: Sheet Metal Roofing Material
 - 6. Section 06101 Wood Curbs

1.02 References

- A. General: Referenced standards are provided for guidance to address Sections related to the proper installation, flashing and weatherproofing of the skylight system. The local Building Code requirements shall be addressed and approved by the Authority having Jurisdiction (AHJ), and may supersede the specifications detailed herein.
- B. Aluminum Association (AA)
 - 1. Specifications for Aluminum Structures.
- C. American Architectural Manufacturers Association (AAMA)
 - 1. Standard air and water tests as outlined in AAMA Test 501.
 - 2. AAMA SDGS-1 Structural Design Guidelines for Aluminum Framed Skylights
 - 3. Voluntary Guide Specification and Inspection Methods for Clear Anodic finishes for Architectural Aluminum. AAMA 607.1
 - 4. Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum. AAMA 603.8
 - 5. Specifications for High Performance Organic Coatings on Architectural Extrusions and Panels. AAMA 605.2
 - 6. Voluntary Guide Specification and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum. AAMA 606.1
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM C509 Cellular Elastomeric Preformed Gasket and Sealing Material
 - 2. ASTM C794 Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
 - 3. ASTM C864 Dense Elastomeric Compression Seal Gaskets, Setting Blocks and Spacers
 - 4. ASTM D1149 Test Method for Rubber Deterioration – Surface Ozone Cracking in a Chamber (Flat Specimen)
 - 5. ASTM E283 Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors
 - 6. ASTM E330 Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference
 - 7. ASTM E331 Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference

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- C. National Roofing Contractors Association (NRCA)
 - 1. Roofing and Waterproofing Manual
- 1.03 System Performance Description
 - A. Provide metal-framed skylights which have been manufactured, fabricated and installed to withstand loading requirements by the current edition of the International Building Code (IBC) or the current edition of the International Building Code (IBC). Provide performance criteria required by these specifications without defects, damage or failure.
 - B. Design framing system to support design loads as specified by local building codes. Deflection criteria of L/175 shall be maximum allowable under design load.
 - 1. 30 PSF Snow Load plus dead load
 - 2. 30 PSF Negative wind or uplift load plus dead load
 - C. Allowable air infiltration shall not exceed 0.06 CFM of the total glazed surface area when tested in accordance with ASTM E283 at a static pressure of 6.24 PSF.
 - D. Water penetration: no uncontrollable water penetration when tested in accordance with ASTM E331 at a static pressure not less than 6.24 PSF.
 - E. Thermal Movement: provide for expansion and contraction of materials so there will be no objectionable distortion when subjected to a temperature of +/- 50 degrees F.
- 1.02 Submittals
 - A. Submit product data and test reports indicating compliance with the specifications
 - B. Submit complete shop drawings showing all details and elevations of the skylight system, including anchoring, glazing materials, sealant and flashing.
 - C. Submit samples of each type of finishes and glazing prior to proceeding with fabrication
 - 2. Glazing material: samples for verification of specified color, reflective coating and frit pattern if required.
 - 3. Aluminum Finish: color charts for selection from manufacturer's standard colors.
- 1.03 Quality Assurance
 - A. Manufacturer shall utilize quality control procedures in accordance with the procedures outlined in ICC Evaluation Services AC10 Quality Control Standard.
 - B. The skylight shall be installed by an approved installer with a minimum experience of 5 years experience.

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1.04 Warranty

- A. Warrant the skylight system to be free from defects in workmanship and materials for a period of 10 years from the date of final completion of the skylight.
- B. Warrant the glazing against defective materials and failure per the glazing manufacturer's standard material warranty.
- C. Aluminum frame finish warranty. **(Select one)**
 - 1. Powder coat finish shall be warranted for a period of (5) five years from date of application.
 - 2. Kynar Fluoropolymer Finish Two-Coat: 10 years
 - 3. Kynar fluoropolymer finish Three-Coat: 20 years
 - 4. Mill finish – warranty excluded

PART II – PRODUCTS

2.01 Unit vaulted skylights

- A. Manufacturer
 - 1. The drawings and specifications are based on products as manufactured by Skyco Skylights, 2995 Airway Avenue, Suite B, Costa Mesa, CA 92626. P: 949 629-4090, www.skycoskylights.com
 - 2. Acceptable manufacturer: Skyco Skylights, (949 629-4090). www.skycoskylights.com
 - 3. Optional manufacturers must pre-qualify to bid not less than (10) ten days prior to bid date.

2.02 Materials and Fabrication

- A. Model CVDD double glazed barrel vault skylight or Model CVD single glazed barrel vault.
- B. Vertical Ends: **Select one** (Yes No)
- C. Continuous vaulted skylights with extruded aluminum framing members.
- D. Skylight framing members, perimeter curb and glazing caps shall be 6063-T5 or 6063-T6 aluminum alloy of sufficient thickness for the application and to meet the required design loads.
- E. Skylight sill members shall be designed to collect and weep water infiltration that may occur and weep to the exterior of the building
- F. Anchor locations to the curb shall be slotted to allow for thermal movement and expansion
- G. Support rafters shall be spaced (4' 0" on center for uniform snow load not to exceed 30 psf) (3' 0" on center for uniform snow load not exceeding 40 psf)**
- H. All units which exceed 85 inches wide shall be shipped knocked-down due to shipping limitations.
- I. Formed flashing and closures shall be a minimum 0.062 inch thick aluminum sheet.
- J. Fabricate work to be straight, plumb, level and square. Provide work to sizes, shapes and profiles indicated on approved shop drawings.
- K. Fasteners: Fasteners used for the attachment of exterior cap retainers shall be corrosion resistant steel. All other fasteners shall be zinc plated steel unless otherwise specified.
- L. Glazing: Select from one of the following options**
 - 1. **(Select One)** Polycarbonate Sheet, Multi-Wall polycarbonate, Acrylic
 - 2. Outer Glazing Color: Acrylic: (Colorless) (White #2447) (Bronze #2412) (Gray #2064)
Polycarbonate: Thickness: (___) (White) (Opal) (Bronze) (Clear)
 - 3. Inner Glazing Color: Acrylic: (Colorless) (White 2447)
Polycarbonate: Thickness (___) (White) (Opal) (Clear)

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- M. Visible Light Transmittance **(Please Specify)**
- N. Solar Heat Gain Coefficient – SHGC: **(Please Specify)**
- O. Sealants: Sealants shall be compatible with all contact substrates and components. Sealants shall be applied in accordance with sealant manufacturer’s guidelines and joint dimensions held as shown on the approved shop drawings.
- P. Finish: Exposed metal surfaces of skylight system, including framing, support system, flashings and other items associated with the skylight shall be finished with: **(Please Select one)**
 - 1. Mill Finish
 - 2. Powder Coat Finish
 - 3. Kynar 2 coat or 3 coat

2.03 Fabrication

- A. Skylights shall be factory fabricated to the size and configuration indicated on the Architectural drawings and assembled in the largest possible sections at the factory and in accordance with job-site conditions.
- B. Design rafter bars and caps to accept EPDM and/or Santoprene gaskets.
- C. All clips for the connection of the skylight frame shall be steel or aluminum.
- D. All welding shall be TIG welded and ground smooth where required.
- E. Locate weep holes to properly drain water to the exterior

2.04 Source Quality

- A. Source Quality: Obtain the continuous vaulted skylight from a single manufacturer.

PART III – EXECUTION

3.01 Manufacturer’s Instructions

- A. Compliance: Comply with manufacturer’s product data, including product technical bulletins, product erection/installation instructions, and approved shop drawings

3.02 Examination

- A. Site Verification of Conditions: Verify that substrate conditions (which have been previously installed under other sections) are acceptable for the skylight installation and all substrate dimensions are in accordance with the approved shop drawings.

3.03 Preparation

- A. Preparation: Confirm measurements of as-built and adjacent construction and evaluate conditions of the substrates, supports and other conditions related to the installation of the skylight system, and notify the General Contractor, in writing, of conditions detrimental to the proper completion of work. Do not proceed with work until unsatisfactory conditions are corrected.

3.04 Installation

- A. Installation shall be under the direction of the skylight manufacturer and by an approved sub-contractor.
- B. Match profiles, sizes and spacing indicated on the approved shop drawings. Ensure that the weep and condensation control systems function properly and are installed in accordance with the shop drawings.

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- C. When required, do not perform structural silicon sealant work when the temperature of the aluminum frame is below 32 degrees F, without written approval from the silicon sealant manufacturer.
- D. Coordinate installation with adjacent work, such as sheet metal, roofing materials and other related work, to ensure a complete weatherproof assembly. Allow for differential and thermal movement within the overall system
- E. Site Tolerances: The as-built structural curb support and adjacent construction should be held to within $\pm \frac{1}{2}$ inch of the theoretical dimensions shown on the approved shop drawings.
- F. Install the skylight system true and plumb in alignment with established lines and elevations
- G. Install all components to allow for proper drainage of condensation and water infiltration which may occur and ensure provisions for migrating to the exterior are in accordance with the approved shop drawings.
- H. Skylight materials shall be installed in accordance with the manufacturer's erection drawings and recommendations.
- I. Contact areas between aluminum and dissimilar materials shall be isolation with a protective material to prevent electrolytic corrosion.

3.05 Protection

- A. The skylight manufacturer does not provide or include any temporary protection for the skylight system after completion of the installation. Protection of the skylight system from other trades, after completion of the installation, shall be the responsibility of the General Contractor.
- B. During installation, remove all debris from gutter system, remove all labels and part number markings, handprints, construction dirt and sealant smears from all components. Touch-up damaged coatings and finishes and repair minor damage to eliminate all evidence of repair. Remove and replace work which may not be satisfactorily repaired.

3.06 Cleaning

- A. Remove temporary coverings on glazing
- B. Clean glazing in accordance with the manufacturer's instructions and frame upon completion of the skylight installation utilizing non-abrasive materials and methods in accordance with manufacturer's instructions.
- C. Clean skylight frame and related metal surfaces using non-abrasive materials and methods in accordance with manufacturer's instructions.
- D. Final cleaning, if required, subsequent to completion of the skylight installation, shall be performed by the General Contractor.

END OF SECTION 08620

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