

**SECTION 08 63 00**  
**CUSTOM DESIGNED SYSTEMS ALUMINUM FRAMED**  
**SKYLIGHT SYSTEMS DATA SHEET**

PART 1 GENERAL

1.01 WORK INCLUDED

All work related to skylight include the following: Aluminum skylight frame, glazing, attachment plates, flashings and gutters adjoining the skylight as required on drawings and specified herein; anchoring devices, internal plates expansion mechanisms in conjunction with each component as specified; coatings of skylight components; structural integrity and watertight design of the assembly.

1.02 DESIGN CRITERIA

Custom Designed Systems is compliant to the following building requirements:

- A. Design Loads: CDS will meet all load and deflection requirements as required by project engineer and all governing agents. Deflection of each skylight members shall not exceed L/180.
- B. Fasteners: Design shall be based on ultimate loading of a 4 to 1 safety factor.
- C. Thermal Movement: The skylight assembly shall withstand a 180 degree Fahrenheit temperature variation without overstressing any part of that assembly and its glazing. All thermal stresses will transfer to the building structure.
- D. Glass Bearing: Glass will be supported on all sides with a ½" minimum setting on a gasket with a aluminum support member.
- E. Performance: The entire skylight is designed with a continuous integral gutter system to drain any moisture to the exterior and waterproof to the interior. All spanning members shall be structural and tubular in design.
- F. The design of the skylight is to prevent noises such as popping, creaking and wind harmonics.
- G. Design of all horizontal glazing components, including the eave, will be flush and silicone sealed to allow water to run freely off the skylight surface.
- H. Test Reports: CDS meets all the following requirements and will provide documentation of satisfactory completion of these tests as required by governing officials, and as further specified.
  - 1. ASTM E547: Conducted at 15 PSF static pressure, with test pressure maintained for (4) cycles; no uncontrolled water is to appear on the interior parts of the skylight framing.
  - 2. ASTM E331: Conducted at 6.24 PSF static air pressure, with test pressure maintained for the full duration of one (15) minute cycle; no uncontrolled water is to appear on the interior parts of the skylight framing.
  - 3. AAMA 1503: Conduct at 1.57 PSF, with test pressure maintained. Maximum allowable rate (CFM/ft) is 0.01CFM/sqft

4. Structural testing information for aluminum rafter members, performed by an independent firm, conducted at 750 lbs at 75lbs PSF for the full duration of 48 hours with a 3 times design load factor. Glass unit to remain as upper light is broken.
5. ASTM E330: Conduct test with Design Load of +/- 70psf and Structural load of +/- 105 psf with no damage to structural support members.
6. Skylight frame and it's glazing comply with UFC 4-010-01 for Explosive Weight Type I tested by Architectural Testing in York, PA.
7. CDS Skylights meets a .35 U-value as a system under NFRC Testing.

I. LEEDS QUALIFICATIONS:

Custom Designed Systems qualifies for the following LEEDS points:

1. MR Credit 1.1 AND 1.2: Our Company is proud to announce that our facility recycles 98% of everything that enters its plant.
2. MR Credit 4.1 AND 4.2: Certification of 26% post-industrial content in skylight framing. Our product is 100% recyclable for final consumer.
3. MR Credit 5.1 AND 5.2: Custom Designed Systems is located in Gladstone, OR and is within 500 miles of the project.
4. EQ Credit 4.1: We use no sealants to the interior of our skylights and Low Emitting Sealant on the exterior.
5. EQ Credit 6.2: We can glaze operable skylights, awnings, hoppers and/or fan systems for easy use.
6. EQ Credit 8.1: We can create soft glazing to diffuse the lighting so as not to be blinded by glare.
7. EQ Credit 8.2: We are supplying a system that has an unrestricted view to the exterior allowing full benefits of the exterior lighting.

1.03 QUALITY ASSURANCE

- A. We, the manufacturer, have no less than twenty-three years of successful fabrication of work similar to this project.
- B. Installation shall be performed by a glazing contractor, authorized by the manufacturer that shall meet all our requirements, the manufacturer, for installation of this project.
- C. The Engineer of record for this project has 30 years of experience in the field working with skylights.

1.04 WARRANTY

- A. Skylight: Custom Designed Systems warrants its skylight for (5) years. Warranty agrees to repair or replace any part of the skylight that exhibits defects in workmanship of framing systems components, (5) years on structural performance and failure (5) years weather seals and structural silicone.
- B. Glass Warranty: Submit a (10) year warranty on insulated glass failure. Warranty is provided from glass manufacturer in a separate specific warranty.

## PART 2 - PRODUCT

### 2.01 MANUFACTURER

- A. CUSTOM DESIGNED SYSTEMS INC. of Gladstone, OR

### 2.02 METAL MATERIALS

- A. Framing Members: ASTM B 221 Extrusions shall be extruded aluminum, 6005-T61 alloy, minimum thickness 0.125 inch.
- B. Framing members shall be of a single extrusion tubular design.
- C. Concealed Cap Fasteners: Minimum #10 machine screw at 10" on center with Saniprene gaskets in the color of black. 300 series stainless steel fasteners.
- D. Fasteners: All fasteners are to be, ASTM A193, 300 stainless-steel screws.
- E. Exposed Flashing and Closures: ASTM B 209 5052-H32 .040 aluminum flashing with finish to match Architects selected color from submitted samples.

### 2.03 GLAZING MATERIALS

- A. General: Glass types are specified in Section 08800. The following descriptions established minimum standards; ALL overhead glazing shall be sized to conform to loading and local governing requirements.
- B. Insulated Glass: Nominal 1-3/16" insulated units shall consist of an outer light of fully tempered 1/4" glass and a 7/16" safety laminated glass on lower light under the requirements of local codes separated by a 1/2" air space. Dual seal the units with a polysobutylene primary seal and silicone secondary seal.
- C. Gaskets: Minimum 1/8" thick extruded Saniprene rubber shall be interlocked into the skylight glazing bars and caps so to provide a setting surface and waterproof seal against both sides of glass. Tape gaskets are not acceptable.
- D. Glazing Sealant: As recommended by the manufacturer.
  - 1. Structural Sealant: ASTM C 1184, neutral-curing silicone black in color.
  - 2. Weather seal Sealant: ASTM C 920 neutral curing silicone which is compatible with all surfaces and finishes. Pre-prime or pre-treat surfaces prior to its application, as recommended by the manufacturer.
- E. Glass Blocks: Extruded setting blocks shall support the glass edges to prevent both vertical and lateral slipping at a minimum 1/4" in thickness.

### 2.04 FABRICATION

- A. All fabrication is done at manufacturers plant and assembled as much as possible for economical shipping. All fabrication is to be performed by qualified craftsmen only.
- B. All plates and clips are to be concealed. Provide a weepage system so to drain any moisture to the exterior.
- C. All glass supporting members shall be aligned and fabricated with hairline joints to within 1/64" which are to be sealed if water crosses those joints.

- D. Provide weep holes in all eave members so that the water penetration and condensation will drain to the exterior of the skylight above the eave apron.

## 2.05 FINISHES

- A. Anodized – Architectural Class I complying with AAMA 611.
- B. Kynar paint in a 2-coat minimum finish as selected by Architect

## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Inspect the installed work of other trades and verify that it is satisfactory so as to have a proper installation of the skylights. Do not proceed with any installations until any discrepancies have been corrected.

### 3.02 PREPERATION

- A. Where aluminum is in contact with dissimilar materials, protect against galvanic action by applying a sealant or tape recommended by the manufacturer.

### 3.03 INSTALLATION

- A. Frames, flashings and gutters are to be installed and sealed in accordance with manufacturers suggestions and per approved shop drawings.
- B. Install skylight plumb, level and square.
- C. Leave all surfaces free of labels, excess sealants and protective material.
- D. Install all components to drain all waters, condensation or interior drainage, to drain to the exterior of the skylight.
- E. Install glazing as indicated on manufacturer's approved drawings noting 2 setting blocks per light of glass 2" in from daylight opening.
- F. Install weather seal sealant assuring a weatherproof joint as recommended by the manufacturer including prep work as required.

### 3.04 CLEANING AND REPAIR

- A. Remove all labels and temporary protective coatings from pre-finished metal surfaces.
- B. Remove excess sealant according to sealant manufacturer's recommendations.
- C. Replace damaged work.

END OF SECTION