



# Code Compliance Research Report CCRR-0235

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**DIVISION: 08 00 00 – OPENINGS**  
**Section: 08 62 00 – Unit Skylights**

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**REPORT SUBJECT:**  
**SunWave™ Daylights**

## 1.0 SCOPE OF EVALUATION

This research report addresses compliance with the following Codes:

- 2015 International Building Code
- 2015 International Residential Code

SunWave™ Daylighting Systems have been evaluated for the following properties:

- Structural Performance
- Durability
- Burning

## 2.0 USES

**2.1.** SunWave™ Daylights are plastic glazed unit skylights complying with IBC Sections 2405 and 2610 and IRC Section R308.6.

## 3.0 DESCRIPTION

**3.1.** The SunWave™ Daylights are fixed unit skylights with general dimensions as shown in Table 1. Each of these models utilizes framing members of identical cross section and identical mounting configuration. Only the perimeter lengths vary to make frames of the required dimensions. The numbers of fasteners vary with skylight size and are shown in Table 1.

**3.2.** The single glazed SunWave™ Daylights utilize prismatic lenses of extruded acrylic or polycarbonate plastic. Glazing materials and their associated thicknesses are as outlined in Table 1. An aluminum curb frame is mounted to a wood curbing, using No. 12 X 1-½ inch long hex washer head screws to form the

base of the skylight assembly. Airseal foam neoprene gasket tape is utilized between the horizontal mating surfaces of the wood curb and the aluminum curb frame. The plastic glazing is mounted on top of the curb frame using GE SCS1000 Silicone or Manus-Bond 75-AM sealant. An aluminum thermal break frame is assembled over the glazing and engages the lower aluminum curb frame in a “snap-on” arrangement. No. 8 x ½ inch wafer modified truss head screws are installed to secure the aluminum pieces. Additional details of the skylight assemblies are shown in Figures 1 and 2. Further details of materials utilized in the assembly are as follows;

**3.3. Glazing Materials:** Single glazed prismatic and smooth thermoforming raw acrylic or polycarbonate material.

**3.3.1.** The SunWave™ Daylights utilize a glazing manufactured from Arkema DR101 Acrylic (ICC-ES ESR-1653) or Sunoptics Polycarbonate (ICC-ES ESR-3362) extruded to a thickness of 0.160 inch. See Table 1.

**3.4. Aluminum Components:** The curb frame and the thermal break curb are manufactured from extruded 6063-T6 tempered aluminum.

**3.5. Gasketing and Sealants:**

**3.5.1.** Airseal foam neoprene gasket tape is utilized between the horizontal mating surfaces of the wood curb and the aluminum curb frame

**3.5.2.** Sealing between the glazing domes and the aluminum framing is accomplished with GE SCS1000 Silicone or Manus-Bond 75-AM glazing sealant.

**3.6. Fasteners:** Fasteners utilized in the skylight assemblies are manufactured by PrimeSource Building Products and are recognized in ICC-ES Evaluation Report, ESR-1408. See Table 1 for descriptions and quantities.

**3.6.1.** The aluminum curb frame is fastened to the wood curbing utilizing zinc plated No. 12 X 1 ½ inch self-drilling hex washer head screws.

**3.6.2.** The aluminum thermal break curb is fastened to the curb frame using zinc plated No. 8 X 1/2 inch wafer modified truss head screws

#### 4.0 PERFORMANCE CHARACTERISTICS

**4.1.** For the models listed in Section 1, the maximum allowable positive and negative (wind uplift) loads are as indicated in Table 2.

**4.2.** Each of the models listed in Section 1, were tested and determined to be acceptable to the uniform load, water resistance and air infiltration acceptance criteria described in Part A of the ICC-ES AC16.

#### 5.0 INSTALLATION

SunWave™ Daylights must be installed in accordance with the manufacturer's published installation instructions, the applicable Code and this Research Report. The manufacturer's published installation instructions and this Research Report must be strictly adhered to, and a copy of the instructions must be available on the jobsite during installation.

**5.1.** Skylights shall be installed in accordance with IBC Sections 2405 and 2610 and IRC Section R308.6.

**5.2.** Skylights shall be mounted on a wood curb that raises the plastic glazing at least 4 inches above the plane of the roof.

**5.3.** Outside curb dimensions are indicated in Table 1. The design, attachment, flashing and placement of the wood curb to the roof deck is outside the scope of this report.

**5.4.** Skylights shall be attached to the curb utilizing fasteners described in this report. The fastener manufacturer, type, quantity and location are outlined in Table 2.

#### 6.0 SUPPORTING EVIDENCE

**6.1.** Manufacturer's drawings and installation instructions (Detail No. FS-DL-1, dated 3/23/2011).

**6.2.** Testing data demonstrating compliance with AAMA/WDMA/CSA101/I.S.2/A440-11, "Standard/Specification for Windows, Doors, and Unit Skylights", American Architectural Manufacturers Association, Window and Door Manufacturers Association, and Canadian Standards Association.

**6.3.** Reports of testing demonstrating compliance with ICC-ES AC16, Acceptance Criteria for Plastic Glazed Skylights, approved April 2011.

**6.4.** Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

#### 7.0 CONDITIONS OF USE

The SunWave™ Daylights described in this Research Report complies with, or is a suitable alternative to, what is specified in those Codes listed in Sections 1.0 and 2.0 of this report, subject to the following conditions:

**7.1.** Installation must comply with this Research Report, the manufacturer's published installation instructions and the applicable Code. In the event of a conflict between the manufacturer's instructions and this report, this report governs.

**7.2.** Design loads do not exceed loads indicated in Table 2 of this report.

**7.3.** Wood curbs must have a minimum specific gravity of 0.43 and a minimum thickness of 1-½ inch and sufficient height to mount the plastic glazing higher than 4 inches above the plane of the roof.

**7.4.** Fasteners are installed in accordance with manufacturer instructions and this report.

**7.5.** The status of this report is contingent on the validity of the ICC-ES reports identified herein. The revocation or expiration of any included ICC-ES reports will invalidate this report.

**7.6.** Where required by the building official, engineering calculations and details shall be provided. The calculations shall verify that the anchorage complies with the building code for the type of framing and condition of the supporting construction.

**7.7.** The SunWave™ Daylights are manufactured in accordance with the manufacturer's approved quality control system with inspections by Intertek.

#### 8.0 IDENTIFICATION

The SunWave™ Daylights described in this Research Report are identified by a marking bearing the following information:

**8.1.** The manufacturer's name (Firestone Building Products Company, LLC) and address.

**8.2.** Plastic dome classification (CC1 or CC2) and thickness of plastic glazing material prior to thermoforming, and allowable loads.

**8.3.** Safety labeling indicating "Risk of Fall" that complies with Class 1, ANSI Standard Z35.1 specifications for accident prevention signs.

**8.4.** Code Compliance Research Report mark and number (CCRR-235).

CODE  
COMPLIANCE



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CCRR-0235

## 9.0 CODE COMPLIANCE RESEARCH REPORT USE

**9.1.** Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

**9.2.** Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

**9.3.** Reference to the Intertek website address: [whdirectory.intertek.com](http://whdirectory.intertek.com) is recommended to ascertain the current version and status of this report.

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Table 1 – Skylight Models and General Description

| Skylight Description |            |                | Glazing Description   |                        | Curb and Fastener Description |   |                     |   |
|----------------------|------------|----------------|---|------------------------|-------------------------------|---|---------------------|---|
| Model Series         | Size       | Dome Rise (in) | Glazing Material  | Glazing Thickness (in) | Nominal Outside Curb Dims.    | Fastener Description (Curb Frame to Curb)                           | Number of Fasteners | Fastener Spacing (Measured on outside of aluminum curb frame)   |
| SunWave™ Daylights   | 5ft x 10ft | 16             | Arkema DR101 Acrylic (ESR-1653)<br>Sunoptics Polycarbonate (ESR-3362) | 0.160                  | 63"X 123"                     | Zinc plated No. 12 X 1 ½ inch self-drilling hex washer head screws* | 26                  | 8" from each corner and equally spaced between for a total of 3 fasteners per 5 ft side and 10 fasteners per 10 ft side ( 26 fasteners total) |

\* Fasteners Manufactured by Primesource Building Products Ref. ICC-ES Report # ESR-1408

Table 2 – Skylight Models and Allowable Loadings

| Model Series       | Size         | Allowable Live Load (psf) | Allowable Wind Uplift (psf) |
|--------------------|--------------|---------------------------|-----------------------------|
| SunWave™ Daylights | 5 ft X 10 ft | 20                        | 20                          |

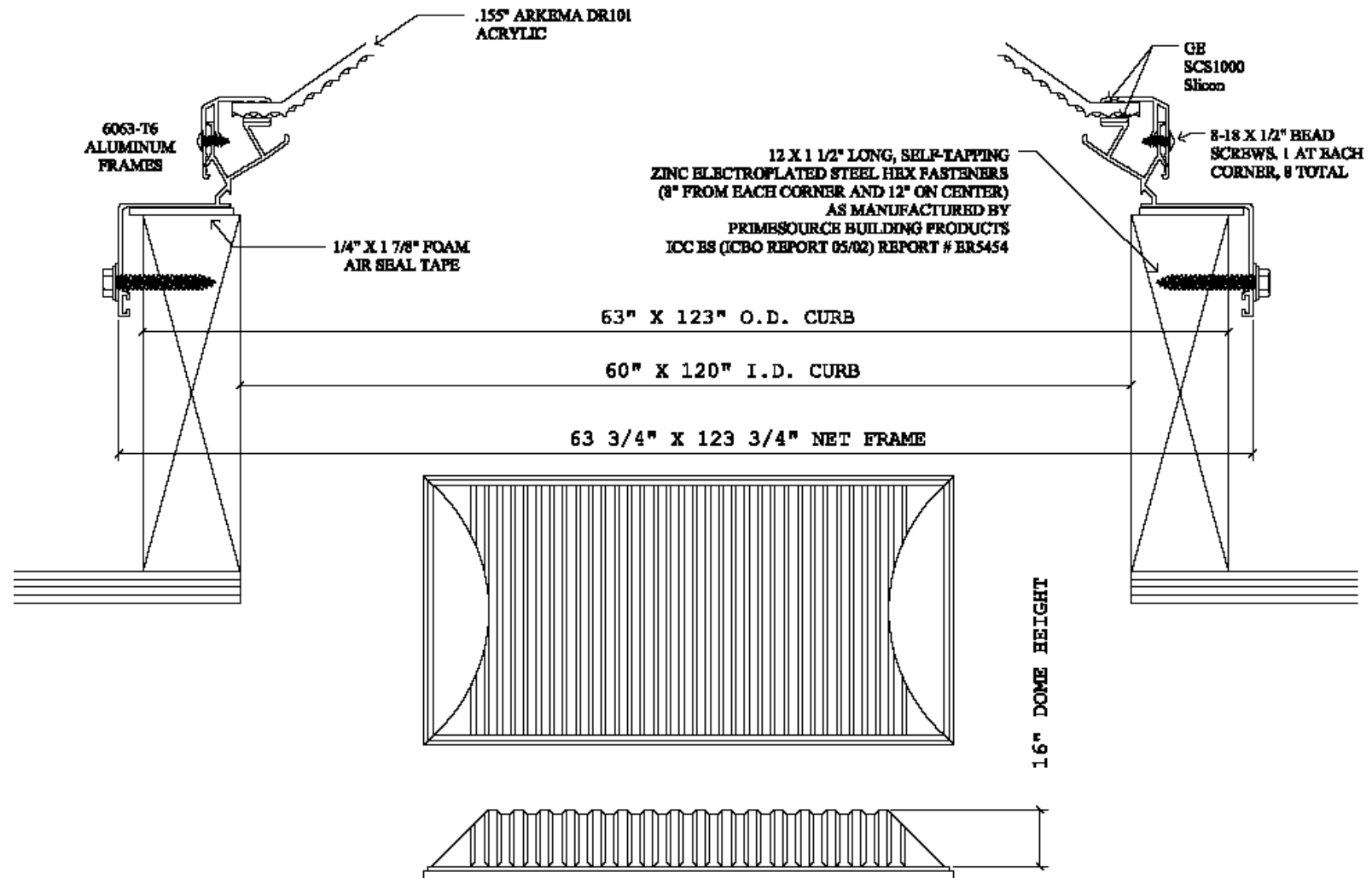


FIGURE 1 – SunWave™ Daylights