



# ICC-ES Evaluation Report

## ESR-4166

Reissued June 2023

This report is subject to renewal June 2024.

**DIVISION: 09 00 00—FINISHES**
**Section: 09 62 83—Structural Glass Flooring**
**REPORT HOLDER:**
**GLASS FLOORING SYSTEMS, INC.**
**EVALUATION SUBJECT:**
**SKYFLOOR® SERIES 1000 WALKABLE SKYLIGHT**

### 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

2018 and 2015 *International Building Code*® (IBC)

**Properties evaluated:**

- Structural
- Air Infiltration
- Water Penetration Resistance

### 2.0 USES

The SkyFloor® Series 1000 Walkable Skylights have been shown to comply with IBC Sections 2405.5 and 2409.1 and are used in nonclassified roofing assemblies and floors where fire-resistance rated construction is not required.

### 3.0 DESCRIPTION:

The SkyFloor® Series 1000 Walkable Skylight system components consist of glass panels, spacers, gaskets, setting blocks, silicone and backer rods supported by aluminum (6063 T6) z-shape extrusions along the entire perimeter. See Figure 1. The product specifications are as noted in the approved quality control documents. Other components installed at the jobsite must comply with the following:

#### 3.1 Top Glass Panels:

The laminated glass panels must comply with ASTM C1172 and comply with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1.

The individual layers of the laminated glass panels must be Kind FT fully tempered glass complying with ASTM C1048.

The PVB interlayers must have a minimum shear modulus of 70 psi for  $T \leq 122^{\circ}\text{F}$  (.48 MPa for  $T \leq 50^{\circ}\text{C}$ ).

The top panels consist of three glass layers and two interlayers. Each glass layer must have a minimum nominal thickness of 0.375 inches (9.53 mm). The PVB interlayers must be a minimum 0.060-inch (1.52 mm) thickness. The overall minimum nominal thickness must be 1.185 inches (30.1 mm). The top panels are  $45^{13}/_{16}$  inches (1164 mm) square.

#### 3.2 Bottom Glass Panels:

The bottom panels comply with the same material specifications as the top glass panels, except they consist of two glass layers and one interlayer. The glass layers must have a minimum nominal thickness of 0.125 inches (3.175 mm). The PVB interlayer must be a minimum 0.030-inch (.762 mm) thickness. The overall minimum nominal thickness must be 0.25 inches (6 mm). The bottom panels are  $42^{9}/_{16}$  inches (1081 mm) square.

#### 3.3 Silicone:

The silicone must comply with ASTM C920 Type S, Grade NS, Class 50, Use NT, G and A and ASTM C1184.

### 4.0 DESIGN AND INSTALLATION

#### 4.1 Design:

The SkyFloor® Series 1000 Walkable Skylight has an ASD allowable positive uniform live load capacity of 100 psf (4.8 KPa) and an ASD allowable negative uniform wind load of 100 psf (4.8 KPa). The maximum deflection at the allowable loads is less than  $L/175$ . Concentrated live loads per Chapter 16 of the IBC must be considered by the registered design professional.

The system meets the air infiltration and water penetration resistance requirements of AAMA/WDMA/CSA 101/I.S.2/A440.

#### 4.2 Installation:

Installation must comply with Figure 1. The system must be continuously supported around the entire perimeter with the z-shape extrusions, and the z-shape extrusions must be continuously supported along the 3.5-inch (89 mm) bottom flange and anchored to the supporting structure.

### 5.0 CONDITIONS OF USE

The SkyFloor® Series 1000 Walkable Skylight described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Use in fire-resistance rated construction is outside of the scope of this report.
- 5.2 Use in classified roofing assemblies is outside of the scope of this report.
- 5.3 Slip resistance is outside of the scope of this report.
- 5.4 Installation shall comply with IBC Section 2405.
- 5.5 The thermal break shall not be directly exposed to moisture or sunlight when installed in exterior locations.
- 5.6 All glass must be fully-tempered Type II laminated glass, with an interlayer complying with Section 3.1 and 3.2 of this report and fabricated and inspected in accordance with ASTM C1172. The glass fabricator must provide certification of compliance with ASTM C1172.
- 5.7 The system components, except for the glass, silicone, and fasteners, are supplied by the report holder.
- 5.8 Installation of aluminum in contact with dissimilar materials shall comply with the Aluminum Design Manual (ADM) Section M.7.
- 5.9 Concentrated live loads are outside of the scope of this report.
- 5.10 Anchorage of the perimeter supports to the supporting structure is outside of the scope of this report.

## 6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with AAMA/WDMA/CSA 101/1.S.2/A440, ASTM E1300, and ASTM E72.
- 6.2 Quality documentation in accordance with the ICC-ES Acceptance Criteria for Quality Documentation (AC10), dated January 2019.

## 7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4166) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, the SkyFloor® Walkable Skylights components, except for the glass, silicon, and fasteners, are packaged with a label bearing the report holder's name; and product description.

The glass panels must be identified as specified in this report and the applicable code.

- 7.3 The report holder's contact information is the following:

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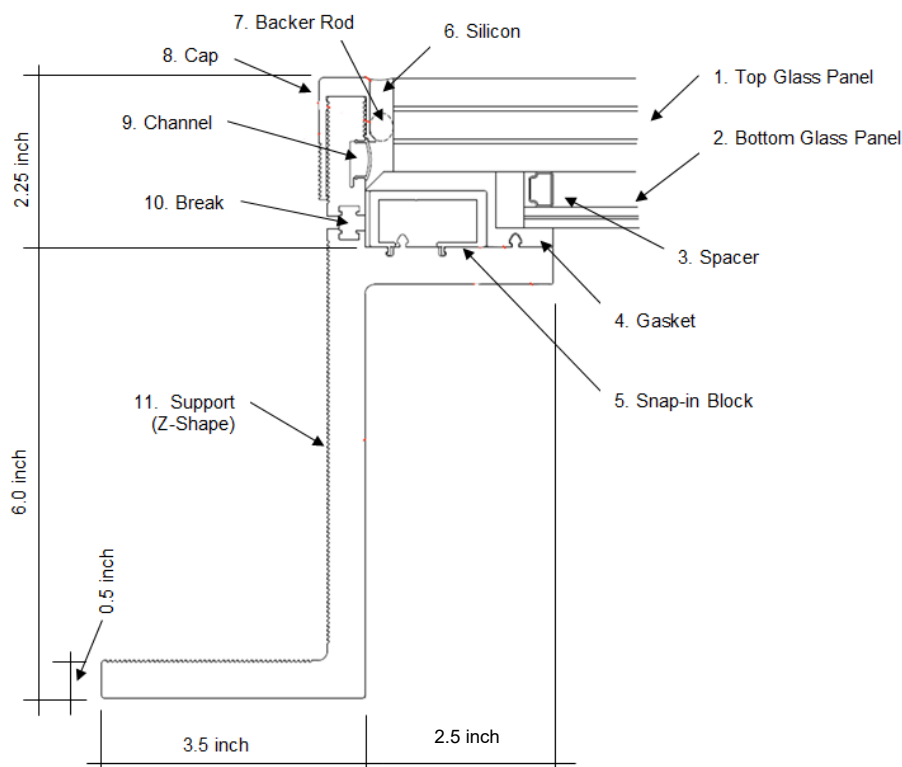


FIGURE 1—PERIMETER CROSS SECTION

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Section: 09 62 83—Structural Glass Flooring

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## 1.0 REPORT PURPOSE AND SCOPE

## Purpose:

The purpose of this evaluation report supplement is to indicate that SkyFloor® Series 1000 Walkable Skylights, described in ICC-ES evaluation report ESR-4166, have also been evaluated for compliance with the code noted below.

## Applicable code edition:

- 2019 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

## 2.0 CONCLUSIONS

## 2.1 CBC:

The SkyFloor® Series 1000 Walkable Skylights, described in Sections 2.0 through 7.0 of the evaluation report ESR-4166, comply with CBC Chapter 24, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapter 24, as applicable.

## 2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

## 2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

This supplement expires concurrently with the evaluation report, reissued June 2023.