

TEXAS DEPARTMENT OF INSURANCE

Engineering Services / MC 103-3A 333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104
Phone No. (512) 322-2212 Fax No. (512) 463-6693

PRODUCT EVALUATION SK-23

Effective January 1, 2011

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation **December 2012**.*

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code and the Texas Engineering Practice Act.

VELUX SUN TUNNEL Skylights, Model TCR, Tubular Daylighting Devices (TDD) Non-Impact Resistant, manufactured by:

VELUX America, Inc.
450 Old Brickyard Road
P.O. Box 5001 Greenwood, SC 29648-5001
(864) 941-4828

are acceptable for use along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

PRODUCT DESCRIPTION

The VELUX SUN TUNNEL skylights, Model TCR, are non-impact resistant tubular daylighting devices. The skylights consist of an acrylic dome, metal flashing, tunnel section, and diffuser assemblies. The TCR models are intended for low slope roofs and for commercial applications. This evaluation report includes all acrylic-domed models based on the following tested configurations:

General Description:

System	Description	Label Rating
1	Model TCR 022 0000 P1; High-profile, curb-mount steel flashing, Rigid tunnel, 22" diameter; Dual-glazed round diffuser	SP-150
2	Model TCR 022 0000 P1; High-profile, curb-mount steel flashing, Rigid tunnel, 22" diameter; Single-glazed square diffuser	SP-150

Maximum dome size: 25 $\frac{5}{8}$ " diameter

Maximum flashing neck opening size: 24 $\frac{3}{8}$ "

Minimum neck height: 4 $\frac{5}{8}$ " high

Minimum deck rough opening: 26 $\frac{1}{2}$ " x 26 $\frac{1}{2}$ " square

Tunnel Details: Rigid tunnel is 98 percent super specular reflective silver backed aluminum (0.016" wall thickness for the extension tunnel and 0.02" wall thickness for the elbows).

Glazing Details: The acrylic dome is $\frac{1}{8}$ " thick minimum. The dome is secured to the polypropylene mounting rings with No. 8 x $\frac{3}{4}$ " long pan head self-tapping screws in all holes provided.

Flashing Construction: The curb mounted flashing is powder-coated aluminized sheet steel (Galvalume or G-90 coated), 0.031" thick, with edges bent to form the attachment surface to the side of the site-built curbing.

General: An Intermediate Ring interface attachment allows the dome to be mechanically fastened to the flashings with screws. The intermediate ring material is black Polypropylene with UV inhibitors. A pivot ring forms the interface between the intermediate ring and the tunnel, constructed to fit into the intermediate ring without being able to pass through the bottom of the intermediate ring utilizing the ball and socket principle.

Product Identification: A permanent identification label will be affixed to the product. The permanent label includes the manufacturer's name and the product model number, at a minimum. In addition, a temporary certification program label (WDMA) will be provided with each VELUX SUN TUNNEL skylight. The certification program label includes the manufacturer's name; a product identifier; performance characteristics; the approved inspection agency (WDMA); and the references to the following standards: AAMA/WDMA/CSA 101/I.S.2/A440-05 and AAMA/WDMA/CSA 101/I.S.2/A440-08.

LIMITATIONS

Design pressures:

System	Model ID	Allowable Roof Slopes	Tunnel Diameter	Design Pressure (psf)
1	TCR 022 0000 P1	0° - 30°	22"	± 150
2	TCR 022 0000 P1	0° - 30°	22"	± 150

Impact Resistance: These skylight assemblies do not satisfy the Texas Department of Insurance's criteria for protection from windborne debris. These skylight assemblies will need to be protected with an impact protective system when installed in areas where windborne debris protection is required.

Acceptance of Smaller Assemblies: Identically built assemblies with dome and tunnel dimensions equal to or smaller than those specified in this evaluation report are acceptable within the limitations specified in this evaluation report.

INSTALLATION INSTRUCTIONS

General: TDD components shall be assembled and installed in accordance with the manufacturer's installation instructions and this evaluation report. Detailed installation instructions are shipped in each carton, and additional drawings may be available from the manufacturer.

1. Manufacturer's installation instructions shall be followed unless otherwise specified by this product evaluation report. The product requires a site-constructed wood curb.
2. Roof rafters may be cut as necessary to facilitate skylight installation. Additional jamb and header bracing shall be installed as necessary to provide support directly beneath the wood curb. The roof framing members shall be a minimum Spruce-Pine-Fir dimension lumber (SG ≥ 0.42).

Installation: The roof framing shall be minimum SPF dimension lumber. The roof deck shall be minimum nominal $\frac{1}{2}$ " plywood or OSB. A wood curb shall be constructed on site prior to installing the TDD. The wood curb assembly is not included in the SUN TUNNEL kit. The wood curb components and the roof framing fasteners shall be acquired and installed separately. The wood curb shall, at a minimum, consist of 2 x 4 SPF dimension lumber (SPG = 0.42). The curb shall be toe-nailed to the roof framing (minimum 2 x SPF dimension lumber) with minimum 12d galvanized common nails ($3\frac{1}{4}$ inches long, 0.162" nominal diameter). The fasteners shall be spaced approximately 3 inches from each corner and approximately 5 inches on center along the perimeter of the wood curb. The nails shall be driven (toe-nailed) through the roof deck and into the roof framing members below (a minimum of $1\frac{1}{4}$ " penetration). The SUN TUNNEL flashing is secured to the wood curb with minimum No. 8 x $1\frac{1}{2}$ " pan head stainless steel screws, two per side, approximately 3 inches from each end.

Note: The manufacturer's installation instructions shall be available on the job site during installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.