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 Effective January 1, 2011
SK-15

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 July 2013.

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, Tubular Daylighting Devices (TDD), 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 are impact resistant tubular daylighting devices. The skylights consist of a polycarbonate dome, steel flashing, tunnel section, and diffuser assemblies. The TGF, TGR, TMF, and TMR models are configured for residential applications. This evaluation report includes all polycarbonate-domed models based on the following tested configurations:

General Description:

System	Description	Label Rating
1	Model TMR***1000; High-profile, pitched steel flashing, Rigid tunnel, 10" or 14" diameter; Dual-glazed diffuser	SP-80 445 mm Dia ASTM E 1886, ASTM E 1996, ± 50 psf
2	Model TMR***1030; High-profile, pitched steel flashing, Rigid tunnel, 10" or 14" diameter; Quadruple-glazed diffuser	SP-80 445 mm Dia ASTM E 1886, ASTM E 1996, ± 50 psf
3	Model TMF 014 1000; High-profile, pitched steel flashing, Flexible tunnel, 14" diameter; Dual-glazed diffuser	SP-80 445 mm Dia ASTM E 1886, ASTM E 1996, ± 50 psf
4	Model TGR***1000; Low-profile, parallel steel flashing, Rigid tunnel, 10" or 14" diameter; Dual-glazed diffuser	SP-80 445 mm Dia ASTM E 1886, ASTM E 1996, ± 50 psf
5	Model TGF***1000; Low-profile, parallel steel flashing, Flexible tunnel, 14" or 21" diameter; Dual-glazed diffuser	SP-65 445 mm Dia ASTM E 1886, ASTM E 1996, ± 50 psf

Note: In the skylight identification numbers shown in the General Description table above, (***) correlates with the appropriate skylight dimensions in the series.

The following applies to all VELUX SUN TUNNEL Skylights

Maximum dome size: 25 5/8" diameter.

Maximum flashing neck opening size: 24 3/8".

Minimum neck height: 4 5/8" high.

Maximum deck rough opening size: 22 5/8" wide.

Tunnel Details:

Systems 1, 2, and 4: 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).

Systems 3 and 5: Flexible tunnel is 87 percent reflective metalized polyester, on a fiberglass scrim, with helical spring steel wire supports. Elbows are the same as for the rigid tunnel.

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

Flashing Construction:

Systems 1, 2, and 3: The pitched deck flashing powder-coated aluminized sheet steel (Galvalume or G-90 coated), 0.031" thick. The highest point of the flashing is 9", with a 4" minimum height.

Systems 4 and 5: The 4" high parallel deck flashing is powder-coated aluminized sheet steel (Galvalume or G-90 coated), 0.23" thick.

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, AAMA/WDMA/CSA 101/I.S.2/A440-08, ASTM E 1886-05, ASTM E 1996-05, Missile Level C, Cyclic Pressure ± 50 psf.

LIMITATIONS

Design pressures:

System	Model ID	Allowable Roof Slopes	Tunnel Diameter	Design Pressure (psf)
1	TMR 010 1000 and TMR 014 1000	14º - 60º	10" and 14"	± 50
2	TMR 010 1030 and TMR 014 1030	14º - 60º	10" and 14"	± 50
3	TMF 014 1000	14º - 60º	14"	± 50
4	TGR 010 1000 and TGR 014 1000	14 - 60º	10" and 14"	± 50
5	TGF 014 1000 and TGF 021 1000	14º - 60º	10" and 21"	± 50

Impact Resistance: These assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris in the **Inland I** zone and the **Seaward** zone. The assemblies passed Missile Level C specified in ASTM E 1996-05. The assemblies may be installed on any height structure as long as the design pressure rating for the assembly is not exceeded. These assemblies will not need to be protected with an impact protective system. NOTE: Non-impact resistant variations of these products are specified in a separate Texas Department of Insurance product evaluation report.

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.

The following installation requirements apply to all tubular daylighting devices:

1. Manufacturer's installation instructions shall be followed unless otherwise specified by this product evaluation report. The nails, screws, tape, etc., required to assemble and secure the unit to the roof framing are included in the SUN TUNNEL carton.

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 all pre-punched SUN TUNNEL fastener locations in the flashing. The roof framing members shall be a minimum Spruce-Pine-Fir dimension lumber (SG ≥ 0.42). All models shall be secured to the roof decking with fasteners driven through the roof decking and into the roof framing.

Installation: The roof deck shall be minimum nominal ½" plywood or OSB. The SUN TUNNEL flashing is secured to the roof deck with ten (10) 1 ½" long pan head stainless steel screws. The fasteners shall be installed through the pre-punched holes around the outer perimeter of the flashing.

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.