TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION Effective July 1, 2010
SK-03

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 April 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® Skylights, 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

VELUX skylights are aluminum, aluminum clad wood, or aluminum clad capped ABS skylights skylights. The skylights evaluated in the report are non-impact resistant. The skylights are available in fixed and vented configurations. Vented skylights are available in manually and electrically operated versions. The following model designations are included in this evaluation report:

Fixed skylight models: QPF, FCM, and FS
Vented, manually operated skylight models: VS and VCM
Vented, electrically operated skylight models: VSE and VCE

This evaluation report includes aluminum clad wood skylights based on the following tested configurations:

General Description:

System	Description	Label Rating
1	Model QPF****x004; QPF****x008 Fixed Configuration, Pan-Flashed	SKG-C105 1224 x 1224 (48 x 48)
2	Model QPF****x005 Fixed Configuration, Pan-Flashed	SKG-C55 1224 x 1224 (48 x 48)
3	Model FCM****0004; FCM****0008 Fixed Configuration, Curb-Mounted	SKG-C170 1301 x 1295 (51 x 51)
4	Model FCM****0004; FCM****0008 Fixed Configuration, Curb-Mounted	SKG-C95 691 x 1911 (27 x 75)

General Description (continued):

System	Description	Label Rating
5	Model FCM****0005 Fixed Configuration, Curb-Mounted	SKG-C90 1301 x 1295 (51 x 51)
6	Model FS***x004; FS***x008 Fixed Configuration, Deck-Mounted	SKG-C55 1136 x 1175 (45 x 46)
7	Model FS***x004; FS***x008 Fixed Configuration, Deck-Mounted	SKG-C80 776 x 1395 (31 x 55)
8	Model FS***x005 Fixed Configuration, Deck-Mounted	SKG-C35 1136 x 1175 (45 x 46)
9	Model FS***x005 Fixed Configuration, Deck-Mounted	SKG-C85 776 x 1395 (31 x 55)
10	Model VS***x004 (Manual); VS***x008 (Manual) Model VSE***x004 (Electric); VSE***x008 (Electric) Vented Configuration, Deck-Mounted	SKG-C50 1136 x 1175 (45 x 46)
11	Model VS***x004 (Manual); VS***x008 (Manual) Model VSE***x004 (Electric); VSE***x008 (Electric) Vented Configuration, Deck-Mounted	SKG-C70 802 x 1419 (32 x 56)
12	Model VS***x005 (Manual) Model VSE***x005 (Electric) Vented Configuration, Deck-Mounted	SKG-C50 1136 x 1175 (45 x 46)
13	Model VS***x005 (Manual) Model VSE***x005 (Electric) Vented Configuration, Deck-Mounted	SKG-C75 776 x 1395 (32 x 56)
14	Model VCM****2004 (Manual); VCM****2008 (Manual) Model VCE****2004 (Electric); VCE****2008 (Electric) Vented Configuration, Curb-Mounted	SKG-C40 1302 x 1302 (51 x 51)
15	Model VCM****2005 (Manual) Model VCE****2005 (Electric) Vented Configuration, Curb-Mounted	SKG-C40 1302 x 1302 (51 x 51)

Note: In the skylight identification numbers shown in the General Description table above, (***) or (****) correlates with the appropriate skylight dimensions in the series. The "**x**" is a place holder for the interior finish color code. Product performance is not affected by the interior color variants.

Component Dimensions:

System	Overall Size
1	48 3/16" x 48 3/16"
2	48 1/2" x 48 1/2
3	51 1/4" x 51"
4	27 1/4" x 75 1/4"
5	51 1/4" x 51"
6	44 3/4" x 46 1/4"
7	30 1/2" x 54 7/8"
8	44 3/4" x 46 1/4"
9	30 1/2" x 54 7/8"
10	44 3/4" x 46 1/4"
11	31 9/16" x 55 7/8"

Component Dimensions:

System	Overall Size
12	44 3/4" x 46 3/8"
13	31 1/2" x 55 7/8"
14	51 1/4" x 51 1/4"
15	51 1/4" x 51 1/4"

Glazing Description:

System	Glass Construction [1]	Glazing Method [2]
1	IG-1 Clear (Type 04) or White (Type 08)	GM-1
2	IG-2 Clear (Type 05)	GM-1
3	IG-1 Clear (Type 04) or White (Type 08)	GM-2
4	IG-1 Clear (Type 04) or White (Type 08)	GM-2
5	IG-2 Clear (Type 05)	GM-2
6	IG-1 Clear (Type 04) or White (Type 08)	GM-3
7	IG-1 Clear (Type 04) or White (Type 08)	GM-3
8	IG-2 Clear (Type 05)	GM-3
9	IG-2 Clear (Type 05)	GM-3
10	IG-1 Clear (Type 04) or White (Type 08)	GM-3
11	IG-1 Clear (Type 04) or White (Type 08)	GM-3
12	IG-2 Clear (Type 05)	GM-3
13	IG-2 Clear (Type 05)	GM-3
14	IG-1 Clear (Type 04) or White (Type 08)	GM-2
15	IG-2 Clear (Type 05)	GM-2

Note: [1] See the "Glass Construction Key" for the glazing construction.

[2] See the "Glazing Method Key" for the glazing method description.

Glass Construction Key:

IG-1: The skylight contains a sealed insulating glass unit. The insulating glass unit is comprised of a 5/32" fully tempered glass lite and a laminated glass unit separated by a desiccant-filled stainless steel spacer system. The laminated glass unit is comprised of two single strength (3/32") heat strengthened glass lites with a 0.030" PVB interlayer. The glass thickness in the tested assembly and in smaller assemblies shall comply with ASTM E 1300-04.

IG-2: The skylight contains a sealed insulating glass unit. The insulating glass unit is comprised of two double strength (⅛") fully tempered glass lites separated by a desiccant-filled stainless steel spacer system. The glass thickness in the tested assembly and in smaller assemblies shall comply with ASTM E 1300-04.

Glazing Method Key:

GM-1: The insulating glass unit is set from the interior against a bead of structural silicone sealant that is secured with the wood frame with the thermoplastic elastomer gasket against the insulating glass unit.

GM-2: The insulating glass unit is set from the interior against a bead of structural silicone sealant with a flexible installation gasket against the interior of the insulating glass unit.

GM-3: The insulating glass unit is set from the exterior against EPDM frame gaskets and is secured with roll-formed aluminum glazing profiles with silicone sealant against the insulating glass unit.

Frame Construction:

Models QPF, FS, VS, and VSE: The frames are constructed of Ponderosa Pine wood that is encased in either Type IIB, 3105-H32, or 3105-H22, roll-formed, Kynar-coated aluminum cladding. The QPF skylights also utilize an extruded, powder-coated aluminum mounted flashing. The FS, VS, and VSE skylights also utilize a galvanized steel perimeter mounting flange.

Model FCM: The frames are constructed from roll-formed Kynar-coated, 3105-H22 coiled aluminum.

Models VCM and VCE: The frames are constructed of ASA-capped ABS that is encased in 3105-H22 roll-formed, Kynar-coated aluminum cladding, and an extruded, powder-coated aluminum counter flashing. The skylights also utilize an extruded, powder-coated aluminum counter-flashing.

Product Identification: A certification program label (WDMA) will be affixed to the skylight. The certification program label includes the manufacturer's name; the product name; performance characteristics; the approved inspection agency (WDMA); and the following applicable 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	Allowable Dimensions (W x H)	Design Pressure (psf)
1	QPF 2222 x004/x008 to QPF 4646 x004/x008	14° - 60°	48 3/16" x 48 3/16"	± 105
2	QPF 2222 x005 to QPF 4646 x005	14° - 60°	48 ½" x 48 ½	± 55
3	FCM 1422 0004/0008 to FCM 4646 0004/0008	0° - 60°	51 ¼" x 51"	± 170
4	FCM 2246 0004/0008 to FCM 2270 0004/0008	0° - 60°	27 ¼" x 75 ¼"	± 95
5	FCM 1422 0005 to FCM 4646 0005	0° - 60°	51 ¼" x 51"	± 90

Design pressures (continued):

System	Model ID	Allowable Roof Slopes	Allowable Dimensions (W x H)	Design Pressure (psf)
6	FS S01 x004/x008 to FS S06 x004/x008	14º - 85º	44 ¾" x 46 ¼"	± 55
7	FS A01 x004/x008 to FS M08 x004/x008	14º - 85º	30 ½" x 54 ⅞"	± 80
8	FS S01 x005 to FS S06 x005	14º - 85º	44 ¾" x 46 ¼"	± 35
9	FS A01 x005 to FS M08 x005	14º - 85º	30 ½" x 54 ⅞"	± 85
10	VS/VSE S01 x004/x008 to VS/VSE M08 x004/x008	14º - 85º	44 ¾" x 46 ¼"	± 50
11	VS/VSE C01 x004/x008 to VS/VSE M08 x004/x008	14º - 85º	31 9/16" x 55 ⅞"	± 70
12	VS/VSE S01 x005 to VS/VSE M08 x005	14º - 85º	44 ¾" x 46 ⅜"	± 50
13	VS/VSE C01 x005 to VS/VSE M08 x005	14º - 85º	31 ½" x 55 ⅞"	± 75
14	VCM/VCE 1422 2004/2008 to VCM/VCE 4646 2004/2008	0º - 60º	51 ¼" x 51 ¼"	± 40
15	VCM/VCE 1422 2005 to VCM/VCE 4646 2005	0º - 60º	51 ¼" x 51 ¼"	± 40

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: Skylight assemblies with dimensions equal to or smaller than those specified above are acceptable within the limitations specified in this report.

Orientation: Skylights shall be oriented as specified in the manufacturer's installation instructions. The skylight height and width are not interchangeable, except for models FCM and QPF.

INSTALLATION INSTRUCTIONS

General: The skylight assembly shall be prepared and installed in accordance with the manufacturer's installation instructions and this evaluation report. Detailed installation instructions and drawings are available from the manufacturer.

The following installation requirements apply to all skylights:

1. Manufacturer's installation instructions shall be followed unless otherwise specified by this product evaluation report. The nails or screws required to secure the skylight to the roof framing are included in the skylight kit (with the exception of the FCM, VCM, and VCE models, which require a site-constructed wood curb).

2. Roof rafters may be cut as necessary to facilitate skylight installation. Skylights shall be orientated as allowed by the manufacturer. Additional jamb and header bracing shall be installed as necessary to provide support directly beneath the entire skylight frame. The roof framing members shall be a minimum Spruce-Pine-Fir dimension lumber (SG ≥ 0.42). When the skylight jamb length exceeds two feet, double 2 x 6's shall be used to construct the upper and lower jambs. All skylight models shall be secured to the roof decking with fasteners driven through the roof decking and into the roof framing.

Installation:

Systems 1 and 2: The roof framing shall be minimum SPF dimension lumber. The roof deck shall be minimum nominal ½" plywood or OSB. The skylight may be oriented in two directions. The pan flashing shall be properly centered over the rough opening. The skylight is secured to the roof framing through the pre-drilled holes in the frame flashing with ring shank nails (minimum 10 gauge, ⅜" diameter head). Minimum 1¼" long ring shank nails shall be located 3 inches from each corner and 8 inches on center. Four (4) minimum 2" long ring shank nails are required 4 inches in from the top and bottom corners.

Systems 3, 4, and 5: The roof framing shall be minimum SPF dimension lumber. The roof deck shall be minimum nominal ½" plywood or OSB. The skylight may be oriented in two directions. A wood curb shall be constructed on site prior to installing the FCM skylight. The wood curb assembly and flashing are not included in the skylight kit. The wood curb components and the roof framing fasteners shall be acquired and installed separately. Skylight flashing, likewise, 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 (3¼ inches long, 0.162" nominal diameter) with the following fastener spacing:

System 3: Approximately 3 inches from each corner and approximately 3 inches on center along the perimeter of the wood curb. NOTE: If the design pressure requirement is 100 psf or less, then space the fasteners approximately 3 inches from each corner and approximately 5 inches on center along the perimeter of the wood curb.

System 4: Along the long dimensions, approximately 3 inches from each corner and approximately 6 inches on center along the length of the wood curb. Along the short dimensions, approximately 3 inches from each corner and one at the mid-span of the wood curb.

System 5: Approximately 3 inches from each corner and approximately 6 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 1¼" penetration). The skylight frame is set against the wood curb and, while compressing the gasket between the insulating glass unit and the wood curb, the skylight is secured to the wood curb through the pre-drilled holes in the exterior leg of the skylight frame. Minimum No. 8 x 1¾" self-tapping screws shall be used. The fasteners shall be located 5 inches from each corner and one (1) at the mid-span.

Systems 6, 7, 8, 9, 10, 11, 12, and 13: The roof framing shall be minimum SPF dimension lumber. The roof deck shall be minimum nominal ½" plywood or OSB. The skylight shall be oriented in one direction. Flashing is not provided with the skylight kit. Skylight flashing shall be acquired and installed separately. The mounting flange shall be properly centered over the rough opening. The skylight is secured to the roof framing through the pre-drilled holes in the mounting flange with ring shank nails (minimum 10 gauge, ⅜" diameter head). Minimum 1¼" long ring shank nails shall be located 3 inches from each corner and approximately 9 inches on center. The membrane material included in the skylight kit shall be installed as specified in the manufacturer's installation instructions.

Systems 14, and 15: The roof framing shall be minimum SPF dimension lumber. The roof deck shall be minimum nominal ½" plywood or OSB. The skylight shall be oriented in one direction. A wood curb shall be constructed on site prior to installing the skylight. The wood curb assembly and flashing are not included in the skylight kit. The wood curb components and the roof framing fasteners shall be acquired and installed separately. Skylight flashing, likewise, 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 ¼ inches long, 0.162" nominal diameter). The fasteners shall be spaced approximately 3 inches from each corner and approximately 6 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 ¼" penetration). The skylight installation counter flashing is set against the wood curb with the ABS/ASA frame and foam tape against the wood curb, the skylight is secured to the wood curb through the pre-drilled holes in the counter flashing of the skylight frame. Minimum No. 8 x 1 ¾" self-tapping screws shall be used. The fasteners shall be located 4 ½ inches from each corner and one (1) at the mid-span.

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.