



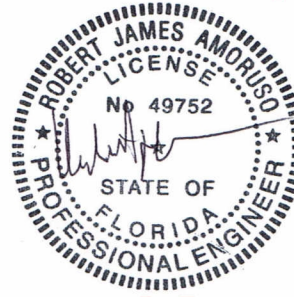
## Product Evaluation Report

Date:	July 17, 2015
Report #:	2059
Report Revision No.:	2
Project #:	415-0615
Product Mfg.:	Kennedy Skylights 5294 Tower Way Sanford, FL 32773
Product Description:	Curb Mounted Glass Skylights, Non-Impact and Impact
Product Category:	Sky Lights
Product Sub-Category:	Skylight
Compliance Method:	Product Approval Rule 61G20-3.005(1)(a) – Certification Mark or Listing
Prepared By:	Robert J. Amoruso, P.E. Florida P.E. No. 49752 PTC Product Design Group, LLC, PO Box 520775, Longwood, FL 32752-0775 Florida C of A No. 25935

### CERTIFICATE OF INDEPENDENCE

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. do not have, nor will acquire, any financial interest in the company manufacturing or distributing product(s) covered by this Product Evaluation Report.

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. do not have, nor will acquire any financial interest in any other entity involved in the approval process or testing of the product(s) covered by this Product Evaluation Report.



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## SCOPE

Evaluate Kennedy Skylights Curb Mounted Glass Skylights, Non-Impact and Impact for conformance to the current edition of the Florida Building Code – Building and Residential Volumes including the High Velocity Hurricane Zone (HVHZ) where applicable (see Product Details section for delineation of HVHZ and non-HVHZ products). The engineering analysis (Reference 3) determines the anchorage of the product to the supporting substrate and the product evaluation report (this document) summarizes FBC compliance verification and appropriate Limitations and Conditions of Use.

Included in this evaluation are product shown on installation drawings KENN0001, KENN0003, KENN0004 and KENN0005.

## DESCRIPTION OF PRODUCT – INSTALLATION REQUIREMENTS

See Reference 1 and Section Titled “Product Details” in this report for a description of the product, its installation and other pertinent data related to its approved use.

## CODE CONFORMANCE

This product is designed to comply with the 5th Edition (2014) Florida Building Code (FBC) and 5th Edition (2014) Florida Residential Code (FRC) requirements including the High Velocity Hurricane Zone (HVHZ) where applicable and as defined in the Product Details section of this evaluation report.

The specific 5th Edition (2014) Florida Building Code (FBC) and 5th Edition (2014) Florida Residential Code (FRC) requirements that have been met by testing (Reference 2), engineering evaluation (Reference 3) and depicted on the installation drawings (Reference 1) are the following.

- Testing and Labeling Requirements
  - Section 1609.1.2/R301.2.1.2 – Protection of Openings
  - Section 1626.2 – Large Missile Impact
  - Section 1710.6 – Skylights and Sloped Glazing
  - Section 2405.5 – Unit Skylights and Tubular Daylight Devices
- Margin of Safety
  - Section 1504.9 – Margin of Safety for wind uplift tests outside HVHZ
  - Section 1523.4 – Margin of Safety for wind uplift tests in HVHZ
- Product Approval Required
  - Section 2410.4
- Glazing Requirements
  - Section 2405.1 – Sloped Glazing and Skylights - Scope
  - Section 2405.2 – Allowable Glazing Materials and Limitation
- Mounting
  - Section 2405.4 – Framing (Curb Requirements)



## LIMITATIONS AND CONDITIONS OF USE

This product evaluation report contains or makes reference to specifications, technical details and installation details and/or methods that pertain to the proper use and/or installation of the product specified herein. Specific limitations and conditions of its use including but not limited to the following are contained in Reference 1 and are the subject of Product Approval in accordance with the State of Florida Product Approval Rule 61G20-3.

- Design Pressure Rating (psf)
- Installation substrate requirements.
- Installation anchor requirements.
- Installation restrictions.
- Product description.
- Product components.

## QUALITY ASSURANCE

This product is manufactured under a quality assurance program audited by an approved Certification and Quality Assurance Entity **National Accreditation & Management Institute (NAMI)** as required in Rule 61G20-3.005(3). See FBC Organization No. CER1773 and QUA1789 for approval under Rule 61G20-3.

## APPLICATIONS/INSTALLATIONS OUTSIDE THE LIMITATIONS AND CONDITIONS OF USE

Rule 61G20-3.005(1)(e) states “Rational engineering analysis cannot be used in lieu of a standard test required by the Code for approval of products within the scope of the standard, except that project specific approval by the local authorities having jurisdiction in accordance with alternate methods and materials authorized in the Code.”

Any modification to this product as evaluated in this report and approved by the Florida Building Commission is outside the scope of this evaluation and will be the responsibility of others. As allowed in Rule 61G20-3.005(1)(e), a project specific approval by the local authorities having jurisdiction may be used given an appropriate rational analysis is conducted and deemed acceptable to the local authorities having jurisdiction.

## PERFORMANCE AND TESTING STANDARDS SUMMARY

Reference 2 conducted testing to the following standard(s). See Reference 3.b for Equivalency Evaluation of test procedures to the 5th Edition (2014) FBC/FRC.

1. TAS201-94, Impact Test Procedures.
2. TAS202-94, Criteria for Testing Impact & Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure.
3. TAS203-94, Criteria for Testing Products Subjected to Cyclic Wind Pressure Loading.
4. AAMA/WDMA 1600/I.S.7-00, Voluntary Specification for Skylights



5. ASTM E330-90, Standard Test Method for Structural Performance of Exterior windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
6. ASTM E331-93, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
7. ASTM E283-91, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
8. ASTM E547-93, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference
9. ASTM E1886-99, Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by missile(s) and Exposed to Cyclic Pressure Differentials
10. ASTM E1996-99, Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

## **REFERENCES & SUPPORTING DOCUMENTS**

### **(SEE PRODUCT DETAILS FOR DRAWING VS. TESTING CROSS-REFERENCE)**

1. Drawings:
  - a. KENN0001, Rev. A, dated 7/15/15, signed and sealed by Robert J. Amoruso, Kennedy Skylights "ICMG" Curb Mounted Glass Skylight – LMI – HVHZ, Installation Anchorage Details
  - b. KENN0003, Rev. A, dated 7/15/15, signed and sealed by Robert J. Amoruso, Kennedy Skylights "CMG" Curb Mounted Glass Skylight - NI, Installation Anchorage Details
  - c. KENN0004, Rev. A, dated 7/15/15, signed and sealed by Robert J. Amoruso, Kennedy Skylights "ISFG4" Curb Mounted Self-Flashing Glass Skylight - LMI, Installation Anchorage Details
  - d. KENN0005, Rev. A, dated 7/15/15, signed and sealed by Robert J. Amoruso, Kennedy Skylights "SFG4" Curb Mounted Self Flashing Glass Skylight - NI, Installation Anchorage Details
2. Test Reports by National Certified Testing Laboratories, Inc.
  - a. NCTL-210-3041-1,2, dated 10/5/04, signed and sealed by Gerald J. Ferrara, P.E., testing to TAS 201/202/203-94 for "ICMG" Curb Mounted Glass Skylight
  - b. NCTL-210-3041-3A, dated 10/5/04, signed and sealed by Gerald J. Ferrara, P.E., testing to AAMA/WDMA 1600-00/I.S.7-2000 for "CMG" Curb Mounted Glass Skylight
  - c. NCTL-210-2959-1, dated 10/30/03, signed and sealed by Gerald J. Ferrara, P.E., testing to ASTM E283-91/E330-90/E331-93/E547-93 and ASTM E1886-99/1996-99 for "ISFG4" Curb Mounted Self-Flashing Glass Skylight
  - d. NCTL-210-3012-1, dated 4/12/04, signed and sealed by Gerald J. Ferrara, P.E., testing to AAMA/WDMA 1600-00/I.S.7-2000 for "SFG4" Curb Mounted Self Flashing Glass Skylight
3. Reports
  - a. Anchorage Engineering
    - i. PTC Report No. 2058-1, Rev. 1, Anchorage Engineering for Kennedy Skylights Curb Mounted Glass and Curb Mounted and Self-Flashing Polycarbonate Skylights, Non-Impact and Impact, signed and sealed by Robert J. Amoruso.



- ii. PTC Report No. 2058-2, Rev. 3, Anchorage Engineering for Kennedy Skylights Curb Mounted Glass and Curb Mounted and Self-Flashing Polycarbonate Skylights, Non-Impact and Impact, signed and sealed by Robert J. Amoruso.
  - iii. PTC Report No. 2059-EER, Rev. 2, Equivalency Evaluation to the 5th Edition (2014) FBC for Kennedy Skylights - Curb Mounted Glass Skylights, Non-Impact and Impact, dated 7/17/15 signed and sealed by Robert J. Amoruso.
4. Material Certifications
- a. Miami-Dade Notice of Acceptance No. 14-0916.10, Kuraray Butacite PVB Glass Interlayer by Kuraray America, Inc.
    - i. Formally supplied by DuPont.
5. 5<sup>th</sup> Edition (2014) Florida Building Code & 5<sup>th</sup> Edition (2014) Florida Residential Code
- a. Testing and Labeling Requirements
    - i. Section 1609.1.2/R301.2.1.2 – Protection of Openings
    - ii. Section 1626.2 – Large Missile Impact
    - iii. Section 1710.6 – Skylights and Sloped Glazing
    - iv. Section 2405.5 – Unit Skylights and Tubular Daylight Devices
  - b. Margin of Safety
    - i. Section 1504.9 – Margin of Safety for wind uplift tests outside HVHZ
    - ii. Section 1523.4 – Margin of Safety for wind uplift tests in HVHZ
  - c. Product Approval Required
    - i. Section 2410.4
  - d. Glazing Requirements
    - i. Section 2405.1 – Sloped Glazing and Skylights - Scope
    - ii. Section 2405.2 – Allowable Glazing Materials and Limitation
  - e. Mounting
    - i. Section 2405.4 – Framing (Curb Requirements)

## Product Details

1. Drawing No. KENN0001
- a. Product Name/Series: "ICMG" Curb Mounted Glass Skylight – LMI
  - b. High Velocity Hurricane Zone (HVHZ): YES
  - c. Outside High Velocity Hurricane Zone (HVHZ): YES
  - d. Impact Resistant: YES
    - i. Glazed laminated product using MD NOA 14-0916.10, Kuraray Butacite PVB Glass Interlayer by Kuraray America, Inc.
  - e. National Certified Test Laboratory, Inc. Test Report No. NCTL-210-3041-1,2
  - f. Design Pressure
    - i. +/-60 psf
    - ii. Margin of Safety = 2 applied for positive and negative loading to Structural Design Pressure per Sections 1504.9 and 1523.4 of the 5th Edition (2014) FBC and MD FAQ (<http://www.miamidade.gov/building/products/skylights.asp>).
  - g. Performance and Testing Standards



- i. Test Report No. NCTL-210-3041-1,2
    1. TAS202-94
    2. TAS201-94
    3. TAS203-94
2. Drawing No. KENN0003
  - a. Product Name/Series: "CMG" Curb Mounted Glass Skylight - NI
  - b. High Velocity Hurricane Zone (HVHZ): NO
  - c. Outside High Velocity Hurricane Zone (HVHZ): YES
  - d. Impact Resistant: NO
  - e. National Certified Test Laboratory, Inc. Test Report No. NCTL-210-3041-3A
  - f. Design Pressure
    - i. +/-95 psf outside HVHZ
    - ii. Margin of Safety = 2 applied to Structural Design Pressure per Sections 1504.9 of the 5th Edition (2014) FBC.
  - g. Performance and Testing Standards
    - i. Test Report No. NCTL-210-3041-3A
      1. AAMA/WDMA 1600/I.S.7-00, Voluntary Specification for Skylights
3. Drawing No. KENN0004
  - a. Product Name/Series: "ISFG4" Curb Mounted Self-Flashing Glass Skylight - LMI
  - b. High Velocity Hurricane Zone (HVHZ): NO
  - c. Outside High Velocity Hurricane Zone (HVHZ): YES
  - d. Impact Resistant: YES
    - i. Glazed laminated product using MD NOA 14-0916.10, Kuraray Butacite PVB Glass Interlayer by Kuraray America, Inc.
  - e. National Certified Test Laboratory, Inc. Test Report No. NCTL-210-2959-1
  - f. Design Pressure
    - i. +/-52.5 psf
    - ii. Margin of Safety = 2 applied to Structural Design Pressure per Section 1504.9 of the 5th Edition (2014) FBC.
  - g. Performance and Testing Standards
    - i. Test Report No. NCTL-210-2959-1
      1. ASTM E330-90
      2. ASTM E331-93
      3. ASTM E283-91
      4. ASTM E547-93
      5. ASTM E1886-99
      6. ASTM E1996-99
4. Drawing No. KENN0005
  - a. Product Name/Series: "SFG4" Curb Mounted Self Flashing Glass Skylight - NI
  - b. High Velocity Hurricane Zone (HVHZ): NO
  - c. Outside High Velocity Hurricane Zone (HVHZ): YES
  - d. Impact Resistant: NO
  - e. National Certified Test Laboratory, Inc. Test Report No. NCTL-210-3012-1
  - f. Design Pressure
    - i. +/-60 psf



- ii. Margin of Safety = 2 applied to Structural Design Pressure per Section 1504.9 of the 5th Edition (2014) FBC.
- g. Performance and Testing Standards
  - i. Test Report No. NCTL-210-3012-1
    - 1. AAMA/WDMA 1600/I.S.7-00, Voluntary Specification for Skylights