

Product Evaluation Report

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Product Manufacturer

Polygal Inc.
1100 Bond Street
Charlotte, NC 28208

Product Name, Model, Series and/or Description

Polygal SG 16mm Clear (3-Wall) Storm Panel L.M. Impact (HVHZ)
Polygal Titan Sky 16mm Clear (5-Wall) Storm Panel L.M. Impact (HVHZ)

Code: Current Edition of the Florida Building Code including the 6th Edition (2017) Florida Building Code

Compliance Methods:

- Product Approval Rule 61G20-3.005(1)(a) – Certification Mark or Listing

Product Testing, Materials and Certification:

- Performance Testing
 - NCTL Test Report No. 210-4125-01, dated 10/24/18, signed and sealed by Douglas J. McDougall, FL PE No. 28392
 - Polygal SG 16mm Clear (3-Wall) Storm Panel L.M. Impact
 - TAS 202 (structural only), TAS 201 and TAS 203
 - Certification by National Accreditation and Management Institute, Inc.
 - NAMI Certification NOPC No. NI014275.01
 - NCTL Test Report No. 210-4125-02, dated 10/24/18, signed and sealed by Douglas J. McDougall, FL PE No. 28392
 - Polygal Titan Sky 16mm Clear (5-Wall) Storm Panel L.M. Impact
 - TAS 202 (structural only), TAS 201 and TAS 203
 - Certification by National Accreditation and Management Institute, Inc.
 - NAMI Certification NOPC No. NI014275
- Plastics Testing
 - QAI Laboratories, Tulsa, OK, Test Report No. TJ0498-1, dated 4/11/12, Polygal, Inc. Titan Sky, signed by Gregory Ertel & J. Brian McDonald
 - ASTM E84-11, Surface Burning Characteristics
 - Flame Spread; 5
 - Smoke Developed; 70
 - QAI Laboratories, Tulsa, OK, Test Report No. TJ0498-2, dated 4/11/12, Polygal, Inc. Titan Sky, signed by Gregory Ertel & J. Brian McDonald
 - ASTM D635-06, Rate of Burning
 - CC1 classification
 - SGS, Charlotte, NC Test Report No. 97808-9, dated 5/9/07, Polygal, Inc. Titan Sky, signed by Brian Ortega and Greg Banasky
 - ASTM E1929-01, Ignition Temperature
 - Self-Ignition Temperature; 968°F
 - SGS, Charlotte, NC Test Report No. 97808-2, dated 5/9/07, Polygal, Inc. SG, signed by Brian Ortega and Greg Banasky
 - ASTM E84-11, Surface Burning Characteristics
 - Flame Spread; 70
 - Smoke Developed; 200
 - SGS, Charlotte, NC Test Report No. 97808-4, dated 5/9/07, Polygal, Inc. SG, signed by Brian Ortega and Greg Banasky
 - ASTM D635-06, Rate of Burning
 - CC2 classification

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- SGS, Charlotte, NC Test Report No. 97808-8, dated 5/9/07, Polygal, Inc. SG, signed by Brian Ortega and Greg Banasky
 - ASTM E1929-01, Ignition Temperature
 - Self-Ignition Temperature; 968°F

Component Code Conformance - Polycarbonate Shutter Material:

Results of plastics testing vs. FBC requirements are summarized below.

Test	Property	Material	Test Result	FBC Requirement	Conclusion
ASTM E84	Flame Spread	Titan Sky 5-Wall Polycarbonate	5	Not FBC requirement	Passes
	Smoke Developed		70	≤ 450	Passes
ASTM D635	Rate of Burning		CC1	CC1 or CC2	Passes
ASTM E1929	Self-Ignition Temperature		968°F	≥ 650°F	Passes
ASTM E84	Flame Spread	SG 3-Wall Polycarbonate	70	Not FBC requirement	Passes
	Smoke Developed		200	≤ 450	Passes
ASTM D635	Rate of Burning		CC2	CC1 or CC2	Passes
ASTM E1929	Self-Ignition Temperature		968°F	≥ 650°F	Passes

Product Installation Instructions:

- Drawing No. No. NL-0116, Original Issue, dated 10/24/18, Polygal SG 16mm Clear (3-Wall) Storm Panel L.M. Impact (HVHZ), signed and sealed by Robert J. Amoruso, P.E.
- Drawing No. No. NL-0117, Original Issue, dated 10/24/18, Polygal Titan Sky 16mm Clear (5-Wall) Storm Panel L.M. Impact (HVHZ), signed and sealed by Robert J. Amoruso, P.E.

Engineering Analysis: The following engineering and/or rational analysis/calculations have been performed.

- Anchorage has been verified by calculation prepared by Robert J. Amoruso, P.E. in accordance with the current edition of the Florida Building Code.

Performance Testing:

- TAS 202 (structural only), TAS 201 and TAS 203

Limitations & Conditions of Use:

- This product has been evaluated for use inside the HVHZ (High Velocity Hurricane Zone)
- Refer to Product Installation Instructions noted above for:
 - Maximum allowable wind loads at related maximum allowable size(s).
 - Overall dimensions and material/grade of main product components, accessories, etc.
 - Illustrated diagrams of the attachment of the product to the structure.
 - Anchor type(s), size(s), substrate(s), embedment, edge distance, and spacing/locations.
- Site wind pressures shall be determined by a licensed professional engineer in accordance with the current edition of the Florida Building Code and/or ASCE 7-10 for components and cladding based on allowable stress design.
- Site conditions not covered in this product evaluation document are subject to additional engineering analysis by a licensed professional engineer or registered architect as required by the authority having jurisdiction.

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- Adequacy of the existing structural substrates as a main wind force resisting system capable of withstanding and transferring applied product loads to the foundation is the responsibility of the licensed professional engineer or registered architect acting as the design professional of record for the project of installation.

Certificate of Independence per Product Approval Rule 61G20-3.009

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

Robert J. Amoruso, P.E. does 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.

Evaluated by:
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