

PRODUCT EVALUATION REPORT

Report No.	PER-N-R1110202
Report Date	02/02/11
Code Reference	2007 Florida Building Code Approved for Use Outside the HVHZ Only
Product Category	Roofing
Product Sub-Category	Products Introduced as a Result of New Technology
Product Name	Novislate™, Noviclay™, and Novishingle™ Roof Panels
Product Manufacturer	Novik Incorporated 160, rue des Grands-Lacs St-Augustin-de-Desmaures, Québec G3A 2K1 CANADA
Evaluating Engineer	Emma T. Mellinger, P.E. Category 5 Engineering Services, Inc.

1. SCOPE OF EVALUATION AND STATEMENT OF CODE COMPLIANCE

This Product Evaluation Report is issued in accordance with the requirements of Florida Administrative Code Rule 9N-3 (formerly Rule 9B-72) for Statewide Product Approval by Method 1(d). The above-referenced product has been tested and evaluated as described herein, and found to be in compliance with the 2007 Florida Building Code. The above-referenced product is, for the purpose intended, at least equivalent to that required by the Code. This product shall be re-evaluated following any relevant changes to the 2007 Florida Building Code.

The 2007 FBC does not specifically address plastic roof shingles or tiles; whereas there are specific code requirements for other types of roofing, i.e. asphalt shingles, concrete and clay tiles, metal panels, etc. Section 104.11 (“Alternative Materials, Design and Methods of Construction”) provides for the approval of materials not specifically addressed in the Code, provided that said material is at least equivalent to that required by the Code in terms of quality, strength, effectiveness, fire resistance, durability and safety.

The roofing products evaluated in this report have been tested and shown to comply with ICC-ES AC07 “Acceptance Criteria for Special Roofing Systems.” This evaluation finds that the requirements of ICC-ES AC07 are equivalent to the requirements of Chapter 15 (Roof Assemblies and Structures) of the 2007 Florida Building Code under the terms of the “Limitations and Conditions of Use” listed in this report.

2. SUBSTANTIATING DATA

The following documents substantiate the evaluation contained in this report:

2.1 Test Reports

Tests were performed by Intertek Testing Services NA Ltd., Coquitlam, BC, as reported in document number 3181562COQ-002, dated March 30, 2010.

Test Report Number	Tests Performed	Test Description	FBC Code Section	Result
3181562COQ-002	ICC-ES AC07 ICC-ES AC07	Uplift-Bend Test Penetration Test	N/A N/A	Pass Pass
3179159COQ-001	ASTM G155-05a ASTM D638-08	Exposure Tensile Strength	2612.2 2612.2	Pass Pass
3181615MID-010	UL 790-04 ASTM E108-07a	Fire Classification	1505.1	Class C
3182128SAT-012A 3182128SAT-012B	ASTM D1929-96 (01)	Self-Ignition	2612.2	Pass
G100066784TOR-002 3182128SAT-013B	ASTM D635-08	Rate of Burning	2612.2	Pass CC2
3181562MTL-011	ICC-ES AC07	Thermal Cycling	N/A	Pass
ITSC-029-02-01	TAS 100-95 ICC-ES AC07	Wind and Wind-Driven Rain	1504.1	Pass Pass

2.1.1 Test Standard Equivalency

The 2007 Florida Building Code references several of the above test standards by different revision years. The following test standard revisions have been reviewed by this office, and deemed equivalent in all technical respects:

ASTM G155-05a (as tested) is equivalent to ASTM G155-04 (as referenced in 2007 FBC).

ASTM D638-08 (as tested) is equivalent to ASTM D638-03 (as referenced in 2007 FBC).

ASTM D635-08 (as tested) is equivalent to ASTM D638-03 (as referenced in 2007 FBC).

ASTM E108-07a (as tested) is equivalent to ASTM E108-04 (as referenced in 2007 FBC).

2.2 Structural Calculations

Structural engineering calculations in accordance with 2007 FBC Section 1609.5.3 were performed to verify the anchors as tested, and to determine the allowable design pressures for use of the product. Reference withdrawal design values from ICC-ES AC116 for 12 gage roofing nails were used to calculate resisting moments. No increase in allowable stress was used.

3. PRODUCT DESCRIPTION

Novislate™, Noviclay™, and Novishingle™ Roof Panels are used as roof covering materials and are recognized as Class C roof coverings when installed in accordance with this Product Evaluation Report. The products are interlocking roof panels manufactured in various colors from a proprietary blend of polymer-based materials, and are designed to provide the look, respectively, of slate shingles, clay tiles, and wood shingles. Nominal dimensions and weights are provided in the table below.

PRODUCT	WIDTH (in)	LENGTH (in)	THICKNESS (in)	INSTALLED WEIGHT (lb/ft²)
Novislate™	53.38	22.25	0.090	0.682
Noviclay™	19	15.75	0.090	1.00
Novishingle™	49	14.5	0.100	0.828

4. INSTALLATION

The products shall be installed in strict accordance with the manufacturer's specific written instructions provided with each product. (The afore-mentioned instructions are an integral part of this Evaluation Report, and are attached hereto as Appendix A).

PRODUCT	NOVSLATE, NOVISHINGLE, NOVICLAY
MAX. UPLIFT PRESSURE	-61.5 psf
SLOPE RANGE	3:12 or greater
DECK	Solid Sheathing Per 2007 FBC. Minimum 15/16 plywood, or nominal 1" x wood plank. Sheathing shall be structurally adequate and fastened to resist the wind loads specified by 2007 FBC Section 1609.
UNDERLAYMENT	Minimum underlayment shall be ASTM D226, Type II (30# felt), or an appropriate equivalent product meeting the requirements of ASTM D2626 or ASTM D1970, and recognized by ICC-ES or holding a current Florida Product Approval.
FLASHING	Hips, Ridges and Valleys shall be flashed in accordance with the manufacturer's published installation instructions.
FIRE CLASSIFICATION	ICC-ES has determined that Novislate, Novishingle, and Noviclay meet the requirements for Class C roof coverings when installed in accordance with this report and with one layer of 63-mil thick Soprema Lastobond underlayment (recognized in ICC-ES ESR-1524)
ROOFING ATTACHMENT	Products shall be installed in strict accordance with the manufacturer's published instructions. Fasteners shall be 12-gage (0.105" shank diameter) by 1 1/2" long ring-shank roofing nails with a 3/8"-diameter head. Fasteners shall meet the requirements of ASTM F1667, with corrosion resistance conforming to ASTM A641 Class 1. The minimum number of fasteners per panel shall be in accordance with the schedule presented in the Panel Attachments table.
WIND RESISTANCE	Products are limited to installation in areas where the maximum wind speed is 100 mph (161 km/h) on structures with a mean roof height of 40 feet (12192 mm) or less in Exposure B areas.

PANEL ATTACHMENTS

NOVISLATE		Fasteners* per Product Panel				
Roof Shape	Roof Slope	Zone 1	Zone 2	Zone 3	Zone 2 (Overhang)	Zone 3 (Overhang)
Gable and Hip	$7^\circ < \theta < 27^\circ$	10	10	10	10	10
Gable	$27^\circ < \theta < 45^\circ$	10	10	10	10	10

NOVISHINGLE		Fasteners* per Product Panel				
Roof Shape	Roof Slope	Zone 1	Zone 2	Zone 3	Zone 2 (Overhang)	Zone 3 (Overhang)
Gable and Hip	$7^\circ < \theta < 27^\circ$	6	6	6	6	6
Gable	$27^\circ < \theta < 45^\circ$	6	6	6	6	6

NOVICLAY		Fasteners* per Product Panel				
Roof Shape	Roof Slope	Zone 1	Zone 2	Zone 3	Zone 2 (Overhang)	Zone 3 (Overhang)
Gable and Hip	$7^\circ < \theta < 27^\circ$	2	2	2	2	3
Gable	$27^\circ < \theta < 45^\circ$	2	2	2	2	2

* Fasteners shall be as stated in Section 4 above.

5. QUALITY ASSURANCE

Novislate, Novishingle, and Noviclay products described in this Product Evaluation Report are manufactured under a Quality Assurance Program that meets the requirements of the 2007 Florida Building Code, and F.A.C. Rule 9N-3. The Quality Assurance Entity is *Intertek Testing Services NA, Inc – ETL/Warnock Hersey* in Middleton, Wisconsin.

6. ENGINEER'S CERTIFICATION OF INDEPENDENCE

Emma T. Mellinger, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which this report is being issued. Additionally, Emma T. Mellinger, P.E. does not have nor will acquire a financial interest in any other entity involved in the approval process of said products.

LIMITATIONS AND CONDITIONS OF USE

- Use of the above-referenced product shall be in strict accordance with this Evaluation Report and the manufacturer's specific written instructions. For all other conditions, a site specific design shall be prepared by a Florida-registered Professional Engineer.
- When installed in accordance with this report, the roofing material is limited to installation in areas where the maximum wind speed is 100 mph (161 km/h) on structures with a mean roof height of 40 feet (12192 mm) or less in Exposure B areas.
- This product shall be installed on roof decks with a minimum slope of 3:12 (25%).
- The above-referenced product is NOT APPROVED for installation in the High Velocity Hurricane Zone.

This Engineer's Evaluation Report has been prepared by



The image shows a circular professional engineer seal for Emma T. Mellinger, P.E., with the number PE 50049 and the date 02/02/2011. The seal is partially obscured by a handwritten signature in cursive that reads "Emma Mellinger".

Emma T. Mellinger, P.E.
PE 50049
02/02/2011