Code Compliance Research Report
CCRR-0226

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DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION
Section: 07 46 00 – Siding

WESTECH BUILDING PRODUCTS, INC.
7451 HWY 62 EAST
MOUNT VERNON, IN 47620
westechbp.com

REPORT SUBJECT:
***TruGrain*™ 6" Siding**

1.0 SCOPE OF EVALUATION

This research report addresses compliance with the following Codes:

- 2012 International Building Code (IBC)
- 2012 International Residential Code (IRC)
- 2014 Florida Building Code (FBC)

  Including High Velocity Hurricane Zone (HVHZ)

TruGrain 6" Siding has been evaluated for the following properties:

- Durability
- Surface Burning
- Weather Resistance
- Wind Load Resistance
- Decay Resistance
- Termite Resistance

2.0 USES

2.1. *TruGrain*™ 6" Siding is intended for use as an exterior wall covering on buildings of Type VB construction (IBC, FBC) and all construction types permitted under the IRC.

3.0 DESCRIPTION

3.1. *TruGrain*™ 6" Siding is a mono-extruded, rigid plastic composite siding consisting of a proprietary formulation. *TruGrain*™ 6" Siding is finished with a simulated wood-grain pattern, and has an exposure width of 6", with wall thickness of 0.17". See Figure 1.

4.0 PERFORMANCE CHARACTERISTICS

4.1. Windload Resistance – Maximum allowable negative design pressures are shown in Table 1 for the *TruGrain*™ 6" Siding when installed in accordance with this report.

4.1.1. *TruGrain*™ 6" Siding has not been evaluated for resisting positive wind pressure. Siding must be installed over structural wood sheathing designed to resist positive design wind pressures in accordance with the applicable code.

4.2. Materials are deemed equivalent to preservative treated or naturally durable wood for resistance to weathering effects, attack from termites and fungus decay.

4.3. Materials used have a flame spread index of less than 200 when tested in accordance with ASTM E 84.

4.4. *TruGrain*™ 6" Siding complies with Section 2605.2 of the IBC and FBC for use as an exterior plastic veneer.

4.5. FBC, High Velocity Hurricane Zones (HVHZ) - *TruGrain*™ 6" Siding has been additionally tested to show compliance with the requirements of the Florida Building Code for use in locations designated as High Velocity Hurricane Zones. Testing has shown;

4.5.1. Sufficient weathering resistance of plastics with outdoor exposure when tested to ASTM G 155 and ASTM D 2565 for a period of 4500 hours and subsequent testing demonstrating compliance with FBC Section 2614.2.

4.5.2. Sufficient resistance to wind forces as determined by Section 1620 of the Florida Building Code when tested to FBC Test Protocol TAS 202-94.

4.5.3. Sufficient resistance to cyclic wind pressure loading as determined by Sections 1625, Table 1625.4 and Table 1626 of the Florida Building Code when tested to FBC Test Protocol TAS 203-94.

5.0 INSTALLATION

TruGrain™ 6" Siding must be installed in accordance with the manufacturer's published installation instructions, the applicable Code and this Research Report. The manufacturer's published installation instructions and this Research Report must be strictly adhered to, and a copy of the instructions must be available on the jobsite during installation. See Table 1 for fastening schedule.

5.1. *TruGrain*™ 6" Siding shall be installed via steel, aluminum or wood battens over an approved structural wood sheathing; 5/8" plywood complying with DOC PS 1, DOC PS 2, or ANSI/APA PRP 210, per IBC 2303.1.5 (FBC 2303.1.4).

5.2. Sheathing must be covered by an approved water-resistive barrier complying with Section 1404.2 of the IBC and FBC, and Section R703.1.1 of the IRC, and provide a means for draining water that enters the assembly to the exterior.

5.3. Protection against condensation shall be provided in accordance with Section 1405.3 of the IBC and FBC.

5.4. Flashing shall be installed in accordance with Section 1405.4 of the IBC and FBC, and IRC Section R703.8.

6.0 SUPPORTING EVIDENCE

6.1. Manufacturer's drawings and installation instructions.

6.2. Reports of testing demonstrating equivalent impact and windload resistance requirements for plastic siding in accordance with ASTM D7254-07, Standard Specification for polypropylene (PP) siding.

6.3. Reports of testing demonstrating termite and decay resistance in accordance with ASTM D7032-08, Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails) as required by Section 2612.4 of the 2015 IBC for Plastic Composites.

6.4. Reports of testing demonstrating compliance with ASTM E84-09, Test Method for Surface Burning Characteristics of Building Materials.

6.5. Reports of freeze-thaw, water and weathering resistance demonstrating compliance with ICC-ES AC92, Acceptance Criteria for Polymer-based, Polymer-modified and High-Pressure Laminate Exterior and Interior Wall Cladding, revised March 2015.

6.6. Reports of testing in accordance with ASTM D1929-96(2001)e01, Test Method for Determining Ignition Properties of Plastics.

6.7. Reports of testing in accordance with ASTM D2843-99(2004)e01, Test Method for Density of Smoke from the Burning or Decomposition of Plastics.

6.8. Reports of testing in accordance with ASTM D635-06, Test Method for Rate of Burning and/or Extent and Time of Burning of Self-supporting Plastics in a Horizontal Position.

6.9. Reports of evaluation and engineering analysis for allowable fastener design capacities by a Professional Engineer registered in the State of Florida.

6.10. Testing for Florida Building Code was performed by a Miami-Dade County approved testing facility (Architectural Testing, Inc. – York, PA) with reports signed and sealed by a Professional Engineer registered in the State of Florida. These reports are;

6.10.1. Reports of testing demonstrating compliance with Section 2614.2 of the Florida Building Code for Approved Plastics.

6.10.2. Reports of testing to Testing Application Standard (TAS) 202-94 "Criteria for Testing Impact & Nonimpact Resistant Building Envelope Components Using Uniform Static Air Pressure" as required by Section 1620 of the Florida Building Code.

6.10.3. Reports of testing to Testing Application Standard (TAS) 203-94 "Criteria for Testing Products subject to Cyclic Wind Pressure Loading" as required by Sections 1625, Table 1625.4 and Table 1626 of the Florida Building Code.

6.11. Quality control manual in accordance with ICC-ES AC10, Acceptance Criteria for Quality Documentation, dated June 2014.

7.0 CONDITION OF USE

The *TruGrain*™ 6" Siding described in this Research Report complies with, or is a suitable alternative to, what is specified in those Codes listed in Sections 1.0 and 2.0 of this report, subject to the following conditions:

7.1. Installation must comply with this Research Report, the manufacturer's published installation instructions and the applicable Code. In the event of a conflict between the manufacturer's instructions and this report, this report governs.

7.2. Wind design pressures determined from nominal design wind speeds (V_{asd}) in accordance with Section 1609.3.1 of the IBC and FBC shall not exceed the maximum allowable design pressure given in Table 1 for *TruGrain*™ 6" Siding.

7.3. *TruGrain*™ 6" Siding is limited to exterior use on buildings of combustible nonfire-resistance-rated construction: IBC and FBC Type V-B (5B) construction and all construction types permitted under the IRC.

7.4. Only those types of fasteners and fastening methods described in this report have been evaluated for the installation of the *TruGrain*™ 6" Siding. Other methods of attachment are outside the scope of this report.

7.5. The battens and batten attachment to the building structure is outside the scope of this report.

7.6. All products are manufactured in Mount Vernon, Indiana by Westech Building Products in accordance with the manufacturer's approved quality control system with inspections by Intertek.

8.0 IDENTIFICATION

The *TruGrain*™ 6" Siding described in this Research Report are identified by a marking bearing the report holder's name (Westech Building Products), the Intertek Mark, and the Code Compliance Research Report number (CCRR-0226).

CODE COMPLIANCE
Intertek
CCRR-0226

9.0 CODE COMPLIANCE RESEARCH REPORT

9.1. Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

9.2. Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

9.3. Reference to the Intertek website address: whdirectory.intertek.com is recommended to ascertain the current version and status of this report.

Table 1 – *TruGrain*™ 6" Siding Allowable Design Pressures

Vertical Battens			Fastener [2]		Allowable Design Pressure
Material [1]	Thickness [1]	Horizontal Spacing	Description	Spacing	
Spruce-Pine-Fir (Specific Gravity, 0.42)	3/4"	16"	#8 (0.164" dia.) x 1-1/2" bugle-head, stainless steel, wood screws	16" o.c.	100 psf
Structural Steel Grade 50	18 gauge	16"	#8 (0.164" dia.) x 3/4" bugle-head, stainless steel, TEK screws. [3]	16" o.c.	126 psf
6063-T5 Aluminum	0.045"	16"	#8 (0.164" dia.) x 3/4" bugle-head, stainless steel, TEK screws. [3]	16" o.c.	103 psf

[1] Installation on battens with a lesser thickness or lesser mechanical properties may result in a lower allowable design pressure.

[2] Fasteners are installed through the center of the prefabricated slotted holes. Same fasteners are used to fasten the aluminum (6063-T5) starter strip to the battens. See Figure 2.

[3] Fasteners for attachment to steel and aluminum battens shall extend through the steel or aluminum a minimum of three exposed threads.

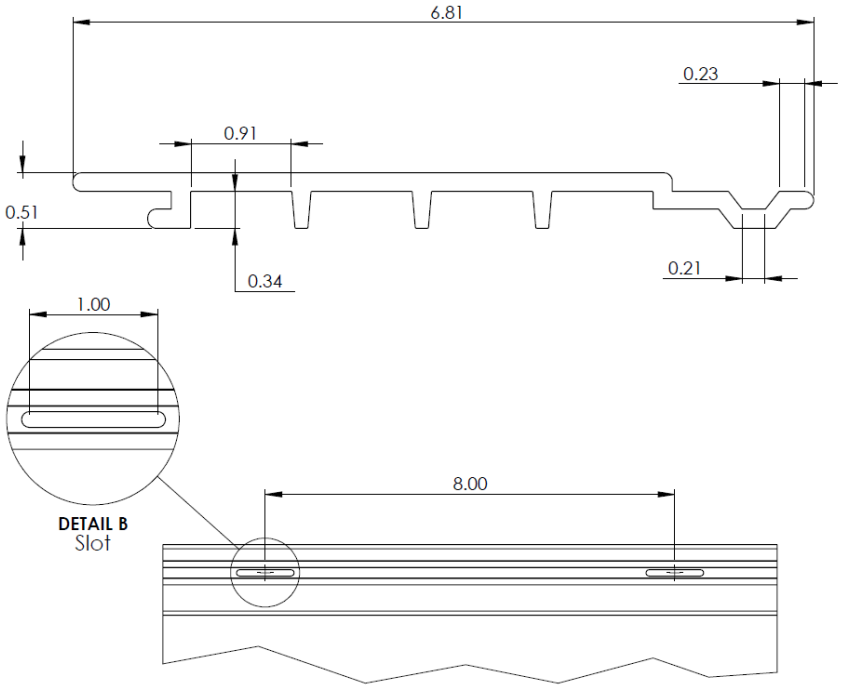
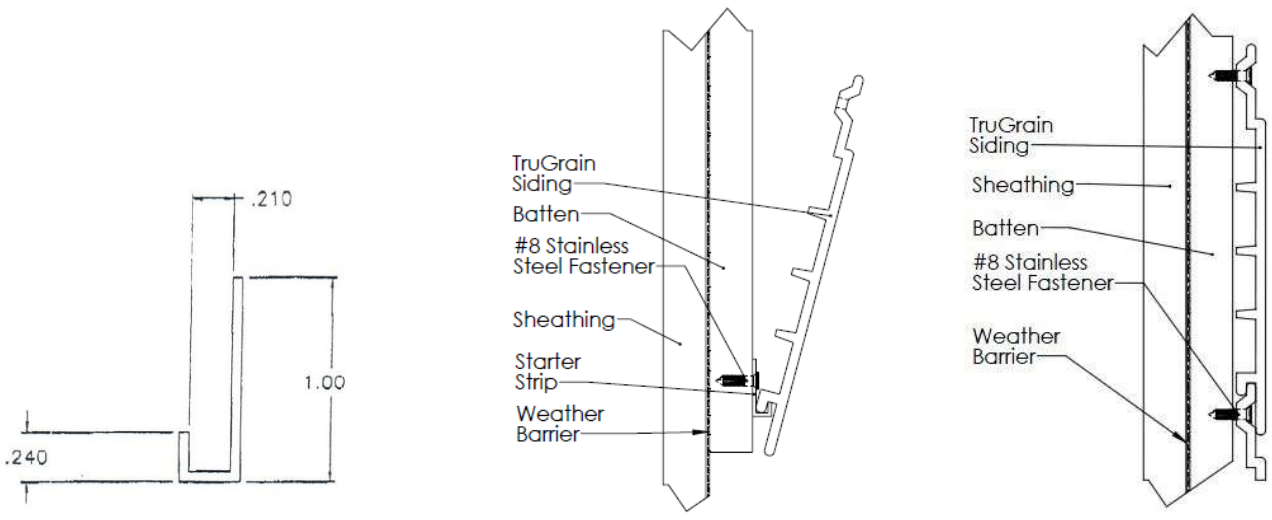


Figure 1 – *TruGrain*™ 6" Siding



Aluminum Starter Strip

Figure 2 – Installation Details