



Product Evaluation Report
ENDURO COMPOSITES, INC.

4.2x1.06 Corrugated Series 250 Roof Panel

Florida Product Approval # 32006.1 R2

Florida Building Code 2023

Per Rule 61G20-3

Method: 2 –B

Category: Structural Components

Subcategory: Roof Deck

Compliance Method: 61G20-3.005(2)(b)

NON HVHZ

Product Manufacturer:

Enduro Composites, Inc.

16602 Central Green Blvd.

Houston, Texas 77032

Engineer Evaluator:

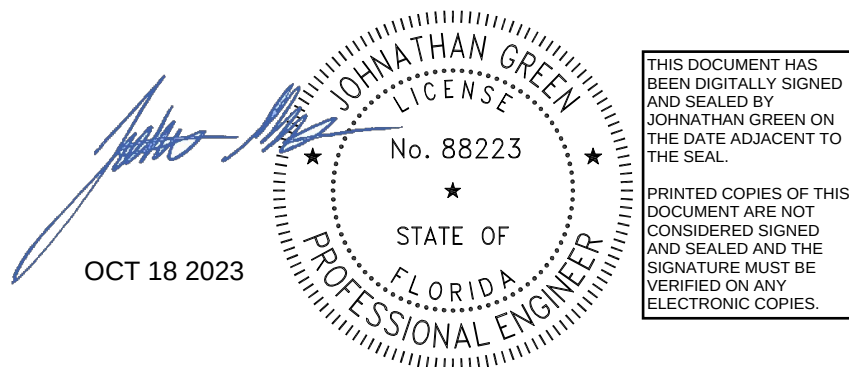
Johnathan Green, P.E. # 88223

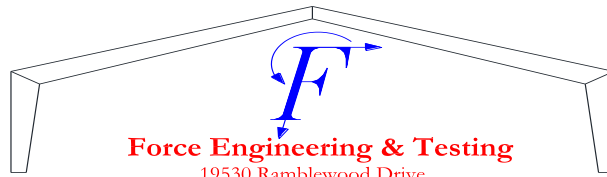
Florida Evaluation ANE ID: 12901

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Force Engineering & Testing

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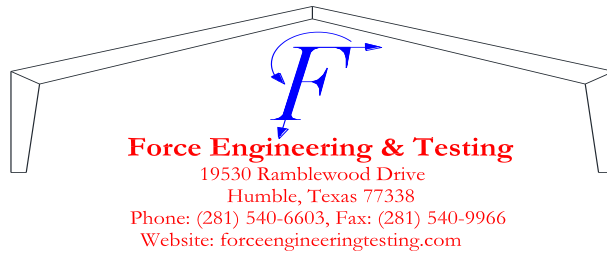
- Compliance Statement:** The product as described in this report has demonstrated compliance with the Florida Building Code 2023, Sections 1504.7, 1709.2, 2606, 2609.
- Product Description:** Tuff Span, 4.2x1.06 Corrugated Series 250 glass fiber reinforced roof panels, 1 1/16" tall major ribs at 4.2" O.C., 37.8" coverage, through fastened structural roof panel. Structural Application.
- Panel Material/Standards:** Material: Nominal 0.065" thick glass fiber reinforced plastic.
Nominal Weight: 10.5 oz/sf.
Nominal Glass Content: 48% by weight
Resin: PFR Iso-Polyester resin system
Panel Finish: Acrylic polymer exterior UV coating, minimum 0.4mil dry thickness.
- Panel Dimension(s):** Width: 37.8" maximum coverage
Rib Height: 1-1/16" major rib at 4.2" O.C.
- Panel Fastener:** #14-x 2" Type B 304 Stainless Steel Hex head with 0.729" O.D. Sealing Washer approved equal on the high corrugation at 4.2"-8.4"-8.4"-8.4"-8.4" fastener pattern. Panel side laps fastened together w/ 3/8" x 1 1/4" Grommet at 18" O.C.
Corrosion Resistance: Per Florida Building Code 2023, Section 1507.4.4.
- Substrate Description:** Min. 16 Ga. Steel Framing. Framing must be designed in accordance w/ Florida Building Code 2023.

Allowable Design Pressures:

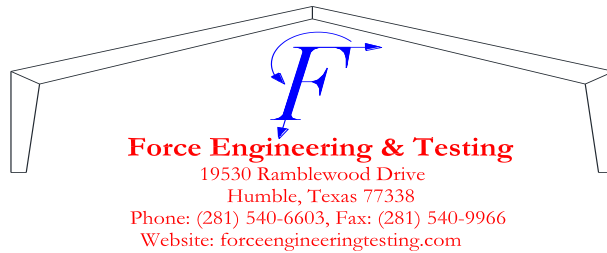
Table "A"

Maximum Design Pressure:	-20.0 psf	+60.0 psf	-57.5 psf
Fastener Pattern:	4.2"-8.4"-8.4"-8.4"-8.4"	4.2"-8.4"-8.4"-8.4"-8.4"	4.2"-8.4"-8.4"-8.4"-8.4"
Fastener Spacing:	5'-0" O.C.	5'-0" O.C.	2'-0" O.C.

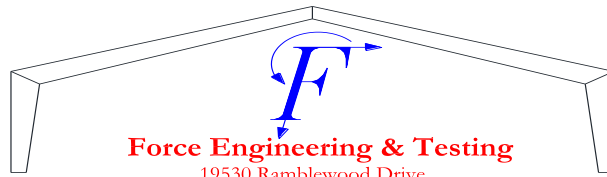
*Design Pressure includes a Safety Factor = 2.0.



Code Compliance:	The product described herein has demonstrated compliance with The Florida Building Code 2023, Section 1504.7, 1709.2, 2606, 2609.
Evaluation Report Scope:	The product evaluation is limited to compliance with the structural wind load requirements of the Florida Building Code 2023, as relates to Rule 61G20-3.
Performance Standards:	The product described herein has demonstrated compliance with: ▪ ASTM E 1592-05 (2017) ▪ FM 4471-92 ▪ ASTM D 635-14 ▪ ASTM D 1929-16 ▪ ASTM E 84-18b
Reference Data:	1. ASTM E 1592-01 Force Engineering & Testing, Inc. (FBC Organization # TST-5328) Report No. 314-0345T-08 2. FM 4471-10, Section 4.4 Foot Traffic Resistance Test Force Engineering & Testing (FBC Organization # TST-5328) Report No. 314-0034T-21 3. ASTM D 635-10 Fenestration Testing Laboratory (FTL)-Miami, FL Report No. 12086 Test Results: Class CC1 4. ASTM D 1929-12 Fenestration Testing Laboratory (FTL)-Miami, FL Report No. 12086 Test Results: Self-Ignition 779° F 5. ASTM E 84-08A Southwest Research Institute Report No. 01.14430.01.018d Test Results: Smoke Developed Index 250 & Flame Spread Index 20. 6. Certificate of Independence By Johnathan Green, P.E. #88223
Test Standard Equivalency:	1. The ASTM E 1592-01 test standard is equivalent to the ASTM E 1592-05 (2017) test standard. 2. The FM 4471-10, Foot Traffic Resistance test standard is equivalent to the FM 4471-92, Foot Traffic Resistance test standard. 3. Letter of Equivalency for ASTM D635 & ASTM D1929 from Fenestration Testing Laboratory (FTL), dated 01/04/2021. 4. Letter of Equivalency for ASTM E84 from Intertek, dated 10/13/2023.
Quality Assurance Entity:	The manufacturer has established compliance of roof panel products in accordance with the Florida Building Code and Rule 61G20-3.005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity.



Minimum Slope Range:	Minimum Slope shall comply with Florida Building Code 2023, including Section 1507.4.2 and in accordance with Manufacturers recommendations. For slopes less than 3:12, lap sealant must be used in the panel side laps.
Installation:	Install per manufacturer's recommended details.
Panel Separation:	Panels shall be separated from each other by not less than 4 ft. measured in a horizontal plan unless the building meets one of the exceptions in FBC 2023 Section 2609.2.
Area Limitations:	Class CC1: See Table 2609.4 (FBC 2023)
Panels Shall NOT be Installed in:	Groups H, I-2, I-3 (FBC 2023, Section 2609.1)
Shear Diaphragm:	Shear diaphragm values are outside the scope of this report.
Design Procedure:	Based on the dimensions of the structure, appropriate wind loads are determined using Chapter 16 of the Florida Building Code 2023 for roof cladding wind loads. These component wind loads for roof cladding are compared to the allowable pressure listed above. The design professional shall select the appropriate erection details to reference in his drawings for proper fastener attachment to his structure and analyze the panel fasteners for pullout and pullover. Support framing must be in compliance with Florida Building Code 2023 Chapter 22 for steel, and Chapter 16 for structural loading.



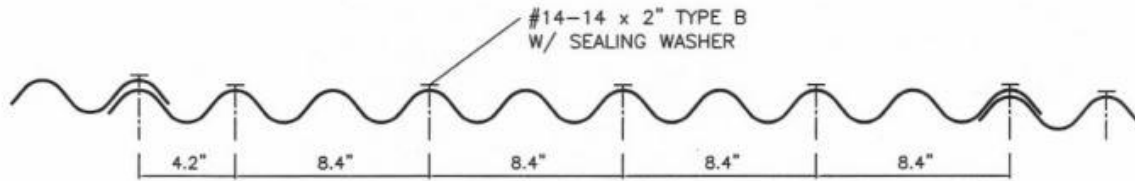
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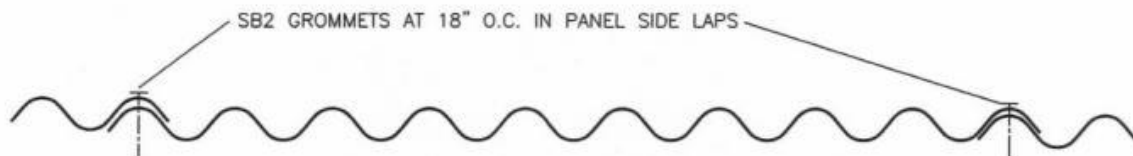
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4.2x1.06 CORRUGATED FASTENER PATTERN AT SUPPORTS



4.2x1.06 CORRUGATED FASTENER PATTERN IN BETWEEN SUPPORTS