

PRODUCT EVALUATION REPORT
Horizon Structural Systems, Inc.
U or PBU Through Fastened Wall Panel over Open Framing

Florida Product Approval Number FL 46662.2

Category: Structural Components

Sub-Category: Structural Wall

Compliance Method: 61G20-3.005 (1)(D)

NON-HVHZ

Product Manufacturer

**Horizon Structural Systems, Inc.
1659 W. State Highway 46
New Braunfels, Texas 78132**

Manufacturing Location

**Horizon Structural Systems, Inc.
1659 W. State Highway 46
New Braunfels, Texas 78132**

Engineer Evaluator

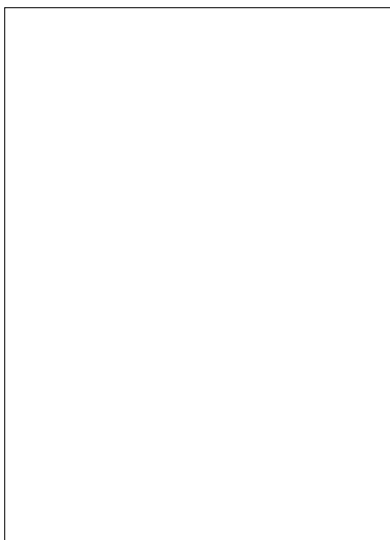
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Validator

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Evaluation Report Pages 1-5 Dated 04-11-2024



Compliance Statement

The product described in this report has demonstrated compliance with the 2023 (8th Edition) Florida Building Code Sections 1404.5

Product Description

Horizon U or PBU Through Fastened structural panels applied over open framing:

1. PBU 26 Gauge
(0.0170 Sheet Thickness) with a minimum $F_y = 80$ ksi and $F_u = 82$ ksi 12-12 Fastener Spacing
2. PBU 26 Gauge
(0.0170 Sheet Thickness) with a minimum $F_y = 80$ ksi and $F_u = 82$ ksi 5-7-5 Fastener Spacing
3. PBU 24 Gauge
(0.0228 Sheet Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi 12-12 Fastener Spacing
4. PBU 24 Gauge
(0.0228 Sheet Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi 5-7-5 Fastener Spacing
5. PBU 22 Gauge
(0.0272 Sheet Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi 12-12 Fastener Spacing
6. PBU 22 Gauge
(0.0272 Sheet Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi 5-7-5 Fastener Spacing

Panel Material Standard

Formed steel in compliance with the 2023 (8th Edition) Florida Building Code Section 1405.2 with optional painted finish.

Panel Fastener

Corrosion Resistant #12 – 14 HWH SD as indicated in the **Load Tables** of this Evaluation Report

Substrate Description

Minimum 16 gauge (0.0596 steel thickness) open framing.
Framing must be designed in accordance with the 2023 (8th Edition) Florida Building Code

Quality Assurance Entity

The manufacturer has established compliance of products in accordance with the 2023 (8th Edition) Florida Building Code as relates to Rule 61G20-3.005(3) for manufacturing under a quality assurance program audited by an approved quality assurance entity.

Insulation

Manufacturer's approved products (optional)

Fire Classification

Fire Classification is outside the scope of this evaluation

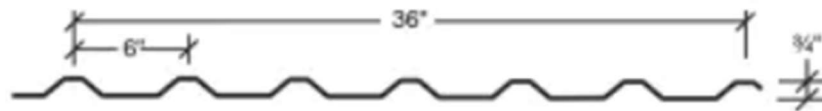
Shear Diaphragm

Shear Diaphragm is outside the scope of this evaluation

Design Procedure

Based on dimensions of the structure, appropriate wind loads are determined using chapter 16 of the 2023 (8th Edition) Florida Building Code for component loading of roof cladding. These component wind loads are compared to the allowable load listed in the **Load Tables** of this evaluation report. The design professional shall select appropriate fastener pattern and panel gauge to reference in the construction documents for proper installation. Design of support framing must be in compliance with the 2023 (8th Edition) Florida Building Code.

U or PBU Panel Fastener Diagram



Notes:

1. Fastener Pattern 5-7-5 is to be used at the ends of all panels
2. Fastener Pattern 12-12 and 5-7-5 are to be used at the intermediate supports as indicated in the span load tables to achieve the required uplift load capacity.

Horizon (PBU)

Horizon (PBU) Panel				Section Properties					
Panel Gauge	Fy	Fu	Weight	Negative Bending			Positive Bending		
	ksi	Ksi		Ixe	Sxe	Maxo	Ixe	Sxe	Maxo
			Psf	In ⁴	In ³	Kip-in	In ⁴	In ³	Kip-in
26	60*	61.5*	0.83	0.0157	0.0318	1.143	0.0227	0.0373	1.343
24	50	60	1.11	0.0240	0.0511	1.530	0.0340	0.0580	1.737
22	50	60	1.33	0.0300	0.0665	1.993	0.0433	0.0730	2.187

*= Fy is 80 ksi, Fu is 82 ksi reduced to Fy = 60 ksi and Fu = 61.5 ksi in accordance with the 2016 North American Specification for Cold-Formed Steel Structural Members with Supplement 2 (2020) Section A2.3.2.

Notes:

1. All calculations for section properties are calculated in accordance with the 2016 edition of the North American Specification for Cold-Formed Members with Supplement 2 (2020).
2. Ixe is for deflection calculations.
3. Sxe is for bending calculations.
4. Maxo is for allowable bending moment calculations.
5. All values are for one foot of panel from major rib to major rib.

Horizon Structural Systems

PRODUCT INFORMATION

PBU PANEL

26 gauge (Fy = 60 ksi) #12-14 Fasteners on 12" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	514.1	190.6	84.7	47.6	30.5	19.0	12.0	8.0	5.6
	Live Load/Deflection	563.8	223.9	99.5	56.0	35.8	24.9	17.3	11.6	8.2
2-Span	Negative Wind Load	205.6	102.8	68.5	51.4	35.7	24.8	18.3	14.0	11.0
	Live Load/Deflection	735.3	188.8	84.3	47.5	30.4	21.2	15.5	11.9	9.4
3-Span	Negative Wind Load	233.6	116.8	77.9	58.4	44.6	31.0	22.6	15.1	10.6
	Live Load/Deflection	704.8	235.1	105.2	59.3	38.0	26.4	19.4	14.9	11.8

26 gauge (Fy = 60 ksi) #12-14 Fasteners on 6" centers for attachment to all supporting members (16 gauge supporting members minimum)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	762.2	190.6	84.7	47.6	30.5	19.0	12.0	8.0	5.6
	Live Load/Deflection	563.8	223.9	99.5	56.0	35.8	24.9	17.3	11.6	8.2
2-Span	Negative Wind Load	411.3	205.6	98.9	55.8	35.7	24.8	18.3	14.0	11.0
	Live Load/Deflection	735.3	188.8	84.3	47.5	30.4	21.2	15.5	11.9	9.4
3-Span	Negative Wind Load	467.3	233.6	123.4	69.6	44.6	31.0	22.6	15.1	10.6
	Live Load/Deflection	704.8	235.1	105.2	59.3	38.0	26.4	19.4	14.9	11.8

** = Fastener Diameter shall be 1/2" Minimum

Horizon Structural Systems

PRODUCT INFORMATION

PBU PANEL

24 gauge (Fy = 50 ksi)										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	514.1	255.0	113.3	63.8	40.8	28.3	18.3	12.3	8.6
	Positive Load Wind/Deflection	805.2	289.4	128.6	72.4	46.3	32.2	23.6	17.4	12.2
2-Span	Negative Wind Load	205.6	102.8	68.5	51.4	41.1	32.1	23.6	18.1	14.3
	Positive Load Wind/Deflection	978.3	252.3	112.8	63.6	40.7	28.3	20.8	15.9	12.6
3-Span	Negative Wind Load	233.6	116.8	77.9	58.4	46.7	38.9	29.5	22.6	16.3
	Positive Load Wind/Deflection	1006.5	313.9	140.7	79.4	50.9	35.4	26.0	19.9	15.7

24 gauge (Fy = 50 ksi) #12-14 Fasteners on 6" centers for attachment to all supporting members (16 gauge supporting members minimum)**										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	1020.0	255.0	113.3	63.8	40.8	28.3	18.3	12.3	8.6
	Live Load/Deflection	805.2	289.4	128.6	72.4	46.3	32.2	23.6	17.4	12.2
2-Span	Negative Wind Load	411.3	205.6	127.8	72.1	46.2	32.1	23.6	18.1	14.3
	Live Load/Deflection	978.3	252.3	112.8	63.6	40.7	28.3	20.8	15.9	12.6
3-Span	Negative Wind Load	467.3	233.6	155.8	90.0	57.7	40.1	29.5	22.6	16.3
	Live Load/Deflection	1006.5	313.9	140.7	79.4	50.9	35.4	26.0	19.9	15.7

** = Fastener Washer Diameter shall be 1/2" Minimum

Horizon Structural Systems

PRODUCT INFORMATION

PBU PANEL

22 gauge (Fy = 50 ksi) #12-14 Fasteners on 12" centers for attachment to all supporting members (16 gauge supporting members minimum)**										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	514.1	257.0	147.7	83.1	53.2	36.4	22.9	15.4	10.8
	Live Load/Deflection	1111.8	364.4	162.0	91.1	58.3	40.5	29.8	22.2	15.6
2-Span	Negative Wind Load	205.6	102.8	68.5	51.4	41.1	34.3	29.4	22.8	18.0
	Live Load/Deflection	1264.6	328.0	146.8	82.8	53.0	36.9	27.1	20.7	16.4
3-Span	Negative Wind Load	233.6	116.8	77.9	58.4	46.7	38.9	33.4	28.4	20.4
	Live Load/Deflection	1389.8	407.7	183.0	103.3	66.2	46.0	33.8	25.9	20.5

22 gauge (Fy = 50 ksi) #12-14 Fasteners on 6" centers for attachment to all supporting members (16 gauge supporting members minimum)**										
SPAN TYPE	LOAD TYPE	SPAN IN FEET								
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
Single	Negative Wind Load	1028.2	332.2	147.7	83.1	53.2	36.4	22.9	15.4	10.8
	Live Load/Deflection	1111.8	364.4	162.0	91.1	58.3	40.5	29.8	22.2	15.6
2-Span	Negative Wind Load	411.3	205.6	137.1	90.8	58.2	40.4	29.7	22.8	18.0
	Live Load/Deflection	1264.6	328.0	146.8	82.8	53.0	36.9	27.1	20.7	16.4
3-Span	Negative Wind Load	467.3	233.6	155.8	113.3	72.6	50.5	37.1	28.4	20.4
	Live Load/Deflection	1389.8	407.7	183.0	103.3	66.2	46.0	33.8	25.9	20.5

** = Fastener Washer Diameter shall be 1/2" Minimum

Notes:

1. Allowable loads are based on uniform span length and uniformly distributed load.
2. Allowable gravity load is limited by bending, shear or deflection.
3. Allowable gravity loads are computed for a maximum total load deflection of L/60.
4. Weight of the panel must be included with gravity load combinations as appropriate.
5. This material is subject to change without notice.
6. This material has been developed in accordance with the 2016 North American Specification for Cold-Formed Structural Steel Members with Supplement 2 (2020).

The engineering data contained herein is for the express use of the customers of Horizon Structural Systems Inc. and qualified design professionals.