

**PRODUCT EVALUATION REPORT**  
**Horizon Structural Systems, Inc.**  
**R or PBR Through Fastened Wall Panel over Open Framing**

**Florida Product Approval Number FL 48613.1**

**Category: Panel Wall**

**Sub-Category: Siding**

**Compliance Method: 61G20-3.005 (1)(D)**  
**NON-HVHZ**

**Product Manufacturer**

Horizon Structural Systems, Inc.  
1659 W. State Highway 46, Ste 115 #622  
New Braunfels, Texas 78132

**Manufacturing Location**

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

**Engineer Evaluator**

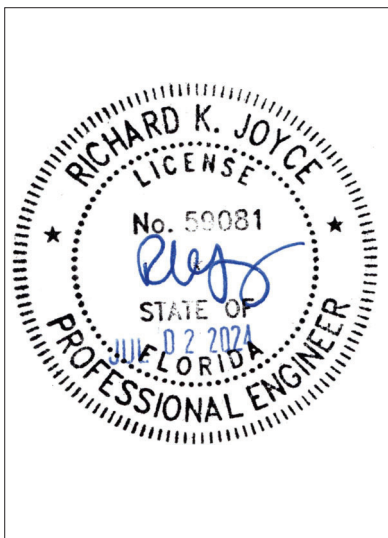
R. Keith Joyce, P.E. Florida 59081

**Validator**

Dennis L. Johnson, P.E., Florida 54340  
Florida C.O.A. 30308

**Contents**

**Evaluation Report Pages 1-5 Dated 07-02-24**



### **Compliance Statement**

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

### **Product Description**

Horizon R or PBR Through Fastened structural panels applied over open framing:

1. PBR 26 Gauge  
(0.0170 Sheet Thickness) with a minimum  $F_y = 80$  ksi and  $F_u = 82$  ksi 12-12 Fastener Spacing
2. PBR 26 Gauge  
(0.0170 Sheet Thickness) with a minimum  $F_y = 80$  ksi and  $F_u = 82$  ksi 5-7-5 Fastener Spacing
3. PBR 24 Gauge  
(0.0228 Sheet Thickness) with a minimum  $F_y = 50$  ksi and  $F_u = 65$  ksi 12-12 Fastener Spacing
4. PBR 24 Gauge  
(0.0228 Sheet Thickness) with a minimum  $F_y = 50$  ksi and  $F_u = 65$  ksi 5-7-5 Fastener Spacing
5. PBR 22 Gauge  
(0.0272 Sheet Thickness) with a minimum  $F_y = 50$  ksi and  $F_u = 65$  ksi 12-12 Fastener Spacing
6. PBR 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 (8<sup>th</sup> Edition) Florida Building Code Section 1405.4 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 (8<sup>th</sup> Edition) Florida Building Code

### **Quality Assurance Entity**

The manufacturer has established compliance of products in accordance with the 2023 (8<sup>th</sup> 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

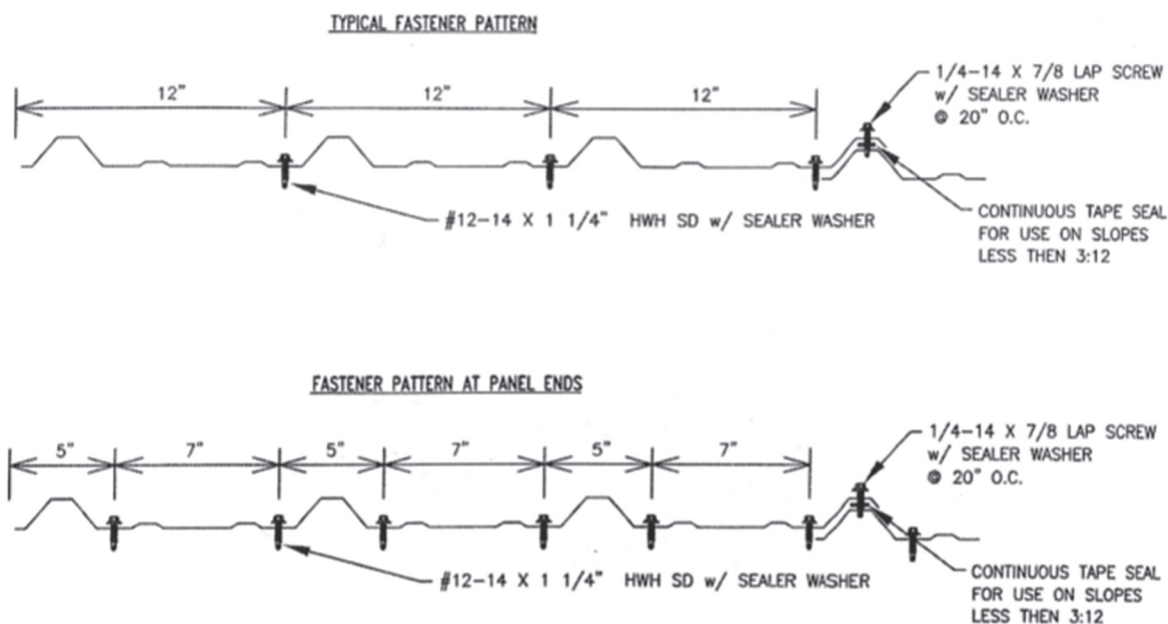
### **Shear Diaphragm**

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 (8<sup>th</sup> 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 (8<sup>th</sup> Edition) Florida Building Code.

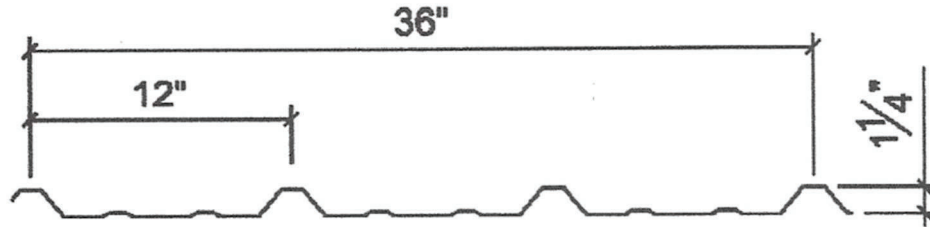
## R or PBR Panel Fastener Diagram



### 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 (PBR)



| Horizon (PBR) Panel |     |       |        | Section Properties |                 |        |                  |                 |        |
|---------------------|-----|-------|--------|--------------------|-----------------|--------|------------------|-----------------|--------|
| Panel Gauge         | Fy  | Fu    | Weight | Negative Bending   |                 |        | Positive Bending |                 |        |
|                     | ksi | Ksi   | Psf    | Ixe                | Sxe             | Maxo   | Ixe              | Sxe             | Maxo   |
|                     |     |       |        | In <sup>4</sup>    | In <sup>3</sup> | Kip-in | In <sup>4</sup>  | In <sup>3</sup> | Kip-in |
| 26                  | 60* | 61.5* | 0.83   | 0.0347             | 0.0392          | 1.410  | 0.0387           | 0.0325          | 1.167  |
| 24                  | 50  | 60    | 1.11   | 0.0507             | 0.0646          | 1.933  | 0.0607           | 0.0629          | 1.883  |
| 22                  | 50  | 60    | 1.33   | 0.0633             | 0.0777          | 2.327  | 0.0766           | 0.0822          | 2.463  |

\*= Fy is 80 ksi, Fu is 82 ksi reduced to Fy = 60 ksi and Fy = 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, Inc.

### PRODUCT INFORMATION

### PBR 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        | 235.1 | 104.5 | 58.8 | 37.6 | 26.1 | 19.2 | 14.7 | 11.6 |
|                                                                                                                                         | Live Load/Deflection | 354.2        | 177.1 | 86.4  | 48.6 | 31.1 | 21.6 | 15.9 | 12.2 | 9.6  |
| 2-Span                                                                                                                                  | Negative Wind Load   | 205.6        | 102.8 | 68.5  | 46.8 | 30.4 | 21.2 | 15.7 | 12.0 | 9.5  |
|                                                                                                                                         | Live Load/Deflection | 472.3        | 194.4 | 95.2  | 55.6 | 36.3 | 25.5 | 18.8 | 14.5 | 11.5 |
| 3-Span                                                                                                                                  | Negative Wind Load   | 233.6        | 116.8 | 77.9  | 57.6 | 37.5 | 26.3 | 19.5 | 15.0 | 11.9 |
|                                                                                                                                         | Live Load/Deflection | 442.8        | 221.4 | 114.7 | 68.0 | 44.7 | 31.5 | 23.4 | 18.0 | 14.3 |

| 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   | 940.2        | 235.1 | 104.5 | 58.8 | 37.6 | 26.1 | 19.2 | 14.7 | 11.6 |
|                                                                                                                                        | Live Load/Deflection | 354.2        | 177.1 | 86.4  | 48.6 | 31.1 | 21.6 | 15.9 | 12.2 | 9.6  |
| 2-Span                                                                                                                                 | Negative Wind Load   | 411.3        | 169.5 | 80.9  | 46.8 | 30.4 | 21.2 | 15.7 | 12.0 | 9.5  |
|                                                                                                                                        | Live Load/Deflection | 472.3        | 194.4 | 95.2  | 55.6 | 36.3 | 25.5 | 18.8 | 14.5 | 11.5 |
| 3-Span                                                                                                                                 | Negative Wind Load   | 467.3        | 201.5 | 98.5  | 57.6 | 37.5 | 26.3 | 19.5 | 15.0 | 11.9 |
|                                                                                                                                        | Live Load/Deflection | 442.8        | 221.4 | 114.7 | 68.0 | 44.7 | 31.5 | 23.4 | 18.0 | 14.3 |

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

# Horizon Structural Systems, Inc.

## PRODUCT INFORMATION

## PBR PANEL

| 24 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 | 143.2 | 80.6 | 51.6 | 35.8 | 26.3 | 20.1 | 15.9 |
|                                                                                                                                         | Live Load/Deflection | 507.2        | 253.6 | 139.5 | 78.5 | 50.2 | 34.9 | 25.6 | 19.6 | 15.5 |
| 2-Span                                                                                                                                  | Negative Wind Load   | 205.6        | 102.8 | 68.5  | 51.4 | 41.1 | 34.3 | 25.4 | 19.5 | 15.4 |
|                                                                                                                                         | Live Load/Deflection | 676.2        | 291.6 | 136.7 | 78.4 | 50.7 | 35.4 | 26.1 | 20.0 | 15.8 |
| 3-Span                                                                                                                                  | Negative Wind Load   | 233.6        | 116.8 | 77.9  | 58.4 | 46.7 | 38.9 | 31.6 | 24.3 | 19.2 |
|                                                                                                                                         | Live Load/Deflection | 634.0        | 317.0 | 167.6 | 96.9 | 62.9 | 44.0 | 32.5 | 24.9 | 19.7 |

| 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   | 1028.2       | 322.2 | 143.2 | 80.6 | 51.6 | 35.8 | 26.3 | 20.1 | 15.9 |
|                                                                                                                                        | Live Load/Deflection | 507.2        | 253.6 | 139.5 | 78.5 | 50.2 | 34.9 | 25.6 | 19.6 | 15.5 |
| 2-Span                                                                                                                                 | Negative Wind Load   | 411.3        | 205.6 | 133.4 | 76.5 | 49.4 | 34.5 | 25.4 | 19.5 | 15.4 |
|                                                                                                                                        | Live Load/Deflection | 676.2        | 291.6 | 136.7 | 78.4 | 50.7 | 35.4 | 26.1 | 20.0 | 15.8 |
| 3-Span                                                                                                                                 | Negative Wind Load   | 467.3        | 233.6 | 155.8 | 94.6 | 61.3 | 42.9 | 31.6 | 24.3 | 19.2 |
|                                                                                                                                        | Live Load/Deflection | 634.0        | 317.0 | 167.6 | 96.9 | 62.9 | 44.0 | 32.5 | 24.9 | 19.7 |

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

# Horizon Structural Systems, Inc.

## PRODUCT INFORMATION

## PBR 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 | 171.4 | 96.9  | 62.0 | 43.1 | 31.7 | 24.2 | 19.1 |
|                                                                                                                                         | Live Load/Deflection | 700.3        | 350.2 | 182.5 | 102.6 | 65.7 | 45.6 | 33.5 | 25.7 | 20.3 |
| 2-Span                                                                                                                                  | Negative Wind Load   | 205.6        | 102.8 | 68.5  | 51.4  | 41.1 | 34.3 | 29.4 | 25.5 | 20.2 |
|                                                                                                                                         | Live Load/Deflection | 933.8        | 360.4 | 166.6 | 95.1  | 61.3 | 42.7 | 31.5 | 24.1 | 19.1 |
| 3-Span                                                                                                                                  | Negative Wind Load   | 233.6        | 116.8 | 77.9  | 58.4  | 46.7 | 38.9 | 33.4 | 29.2 | 25.2 |
|                                                                                                                                         | Live Load/Deflection | 875.4        | 437.5 | 205.3 | 117.9 | 76.2 | 53.2 | 39.2 | 30.1 | 23.8 |

| 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       | 387.8 | 172.3 | 96.9  | 62.0 | 43.1 | 31.7 | 24.2 | 19.1 |
|                                                                                                                                        | Live Load/Deflection | 700.3        | 350.2 | 182.5 | 102.6 | 65.7 | 45.6 | 33.5 | 25.7 | 20.3 |
| 2-Span                                                                                                                                 | Negative Wind Load   | 411.3        | 205.6 | 137.1 | 100.4 | 64.8 | 45.2 | 33.3 | 25.5 | 20.2 |
|                                                                                                                                        | Live Load/Deflection | 933.8        | 360.4 | 166.6 | 95.1  | 61.3 | 42.7 | 31.5 | 24.1 | 19.1 |
| 3-Span                                                                                                                                 | Negative Wind Load   | 467.3        | 233.6 | 155.8 | 116.8 | 80.5 | 56.2 | 41.5 | 31.8 | 25.2 |
|                                                                                                                                        | Live Load/Deflection | 875.4        | 437.5 | 205.3 | 117.9 | 76.2 | 53.2 | 39.2 | 30.1 | 23.8 |

\*\* = 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.