

PRODUCT EVALUATION REPORT
Corle Building Systems

R / PBR (24 Gauge Grade 50) Through Fastened Roof Panel

Florida Product Approval Number: FL6278.1

Category: Structural Components
Sub-Category: Roof Deck

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

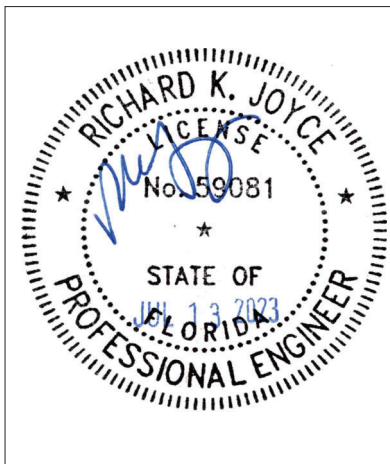
Large Missile Impact Rated

Product Manufacturer:
Corle Building Systems
404 Sarah Furnace Road
Imler, PA 16655

Engineer Evaluator
R. Keith Joyce, P.E., Florida 59081

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

Contents
Evaluation Report Pages 1-5 Dated 07-03-2023



Compliance Statement

The product described in this report has demonstrated compliance with the 2023 (8th Edition) Florida Building Code Sections 1504.3.2, 1504.7, 1507.4 and 2210.1.

Product Description

R / PBR Through Fastened structural roof panels applied over open framing:

1. R / PBR 24 Gauge Grade 50
(0.0236 Sheet Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi 12-12 Fastener Spacing
2. R / PBR 24 Gauge Grade 50
(0.0236 Sheet Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi 5-7-5 Fastener Spacing

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.

Minimum Roof Slope

Minimum roof slope of ½:12 shall comply with the 2023 (8th Edition) Florida Building Code, Including Section 1507.4.2 and in accordance with the Manufacturers recommendations. For slopes less than 3:12 lap sealant must be used at all side laps.

Insulation

Manufacturer's approved products (optional)

Fire Classification

Fire Classification is outside the scope of this evaluation

Shear Diaphragm

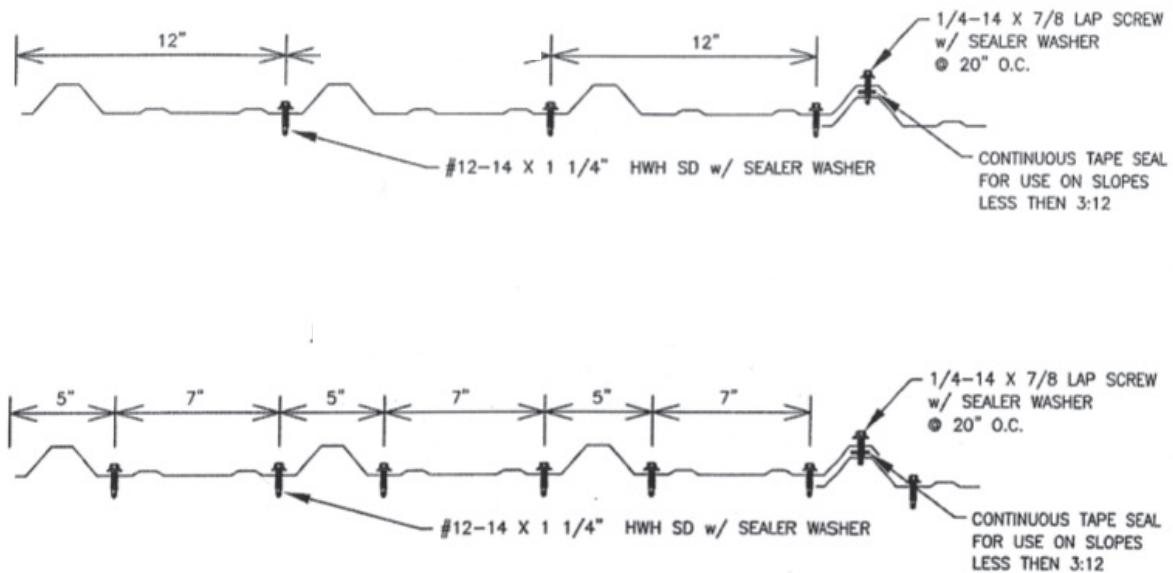
Shear Diaphragm is outside the scope of this evaluation

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.

R or PBR Panel Fastener Patterns

TYPICAL FASTENER PATTERN

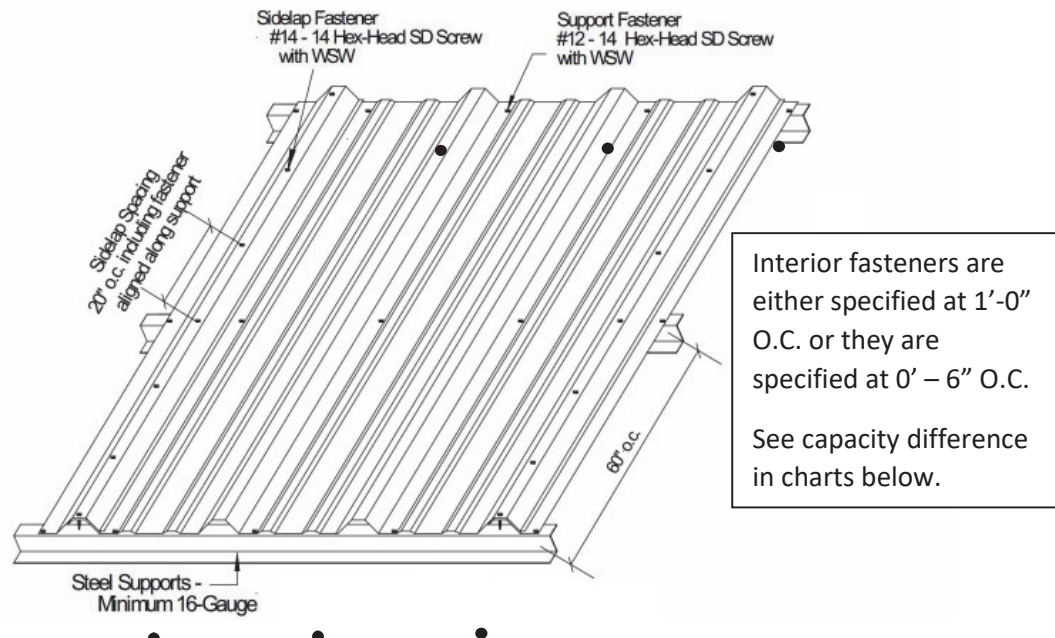


Notes:

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.

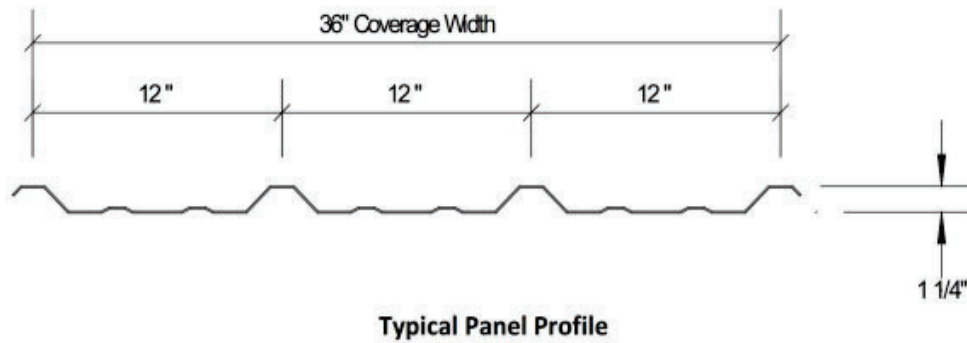
Corle Building Systems

"R/PBR Panel" 24 Ga. Steel Roof Panel attached to Steel Supports



Interior fasteners are either specified at 1'-0" O.C. or they are specified at 0' - 6" O.C.

See capacity difference in charts below.



R / PBR				Section Properties					
Panel Gauge	F_y	F_u	Weight	Negative Bending			Positive Bending		
				I_{xe}	S_{xe}	M_{axo}	I_{xe}	S_{xe}	M_{axo}
	Ksi	Ksi	psf	in ⁴	in ³	Kip-in	in ⁴	in ³	Kip-in
24	50	65	1.11	0.0450	0.0614	1.84	0.0577	0.0588	1.76

Notes:

1. All calculations for section properties of R panels are calculated in accordance with the 2016 edition North American Specification for Cold-Formed Members with Supplement 2 (2020).
2. I_{xe} is for deflection calculations.
3. S_{xe} is for bending calculations.
4. M_{axo} is for allowable bending moment calculations.
5. All values are for one foot of panel width.

The engineering data contained herein is for the express use of the customers of Corle Building Systems and qualified design professionals.

Span Load Table

24 Ga. panel (0.0236")

R / PBR (24 Gauge Grade 50)				Allowable Gravity Loads			
Span Type	Span (ft.)						
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Single	293	188	130	96	73	58	47
2 - Span	291	190	133	98	76	60	49
3 - Span	357	234	165	122	94	75	61
R / PBR (24 Gauge Grade 50) Allowable Wind Loads (Interior Fasteners 12-12)							
Span Type	Span (ft.)						
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Single	257	196	136	100	77	61	47
2 - Span	103	82	69	59	51	46	41
3 - Span	117	93	78	67	58	52	47
R / PBR (24 Gauge Grade 50) Allowable Wind Loads (Interior Fasteners 5-7-5)							
Span Type	Span (ft.)						
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Single	306	196	136	100	77	61	47
2 - Span	206	165	128	94	72	57	47
3 - Span	234	187	156	117	90	71	58

Notes:

1. Allowable loads are based on uniform span lengths and uniformly distributed load.
2. Live Load is limited by bending, shear, combined bending & shear, and web crippling.
3. Negative Wind Load does not include a 33.33% increase and does consider pull-over and pull-out on a minimum 16 gauge supporting member. (0.06" – $F_y = 55$ ksi and $F_u = 70$ ksi supporting members).
4. Above loads are computed for a maximum total deflection of $L/120$.
5. The weight of panels must be deducted or added to the table values indicated above.
6. The material is subject to change without notice.
7. These data have been developed in accordance with the 2016 version of the North American Specification for Cold-Formed Steel Structural Members with Supplement 2 (2020).
8. The engineering data contained herein is for the express use of the customer of Corle Building Systems and qualified design professionals.