

**EVALUATION REPORT OF
SBI METAL BUILDINGS
'PBR PANEL'**

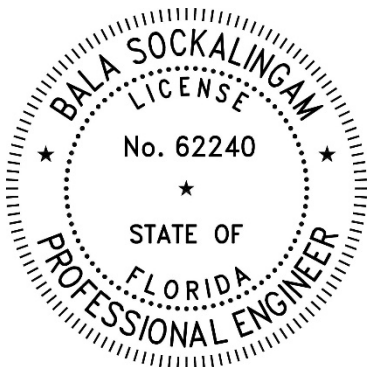
**FLORIDA BUILDING CODE 8TH EDITION (2023)
FLORIDA PRODUCT APPROVAL
FL 41792.1-R1
STRUCTURAL COMPONENTS
ROOF DECK**

**Prepared For:
SBI Metal Buildings
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**This report consists of
Evaluation Report (3 Pages including cover)
Installation Details (1 Page)
Load Span Table (1 Page)**

**Report No. C2698-1
Date: 7.28.2023**



This item has been digitally signed and sealed by Bala Sockalingam, PE, on the date indicated.

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Manufacturer:	SBI Metal Buildings
Product Name:	PBR
Panel Description:	36" wide coverage with (4) 1-1/2" high ribs
Materials:	Min. 26 ga., 80 ksi steel or min. 24 ga., 50 ksi steel. Galvanized coated steel (ASTM A653) or Galvalume coated steel (ASTM A792) or painted steel (ASTM A755). Corrosion resistant as per FBC 2023 Section 1507.4.3.
Support Description:	Min. 16 ga., 50 ksi steel section.
Slope:	1/2:12 or greater in accordance with FBC 2023 Section 1507.4.2. Requires applied lap sealant for roof slopes less than 3:12.
Design Uplift Pressure:	The allowable uniform loads shown on the load span table were determined in accordance with FBC 2023 Section 1504.3.2 and 2210.1 and AISI S100-16(2020) w/S2-20. Purlin, frames and support connections must be designed to resist all loads.
Panel Attachment:	#12-14 x 1-1/4" long self-drilling screws with washer. Fasteners are corrosion resistant as per FBC 2023 Section 1507.4.4.
At panel ends	7"-5"-7" o.c. across panel width
At intermediate	12" o.c. across panel width
Sidelap Attachment:	1/4"-14 x 7/8" long self-drilling screws with washer at 20" o.c. Fasteners are corrosion resistant as per FBC 2023 Section 1507.4.4.
Test Standards:	Roof assembly tested in accordance with FM 4470 (2016) Section 4.6 'Resistance to Foot Traffic'
Code Compliance:	The product described herein has demonstrated compliance with FBC 2023 Section 1507.4.
Product Limitations:	Design wind loads shall be determined for each project in accordance with FBC 2023 Section 1609 or ASCE 7-22 using allowable stress design. The design pressure for reduced support spacing may be computed using rational analysis prepared by a Florida Professional Engineer or based on SBI load span table. This evaluation report is not applicable in High Velocity Hurricane Zone. Fire classification is not within the scope of this Evaluation Report. Refer to FBC 2023 Section 1505 and current approved roofing materials directory or ASTM E108/UL790 report from an accredited laboratory for fire ratings of this product.

Supporting Documents: FM 4470 Test Report
ENCON Technology Inc.
C2591-1, Reporting Date 11/17/2022

Section Properties: SBI PBR Panel											
Gauge	Thickness in.	Weight psf	Yield Stress ksi	Allowable Shear V_a kips/ft	Moment of Inertia I_x in ⁴ /ft	Top in Compression (Positive Bending)			Bottom in Compression (Negative Bending)		
						I_{xe} in ⁴ /ft	S_{xe} in ³ /ft	M_a in.kips/ft	I_{xe} in ⁴ /ft	S_{xe} in ³ /ft	M_a in.kips/ft
26	0.0190	0.905	80	0.88	0.0527	0.044	0.045	1.606	0.034	0.050	1.791
24	0.0236	1.124	50	1.14	0.0667	0.060	0.062	1.857	0.046	0.063	1.896

Notes on Section Properties:

1. Section properties and allowables are calculated in accordance with North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition (Reaffirmed 2020), with Supplement 2, 2020 Edition.
2. I_x is full moment of inertia, I_{xe} +/- & S_{xe} +/- are effective moment of inertia and section modulus
3. M_a is allowable bending moment and V_a is allowable shear.
4. All values are for one foot of panel width.
5. Minimum deliverable bare steel thickness should not be less than 0.95 of design thickness.

Allowable Reactions Based on Web Crippling Strength

Ga.	Minimum Bearing Length (in)	Allowable reaction load at support (kips/ft)	
		End	Interior
26	2.5	0.207	0.302
24		0.257	0.379

Ga.	Support Width (in)	Allowable Live Loads (lb/ft ²)								
		Span (ft)								
		2	2.25	2.5	3	3.5	4	4.5	5	5.5
26	2.5	132.1	117.4	105.7	88.1	75.5	66.1	58.7	52.8	45.4
24		165.8	147.4	132.6	110.5	94.7	82.9	71.8	58.3	48.3
Ga.	Support Thickness	Allowable Uplift Loads (lb/ft ²)								
		Span (ft)								
		2	2.25	2.5	3	3.5	4	4.5	5	5.5
26	16 Ga.	122.0	108.5	97.6	81.4	69.7	61.0	54.2	48.8	40.8
	14 Ga.	137.4	122.1	109.9	91.6	78.5	68.7	60.6	49.3	40.8
24	16 Ga.	122.0	108.5	97.6	81.4	69.7	61.0	54.2	48.8	44.4
	14 Ga.	137.4	122.1	109.9	91.6	78.5	68.7	61.0	54.9	47.3

Notes on Load Table:

1. Allowable load based on stress is the smallest load due to bending, shear and combined bending and shear, web crippling (live), fastener capacity (uplift) and deflection limit of L/180.
2. These loads are for panel strength and fastener capacity (#12-14 SDS). Purlins, frames and all support connections must be designed to resist all loads imposed on the panel.
3. For roof panels, self weight of the panel has to be deducted from the allowable inward load to arrive at the actual 'live load' carrying capacity of the panel.
4. Panels must be installed as per Evaluation Report FL 41792.1 and SBI's current installation procedure.