

PRODUCT EVALUATION REPORT
Chief Buildings, Inc.

CS Panel Through Fastened Roof Panel over Open Framing

Florida Product Approval Number FL16583.1

Category: Structural Components

Sub-Category: Roof Deck

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

NON-HVHZ

Product Manufacturer

Chief Buildings, Inc.
PO Box 2078
3942 W. Old Highway 30
Grand Island, Nebraska 68802

Manufacturing Location

Chief Buildings, Inc.
1225 E Maple St, Rensselaer, Indiana 47978

Engineer Evaluator

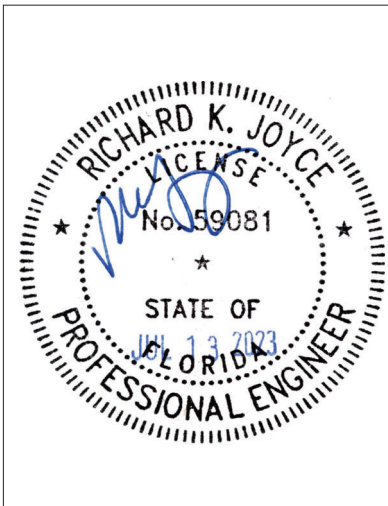
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Validator

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Evaluation Report Pages 1-6 Dated 07-03-2023



Compliance Statement

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

AP Panel Through Fastened structural panels applied over open framing:

1. CS, 26 Gauge (0.0181 Design Thickness) with a minimum $F_y = 80$ ksi and $F_u = 82$ ksi
2. CS, 24 Gauge (0.0230 Design Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi
3. CS, 22 Gauge (0.0293 Design Thickness) with a minimum $F_y = 50$ ksi and $F_u = 65$ ksi

Panel Material Standard

Formed steel in compliance with the 2023 (8th Edition) Florida Building Code Section 1507.4.3 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 open framing.

Framing must be designed in accordance with the 2023 (3th 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 shall be 1/2:12 in compliance with the 2023 (8th Edition) Florida Building Code, Including Section 1507.4.2 and in accordance with the manufacturers recommendations.

Insulation

Manufacturer's approved products (optional)

Fire Classification

Fire Classification is outside the scope of this evaluation

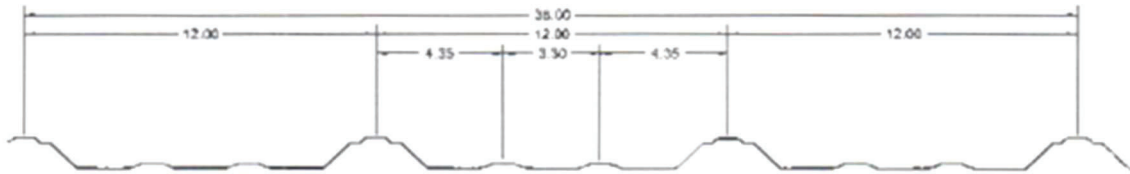
Shear Diaphragm

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.

CS Panel Profile



CS Panel 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		in ⁴	in ³	Kip-in	in ⁴	in ³	Kip-in
22	50	65	1.38	0.0467	0.0410	2.05	0.0600	0.0443	2.22
24			1.08	0.0340	0.0318	1.59	0.0477	0.0348	1.74
26	60*	61.5*	0.85	0.0250	0.0244	1.47	0.0360	0.0262	1.57

* = F_y is 80 ksi, F_u is 82 ksi reduced to F_y = 60 ksi, F_u = 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 of CS 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 Chief Buildings and qualified design professionals.

22 Ga. panel (0.0293") 12-12 Fastening Pattern $F_y = 50$ ksi

CS (22 Gauge)		Allowable Wind Pressure Loads								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	372	238	165	121	93	73	59	49	41	35
2 - Span	327	212	149	110	84	67	54	45	38	32
3-Span	401	262	184	137	105	83	68	56	47	40

CS (22 Gauge)		Allowable Wind Suction Loads (Interior Fasteners 1'-0" O.C.)								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	298	219	152	112	85	67	55	45	38	32
2 - Span	119	95	79	68	60	53	48	43	40	35
3-Span	135	108	90	77	68	60	54	49	45	42

22 Ga. panel (0.0293") 5-7-5 Fastening Pattern $F_y = 50$ ksi

CS (22 Gauge)		Allowable Wind Pressure Loads								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	372	238	165	121	93	73	59	49	41	35
2 - Span	327	212	149	110	84	67	54	45	38	32
3-Span	401	262	184	137	105	83	68	56	47	40

CS (22 Gauge)		Allowable Wind Suction Loads (Interior Fasteners 5''-7''-5'' O.C.)								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	342	219	152	112	85	67	55	45	38	32
2 - Span	238	190	159	119	92	73	59	49	41	35
3-Span	270	216	180	148	114	90	73	61	51	44

24 Ga. panel (0.0230") 12-12 Fastening Pattern $F_y = 50$ ksi

CS (24 Gauge)			Allowable Wind Pressure Loads							
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	290	186	129	95	73	57	46	38	32	27
2 - Span	254	165	116	85	66	52	42	35	29	25
3-Span	312	204	143	106	82	65	52	43	37	31

CS (24 Gauge)			Allowable Wind Suction Loads (Interior Fasteners 1'-0" O.C.)							
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	265	170	118	87	66	52	42	35	29	25
2 - Span	119	95	79	68	60	53	46	38	32	27
3-Span	135	108	90	77	68	60	54	47	40	34

24 Ga. panel (0.0230") 5-7-5 Fastening Pattern $F_y = 50$ ksi

CS (24 Gauge)		Allowable Wind Pressure Loads								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	290	186	129	95	73	57	46	38	32	27
2 - Span	254	165	116	85	66	52	42	35	29	25
3-Span	312	204	143	106	82	65	52	43	37	31

CS (24 Gauge)		Allowable Wind Suction Loads (Interior Fasteners 5''-7''-5'' O.C.)								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	265	170	118	87	66	52	42	35	29	25
2 - Span	238	180	126	93	72	57	46	38	32	27
3-Span	270	216	156	116	89	71	57	47	40	34

26 Ga. panel (0.0181") 12-12 Fastening Pattern $F_y = 80$ ksi

CS (26 Gauge)			Allowable Wind Pressure Loads							
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	262	167	116	85	65	52	42	35	29	25
2 - Span	231	151	106	78	60	48	39	32	27	23
3-Span	283	186	131	97	75	59	48	40	34	29

CS (26 Gauge)			Allowable Wind Suction Loads (Interior Fasteners 1'-0" O.C.)							
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	244	156	109	80	61	48	39	32	27	23
2 - Span	116	93	78	67	58	51	41	34	29	25
3-Span	132	106	88	76	66	59	52	43	36	31

26 Ga. panel (0.0181") 5-7-5 Fastening Pattern $F_y = 80$ ksi

CS (26 Gauge)		Allowable Wind Pressure Loads								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	262	167	116	85	65	52	42	35	29	25
2 - Span	231	151	106	78	60	48	39	32	27	23
3-Span	283	186	131	97	75	59	48	40	34	29

CS (26 Gauge)		Allowable Wind Suction Loads (Interior Fasteners 5''-7''-5'' O.C.)								
Span Type	Span (ft.)									
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
Single	244	156	109	80	61	48	39	32	27	23
2 - Span	220	161	113	84	64	51	41	34	29	25
3-Span	250	197	139	104	80	63	52	43	36	31

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 $L/60$.
5. The weight of panels has already been deducted from the allowable loads shown 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).

The engineering data contained herein is for the express use of the customer of Chief Buildings and qualified design professionals