

PRODUCT EVALUATION REPORT
Corle Building Systems, Inc.

Seam-Lok Standing Seam Metal Roof Assembly

Florida Product Approval Number: FL6278.4

Category: Structural Components

Sub-Category: Roof Deck

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

Product Manufacturer:

**Corle Building Systems
404 Sarah Furnace Road
Imler, PA 16655**

Engineer Evaluator

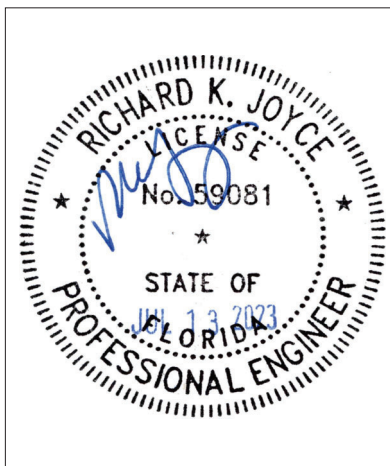
R. Keith Joyce, P.E. 59081

Validator

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

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Evaluation Report Pages 1-8 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

Seam-Lok Roof Deck panels applied over open framing using concealed clips:

1. Seam-Lok 24" - 24 gauge (0.0236" steel thickness) with a minimum $F_y = 50$ ksi, $F_u = 65$ ksi
2. Seam-Lok 24" - 22 gauge (0.0290" steel thickness) with a minimum $F_y = 50$ ksi, $F_u = 65$ ksi
3. Seam-Lok 18" - 24 gauge (0.0236" steel thickness) with a minimum $F_y = 50$ ksi, $F_u = 65$ ksi
4. Seam-Lok 18" - 22 gauge (0.0290" steel thickness) with a minimum $F_y = 50$ ksi, $F_u = 65$ ksi

Panel Material Standard

Formed steel in compliance with the 2023 (8th Edition) Florida Building Code Section 1507.4.3 with optional painted finish.

Roof Panel Clips

Product Name: KC-480 or KC-485
Type: Sliding Standing Seam Clips
Corrosion Resistance: Per 2023 (8th Edition) Florida Building Code 1507.4.3(2)

Panel Fastener

(2) 1/4 – 14 HWH SD per clip 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

Scope of Evaluation Report

This Product Evaluation is limited to compliance with the 2023 (8th Edition) Florida Building Code wind load as it relates to Rule 61G20-3.005(3)

Reference Data

1. ASTM E1592-05
Farabaugh Engineering and Testing Report Number T192-13
2. FM4470 Section 5.5 Foot Traffic Resistance Test

Minimum Roof Slope

Minimum roof slope shall be ¼:12 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.

Reference Standards:

AISI S100 - 2016 North American Specification for the design of Cold-Formed Steel Structural Members with Supplement 2 (2020).

UL 580 – 2006

Basis of Evaluation:

Structural load carrying capacity for uplift is based on ASTM E1592 Testing.

Structural load carrying capacity for gravity is based on rational analysis through application of AISI S100-2016 N.A. Specifications.

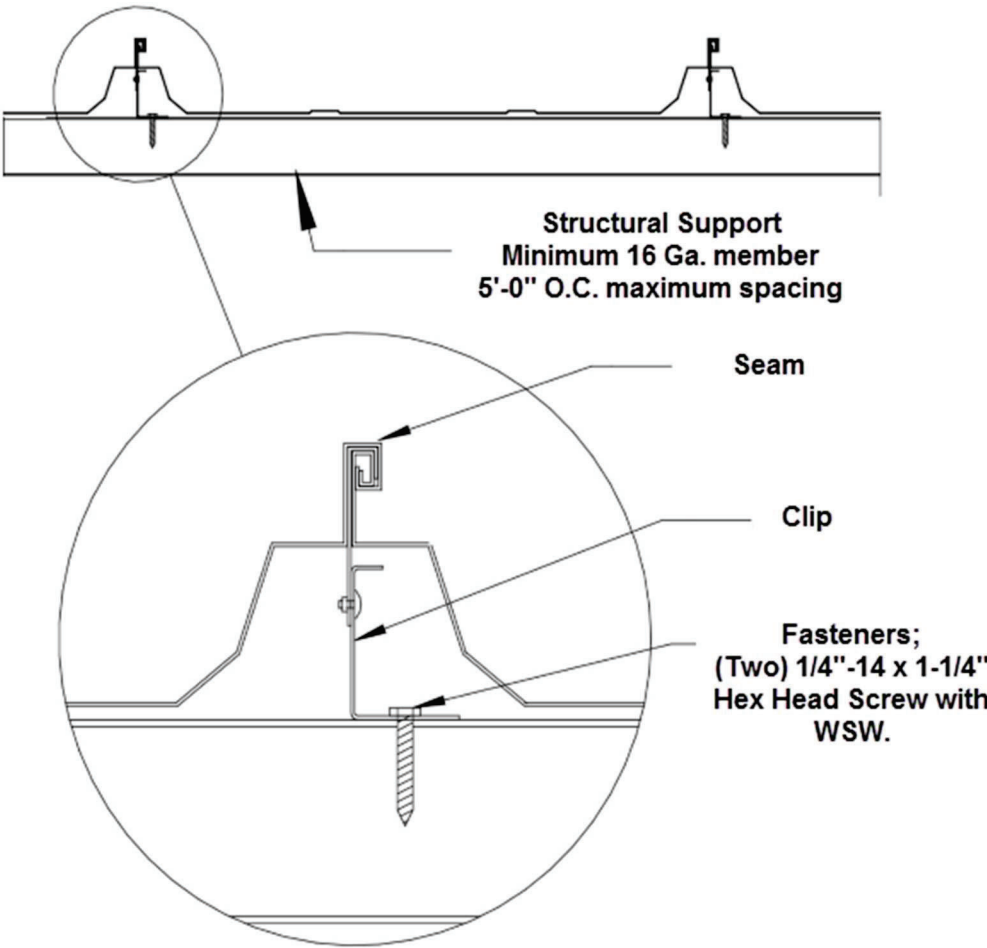
Limitations and Conditions of use for NON-HVHZ:

1. This Compliance is not for HVHZ.
2. Maximum roof component gravity load are per the load tables.
3. The panels are to be installed over open framing in accordance with the load tables, installation details and UL construction number 287.
4. The use of panels as a shear diaphragm is outside the scope of this product approval.
5. Minimum installed roof slope is 0.25:12.

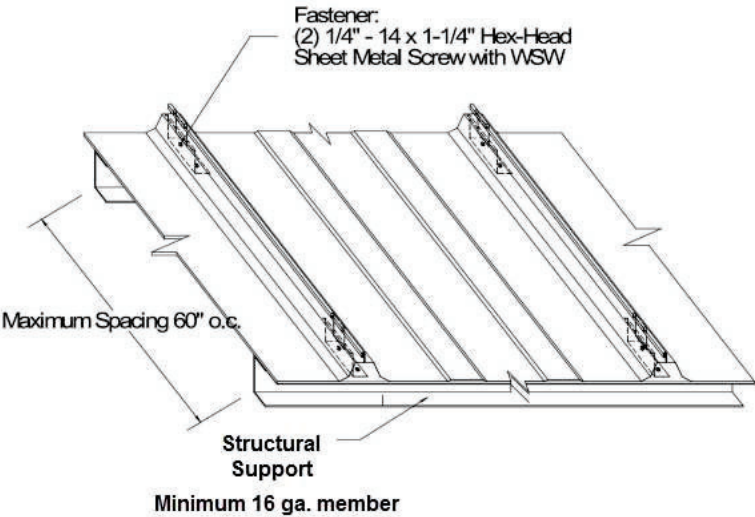
Technical Documentation:

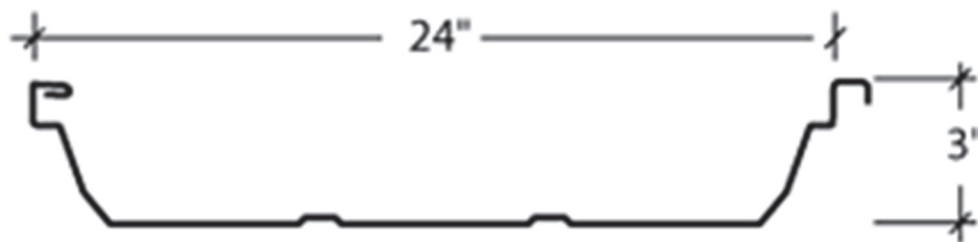
1. Allowable Gravity and Uplift Load Tables
2. Installation Details

Seam-Lok



Seam-Lok





Seam-Lok 24" Panel				Section Properties					
Panel Gauge	Fy	Fu	Weight	Negative Bending			Positive Bending		
				Ixe	Sxe	Maxo	Ixe	Sxe	Maxo
	ksi	Ksi	Psf	In ⁴	In ³	Kip-in	In ⁴	In ³	Kip-in
24	50	65	1.20	0.303	0.1873	5.608	0.622	0.2561	7.667
22			1.53	0.403	0.2441	7.308	0.791	0.3260	9.760

Note: Section Properties shown are for one full panel width (24").

Seam-Lok 24" Panel (24 Gauge)			Allowable Gravity Load				
Span Type	Span (ft)						
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Single	331	265	221	189	160	126	102
2 Span	287	189	133	99	76	60	49
3-Span	347	231	164	122	94	75	61

Seam-Lok 24" Panel (22 Gauge)			Allowable Gravity Load				
Span Type	Span (ft)						
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Single	331	265	221	189	166	147	125
2 Span	375	246	174	129	99	79	64
3-Span	234	187	156	134	117	104	93

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 Corle Building Inc. and qualified design professionals.

**Allowable Uplift Load
24" Seam-Lok 24 Gauge**

Span	ASTM E1592 Test Value (PSF)	Allowable Uplift (PSF)
1'-0"	190.67	109.58
1'-6"		94.30
2'-0"		79.03
2'-6"	110.93	63.75
3'-0"		59.17
3'-6"		54.59
4'-0"		50.01
4'-6"		45.43
5'-0"	71.07	40.84

Notes:

1. Test results are highlighted.
2. The above loads are for use with HW-2122, HW-2124, HW-2126, HW-2128 and HW-2129
3. Allowable loads are based on uniform span length and uniformly distributed loads.
4. Weight of the panel has already been included in the above allowable uplift load.
5. This material is subject to change without notice.
6. Design Load is computed using a 1.74 factor of safety as allowed by AISI S100—16.
7. These tables do not consider fastener pull-out. Clip attachment must be designed separately.

24" Seam-Lok 22 Gauge

Span	ASTM E1592 Test Value (PSF)	Allowable Uplift (PSF)
1'-0"	223.60	126.23
1'-6"		112.29
2'-0"		98.26
2'-6"	149.07	84.22
3'-0"		78.93
3'-6"		73.64
4'-0"		68.36
4'-6"		63.07
5'-0"	102.27	57.78

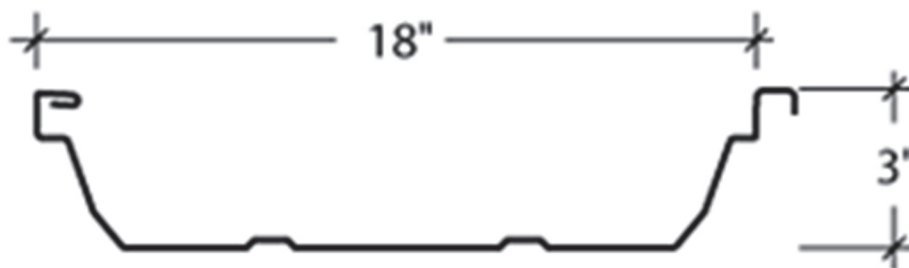
Notes:

1. Test results are highlighted.
2. The above loads are for use with HW-2122, HW-2124, HW-2126, HW-2128 and HW-2129
3. Allowable loads are based on uniform span length and uniformly distributed loads.
4. Weight of the panel has already been included in the above allowable uplift load.
5. This material is subject to change without notice.
6. Design Load is computed using a 1.77 factor of safety as allowed by AISI S100—16.
7. These tables do not consider fastener pull-out. Clip attachment must be designed separately.

CORLE BUILDINGS

Product Information

Seam-Lok Panel



Seam-Lok 18" Panel				Section Properties					
Panel Gauge	Fy	Fu	Weight	Negative Bending			Positive Bending		
	ksi	Ksi		I _{xe}	S _{xe}	Maxo	I _{xe}	S _{xe}	Maxo
24	50	65	1.28	0.305	0.1875	5.614	0.562	0.2461	7.368
22			1.63	0.405	0.2442	7.310	0.714	0.3132	9.379

Note: Section Properties shown are for one full panel width (18").

Seam-Lok 18”Panel (24 Gauge)			Allowable Gravity Load				
Span Type	Span (ft)						
	2’-0”	2’-6”	3’-0”	3’-6”	4’-0”	4’-6”	5’-0”
Single	331	265	221	189	166	147	131
2 Span	287	189	133	99	76	61	49
3-Span	234	187	156	134	117	96	78

Seam-Lok 18" Panel (22 Gauge)			Allowable Gravity Load				
Span Type	Span (ft)						
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Single	331	265	221	189	166	147	132
2 Span	373	246	173	129	99	79	64
3-Span	234	187	156	134	117	104	93

Notes:

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

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CORLE BUILDINGS

Product Information

Seam-Lok Panel

18" Seam-Lok 24 Gauge

Span	ASTM E1592 Test Value (PSF)	Allowable Uplift (PSF)
2'-0"	208.00	116.85
2'-6"		96.89
3'-0"	146.93	76.93
3'-6"		71.33
4'-0"		65.73
4'-6"		60.13
5'-0"	97.07	54.53

Notes:

1. Test results are highlighted.
2. The above loads are for use with HW-2122, HW-2124, HW-2126, HW-2128 and HW-2129
3. Allowable loads are based on uniform span length and uniformly distributed loads.
4. Weight of the panel has already been included in the above allowable uplift load.
5. This material is subject to change without notice.
6. Design Load is computed using a 1.78 factor of safety as allowed by AISI S100—16.
7. These tables do not consider fastener pull-out. Clip attachment must be designed separately.

18" Seam-Lok 22 Gauge

Span	ASTM E1592 Test Value (PSF)	Allowable Uplift (PSF)
2'-0"	230.53	129.51
2'-6"		123.18
3'-0"	208.00	116.85
3'-6"		104.68
4'-0"		92.51
4'-6"		80.34
5'-0"	121.34	68.17

1. Test results are highlighted.
2. The above loads are for use with HW-2122, HW-2124, HW-2126, HW-2128 and HW-2129
3. Allowable loads are based on uniform span length and uniformly distributed loads.
4. Weight of the panel has already been included in the above allowable uplift load.
5. This material is subject to change without notice.
6. Design Load is computed using a 1.78 factor of safety as allowed by AISI S100—16.
7. These tables do not consider fastener pull-out. Clip attachment must be designed separately.