

**EVALUATION REPORT OF
TRIDENT BUILDING SYSTEMS, LLC'S
'SURLOK ROOF PANELS'**

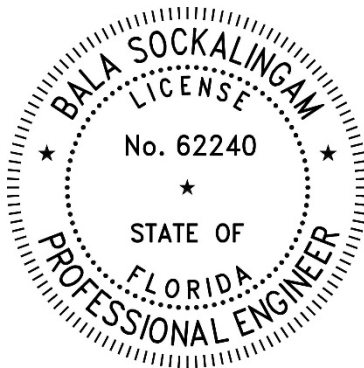
**FLORIDA BUILDING CODE 8TH EDITION (2023)
FLORIDA PRODUCT APPROVAL
FL 42189.1
STRUCTURAL COMPONENTS
ROOF DECK**

**Prepared For:
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**This report consists of
Evaluation Report (3 Pages including cover)
Installation Details (2 Pages)
Load Span Tables (2 Pages)**

**Report No. C2668-1
Date: 7.28.2023**



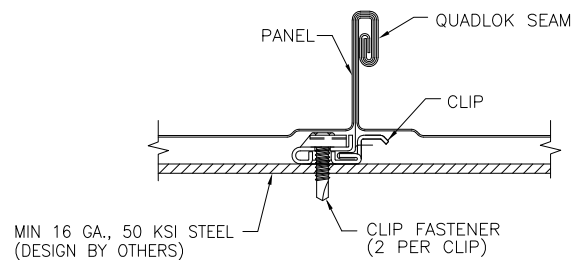
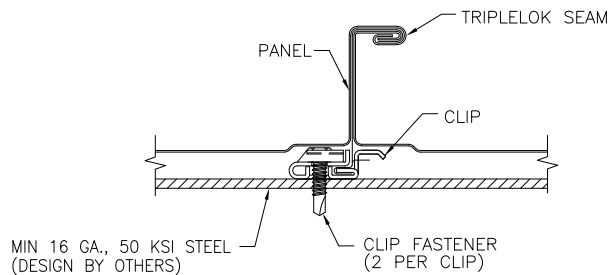
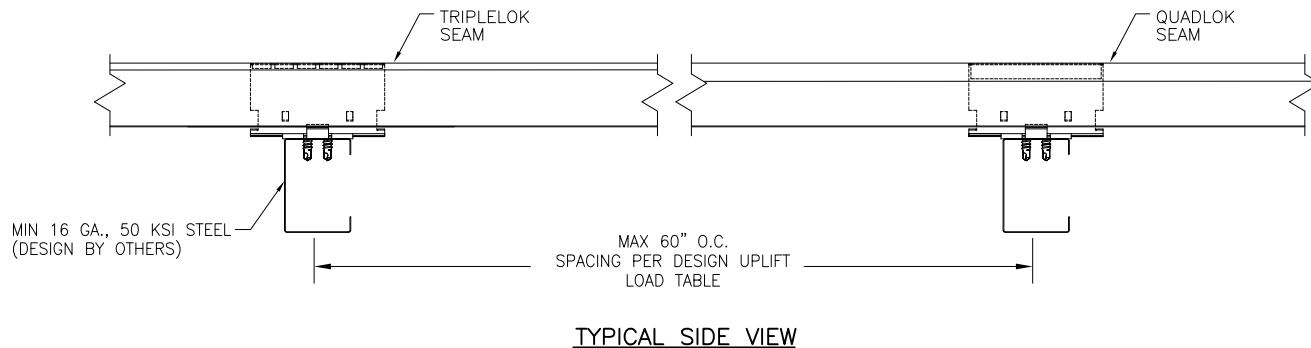
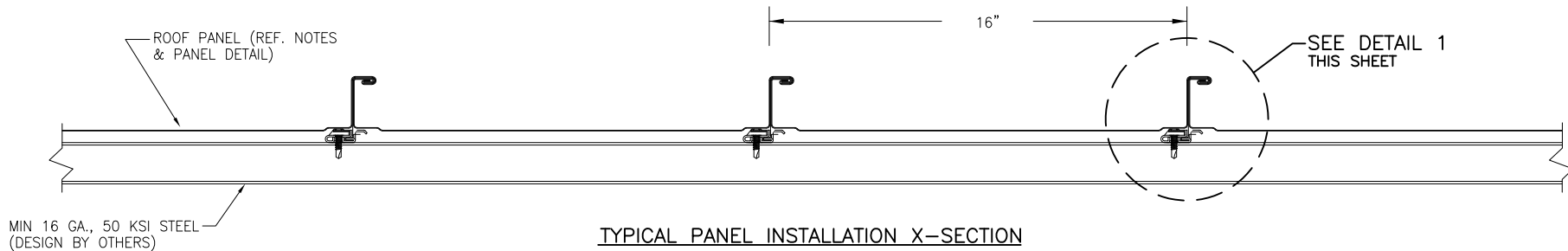
This item has been digitally signed and sealed by Bala Sockalingam, PE, on the date indicated.

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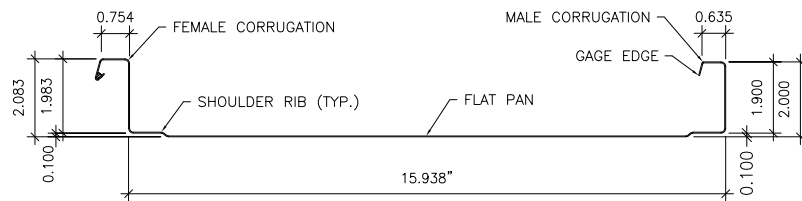
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Manufacturer:	Trident Building Systems, LLC
Product Name:	SurLok Roof Panel
Panel Description:	Standing seam panel with 16" wide coverage and 2" high ribs
Materials:	Min 24 ga. with galvalume coated steel (ASTM A792) ($F_y = 50$ ksi). Corrosion resistant as per FBC 2023 Section 1507.4.3.
Support Description:	Min. 16 ga., 50 ksi steel section (Must be designed by others)
Slope:	1/4:12 or greater in accordance with FBC 2023 Section 1507.4.2
Design Uplift Pressure:	Min. 24 ga. SurLok Roof Panel with MC 1200 or FC 11200 Series Clips 136.4 psf at support spacing of 24" o.c. with TripleLok™ Seam 56.6 psf at support spacing of 60" o.c. with TripleLok™ Seam 191.3 psf at support spacing of 24" o.c. with QuadLok™ Seam 78.8 psf at support spacing of 60" o.c. with QuadLok™ Seam Min. 24 ga. SurLok Roof Panel with MPS 1200 Series Clips 210.6 psf at support spacing of 24" o.c. with TripleLok™ Seam 92.0 psf at support spacing of 60" o.c. with TripleLok™ Seam 235.0 psf at support spacing of 24" o.c. with QuadLok™ Seam 98.2 psf at support spacing of 60" o.c. with QuadLok™ Seam The allowable uplift loads were determined from ASTM E1592 testing and are applicable for the panel and panel to clip connection. Clip fastener, purlin, frames and support connections must be designed to resist all loads. The factors of safety were determined in accordance with FBC 2023 Section 1504.9, ASTM E1592 test standard and the procedures of Section I6.3.1, K2.1.1 and K2.1.2 of the AISI S100-16(2020) w/S2-20.
Panel Attachment:	MC, FC or MPS clip with (2) 1/4"-14 x 1-1/2" long SDS per clip. Clips and fasteners are corrosion resistant as per FBC 2023 Section 1506.7 and 1507.4.4, respectively.
Test Standards:	Roof assembly tested in accordance with ASTM E1592-95, E1592-01, E1592-05(2012) & E1592-05(2017) 'Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference' and FM 4470 Section 5.5 'Resistance to Foot Traffic'.

Test Equivalency:	The test procedures in ASTM E1592-95, E1592-01 and E1592-05(2012) comply with test procedures prescribed in ASTM E1592-05(2017). The test procedures in FM 4470 (1992) comply with test procedures prescribed in 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 maximum support spacing listed herein shall not be exceeded. The design pressure for reduced clip spacing may be computed using rational analysis prepared by a Florida Professional Engineer or based on Trident's load span tables. This evaluation report is not applicable in High Velocity Hurricane Zone. Fire classification is not within 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:	ASTM E1592 Test Reports ENCON Technology Inc. C1432-1 & 2, Reporting Date 12/28/2005 C2518-1 & 2, Reporting Date 11/30/2021 C2389-1, Reporting Date 11/24/2021 FM 4470 Test Report ENCON Technology Inc. C1669-1, Reporting Date 9/30/2009 (Trident Building Systems is authorized to use Building Research System's Test Reports)



**CLIP SECTION VIEW
DETAIL 1**



PANEL SECTION
(24 OR 22 GA.)

GENERAL NOTES:

1. STRUCTURAL ROOF PANEL HAS BEEN DESIGNED IN ACCORDANCE WITH FLORIDA BUILDING CODE (FBC).
2. ROOF PANELS SHALL BE 24 GA. ($t = 0.022"$) OR 22 GA. ($t = 0.028"$). EFFECTIVE COVERING WIDTH OF PANEL = 16".
3. THE ROOF PANELS SHALL BE INSTALLED OVER STRUCTURE AS SPECIFIED ON THIS DRAWING.
4. REQUIRED DESIGN WIND LOADS SHALL BE DETERMINED FOR EACH PROJECT. THIS PANEL SYSTEM MAY NOT BE INSTALLED WHEN THE REQUIRED DESIGN WIND LOADS ARE GREATER THAN THE ALLOWABLE DESIGN LOADS.
5. CLIPS AND FASTENERS MUST BE IN ACCORDANCE WITH THESE DRAWINGS & FLORIDA BUILDING CODE. IF A DIFFERENCE OCCURS BETWEEN THE MINIMUM REQUIREMENTS OF THESE DRAWINGS & THE CODE, THE CODE SHALL CONTROL.
6. PURLINS/JOISTS/TRUSSES MUST BE DESIGNED TO WITHSTAND WIND LOADS AS REQUIRED FOR EACH APPLICATION AND ARE THE RESPONSIBILITY OF OTHERS.

DRAWN BY: B.S.		CHECKED BY: S.C.	
PLOT:		DATE: 7/17/2023	
NO.	DATE	BY	REVISION DESCRIPTION
DRAWING TITLE			
SURLOK PANEL			
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MANUFACTURER			
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DRAWING NO.		REV.	
2668-1			
PAGE NO.			
1		OF 2	

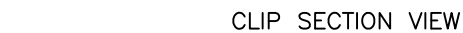


Diagram illustrating the Triple Lok or Quad Lok seam connection. The components shown are:

- PANEL
- PANEL CLIP
- CLIP FASTENER (2 PER CLIP)
- 16 GA. SUPPORT
- TRIPLELOK OR QUADLOK SEAM

CLIP SECTION VIEW



Diagram illustrating the assembly of a panel clip fastener. The components shown are:

- PANEL
- TRIPLELOK OR QUADLOK SEAM
- PANEL CLIP
- 16 GA. SUPPORT
- CLIP FASTENER (2 PER CLIP)

CLIP SECTION VIEW

[illegible]

TRIDENT BUILDING SYSTEMS, LLC
Min. 24 Ga. SurLok Panel Uplift Loads
With MC 1200 or FC 11200 Series Clips

Seam	Span (ft)	Ultimate Load (psf)	Design Load (psf)
TripleLok™	2	232.3	136.4
	2.5		113.3
	3		94.4
	3.5		80.9
	4		70.8
	4.5		62.9
	5	96.5	56.6
QuadLok™	2	326.1	191.3
	2.5		157.6
	3		131.4
	3.5		112.6
	4		98.5
	4.5		87.6
	5	134.7	78.8

Notes:

- The allowable uplift loads were determined from ASTM E1592 testing and are applicable for the panel and panel to clip connection. Clip fastener, purlin, frames and support connections must be designed to resist all loads imposed on the panel.
- The factor of safety was determined in accordance with the procedures of Section I6.3.1, K2.1.1 and K2.1.2 of the AISI S100-16(2020) w/S2-20. The factor of safety for the following tests:
2' 0" span with TripleLok™ Seam = 1.703
5' 0" span with TripleLok™ Seam = 1.704
2' 0" span with QuadLok™ Seam = 1.705
5' 0" span with QuadLok™ Seam = 1.709
- Panels must be installed as per Evaluation Report FL 42189.1 and Trident Buildings current installation procedure.
- MC 1200 Series Clip: MC 1203, MC 1213 & FC 11200 Series Clip: FC11200, FC 11203, FC 11213
- Three or more spans condition.

TRIDENT BUILDING SYSTEMS, LLC
Min. 24 Ga. SurLok Panel Uplift Loads
With MPS 1200 Series Clips

Seam	Span (ft)	Ultimate Load (psf)	Design Load (psf)
TripleLok™	2	358.4	210.6
	2.5		183.9
	3		153.3
	3.5		131.4
	4		115.0
	4.5		102.2
	5	156.7	92.0
QuadLok™	2	400.0	235.0
	2.5		196.5
	3		163.7
	3.5		140.3
	4		122.8
	4.5		109.2
	5	167.5	98.2

Notes:

1. The allowable uplift loads were determined from ASTM E1592 testing and are applicable for the panel and panel to clip connection. Clip fastener, purlin, frames and support connections must be designed to resist all loads imposed on the panel.
2. The factor of safety was determined in accordance with the procedures of Section I6.3.1, K2.1.1 and K2.1.2 of the AISI S100-16(2020) w/S2-20. The factor of safety for the following tests:
2' 0" span with TripleLok™ Seam = 1.702
5' 0" span with TripleLok™ Seam = 1.704
2' 0" span with QuadLok™ Seam = 1.702
5' 0" span with QuadLok™ Seam = 1.705
3. Panels must be installed as per Evaluation Report FL 42189.1 and Trident Buildings current installation procedure.
4. MPS 1200 Series Clip: MPS 1203, 1213
5. Three or more spans condition.