EVALUATION REPORT OF
ALLIANCE STEEL INC.'S
'ALLIANCE SEAM 24 PANELS'

FLORIDA BUILDING CODE 8TH EDITION (2023)
FLORIDA PRODUCT APPROVAL
FL 41984.2-R1
STRUCTURAL COMPONENTS
ROOF DECK

Prepared For:
Alliance Steel, Inc.
3333 South Council Road
Oklahoma City, OK 73179-4410
Telephone: (405) 745 7500

Prepared By:
Bala Sockalingam, Ph.D., P.E.
Florida Professional Engineer #62240
1216 N Lansing Ave., Suite C
Tulsa, OK 74106
Telephone: (918) 492-5992

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

Report No. C2682-2
Date: 8.29.2023

BALA SOCKALINGAM
LICENSE
No. 62240
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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

Printed copies of this document are not considered signed and sealed and this signature must be verified on any electronic copies.

2023.08.29
17:48:47 -05'00'

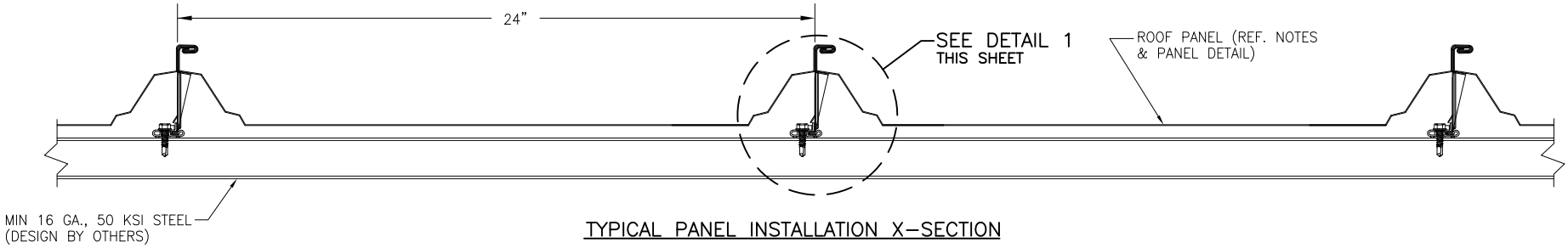
Manufacturer:	Alliance Steel Inc.
Product Name:	Alliance Seam 24
Panel Description:	Standing seam panel with 24" wide coverage and 3" high ribs
Materials:	Min 24 or 22 ga. with galvalume coated steel (ASTM A792) or painted steel (ASTM A755) (F_y = 50 ksi). Corrosion resistant as per FBC 2023 Section 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:	Allowable uplift loads are shown in the load span tables for 24 and 22 ga. panels with RollLok, TripleLok and Quadlok Seams fastened with MPS 600, FC 600 or BA Series clips. Maximum panel span is 5'. 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:	MPS 600, FC 600 or BA Series clips with minimum (2) 1/4"-14 x 1-1/2" SDS per clip at each support. 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 E1592-98 or E1592-01 '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 E1592-98 or E1592-01 comply with test procedures prescribed in ASTM E1592-05(2017). The test procedure in FM 4470 (1992) comply with test procedure 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 panel span listed herein shall not be exceeded.

The design uplift pressure for reduced panel span may be computed using rational analysis prepared by a Florida Professional Engineer or based on Alliance Steel'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.

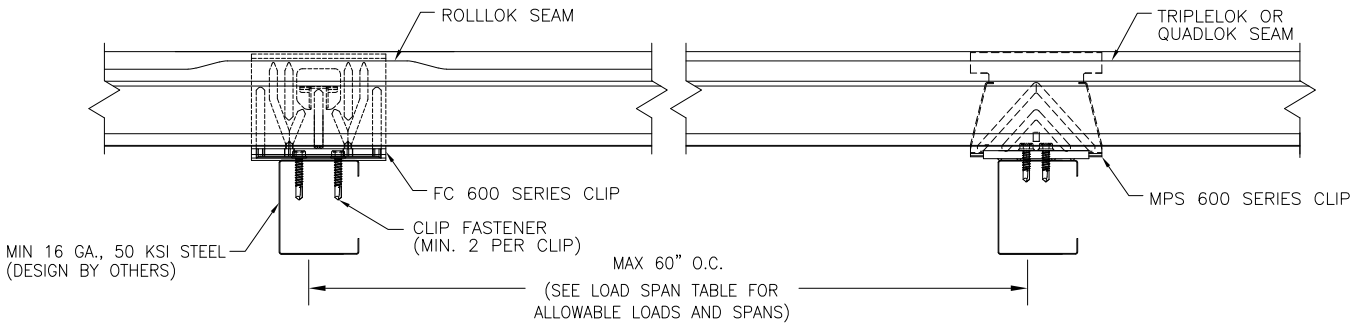
Supporting Documents: ASTM E1592 Test Reports
Project No. C596, Reporting Date 10/28/1998
Project No. C739, Reporting Date 7/28/1999
Project No. C1417-1, Reporting Date 1/20/2006
Project No. C1417-2, Reporting Date 1/23/2006
Project No. C1417-4, Reporting Date 1/25/2006
Project No. C1672-1, -2 & -3, Reporting Date 4/12/2002, Revised Date 9/29/2009
Project No. C1950-1, Reporting Date 3/26/2014
Project No. C2344-1, Reporting Date 6/12/2023

FM 4470 Test Report
ENCON Technology Inc.
C1669-1, Reporting Date 9/30/2009

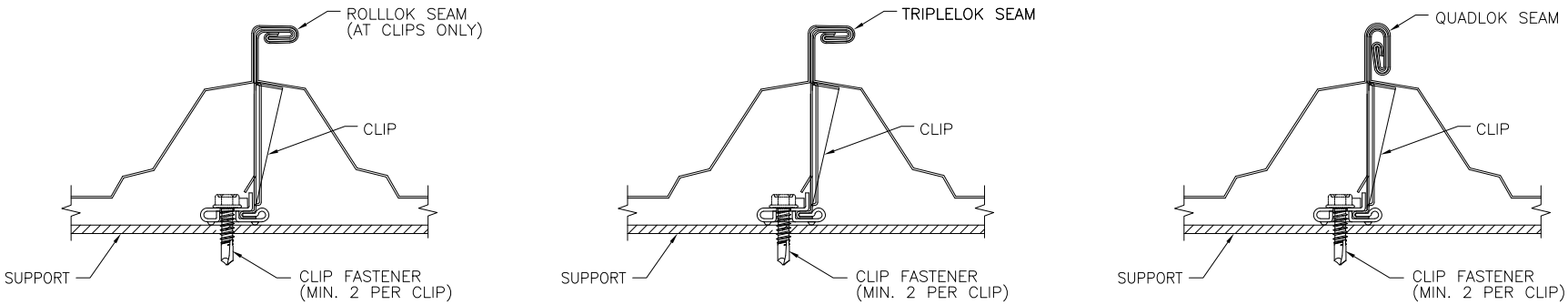
(Alliance Steel is authorized to use Building Research System's Test Reports)



TYPICAL PANEL INSTALLATION X-SECTION

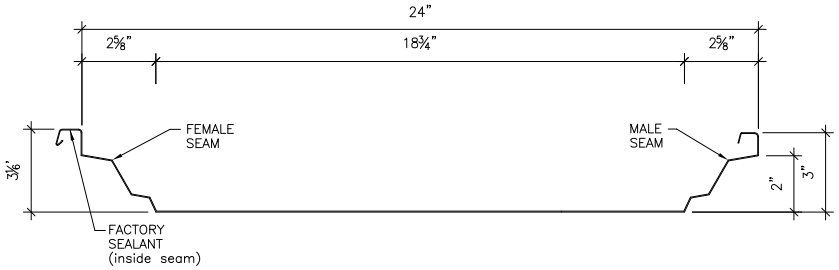


TYPICAL SIDE VIEW



CLIP SECTION VIEW

DETAIL 1



PANEL SECTION

(MIN 24 GA.)

GENERAL NOTES:

1. STRUCTURAL ROOF PANEL HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE (FBC).
2. ROOF PANELS SHALL BE 24 GA. (t = 0.022") OR 22 GA. (t= 0.0285"). EFFECTIVE COVERING WIDTH OF PANEL = 24".
3. ROOF PANELS SHALL BE INSTALLED OVER STRUCTURE AS SPECIFIED ON THESE DRAWINGS.
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. SUPPORTS MUST BE DESIGNED TO WITHSTAND WIND LOADS AS REQUIRED FOR EACH APPLICATION AND ARE THE RESPONSIBILITY OF OTHERS.

DRAWN BY: B.S.	CHECKED BY: K.S.
PLOT:	DATE: 8/24/2023

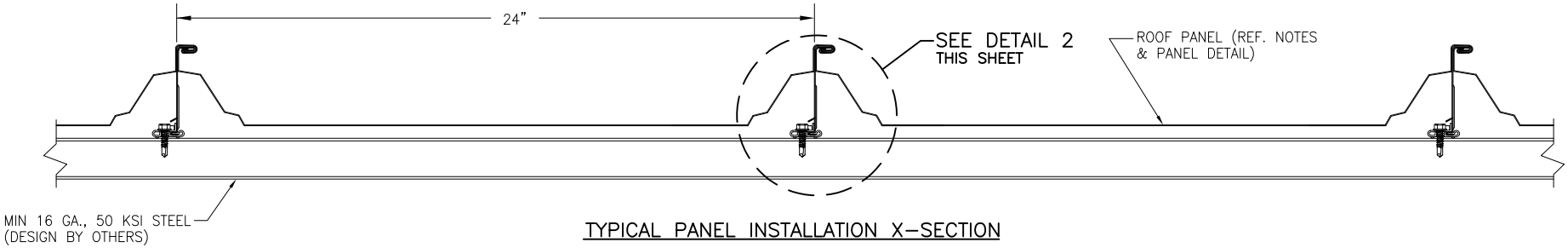
NO.	REVISION DESCRIPTION	BY	DATE

DRAWING TITLE
ALLIANCE SEAM 24 PANEL

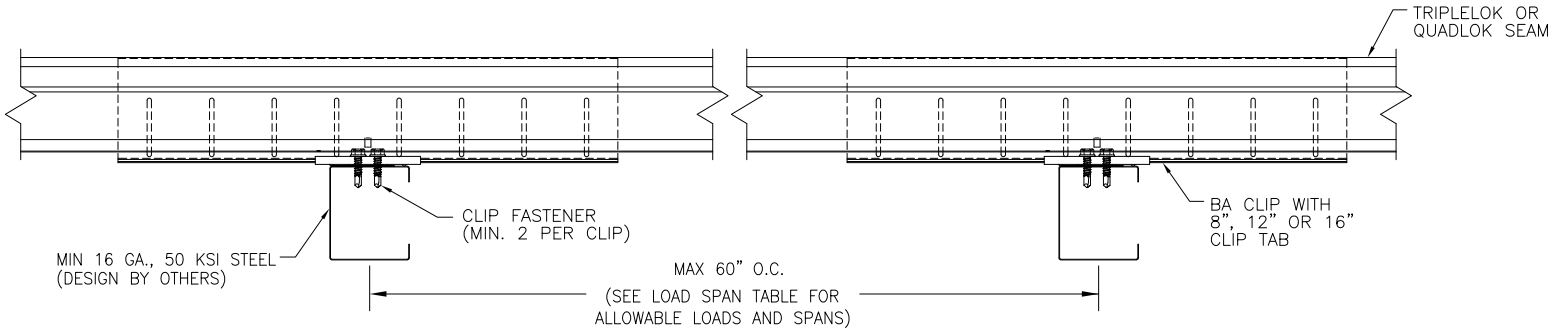
MANUFACTURER
ALLIANCE STEEL INC.
3333 SOUTH COUNCIL ROAD
OKLAHOMA CITY, OK 73179-4410
405 745 7500

CONSULTANTS
BALA SOCKALINGAM, PH.D., P.E.
1216 N LANSING AVE, SUITE C
TULSA, OK 74106
PHONE: 918-492-5992 FAX: 866-366-1543

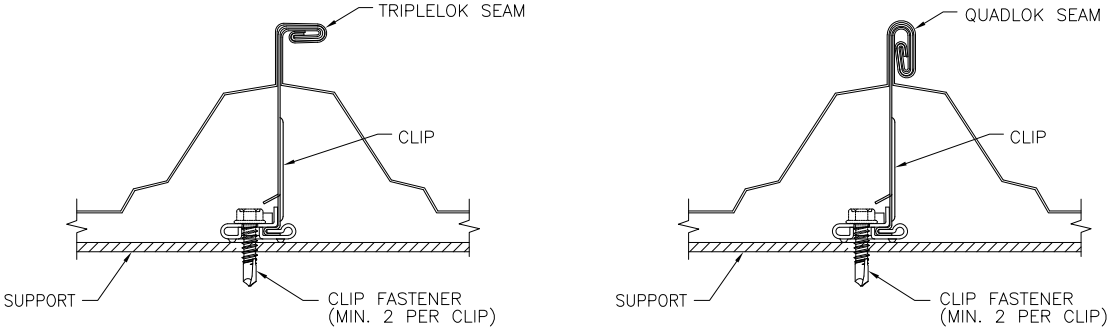
DRAWING NO. 2682-2
REV.



TYPICAL PANEL INSTALLATION X-SECTION



TYPICAL SIDE VIEW



CLIP SECTION VIEW
DETAIL 2

DRAWN BY: B.S.	CHECKED BY: K.S.
PLOT:	DATE: 8/24/2023

NO.	REVISION DESCRIPTION	BY	DATE

DRAWING TITLE
ALLIANCE SEAM 24 PANEL

MANUFACTURER
ALLIANCE STEEL INC.
3333 SOUTH COUNCIL ROAD
OKLAHOMA CITY, OK 73179-4410
405 745 7500

CONSULTANTS
BALA SOCKALINGAM, PH.D., P.E.
1216 N LANSING AVE, SUITE C
TULSA, OK 74106
PHONE: 918-492-5992 FAX: 866-366-1543

DRAWING NO. 2682-2
REV.

ALLIANCE STEEL INC.
Alliance Seam 24 Panel Uplift Loads
With MPS or FC 600 Series Clips

Seam	Span (ft)	Allowable Uplift Load (psf)	
		24 ga.	22 ga.
RollLok	2	61.1	
	2.5	55.6	57.2
	3	47.2	52.5
	3.5	40.4	47.8
	4	35.4	42.3
	4.5	31.4	37.6
	5	28.3	33.8
TripleLok	2	85.5	122.5
	2.5	78.4	98.0
	3	71.3	81.7
	3.5	61.1	70.0
	4	53.5	61.3
	4.5	47.6	54.4
	5	42.8	44.0
QuadLok	2	108.8	157.5
	2.5	99.7	126.0
	3	89.8	105.0
	3.5	77.0	90.0
	4	67.4	78.8
	4.5	59.9	70.0
	5	53.9	56.0

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.
3. The factor of safety for 24 ga. Alliance Seam 24 panels varied between 1.702 and 1.715.
4. The factor of safety for 22 ga. Alliance Seam 24 panels was 2.0.
5. Panels must be installed as per Evaluation Report FL 41984.2 and Alliance Steel's current installation procedure.
6. MPS 600 Series Clip: MPS 602, 603, 607, 608, 609. FC 600 Series Clip: FC 602, 603, 607, 608, 609.
7. Three or more spans condition.

1216 N Lansing Ave., Suite C
Tulsa, Ok 74106
918 492 5992

Bala Sockalingam, Ph.D., P.E.
FL 62240

ALLIANCE STEEL INC.
Alliance Seam 24 Panel Uplift Loads
With BA Series Clips

Seam	Span (ft)	Allowable Uplift Load (psf)		
		BA-602-8 or BA-603-8	BA-602-12 or BA-603-12	BA-602-16 or BA-603-16
TripleLok	2	106.0	127.8	149.7
	2.5	97.0	116.8	136.6
	3	86.4	102.6	118.7
	3.5	74.1	87.9	101.7
	4	64.8	76.9	89.0
	4.5	57.6	68.4	79.1
	5	51.9	61.5	71.2
QuadLok	2	144.8	183.3	
	2.5	132.2	166.8	
	3	114.4	140.7	
	3.5	98.1	120.6	
	4	85.8	105.5	
	4.5	76.3	93.8	
	5	68.7	84.4	

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.
3. The factor of safety for 24 ga. Alliance Seam 24 panels varied between 1.702 and 1.709.
4. Panels must be installed as perEvaluation Report FL 41984.2 and Alliance Steel's current installation procedure.
5. The clip tab width for the following clips are as follows:
   BA-602-8 or BA-603-8: 8"
   BA-602-12 or BA-603-12: 12"
   BA-602-16 or BA-603-16: 16"
6. Three or more spans condition.

1216 N Lansing Ave., Suite C
Tulsa, Ok 74106
918 492 5992

Bala Sockalingam, Ph.D., P.E.
FL 62240