

# SFS GROUP USA, INC.

## TEST REPORT

**SCOPE OF WORK**

ASTM E2140 TESTING ON SYSTEM 1 AND SYSTEM 2, ROOF ATTACHMENTS

**REPORT NUMBER**

M5602.01-109-44

**TEST DATE**

07/02/21

**ISSUE DATE**

07/26/21

**REVISED DATE**

01/14/22

**RECORD RETENTION END DATE**

07/02/25

**PAGES**

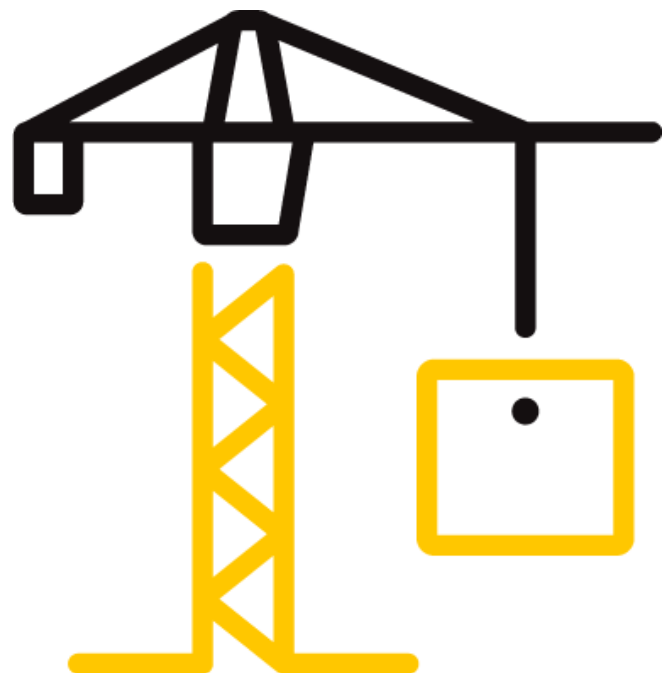
17

**DOCUMENT CONTROL NUMBER**

ATI 00479 (07/24/17)

RT-R-AMER-Test-2805

© 2017 INTERTEK





Total Quality. Assured.

130 Derry Court  
York, Pennsylvania 17406

Telephone: 717-764-7700  
Facsimile: 717-764-4129  
www.intertek.com/building

**TEST REPORT FOR SFS GROUP USA, INC.**

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

**REPORT ISSUED TO**

**SFS GROUP USA, INC.**

2426 Port Street

West Sacramento, California 95961

**SECTION 1**

**SCOPE**

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by SFS Group USA, Inc. to perform testing in accordance with ASTM E2140 on their System 1 and System 2, roof attachments. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in York, Pennsylvania.

For INTERTEK B&C:

<b>COMPLETED BY:</b>	Kyle W. Ruth
<b>TITLE:</b>	Technician – Product Testing
<b>SIGNATURE:</b>	
<b>DATE:</b>	01/14/22

<b>REVIEWED BY:</b>	Vicki L. McElwain
<b>TITLE:</b>	Supervisor – Product Testing
<b>SIGNATURE:</b>	
<b>DATE:</b>	01/14/22

KWR:nls

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

## TEST REPORT FOR SFS GROUP USA, INC.

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

### SECTION 2

#### TEST METHOD(S)

The specimens were evaluated in accordance with the following:

**ASTM E2140-01(2017)**, *Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head*

### SECTION 3

#### MATERIAL SOURCE/INSTALLATION

Test specimen(s) were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimens were installed into a Spruce-Pine-Fir wood test deck. The test deck for System #1 had an interior dimension of 35-3/4" x 72-1/4" with joists spaced 24" on center with 1/2" plywood scabbed into place for the valley mount attachments. A sheet of R-panel metal roofing was secured to the test deck for mounting the attachments. The test deck for System #2 had an interior dimension of 35-1/4" x 60-1/4" with 1/2" plywood scabbed into place for the valley mount attachments. A sheet of corrugated metal roofing was secured to the test deck for mounting the attachments. The interior perimeters of the test decks were sealed with silicone.

### SECTION 4

#### EQUIPMENT

Pressure Loop Calibrator – 63436

Stopwatch – INT00974

Weather Station – 63316

Tape Measure Verification – 63788

### SECTION 5

#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
James Cole	SFS Group USA, Inc.
Jon Moss	SFS Group USA, Inc.
Vicki L. McElwain	Intertek B&C
Kyle W. Ruth	Intertek B&C

**TEST REPORT FOR SFS GROUP USA, INC.**

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

**SECTION 6**

**TEST SPECIMEN DESCRIPTION**

**System #1:**

ATTACHMENT #	PRODUCT NAME	DESCRIPTION	ATTACHMENT
1	Protea 0.25 Hole TPE	3" wide by 4" long by 2-3/4" high extruded aluminum with TPE sealing pads	Four 1/4" x 1" hex washer head screws with EPDM washers
2	Protea 0.25 Hole EPDM	3" wide by 4" long by 2-3/4" high extruded aluminum with EPDM sealing pads	
3	Rib Bracket III 0.25 Hole TPE	2-1/2" wide by 1-3/4" long by 2-5/8" high extruded aluminum with TPE sealing pads	
4	Rib Bracket III 0.25 Hole EPDM	2-1/2" wide by 1-3/4" long by 2-5/8" high extruded aluminum with EPDM sealing pads	
5	Solar Foot Butyl	3-5/8" wide by 2" long by 1-7/8" high extruded aluminum with butyl sealing pads	Four 1/4" x 1-1/2" hex washer head screws with EPDM washers
6			
7	VersaBracket™ 47 Butyl	2-1/2" wide by 2-7/8" long by 1-7/8" high extruded aluminum with butyl sealing pad	Three 1/4" x 1-1/2" hex washer head screws with EPDM washers
8			
13	EF Tab 0.25 Hole - TPE	1-3/16" wide by 2" long by 3/4" high extruded aluminum with TPE sealing pad	Two 1/4" x 1" hex washer head screws with EPDM washers

**TEST REPORT FOR SFS GROUP USA, INC.**

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

**System #2:**

ATTACHMENT #	PRODUCT NAME	DESCRIPTION	ATTACHMENT
9	CorruBracket™ 100T PV 0.25 Hole TPE	3-3/8" wide by 1-3/4" long by 2 1/8" high extruded aluminum with TPE sealing pads	Four 1/4" x 1" hex washer head screws with EPDM washers
10	CorruBracket™ 100T PV 0.25 Hole EPDM	3-3/8" wide by 1-3/4" long by 2-1/8" high extruded aluminum with EPDM sealing pads	
11	CorruBracket™ Butyl	3-1/2" wide by 2" long by 1-5/8" high extruded aluminum with butyl sealing pads	Four 1/4" x 1-1/2" hex washer head screws with EPDM washers
12			

**TEST REPORT FOR SFS GROUP USA, INC.**

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

**SECTION 7**

**TEST RESULTS**

The temperature during testing was 22°C (72°F). The results are tabulated as follows:

**System #1:**

TITLE OF TEST	ATTACHMENT #	RESULTS	ALLOWED	NOTE
<b>ASTM E2140</b> at 6" Static Water Pressure Head	1	No leakage	No leakage	1, 2, 3
	2	No leakage		
	3	No leakage		
	4	No leakage		
	5	No leakage		
	6	No leakage		
	7	No leakage		
	8	No leakage		
	13	No leakage		

**System #2:**

TITLE OF TEST	ATTACHMENT #	RESULTS	ALLOWED	NOTE
<b>ASTM E2140</b> at 6" Static Water Pressure Head	9	No leakage	No leakage	1, 2, 3
	10	No leakage		
	11	No leakage		
	12	No leakage		

**General Note:** All testing was performed in accordance with the referenced standard(s).

*Note 1: The static pressure water head was maintained for six hours.*

*Note 2: The specimen was observed for water leakage after one hour, three hours and immediately prior to termination of test.*

*Note 3: See product description in Section 6 for corresponding number.*

## TEST REPORT FOR SFS GROUP USA, INC.

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

### SECTION 8

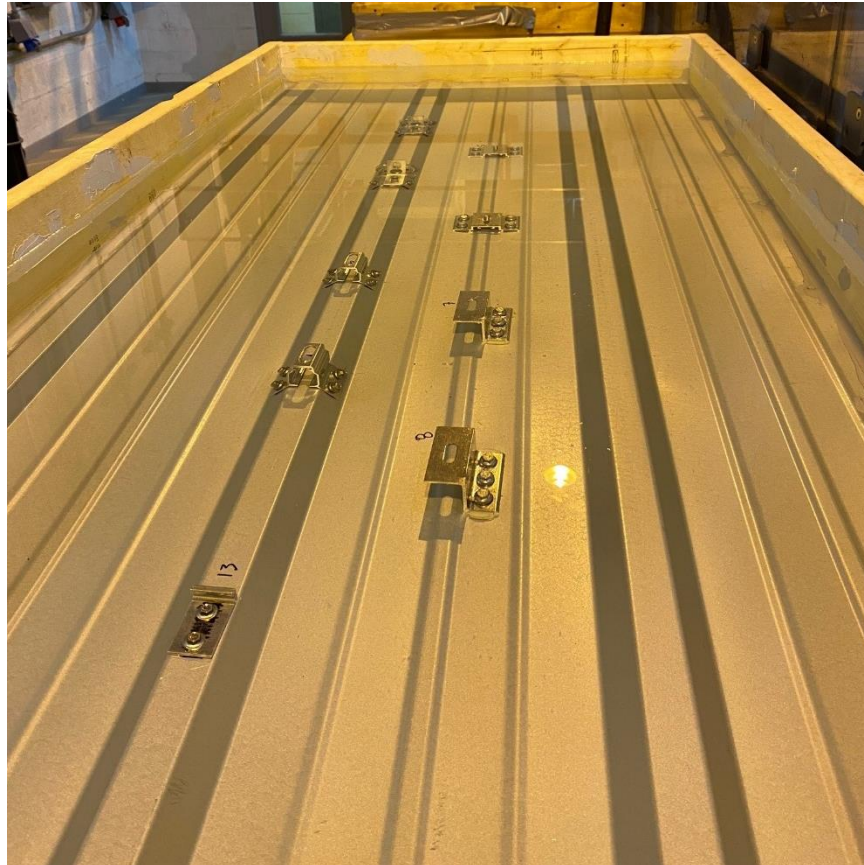
#### CONCLUSION

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

### SECTION 9

#### PHOTOGRAPHS



**Photo No. 1**  
**System #1**



## TEST REPORT FOR SFS GROUP USA, INC.

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21



**Photo No. 2**  
**System #2**





Total Quality. Assured.

130 Derry Court  
York, Pennsylvania 17406

Telephone: 717-764-7700  
Facsimile: 717-764-4129  
[www.intertek.com/building](http://www.intertek.com/building)

**TEST REPORT FOR SFS GROUP USA, INC.**

Report No.: M5602.01-109-44

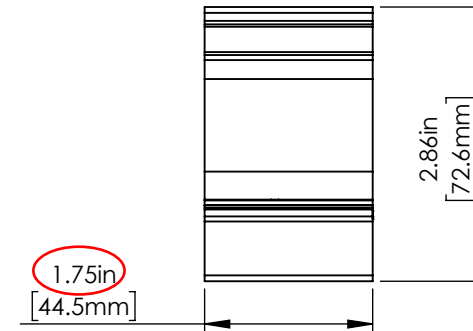
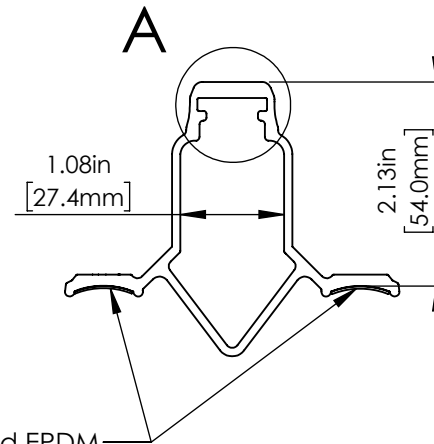
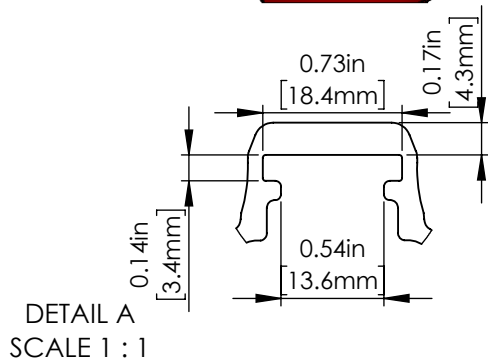
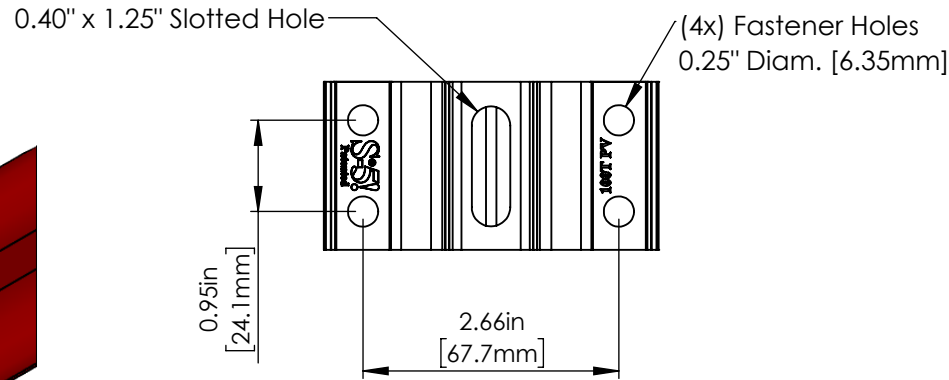
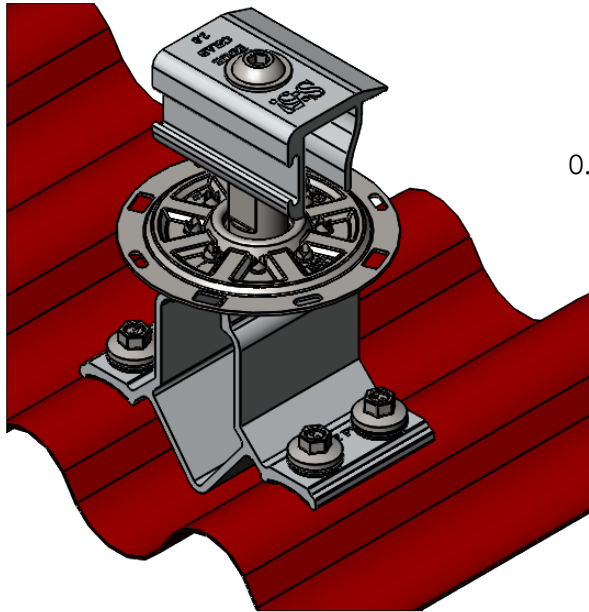
Revision 1: 01/14/22

Original Issue Date: 07/26/21

**SECTION 10**

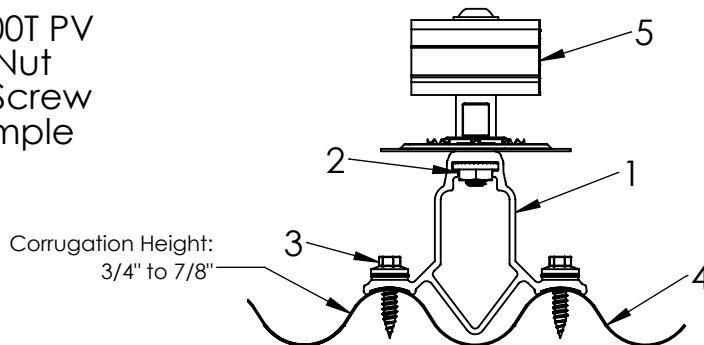
**DRAWINGS**

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.




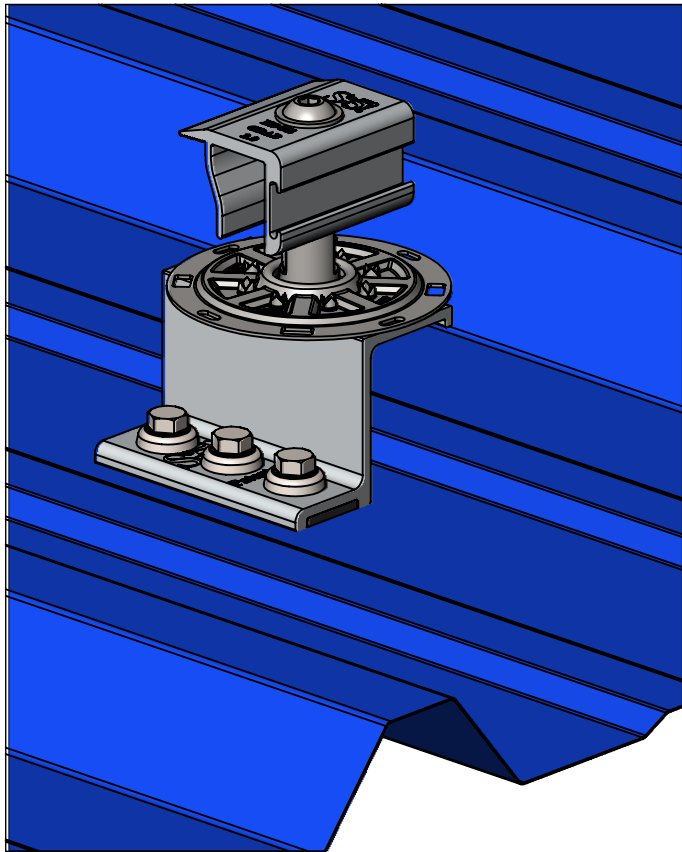
General Notes:

1. CorruBracket 100T PV
2. M8 Hex Flange Nut
3. 1" Self Tapping Screw
4. Metal Roof Example
5. PV Kit 2.0



**FOR STANDING SEAM SPECIFIC MECHANICAL LOAD TEST INFORMATION AND CLAMP INSTALLATION INFORMATION PLEASE VISIT: [WWW.S-5.COM](http://WWW.S-5.COM)**

MATERIAL: 6000 Series AL	 The Right Way! METAL ROOF INNOVATIONS, LTD. 8655 TABLE BUTTE RD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045(FAX)		
BRACKET WEIGHT 0.16 lbs			
SUPPLIED HARDWARE: M8 Hex Flange Nut (4x) 1" Self Tapping Screw	TITLE CorruBracket 100T PV		
SCALE: 1:2	DRAWING NO. USCBTFPV-A-0-D	DRAWN BY JW	DATE 10/1/2020
S-5® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. PATENTS INCLUDING 5,228,248, 5,983,588 AND 6,164,033 (OTHERS ISSUED AND PENDING). EUROPEAN PATENTS ARE ALSO APPLIED FOR AND PENDING UNDER THE PATENT COOPERATION TREATY WITH DIVISIONAL FILING RIGHTS RETAINED. METAL ROOF INNOVATIONS, LTD. (LICENSOR OF S-5!® TECHNOLOGY) AGGRESSIVELY PROSECUTES PATENT INFRINGEMENT.			

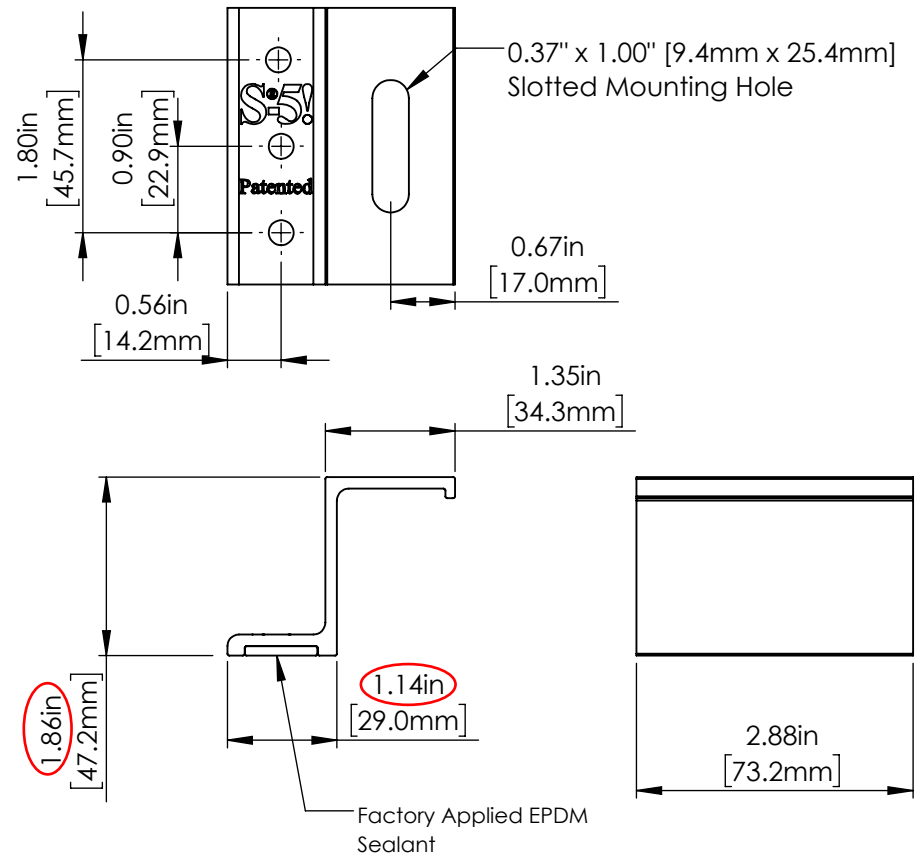


**intertek**  
Total Quality Assured

Report #: M5602.01-109-44

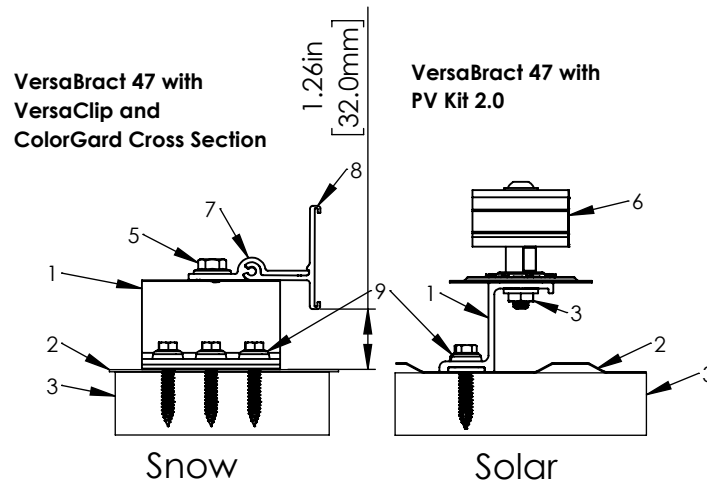
Date: 7/2/21

Verified by: *[Signature]*




General Notes:

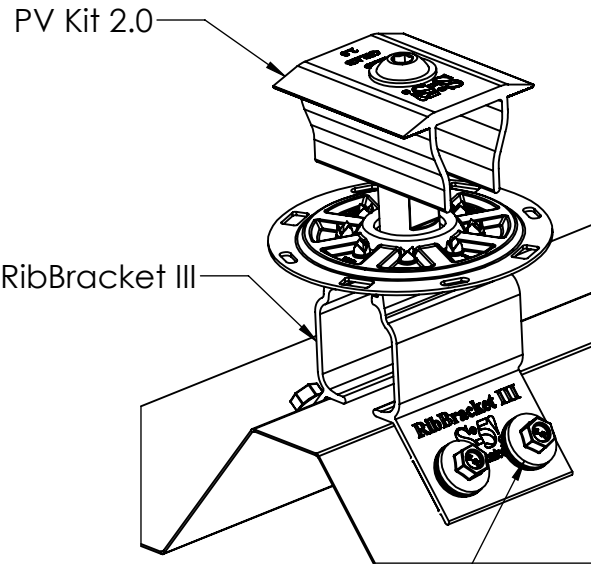
1. VersaBracket 47
2. Example Roof
3. Example Substrate
4. M8 Hex Flange Nut
5. M8 Hex Flange Bolt
6. PV Kit 2.0
7. VersaClip
8. ColorGard Cross Section
9. Fastener



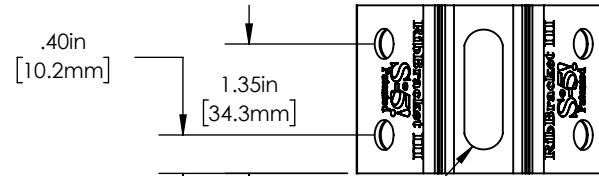
**FOR STANDING SEAM SPECIFIC MECHANICAL LOAD TEST INFORMATION AND CLAMP INSTALLATION INFORMATION PLEASE VISIT: [WWW.S-5.COM](http://WWW.S-5.COM)**

MATERIAL: 6000 Series AL				METAL ROOF INNOVATIONS, LTD. 8655 TABLE BUTTE RD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045(FAX)		
EST BRACKET WEIGHT 0.16 lbs				TITLE VersaBracket 47 [CCD Drawing]		
SUPPLIED HARDWARE: NONE	DRAWING NO. VB47-29-B-0-A	DRAWN BY JW	DATE 11/18/2019			
SCALE: 1:2	<small>S-5!® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. PATENTS INCLUDING 5,228,248, 5,983,588 AND 6,164,033 (OTHERS ISSUED AND PENDING). EUROPEAN PATENTS ARE ALSO APPLIED FOR AND PENDING UNDER THE PATENT COOPERATION TREATY WITH DIVISIONAL FILING RIGHTS RETAINED. METAL ROOF INNOVATIONS, LTD. (LICENSOR OF S-5!® TECHNOLOGY) AGGRESSIVELY PROSECUTES PATENT INFRINGEMENT.</small>					

# RibBracket III

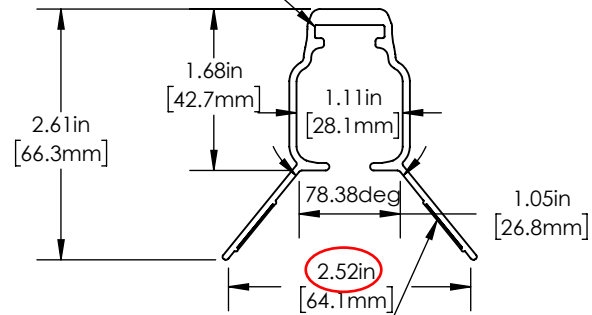


(4x) 1/4" Diameter 1" Length  
5/16" Hex Screw



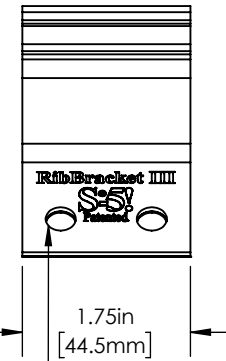
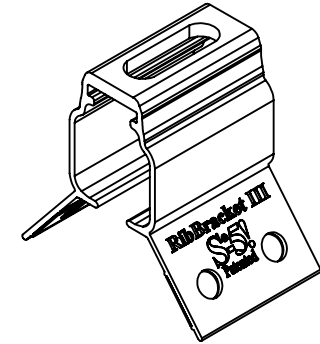
0.40" x 1.25" Slotted Hole

Slot for Hex Flange Nut



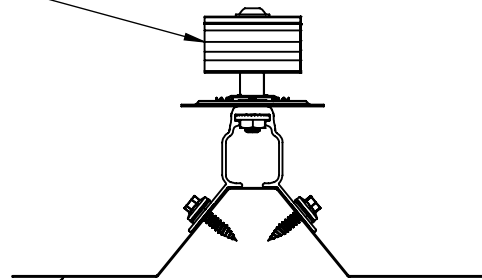
(2x) Factory Applied EPDM

(4x)  $\phi$  .31" Through Hole for Fasteners




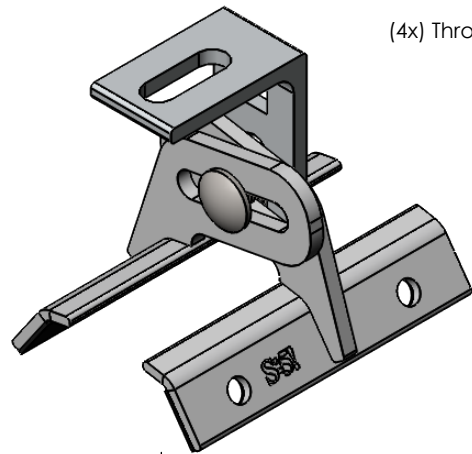
Designed to fit popular North American and Indian Profiles such as PBR-Panel, R-Panel, Kirby Roof (KR), and other similarly dimensioned profiles.

Sample Rib Roof Panel

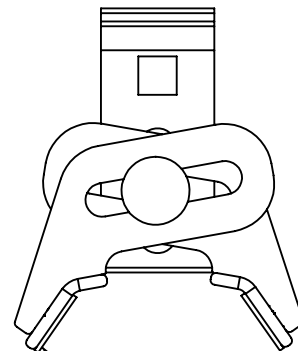
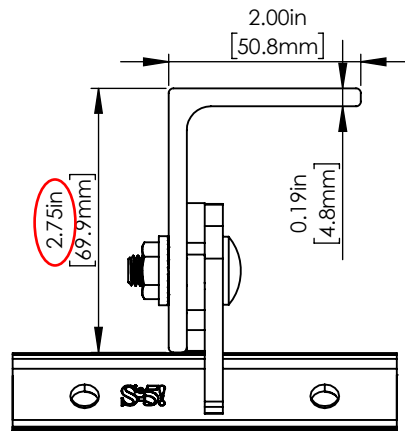
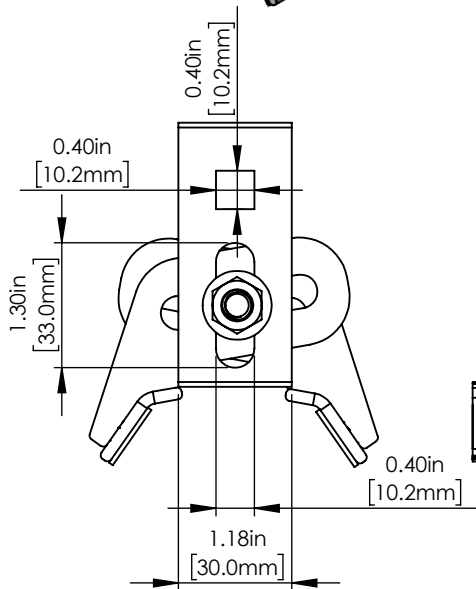
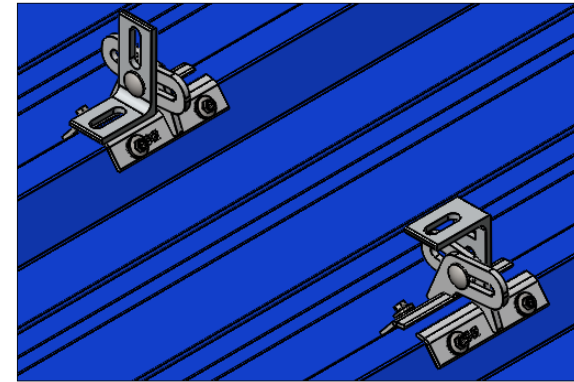
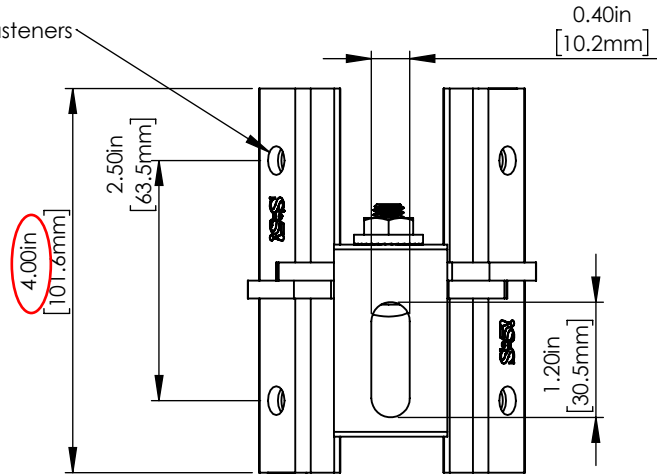


**FOR STANDING SEAM SPECIFIC MECHANICAL LOAD TEST INFORMATION AND CLAMP INSTALLATION INFORMATION PLEASE VISIT: WWW.S-5.COM**

MATERIAL: 6005A T61		METAL ROOF INNOVATIONS, LTD. 8655 TABLE BUTTE RD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045(FAX)	
EST ASSEMBLY WEIGHT 0.180 lbs			
SUPPLIED HARDWARE: M8-1.25 Flange Nut (4x) 1/4"-1" Stainless Steel Self-Tapping Screw with 5/16" Hex Head	TITLE RibBracket III [CCD]		
SCALE: 1:2	DRAWING NO. PBR-A-0-A	DRAWN BY Jesse Winternitz	DATE 7/1/2019
WEIGHTS: Bracket: 0.0935 lbs Screw: 0.0180 lbs Nut: 0.0145 lbs	S-5® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. PATENTS INCLUDING 5,228,248, 5,983,588 AND 6,164,033 (OTHERS ISSUED AND PENDING). EUROPEAN PATENTS ARE ALSO APPLIED FOR AND PENDING UNDER THE PATENT COOPERATION TREATY WITH DIVISIONAL FILING RIGHTS RETAINED. METAL ROOF INNOVATIONS, LTD. (LICENSOR OF S-5!® TECHNOLOGY) AGGRESSIVELY PROSECUTES PATENT INFRINGEMENT.		

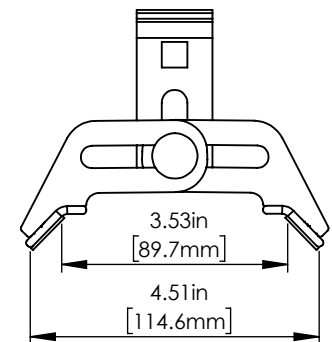
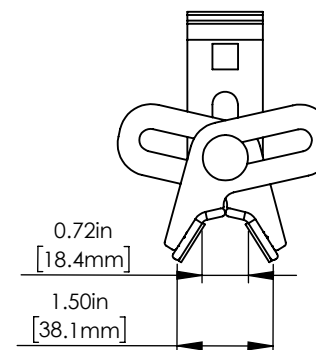


(4x) Through hole for fasteners



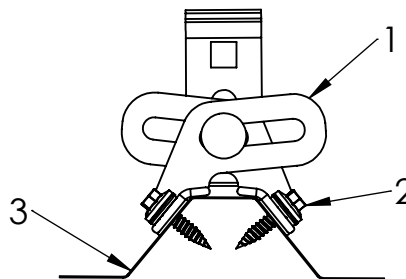
(2x) Factory applied EPDM with sticky adhesive

### MIN and MAX Range



### General Notes:

1. ProteaBracket
2. 1" Self Tapping Screw
3. Example Rib Roof



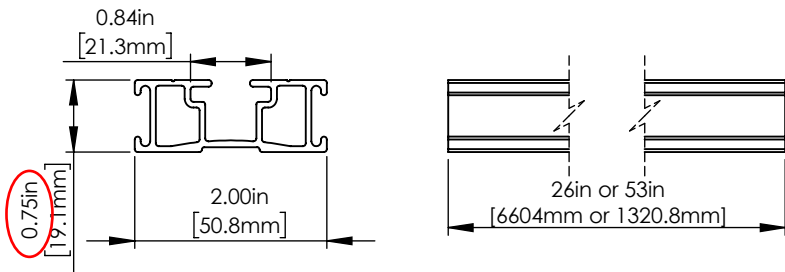
**FOR STANDING SEAM SPECIFIC MECHANICAL LOAD TEST INFORMATION AND CLAMP INSTALLATION INFORMATION PLEASE VISIT: [WWW.S-5.COM](http://WWW.S-5.COM)**

	Report #:	M5602.01-109-44
	Date:	7/2/21
	Verified by:	<i>[Signature]</i>

MATERIAL: 6061 T6 AL	 The Right Way!™			METAL ROOF INNOVATIONS, LTD. 8750 WALKER RD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045(FAX)		
EST ASSEMBLY WEIGHT: 179.2 g						
SUPPLIED HARDWARE: (4x) 1" Self Tapping Screw	TITLE ProteaBracket [CCD]					
SCALE: 1:2	DRAWING NO. PB6-A-0-A_BLF10-A-0-A	DRAWN BY JW	DATE 5/20/2019			
WEIGHTS:	S-5® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. PATENTS INCLUDING 5,228,248, 5,983,588 AND 6,164,033 (OTHERS ISSUED AND PENDING). EUROPEAN PATENTS ARE ALSO APPLIED FOR AND PENDING UNDER THE PATENT COOPERATION TREATY WITH DIVISIONAL FILING RIGHTS RETAINED. METAL ROOF INNOVATIONS, LTD. (LICENSOR OF S-5® TECHNOLOGY) AGGRESSIVELY PROSECUTES PATENT INFRINGEMENT.					

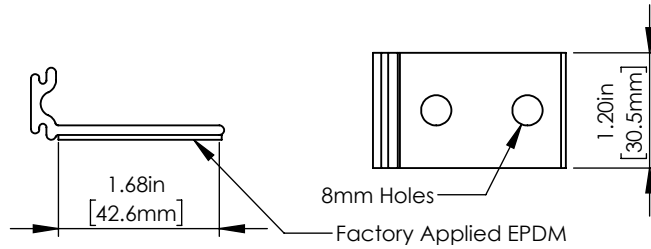
# Gripper Strut

6000 Series Al



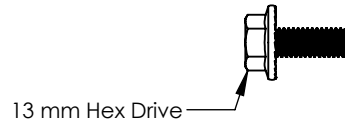
# S-5-Tab EF

6000 Series Al



# M8-1.25 Hex Flange Bolt Multiple Lengths Available

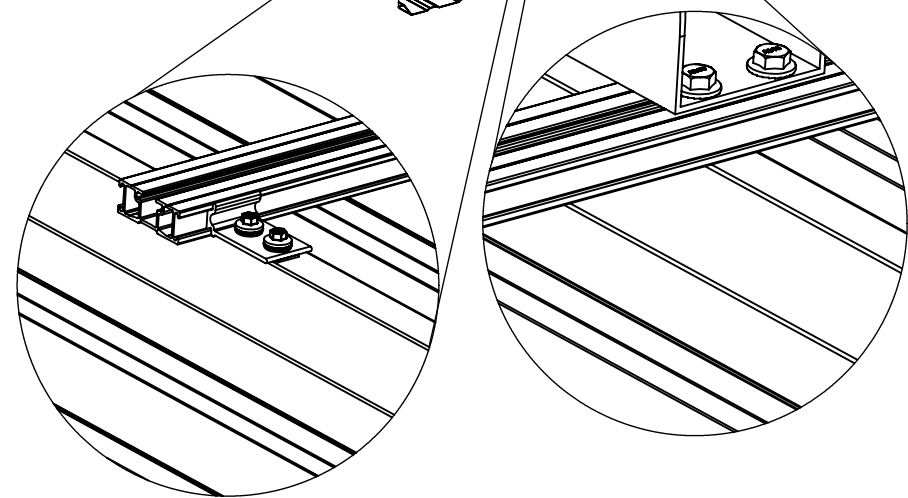
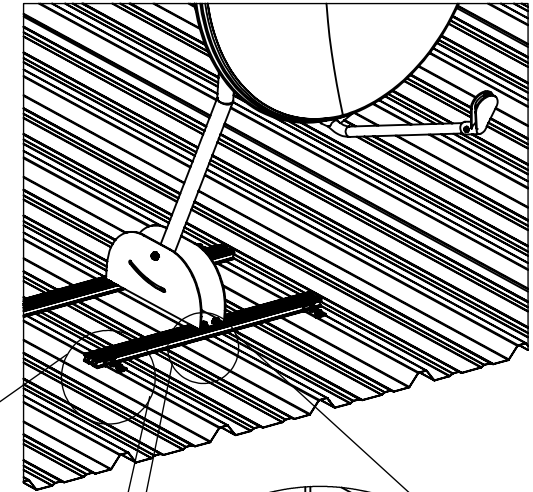
300 Series SS



13 mm Hex Drive

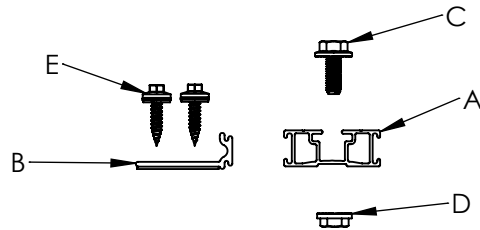
# M8 Hex Flange Nut

300 Series SS



# Self Piercing Screw

300 Series SS



- A. Gripper Strut
- B. EF Tab
- C. M8-1.25 Hex Flange Bolt
- D. M8 Hex Flange Nut
- E. Self Piercing Screw

**FOR STANDING SEAM SPECIFIC MECHANICAL LOAD TEST INFORMATION AND CLAMP INSTALLATION INFORMATION PLEASE VISIT: [WWW.S-5.COM](http://WWW.S-5.COM)**

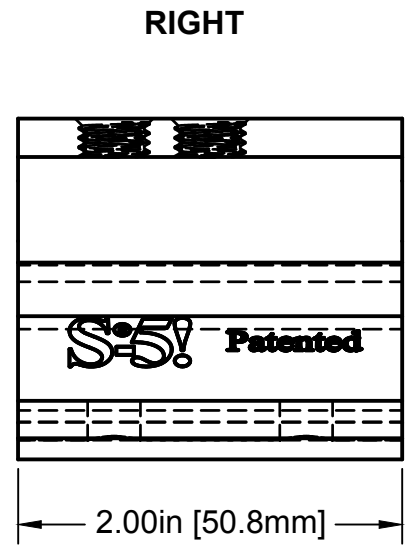
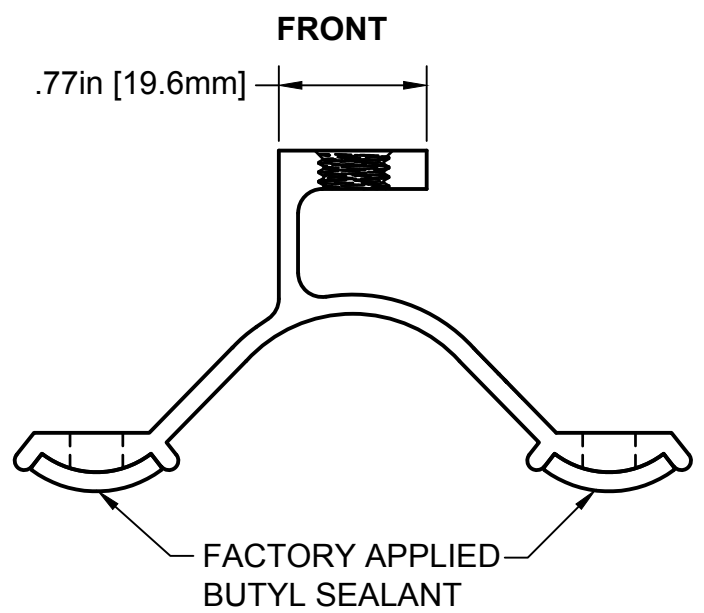
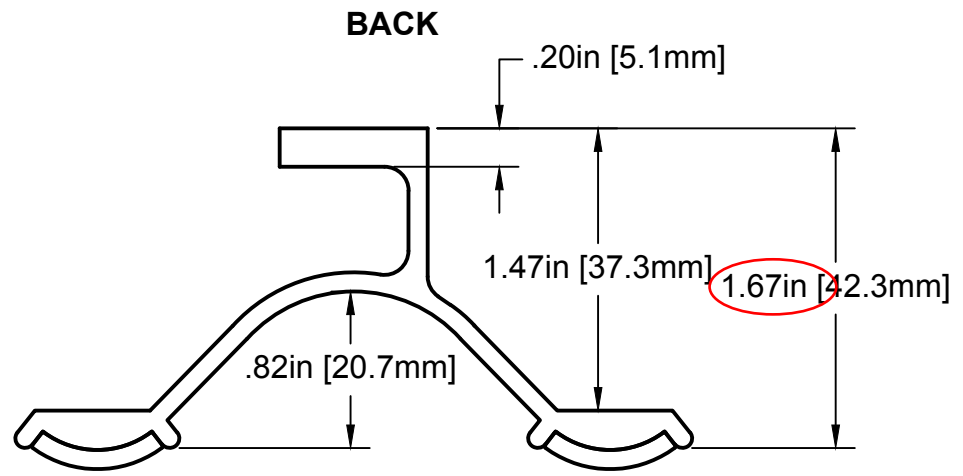
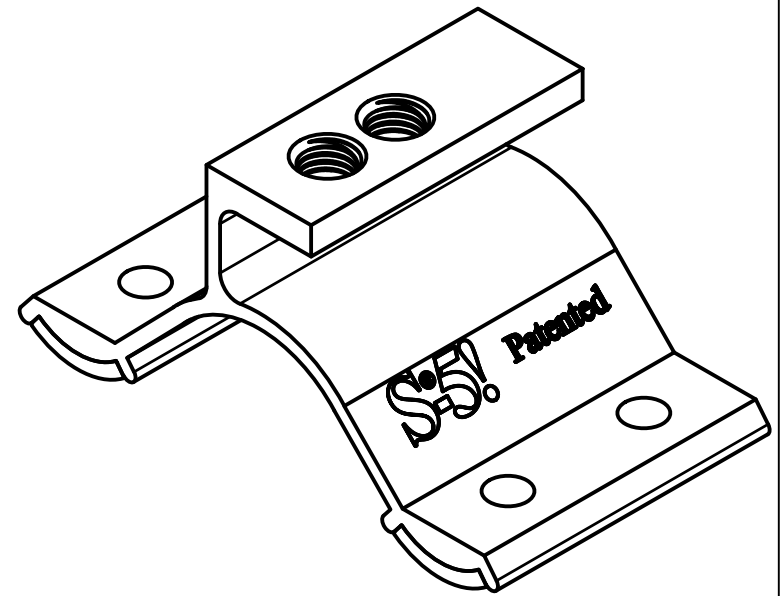
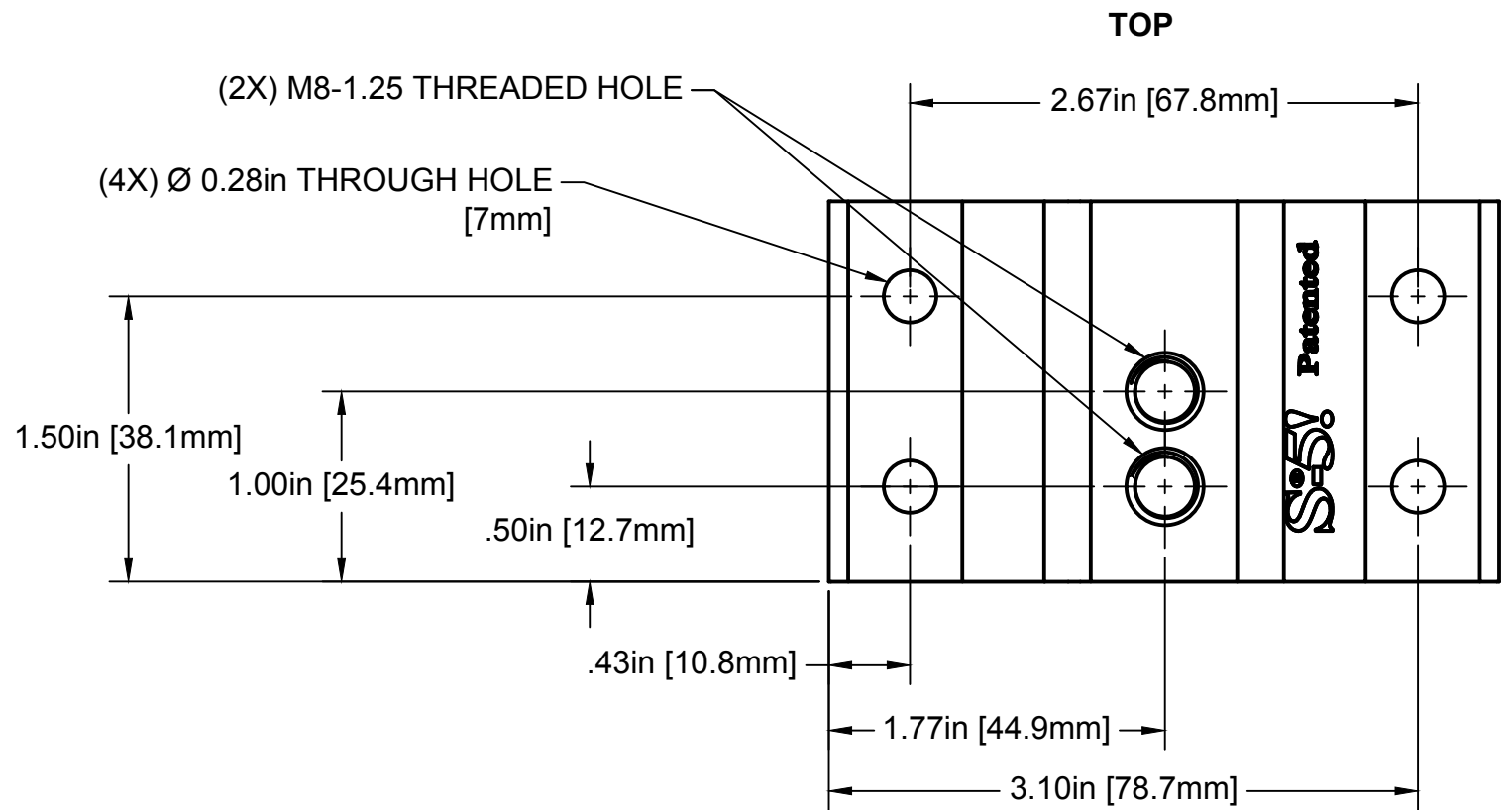
MATERIAL:	 METAL ROOF INNOVATIONS, LTD. 8750 WALKER RD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045(FAX)		
EST ASSEMBLY WEIGHT:			
SUPPLIED HARDWARE:	TITLE GRIPPERFIX EF [CCD]		
SCALE: 1:2	DRAWING NO.	DRAWN BY JW	DATE 6/21/2019
S-5!® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. PATENTS INCLUDING 5,228,248, 5,983,588 AND 6,164,033 (OTHERS ISSUED AND PENDING). EUROPEAN PATENTS ARE ALSO APPLIED FOR AND PENDING UNDER THE PATENT COOPERATION TREATY WITH DIVISIONAL FILING RIGHTS RETAINED. METAL ROOF INNOVATIONS, LTD. (LICENSOR OF S-5!® TECHNOLOGY) AGGRESSIVELY PROSECUTES PATENT INFRINGEMENT.			



Report #: M5602.01-109-44

Date: 7/2/21

Verified by: *[Signature]*



MATERIAL: 6000 Series AL	<b>S-5!®</b>	METAL ROOF INNOVATIONS, LTD.	
EST ASSEMBLY WT: 0.18lbs/.082kg		8750 WALKER RD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045 (FAX)	
HARDWARE: M8-1.25x16 Hex Flange Bolt	TITLE CorruBracket [CCD]		
	DRAWING NO. CB30-A-8-A	DRAWN BY JW	DATE 04/14/2020
	SCALE 1:1	FILE NAME CorruBracket [CCD]	
S-5!® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. AND FOREIGN PATENTS. VISIT OUR WEBSITE AT WWW.S-5.COM FOR COMPLETE INFORMATION ON PATENTS AND TRADEMARKS			

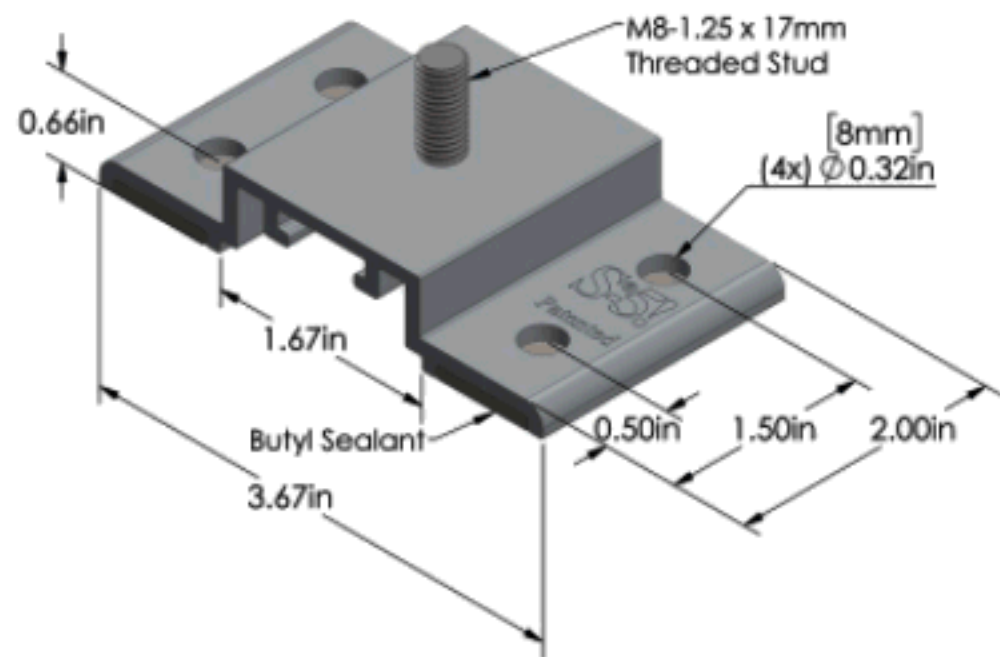
**intertek**  
Total Quality. Assured.

Report #: M5602.01-109-44  
Date: 7/2/21  
Verified by: *[Signature]*



# SolarFoot Product Specifications:

- Compatible with all L-Foot products
- Secure rail-mounted systems to trapezoidal roof profiles
- Integrated reservoir prevents over-compressing seal
- Utilizes either two or four fasteners (sold separately), depending on need
- Must attach through the roof into either deck or structure using S-5! tested fasteners to achieve published holding strength
- Integral M8 stud and hex-flange nut included
- Be sure to see many other features on the [solar racking overview](#) page





Total Quality. Assured.

130 Derry Court  
York, Pennsylvania 17406

Telephone: 717-764-7700  
Facsimile: 717-764-4129  
[www.intertek.com/building](http://www.intertek.com/building)

**TEST REPORT FOR SFS GROUP USA, INC.**

Report No.: M5602.01-109-44

Revision 1: 01/14/22

Original Issue Date: 07/26/21

**SECTION 11**

**REVISION LOG**

REVISION #	DATE	PAGES	REVISION
0	07/26/21	N/A	Original Report Issue
1	01/14/22	4	Edited Attachment # 13 product name