

FALL PROTECTION DISTRIBUTORS, LLC TEST REPORT

SCOPE OF WORK

OSHA 1910.140 STATIC STRENGTH EVALUATION OF A STANDING SEAM BRACKET SYSTEM (SSRA1)

REPORT NUMBER

I6764.01-106-31 R0

TEST DATES

08/22/18 - 08/23/18

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11/02/18

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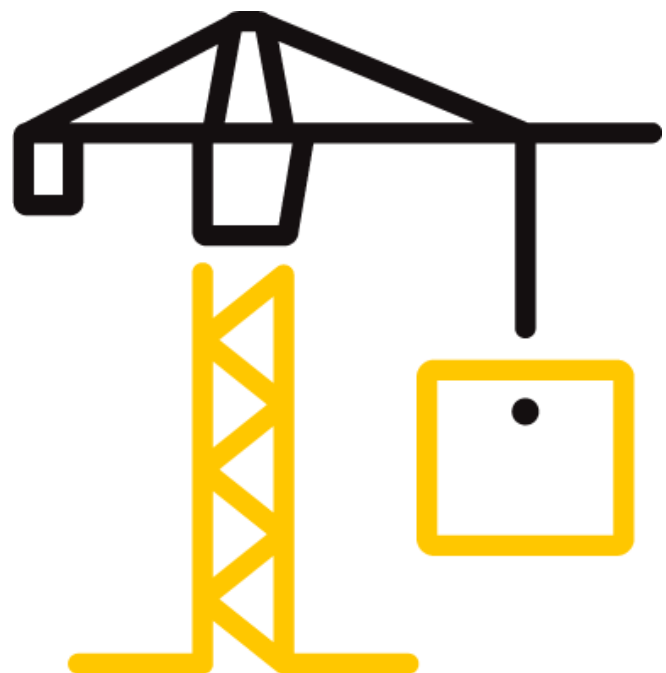
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TEST REPORT FOR FALL PROTECTION DISTRIBUTORS, LLC

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Date: 11/02/18

REPORT ISSUED TO

FALL PROTECTION DISTRIBUTORS, LLC

1324 Seven Springs Boulevard #323

Trinity, Florida 34655

SECTION 1

SCOPE

Product: SSRA1 Anchorage Bracket - Standing Seam Fall Protection Anchorage System

Intertek Building & Construction (B&C) was contracted by Fall Protection Distributors, LLC to evaluate SSRA1 standing seam bracket anchorage system for static strength in accordance with OSHA 1910.140 - *Personal Fall Protection Systems*. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Scott D. Scallorn
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SIGNATURE:	
DATE:	11/02/18

SDS:jmb/jlp

REVIEWED BY:	Joseph M. Brickner
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DATE:	11/02/18

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SECTION 2

TEST METHOD

The specimens were evaluated in accordance with the following:

OSHA 1910.140, *Personal Fall protection Systems*

SECTION 3

MATERIAL SOURCE

The test materials were provided by Fall Protection Distributors, LLC. Installation mockups were assembled on-site at the Intertek-ATI test facility located in York, PA. by Fall Protection Distributors, LLC personnel with the assistance of Intertek-ATI personnel. Refer to the product description photos in Section 9. The anchorage installation test mockups were evaluated by Intertek-ATI personnel immediately upon assembly. Representative materials/test specimens will be retained by Intertek B&C for a minimum of four years from the test completion date.

SECTION 4

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Scott D. Scallorn	Intertek B&C
Joseph M. Brickner	Intertek B&C
Brion McMullen	Action Manufacturing SnoBar LLC

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SECTION 5

TEST PROCEDURES

All conditioning of test specimens and test conditions were at standard laboratory conditions unless otherwise reported. Refer to the test related photos in Section 9.

OSHA 1910.140(C)(8) - Static Strength Evaluation

The Static Strength evaluation was performed on a SATEC UTM (ICN: Y002011). Load was applied both parallel and perpendicular (90°) to a standing seam on a roofing mockup assembly. A total of 3 installation mockups were evaluated for each of the two conditions using detailed loading orientations for nylon tip tension bolts at 180 ft-lbs torque. Load was applied to the attached anchorage through an integrated D-Ring component at a constant rate of 2 in/min. until the target load of 3,600 lb_f was achieved and then held for a minimum of 1 minute prior to release and evaluation of the post-test mockup assembly. Test results were evaluated against the performance requirement of minimum 3,600 pounds tensile pounds force without failure or permanent deformation.

OSHA 1910.140(C)(7) - Proof Testing/Ultimate Failure Load Evaluation

The Proof Test/Ultimate Failure Load evaluation was performed on a single SSRA1 anchorage assembly restricted to the test stage of a SATEC UTM (ICN: Y002011). Tensile load was applied to the anchorage unit through an integrated D-Ring component at a constant rate of 2 in/min. until failure was observed. Ultimate anchorage failure load was recorded and further evaluated against the performance requirement of minimum 5,000 pounds of force without failure.

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TEST SPECIMEN DESCRIPTION

TEST PROCEDURE	NUMBER OF SPECIMENS	NOMINAL SPECIMEN DIMENSIONS	VISUAL CHARACTERISTICS
OSHA 1910.140(C)(8)	Total 6 3 loaded parallel to roofing seam and 3 loaded perpendicular to roofing seam	12 in. long x 2.25 wide x 2 in. high brackets affixed to 12 in. x 36 in. standing seam roofing mockup substrates	Aluminum bracket w/attached steel D-ring See Note 1
OSHA 1910.140(C)(7)	1	12 in. long x 2.25 wide x 2 in. high brackets	SSRA1 aluminum standing seam anchorage bracket See Note 2

Note 1 - Aluminum bracket w/attached steel D-ring affixed to 24 ga coated steel seamed roofing using 12 nylon tipped, stainless steel tension bolts. The seamed roofing panels were mounted to nominal 2x lumber using 3/4", 1" washer head screws.

Note 2 - SSRA1 aluminum standing seam anchorage bracket was restricted inclusive of one top-affixed steel D-ring assembly.

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TEST RESULTS

OSHA 1910.140(C)(8) - Static Strength Evaluation (24 ga Roofing - Nylon Tip - Perpendicular)

SPECIMEN DETAILS				PEAK LOAD (lb _f)	3,600 lb _f HOLD DURATION (min)
NO.	LOAD DIRECTION	ANCHORAGE SYSTEM	TORQUE (ft-lbs)		
A-1	Side Load (Parallel to Seam)	Nylon Tip	180	3,624	1
A-2				3,696	1
A-3				3,636	1
Average				3,652	1

OSHA 1910.140(C)(8) - Static Strength Evaluation (24 ga Roofing - Nylon Tip - Parallel)

SPECIMEN DETAILS				PEAK LOAD (lb _f)	3,600 lb _f HOLD DURATION (min)
NO.	LOAD DIRECTION	ANCHORAGE SYSTEM	TORQUE (ft-lbs)		
B-1	In-Line Load (Perpendicular to Seam)	Nylon Tip	180	3,694	1
B-2				3,656	1
B-3				3,658	1
Average				3,669	1

OSHA 1910.140(C)(7) - Proof Testing/Ultimate Failure Load Evaluation

LOAD DIRECTION	ULTIMATE FAILURE LOAD (lb _f)	FAILURE MODE
Direct Tension	14,500	Aluminum Bracket Thread Shear

SECTION 8

CONCLUSION

The SSRA1 Anchorage Bracket - Standing Seam Fall Protection Anchorage System satisfied the performance requirements as stated in OSHA 1910.140(c)(7) and OSHA 1910.140(c)(8). The isolated D-ring/bracket assembly achieved 5,000 lb_f without failure and the 24 ga roofing mockup installed bracket system is capable of resisting a static load of at least 3,600 lb_f held for a minimum of 1 minute in loading orientations both parallel and perpendicular to the roofing assembly standing seam.

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SECTION 9 PHOTOGRAPHS



Photo No. 1
Pretest Condition SSRA1 Bracket Anchorage Detail



Photo No. 2
Pretest Condition Cupped Tip (Left) and Nylon Tip (Right) Tensions Bolt Details

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Photo No. 3

OSHA 1901.140(c)(8) Static Load Evaluation - Perpendicular to Seam Test Setup



Photo No. 4

OSHA 1901.140(c)(8) Static Load Evaluation - Perpendicular Load Application Detail

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Photo No. 5

OSHA 1901.140(c)(8) Static Load Evaluation - Perpendicular Load Test End Condition



Photo No. 6

OSHA 1901.140(c)(8) Static Load Evaluation - Parallel to Seam Test Setup

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Photo No. 7

OSHA 1901.140(c)(8) Static Load Evaluation - Parallel Load Application Detail



Photo No. 8

OSHA 1901.140(c)(8) Static Load Evaluation - Parallel Load Test End Condition

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Photo No. 9

OSHA 1901.140(c)(7) Bracket Proof Load/Ultimate Failure Evaluation Test Setup



Photo No. 10

OSHA 1901.140(c)(7) - Ultimate Failure Condition



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SECTION 10

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	11/02/18	N/A	Original Report Issue