

17620

17621, 17622, 17623, 17624, 17625

STONE COATED STEEL ROOF HOOK FOR SIDE MOUNT RAILS



A DIVISION OF QUICKSCREWS INTERNATIONAL CORP

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UL CERTIFICATION

PROOF OF UL CERTIFICATION

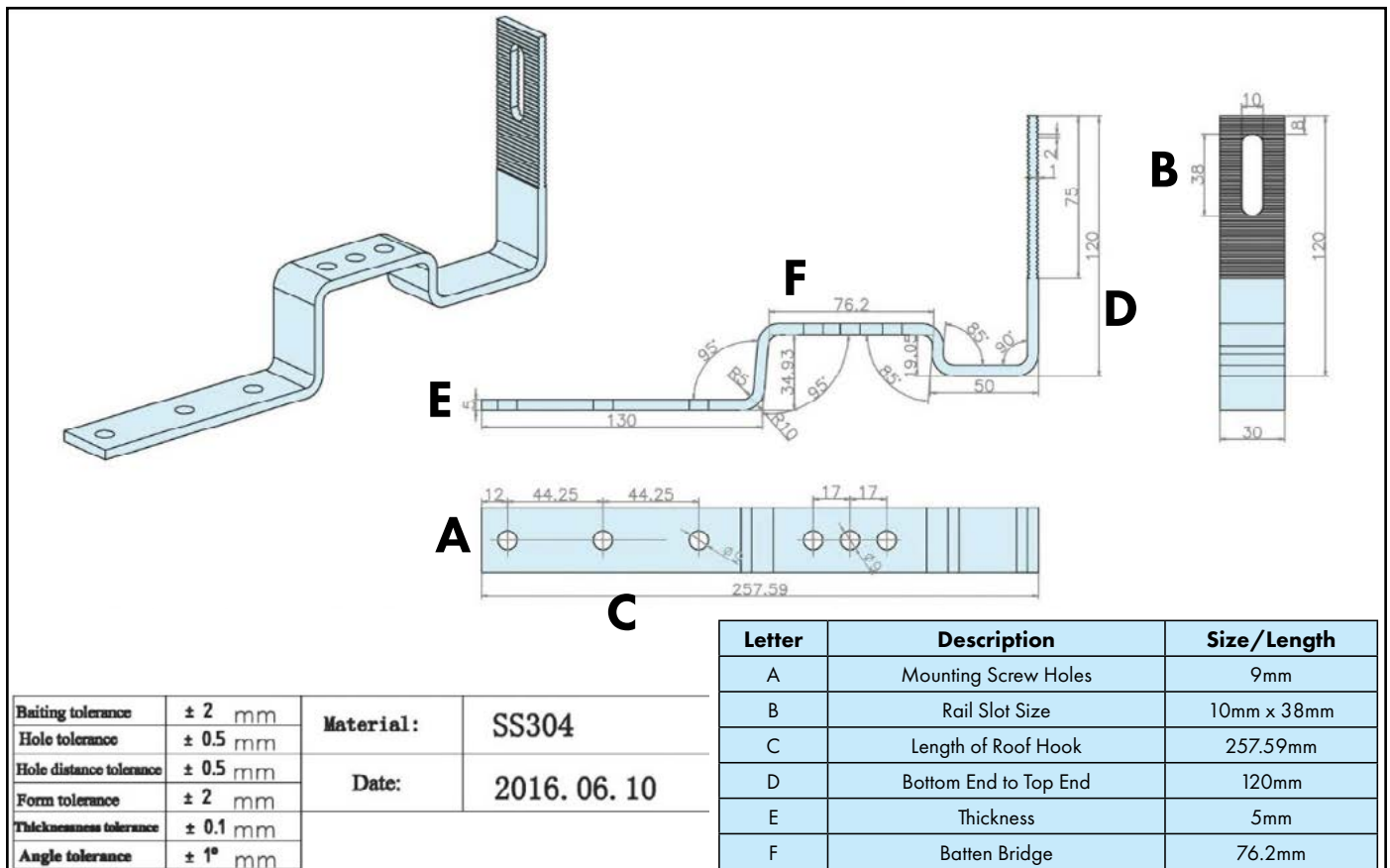
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COMPATIBILITY LETTER

FOR WESTLAKE / UNIFIED STEEL™

SPEC SHEET

Part #	Box Quantity	Screw Size
17620	20 Hooks	N/A
17621	1 Hook	N/A
17622	20 Hooks; 40 Screws	#14 x 3"
17623	1 Hook; 2 Screws	#14 x 3"
17624	20 Hooks; 40 Screws	5/16" x 3"
17625	1 Hook; 2 Screws	5/16" x 3"



CERTIFICATE OF COMPLIANCE

Certificate Number E493748
Report Reference E493748-20170817
Date 2023-April-07

Issued to: QuickBOLT a Division of Quickscrews International Corp
5830 Las Positas Rd
Livermore CA, 94551 US

**This is to certify that
representative samples of**

MOUNTING SYSTEMS, MOUNTING DEVICES, CLAMPING
DEVICES AND GROUND LUGS FOR USE WITH
PHOTOVOLTAIC MODULES AND PANELS - COMPONENT
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the component
requirements in the Standard(s) indicated on this Certificate. UL
Recognized components are incomplete in certain constructional
features or restricted in performance capabilities and are
intended for installation in complete equipment submitted for
investigation to UL LLC.

Standard(s) for Safety: UL 2703, Mounting systems, mounting devices,
clamping/retention devices, and ground lugs for use with flat-
plate photovoltaic modules and panels-.

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification
report have met the requirements for UL certification. It does not provide authorization to apply the UL
Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure
for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified
and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.



Deborah Jennings-Conner, VP Regulatory Services

UL LLC

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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



CERTIFICATE OF COMPLIANCE

Certificate Number E493748
Report Reference E493748-20170817
Date 2023-April-07

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Models:

USR – Component, Roof Mounting Hook Units, Models 15891 15893 15987 16000 16317 16318 16319 16320 16988 16990 16991 16993 17508 17509 17510 17511 17512 17513 17514 17515 17516 17517 17518 17519 17520 17521 17522 17523 17524 17525 17526 17527 17536 17537 17538 17539 17540 17541 17542 17543 17544 17545 17546 17547 17548 17549 17550 17551 17552 17553 17554 17555 17556 17558 17559 17560 17566 17567 17568 17569 17570 17571 17572 17573 17574 17575 17576 17577 17578 17579 17580 17585 17586 17587 17588 17589 17592 17596 17597 17598 17599 17600 17601 17606 17607 17608 17609 17610 17611 17612 17613 17614 17615 17616 17617 17618 17620 17621 17622 17623 17624 17625 17626 17627 17628 17629 17630 17631 17632 17633 17636 17637 17638 17639 17640 17641 17642 17643 17646 17647 17648 17649 17650 17651 17652 17653 17654 17659 17664 17667 17669 17670 17671 17672 17673 17678 17679 17680 17681 17686 17687 17688 17689 17700 17701 17702 17703 17704 17705 17706 17707 17708 17709 17710 17711 17712 17717 17718 17750 17751 17752 17753 17759 15891-10 15891BLK-10 15987A 15987B 17667SS 17672SS 17680SS 17688SS 17713SS 17720 17721SS 17723 17724SS 17726 17727SS 17729 17730SS 15894SS 15891SS 15987BSS 17660 17661 17662 17663 17747 17748

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

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INSTALL INSTRUCTIONS



1



2



3



4



5



6

RECOMMENDED MATERIALS

- Rafter locator
- Chalk or crayon
- 3/16" Drill Bit
- Sealant

INSTALLATION INSTRUCTIONS

1. Remove the Stone Coated Steel Sheets from the area in which you will be installing.
2. Locate and mark the rafters.
3. Place the Hook and predrill two holes with the 3/16" Drill Bit.
4. Remove the Hook, clear the debris, and fill the predrilled holes with sealant.
5. Place and mount the Hook using the Solar Screws.
6. Place the Stone Coated Steel Sheets back over the installation area.

ADJUSTABLE HOOKS

- Adjust the Hook as need be either before or after mounting the Hook.

IF USING GALVA FLASHING

1. Make a cut in the paper
2. Apply sealant to the underside of the Galva Flashing
3. Slide the Flashing underneath the paper or nail down edges
4. Cover the edges of the Galva Flashing with sealant



PN 15991

BUILDING CODE LETTER



March 22nd, 2023

To whom this may concern,

QuickBOLT is committed to excellence. The parts tested are durable goods, meaning the material composition and detailed specifications of the parts do not change. Therefore, all stamps are current. Any part tested will have the same results no matter what year the tests are performed. All testing and reports are current and valid with 2022 CBC standards.

SolarRoofHook is the previous name of QuickBOLT. Any test result referencing SolarRoofHook is referring to a QuickBOLT product.

All our parts were tested by a third-party test facility, in possession of a current engineering license for the state where the tests were performed for the following.

1. Uplift test
2. Downward load test
3. Lateral Test – Asphalt Mounts, and Metal Mounts only
4. ASTM E2440 and ASTM E330 Waterproof Tests - QuickBOLT only

The following is an excerpt from:

CALIFORNIA BOARD FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS
guide to Engineering & Land Surveying for City and County Officials
Page 12, Line 27

27. If the license has expired between the time the engineering documents were prepared and the time when the local agency's review is performed, do the documents need to be re-sealed by a licensee with a current license? (B&P Code §§ 6733, 6735, 6735.3, 6735.4)

As long as the license was current at the time the engineering documents were prepared, the documents do not need to be re-sealed prior to review by the local agency. However, any changes (updates or modifications) to the documents that are made following the review by the local agency would have to be prepared by a licensed engineer with a current license and those changes would have to be signed and sealed.

We trust the information provided will resolve any request for the test reports submitted to have a stamp from the current year.

Regards,

Rick Gentry
Executive Vice President

ENGINEERING REPORT



APPLIED MATERIALS & ENGINEERING, INC.

980 41st Street
Oakland, CA 94608

Tel: (510) 420-8190
FAX: (510) 420-8186
e-mail: info@appmateng.com

February 28, 2017

Mr. Rick Gentry
SolarRoofHook
5830 Las Positas Road
Livermore, CA 94551

Project Number 1170166C

Subject: 90° Non-Adjustable Stone Coated Steel Roof Hook
Part #17620 Laboratory Load Testing

Dear Mr. Gentry:

As requested, Applied Materials & Engineering, Inc. (AME) has completed load-testing the 90° Non-Adjustable Stone Coated Steel Roof Hook; see Appendix A, Figure A1. The purpose of our testing was to evaluate the compression and tension (uplift) load capacity of the 90° Non-Adjustable Stone Coated Steel Roof Hook attached to a 2"x4" Douglas Fir rafter using either two #14x3" or two 5/16"Øx3" Hex Washer Head S/S Mounting Screws (Sold as Part# 17556 and Part# 16988, respectively).

SAMPLE DESCRIPTION

Mockup samples were delivered to our laboratory on January 31, 2017. Mockup configuration consisted of three 12" long rafters at 6.5" o.c., screwed to 1/2" Structural I plywood. The 90° Non-Adjustable Stone Coated Steel Roof Hook is attached through the plywood into a rafter with two fasteners.

TEST PROCEDURES & RESULTS

1. Compression Load Test

A total of six tests (three of #14x3" and three of 5/16"Øx3" screws) were conducted for compressive load capacity on February 24, 2017 using a United Universal testing machine. Samples were rigidly attached to the testing machine and a compressive load was applied to the hook. The samples were loaded in compression at a constant rate of axial deformation of 0.10 in. /min. without shock until the hook was bent and came in contact with the test board; displacement at maximum load before coming in contact with the test board was recorded. Based on the above testing, the average maximum compressive load of the 90° Non-Adjustable Stone Coated Steel Roof Hook attached to a 2"x4" Douglas Fir rafter using two #14x3" lag screws was determined to be 172 lbf. Detailed results are provided in Table I and Figure 1. The average maximum uplift load of the 90° Non-Adjustable Stone Coated Steel Roof Hook attached to a 2"x4" Douglas Fir rafter using two 5/16"Øx3" lag screws was determined to be 152 lbf. Detailed results are provided in Table III and Figure 3. Test setup and mode of failure are provided in Appendix B, Figure B1.

The specific gravity and moisture content of each rafter was tested in accordance with ASTM D2395, Method A (oven-dry). The average specific gravity and average moisture content of the six samples were determined to be 0.360 and 10.1%, respectively.

Mr. Rick Gentry

Project Number 1170166C

SolarRoofHook

90° Non-Adjustable Stone Coated Steel Roof Hook

Part #17620 Laboratory Load Testing

February 28, 2017

2. Tensile (Uplift) Load Test

A total of six tests (three of #14x3" and three of 5/16"Øx3" screws) were conducted for tensile (uplift) load capacity on February 24, 2017 using a United Universal testing machine. Samples were rigidly attached to the testing machine and an uplift (tensile) load was applied to the hook. The samples were loaded in tension at a constant rate of axial deformation of 0.10 in. /min. without shock until failure occurred; displacement at maximum load was recorded. Based on the above testing, the average maximum uplift load of the 90° Non-Adjustable Stone Coated Steel Roof Hook attached to a 2"x4" Douglas Fir rafter using two #14x3" lag screws was determined to be 1475 lbf. Detailed results are provided in Table II and Figure 2. The average maximum uplift load of the 90° Non-Adjustable Stone Coated Steel Roof Hook attached to a 2"x4" Douglas Fir rafter using two 5/16"Øx3" lag screws was determined to be 1617 lbf. Detailed results are provided in Table IV and Figure 4. Test setup and mode of failure are provided in Appendix B, Figure B2.

The specific gravity and moisture content of the rafter was tested in accordance with ASTM D2395, Method A (oven-dry). The average specific gravity and average moisture content of the six samples were determined to be 0.359 and 10.1%, respectively.

Respectfully Submitted,

APPLIED MATERIALS & ENGINEERING, INC.


Joseph Gapuz
Laboratory Manager



Reviewed by:

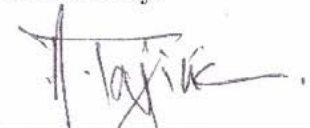

Armen Tajirian, Ph.D., P.E.
Principal

TABLE I

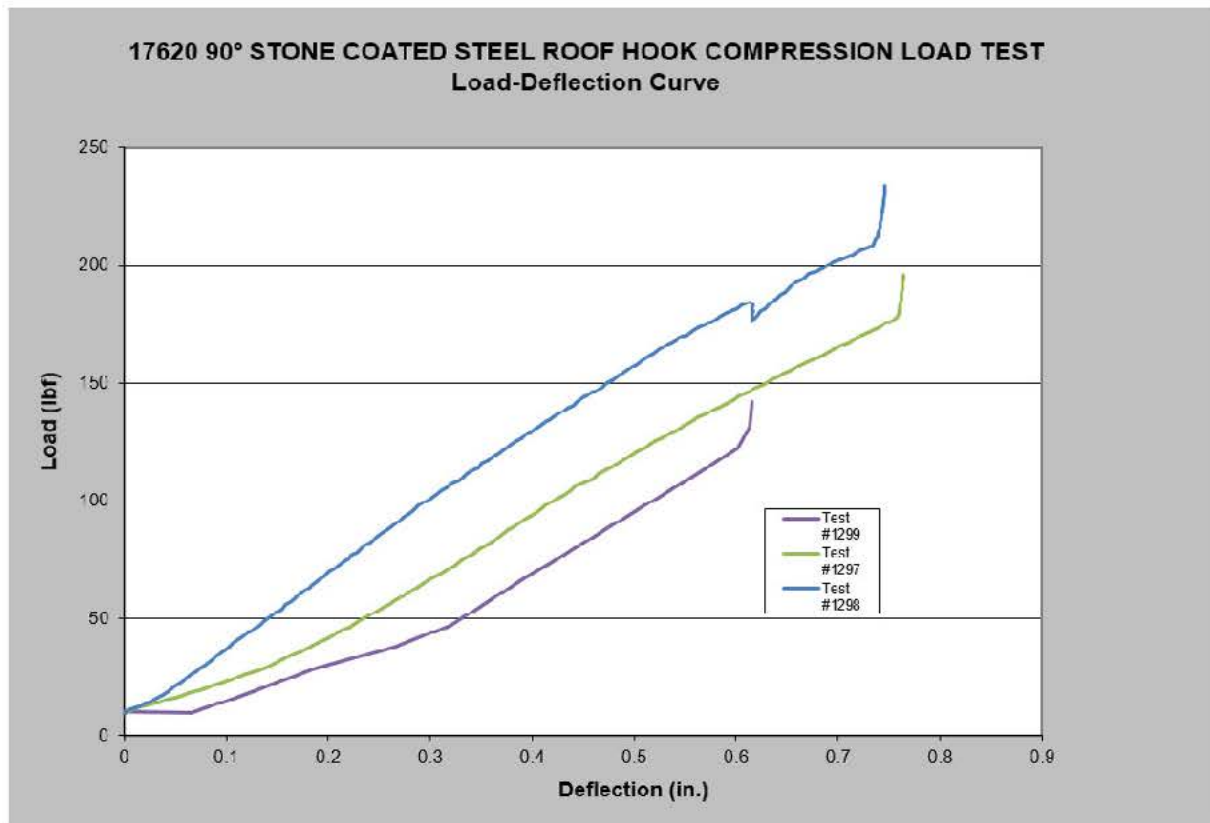
COMPRESSIVE LOAD TEST RESULTS

90° NON-ADJUSTABLE STONE COATED STEEL ROOF HOOK
(PART #17620 w/ #14x3" LAG SCREWS)

PROJECT NUMBER 1170166C

TEST NUMBER	MAXIMUM COMPRESSIVE LOAD (lbf)	DISPLACEMENT AT MAXIMUM LOAD (in.)	MODE OF FAILURE	RAFTER SPECIFIC GRAVITY	RAFTER MOISTURE CONTENT (%)
1297	180	0.7	Hook Contacted Plywood	0.349	9.2
1298	210	0.7		0.363	9.9
1299	125	0.6		0.330	10.2
AVERAGE	172	0.7	..	0.347	9.8

FIGURE 1



Note: Maximum deflection and peak load taken before sharp increase in load, when hook contacts plywood test board

TABLE II
TENSILE (UPLIFT) LOAD TEST RESULTS
90° NON-ADJUSTABLE STONE COATED STEEL ROOF HOOK
(PART #17620 w/ #14x3" LAG SCREWS)
PROJECT NUMBER 1170166C

TEST NUMBER	MAXIMUM TENSILE LOAD (lbf)	DISPLACEMENT AT MAXIMUM LOAD (in.)	MODE OF FAILURE	RAFTER SPECIFIC GRAVITY	RAFTER MOISTURE CONTENT (%)
1288	1546	5.2	Lag Screw Pull-out	0.362	10.1
1290	1454	5.3		0.328	10.5
1292	1424	5.1		0.376	10.4
AVERAGE	1475	5.2	..	0.355	10.3

FIGURE 2

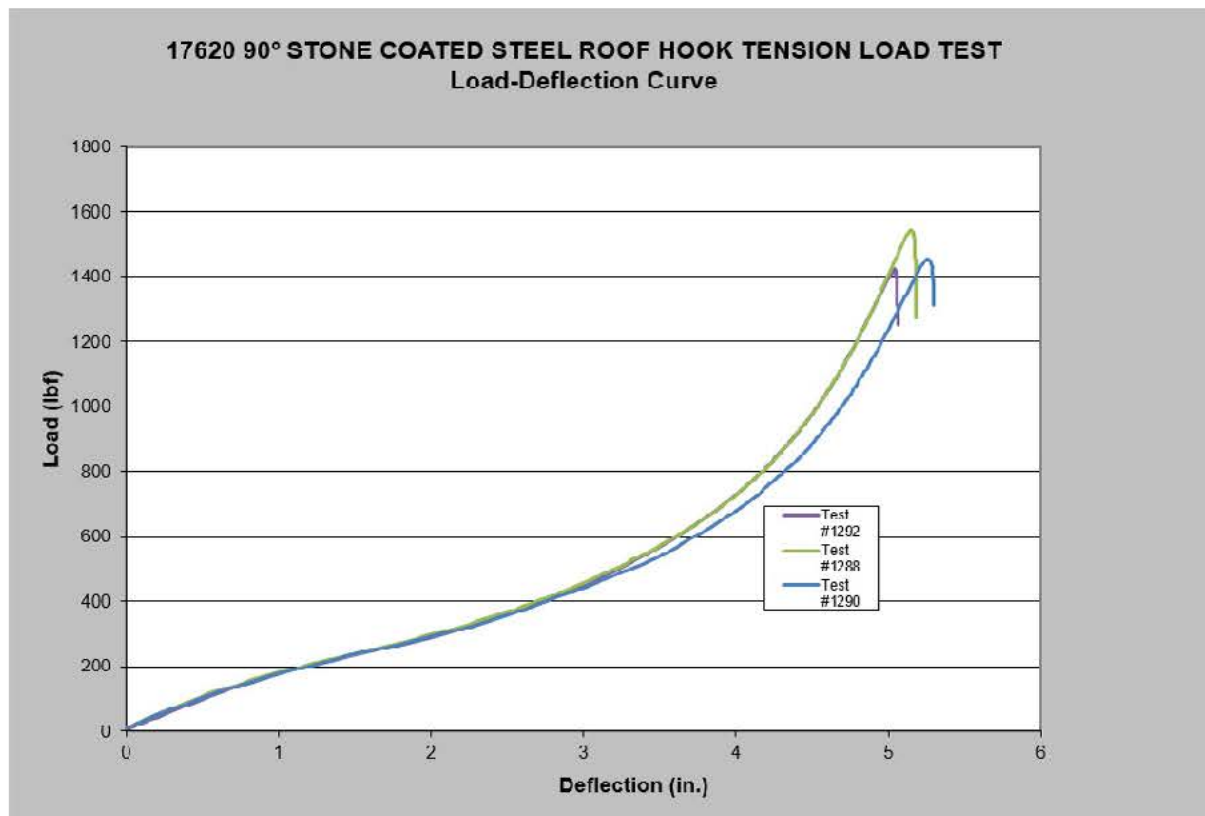


TABLE III

COMPRESSIVE LOAD TEST RESULTS

90° NON-ADJUSTABLE STONE COATED STEEL ROOF HOOK
(PART #17620 w/ 5/16"Øx3" LAG SCREWS)

PROJECT NUMBER 1170166C

TEST NUMBER	MAXIMUM COMPRESSIVE LOAD (lbf)	DISPLACEMENT AT MAXIMUM LOAD (in.)	MODE OF FAILURE	RAFTER SPECIFIC GRAVITY	RAFTER MOISTURE CONTENT (%)
1300	183	0.7	Hook Contacted Plywood	0.381	10.5
1301	134	0.5		0.367	9.8
1302	138	0.6		0.370	10.6
AVERAGE	152	0.6	..	0.373	10.3

FIGURE 3

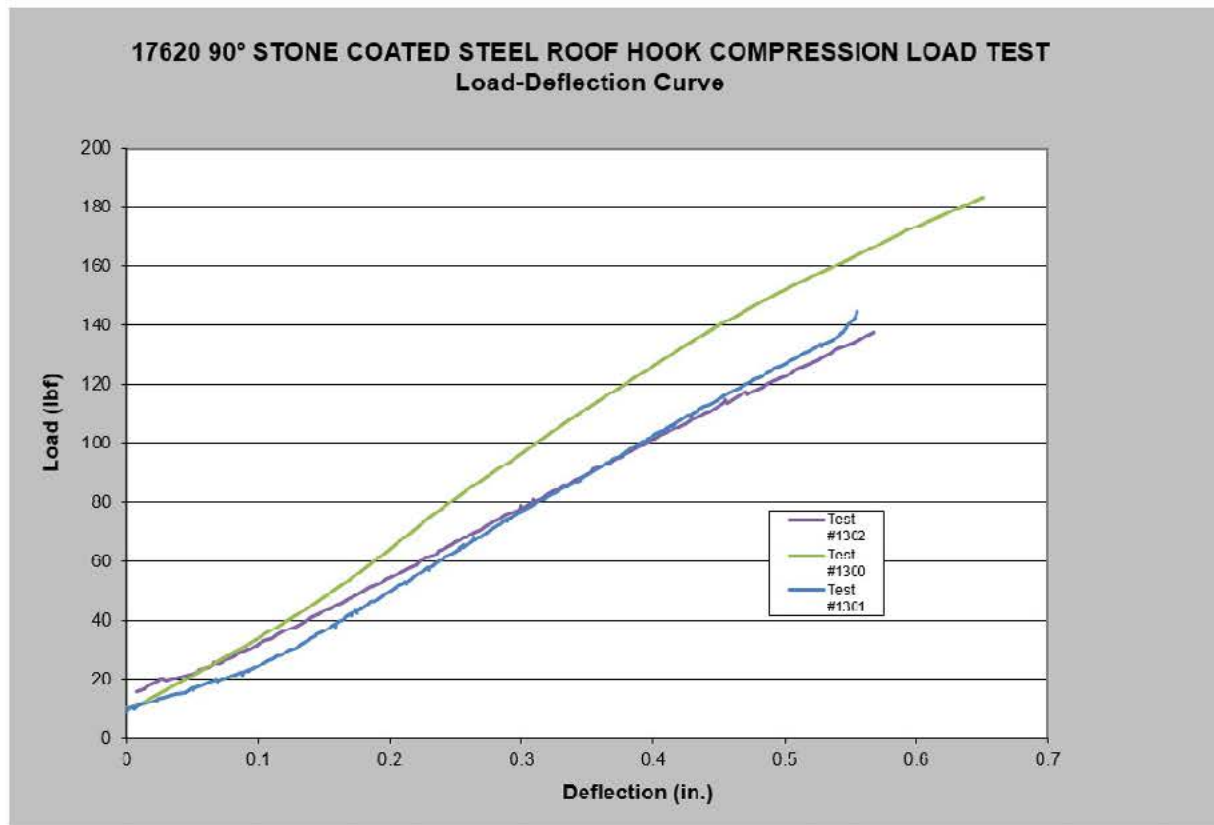


TABLE IV

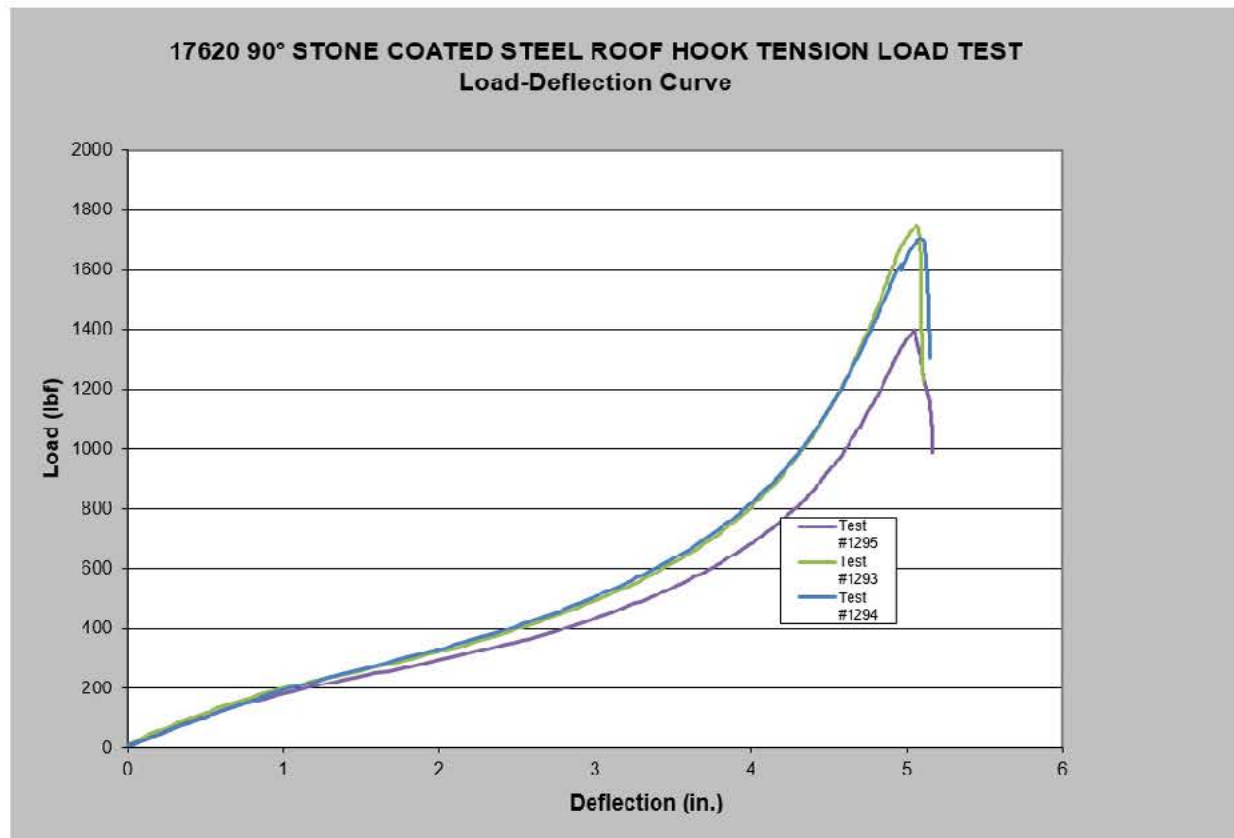
TENSILE (UPLIFT) LOAD TEST RESULTS

90° NON-ADJUSTABLE STONE COATED STEEL ROOF HOOK
(PART #17620 w/ 5/16"Øx3" LAG SCREWS)

PROJECT NUMBER 1170166C

TEST NUMBER	MAXIMUM TENSILE LOAD (lbf)	DISPLACEMENT AT MAXIMUM LOAD (in.)	MODE OF FAILURE	RAFTER SPECIFIC GRAVITY	RAFTER MOISTURE CONTENT (%)
1293	1749	5.1	Lag Screw Pull-out	0.385	10.2
1294	1704	5.1		0.367	9.6
1295	1398	5.0		0.333	9.9
AVERAGE	1617	5.1	..	0.362	9.9

FIGURE 4



COMPATIBILITY LETTER



2801 Post Oak, Suite 600
Houston, TX 77056

T. 800.669.8453
WestlakeRoyalRoofing.com

August 17, 2022

To Our Valued Customers:

In regard to the Solar Roof Hooks that are manufactured by QuickBOLT, the product was developed and manufactured to meet the design needs and compatibility with our *Unified Steel™ stone coated roofing system and as such, should be deemed to be fully useable in the designated fashion prescribed by Unified Steel™, Westlake Royal Roofing Solutions and QuickBOLT.

Sincerely,

Rob Anderson

Robin Anderson
Technical & Strategy Development Manager

**Compatible with the following Unified Steel™ panel profiles – PINE-CREST Shake, COTTAGE Shingle, PACIFIC Tile, BARREL-VAULT Tile, & GRANITE-RIDGE Shingle*

