

# SNR SOLAR LLC. DBA SNAPNRACK MIAMI-DADE TEST REPORT

## SCOPE OF WORK

ASTM D7147 UPLIFT AND SHEAR LOAD TESTING ON THE *ULTRAFOOT*, *DECK* MOUNT WITH FOUR, #14 BY 2-1/4 IN OR TWO, #14 BY 3 IN WOOD SCREWS - DECK AND RAFTER MOUNT

## REPORT NUMBER

S1170.02-119-18 R1

## TEST DATES

12/04/24 - 12/18/24

## ISSUE DATE

01/21/25

## REVISED DATE

02/04/25

## RECORD RETENTION END DATE

12/18/34

## MIAMI-DADE COUNTY NOTIFICATION NO.

ATI24089

## LABORATORY CERTIFICATION NO.

22-0428.14

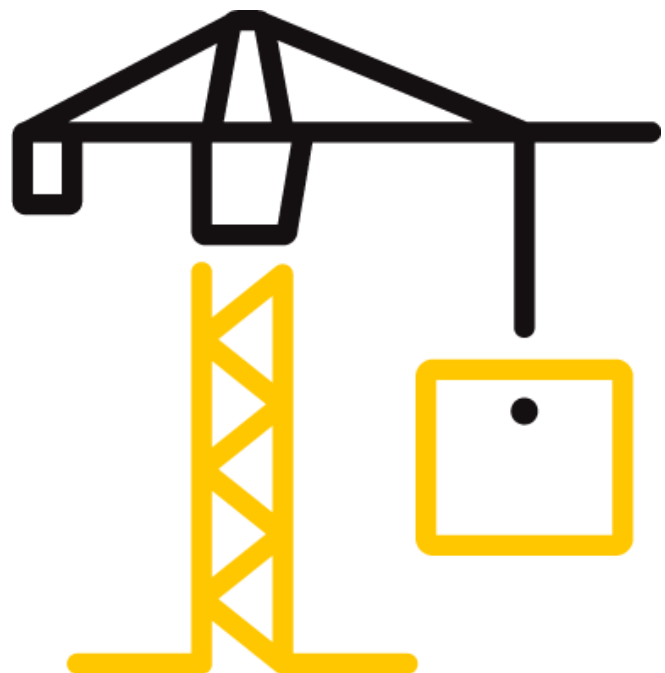
## PAGES

25

## DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2790 (06/05/24)

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## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

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### REPORT ISSUED TO

#### SNR SOLAR LLC. DBA SNAPNRACK

775 Fiero Lane, Suite 200

San Luis Obispo, CA 93401

### SECTION 1

#### SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by SNR Solar LLC. dba SnapNrack to perform uplift and shear load testing on their *UltraFoot, Deck* mount with four, #14 by 2-1/4 in or two, #14 by 3 in wood screws - deck and rafter mount. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek test facility in York, Pennsylvania.

Intertek B&C in York, Pennsylvania has demonstrated compliance with ISO/IEC International Standard 17025 and is consequently accredited as a Testing Laboratory (TL-144) by International Accreditation Service, Inc. (IAS).

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 ten 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.

For INTERTEK B&C:

|                      |                 |                     |                              |
|----------------------|-----------------|---------------------|------------------------------|
| <b>COMPLETED BY:</b> | Adam J. Schrum  | <b>REVIEWED BY:</b> | V. Thomas Mickley, Jr., P.E. |
| <b>TITLE:</b>        | Project Manager | <b>TITLE:</b>       | Senior Staff Engineer        |
| <b>SIGNATURE:</b>    |                 | <b>SIGNATURE:</b>   |                              |
| <b>DATE:</b>         | 02/04/25        | <b>DATE:</b>        | 02/04/25                     |

|                      |                      |
|----------------------|----------------------|
| <b>COMPLETED BY:</b> | Tanya A. Dolby, P.E. |
| <b>TITLE:</b>        | Engineering Manager  |
| <b>SIGNATURE:</b>    |                      |
| <b>DATE:</b>         | 02/04/25             |

AJS:vtm/tad/aas

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## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

### SECTION 2

#### SUMMARY OF TEST RESULTS

##### *UltraFoot, Deck with Four, #14 by 2-1/4 in Wood Screws - Deck Mount*

|  |   |
|--|---|
| <b>UPLIFT RESISTANCE <sup>1</sup></b>                    | Average Load at 1/8 in Displacement - 121 lbf<br>Average Ultimate Load - 439 lbf  |
| <b>SHEAR PERPENDICULAR TO THE FLANGE <sup>1, 2</sup></b> | Average Load at 1/8 in Displacement - 140 lbf<br>Average Ultimate Load - 1053 lbf |
| <b>SHEAR PARALLEL TO THE FLANGE <sup>1, 2</sup></b>      | Average Load at 1/8 in Displacement - 370 lbf<br>Average Ultimate Load - 1106 lbf |

<sup>1</sup> Test/Ulimate loads should not be used as design loads or safe working loads.

<sup>2</sup> Shear loads represent the capacity of the mount to roof connection only and not the shear capacity of the mount as an assembly.

##### *UltraFoot, Deck with Two, #14 by 3 in Wood Screws - Rafter Mount*

|  |   |
|--|---|
| <b>UPLIFT RESISTANCE <sup>1</sup></b>                    | Average Load at 1/8 in Displacement - 626 lbf<br>Average Ultimate Load - 1173 lbf |
| <b>SHEAR PERPENDICULAR TO THE FLANGE <sup>1, 2</sup></b> | Average Load at 1/8 in Displacement - 655 lbf<br>Average Ultimate Load - 3061 lbf |
| <b>SHEAR PARALLEL TO THE FLANGE <sup>1, 2</sup></b>      | Average Load at 1/8 in Displacement - 812 lbf<br>Average Ultimate Load - 3498 lbf |

<sup>1</sup> Test/Ulimate loads should not be used as design loads or safe working loads.

<sup>2</sup> Shear loads represent the capacity of the mount to roof connection only and not the shear capacity of the mount as an assembly.

### SECTION 3

#### TEST METHOD

The specimens were evaluated in general accordance with the following:

**ASTM D7147-11 (Reapproved 2018)**, *Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers*

The uplift and shear load testing reported herein evaluated the connection of the *UltraFoot, Deck* mount to the mock roof and did not evaluate the *UltraFoot, Deck* mount with an attached *Ultra Rail* mount or panel.

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

### SECTION 4

#### MATERIAL SOURCE

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

##### Deck Mount Condition:

Each tested specimen was installed on a mock roof consisting of one 12 in square piece of 15/32 in plywood sheathing, one piece of 30# felt underlayment, and one, three-tab shingle.

##### Rafter Mount Condition:

Each tested specimen was installed on a 12 in square by 6-1/4 in deep mock roof consisting of one 12 in long SPF 2x6 joist, one 12 in square piece of 15/32 in plywood sheathing, one piece of 30# felt underlayment, and one, three-tab shingle.

See photographs of test specimens in Section 10.

### SECTION 5

#### EQUIPMENT

Testing was performed in an Instron Model 5989 Universal Testing Machine. Load and deflection were recorded manually using either the crosshead movement of the test machine, a 2-inch travel Instron® Model 3540-200T-ST deflectometer or a dial indicator accurate to 0.001 in.

### SECTION 6

#### LIST OF OFFICIAL OBSERVERS

| NAME            | COMPANY      |
|-----------------|--------------|
| Shawn E. Beamer | Intertek B&C |
| Adam J. Schrum  | Intertek B&C |

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

### SECTION 7

#### TEST SPECIMEN DESCRIPTION

The *UltraFoot, Deck* mount is a 3 in long angle-shaped aluminum extrusion with a 3 in horizontal leg and a 3 in vertical leg (flange).

##### Deck Mount Condition:

Each mount was fastened to the plywood (deck) of the mock roof with four, #14-10 by 2-1/4 in, stainless steel, hex-washer head, Type A point wood screws with sealing washers.

##### Rafter Mount Condition:

Each mount was fastened to the mock roof with two, #14-10 by 3 in, stainless steel, hex- head, Type A point wood screws with sealing washers. All fasteners were attached to the joist (rafter).

Drawings are included in Section 11 to verify the overall dimensions and other pertinent information of the tested product, its components, and any constructed assemblies.

### SECTION 8

#### TEST PROCEDURE

The purpose of this testing was to determine the uplift and shear load capacity of the product in accordance with ASTM D7147.

##### *Uplift Resistance Testing*

The mock roof assemblies were rigidly mounted to the base of an Instron Model 5989 Universal Test Machine. Load was applied in tension to the 3 in leg of the aluminum angle bracket, through a load cell attached to the testing machine crosshead. Test speed was 0.05 in/min. Displacement was taken with the crosshead movement of the test machine, which was zeroed at zero load. Ultimate load was the maximum load the test assembly could carry.

##### *Shear Load Testing*

The mock roof assemblies were rigidly mounted to the base of an Instron Model 5989 Universal Test Machine. Load was applied to the base of the angle bracket in both a parallel and perpendicular orientation to the flange through a load cell attached to the testing machine crosshead. Test speed was 0.10 in/min. Displacement was taken with either a 2-inch travel Instron® Model 3540-200T-ST deflectometer or a dial indicator, accurate to 0.001 in, attached to the base of the test machine, which were zeroed at zero load. Ultimate load was the maximum load the test assembly could carry.

See photographs in Section 10 for typical test set-up.

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

### SECTION 9

#### TEST RESULTS

##### Uplift Resistance Testing

Test/Ulimate loads should not be used as design loads or safe working loads.

##### *UltraFoot, Deck with Four, #14 by 2-1/4 in Wood Screws - Deck Mount*

Test Date: 12/09/24

| BASE DISPLACEMENT<br>RELATIVE TO MOCK<br>ROOF (in) | SPECIMEN NO. |     |     |
|--|--------------|-----|-----|
|  | 1            | 2   | 3   |
|  | LOAD (lbs)   |     |     |
| 0.020  | 27           | 17  | 25  |
| 0.040  | 46           | 37  | 44  |
| 0.060  | 65           | 58  | 60  |
| 0.080  | 83           | 78  | 77  |
| 0.100  | 102          | 99  | 93  |
| 0.120  | 120          | 118 | 110 |
| 0.140  | 140          | 137 | 127 |
| 0.160  | 160          | 157 | 144 |
| 0.180  | 181          | 176 | 163 |
| 0.200  | 202          | 195 | 182 |
| <b>Ultimate Load:</b>                              | 471          | 369 | 476 |

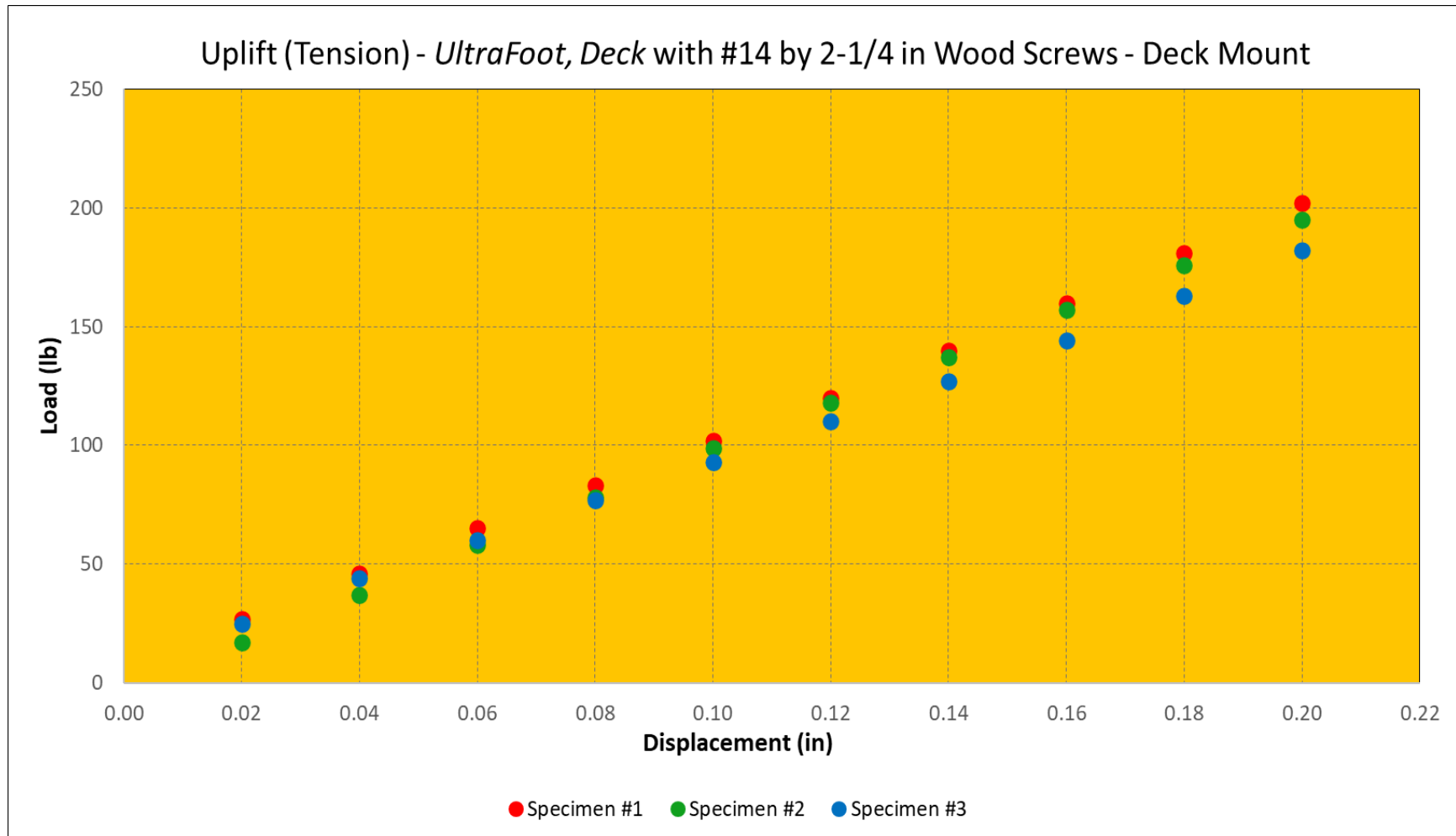
| SPECIMEN NO.    | ULTIMATE LOAD (lbf) | DEVIATION FROM AVERAGE           | LOAD @ 1/8 in DISPLACEMENT (lb) | MODE OF FAILURE                     |
|-----------------|---------------------|----------------------------------|---------------------------------|-------------------------------------|
| 1               | 471                 | +7.3%                            | 125                             | Wood screws withdrew from mock roof |
| 2               | 369                 | -15.9%                           | 123                             |                                     |
| 3               | 476                 | +8.5%                            | 114                             |                                     |
| <b>Average:</b> | <b>439</b>          | <b>Average:</b>                  | <b>121</b>                      |                                     |
|                 |                     | <b>Standard Deviation:</b>       | 6                               |                                     |
|                 |                     | <b>Coefficient of Variation:</b> | 5%                              |                                     |

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

### UltraFoot, Deck with Two, #14 by 3 in Wood Screws - Rafter Mount

Test Date: 12/04/24

| BASE DISPLACEMENT<br>RELATIVE TO MOCK<br>ROOF (in) | SPECIMEN NO. |      |      |
|--|--------------|------|------|
|  | 1            | 2    | 3    |
|  | LOAD (lbs)   |      |      |
| 0.020  | 55           | 86   | 11   |
| 0.040  | 127          | 187  | 43   |
| 0.060  | 227          | 315  | 93   |
| 0.080  | 346          | 460  | 160  |
| 0.100  | 481          | 620  | 249  |
| 0.120  | 622          | 787  | 366  |
| 0.140  | 739          | 941  | 511  |
| 0.160  | 817          | 1070 | 678  |
| 0.180  | 851          | 1174 | 840  |
| 0.200  | 834          | 1267 | 966  |
| <b>Ultimate Load:</b>                              | 851          | 1354 | 1314 |

| SPECIMEN NO.    | ULTIMATE LOAD (lbf) | DEVIATION FROM AVERAGE           | LOAD @ 1/8 in DISPLACEMENT (lb) | MODE OF FAILURE                     |
|-----------------|---------------------|----------------------------------|---------------------------------|-------------------------------------|
| 1               | 851                 | -27.5%                           | 651                             | Wood screws withdrew from mock roof |
| 2               | 1354                | +15.4%                           | 826                             |                                     |
| 3               | 1314                | +12.0%                           | 402                             |                                     |
| <b>Average:</b> | <b>1173</b>         | <b>Average:</b>                  | <b>626</b>                      |                                     |
|                 |                     | <b>Standard Deviation:</b>       | 213                             |                                     |
|                 |                     | <b>Coefficient of Variation:</b> | 34%                             |                                     |

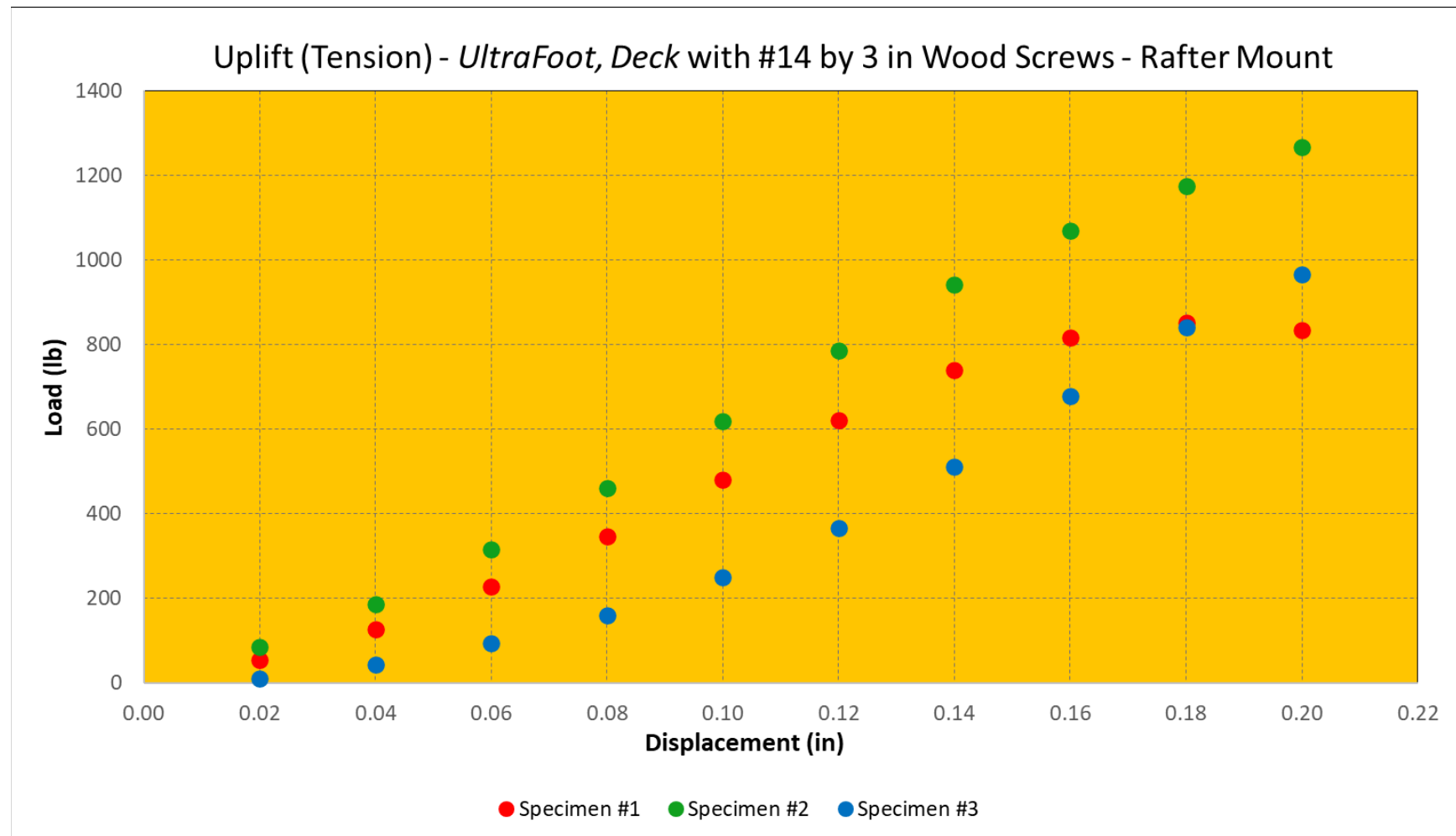


## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



**TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK**

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

**Shear Load Testing**

Test/Ultimate loads should not be used as design loads or safe working loads.

**UltraFoot, Deck with Four, #14 by 2-1/4 in Wood Screws - Deck Mount (Shear Perpendicular to the Flange)**

Test Date: 12/17/24

| BASE DISPLACEMENT<br>RELATIVE TO MOCK<br>ROOF (in) | SPECIMEN NO. |     |     |
|--|--------------|-----|-----|
|  | 1            | 2   | 3   |
|  | LOAD (lbs)   |     |     |
| 0.020  | 24           | 29  | 24  |
| 0.040  | 40           | 48  | 44  |
| 0.060  | 67           | 65  | 67  |
| 0.080  | 91           | 81  | 89  |
| 0.100  | 117          | 97  | 112 |
| 0.120  | 144          | 117 | 134 |
| 0.140  | 177          | 143 | 176 |
| 0.160  | 221          | 168 | 235 |
| 0.180  | 295          | 194 | 271 |
| 0.200  | 338          | 224 | 306 |
| <b>Ultimate Load:</b>                              | 1423         | 844 | 893 |

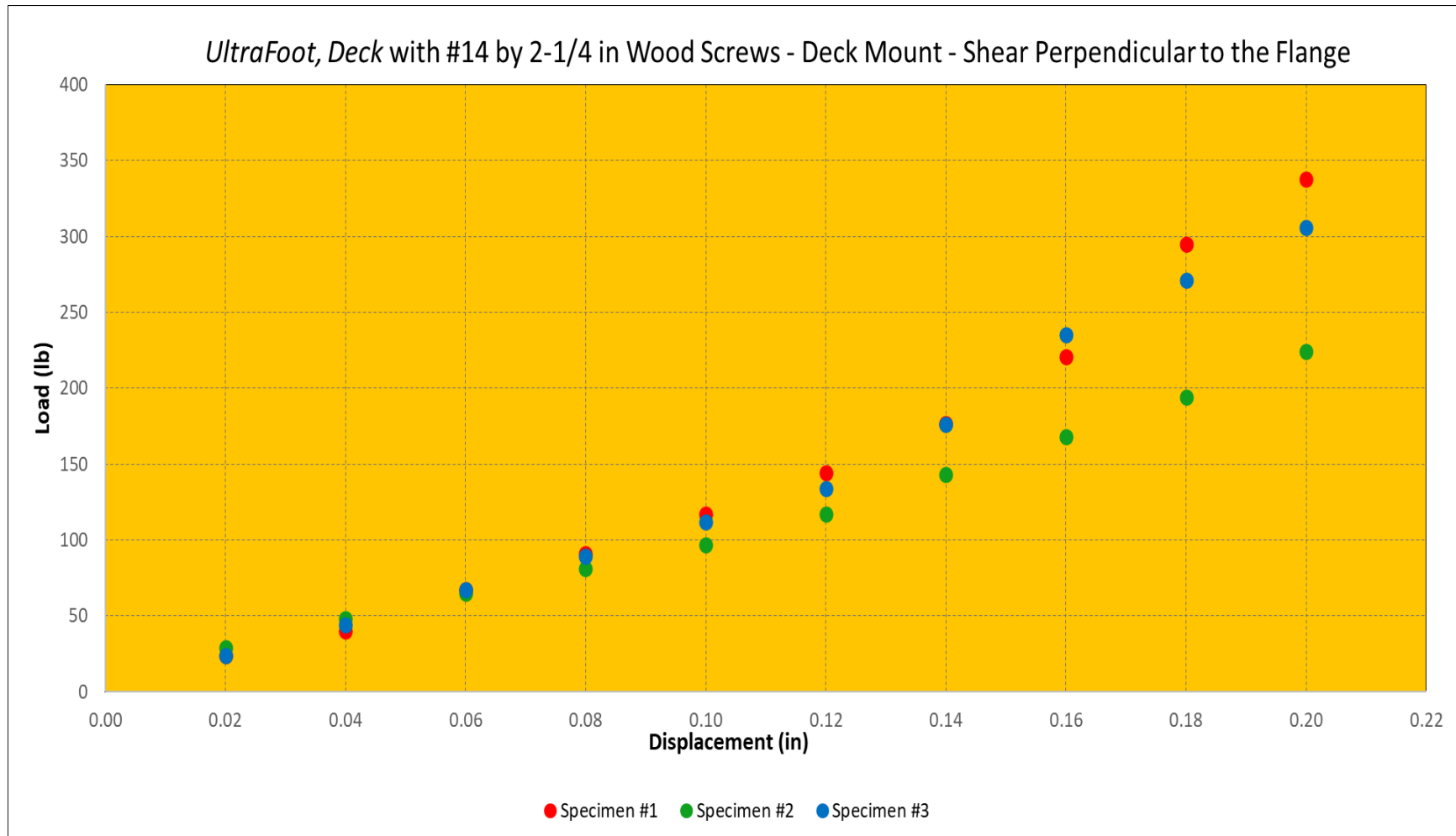
| SPECIMEN NO.    | ULTIMATE LOAD (lbf) | DEVIATION FROM AVERAGE           | LOAD @ 1/8 in DISPLACEMENT (lb) | MODE OF FAILURE                               |
|-----------------|---------------------|----------------------------------|---------------------------------|---|
| 1               | 1423                | +35.1%                           | 152                             | Wood screws bent and pulled through mock roof |
| 2               | 844                 | -19.9%                           | 124                             |   |
| 3               | 893                 | -15.2%                           | 145                             |   |
| <b>Average:</b> | <b>1053</b>         | <b>Average:</b>                  | <b>140</b>                      |   |
|                 |                     | <b>Standard Deviation:</b>       | 15                              |   |
|                 |                     | <b>Coefficient of Variation:</b> | 11%                             |   |

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

**UltraFoot, Deck with Four, #14 by 2-1/4 in Wood Screws - Deck Mount (Shear Parallel to the Flange)**

Test Date: 12/18/24

| BASE DISPLACEMENT<br>RELATIVE TO MOCK<br>ROOF (in) | SPECIMEN NO. |      |      |
|--|--------------|------|------|
|  | 1            | 2    | 3    |
|  | LOAD (lbs)   |      |      |
| 0.020  | 130          | 63   | 45   |
| 0.040  | 174          | 103  | 92   |
| 0.060  | 210          | 150  | 145  |
| 0.080  | 238          | 217  | 209  |
| 0.100  | 278          | 293  | 270  |
| 0.120  | 320          | 380  | 348  |
| 0.140  | 373          | 476  | 446  |
| 0.160  | 439          | 575  | 557  |
| 0.180  | --           | 681  | 670  |
| 0.200  | --           | 793  | 779  |
| <b>Ultimate Load:</b>                              | 1014         | 1302 | 1002 |

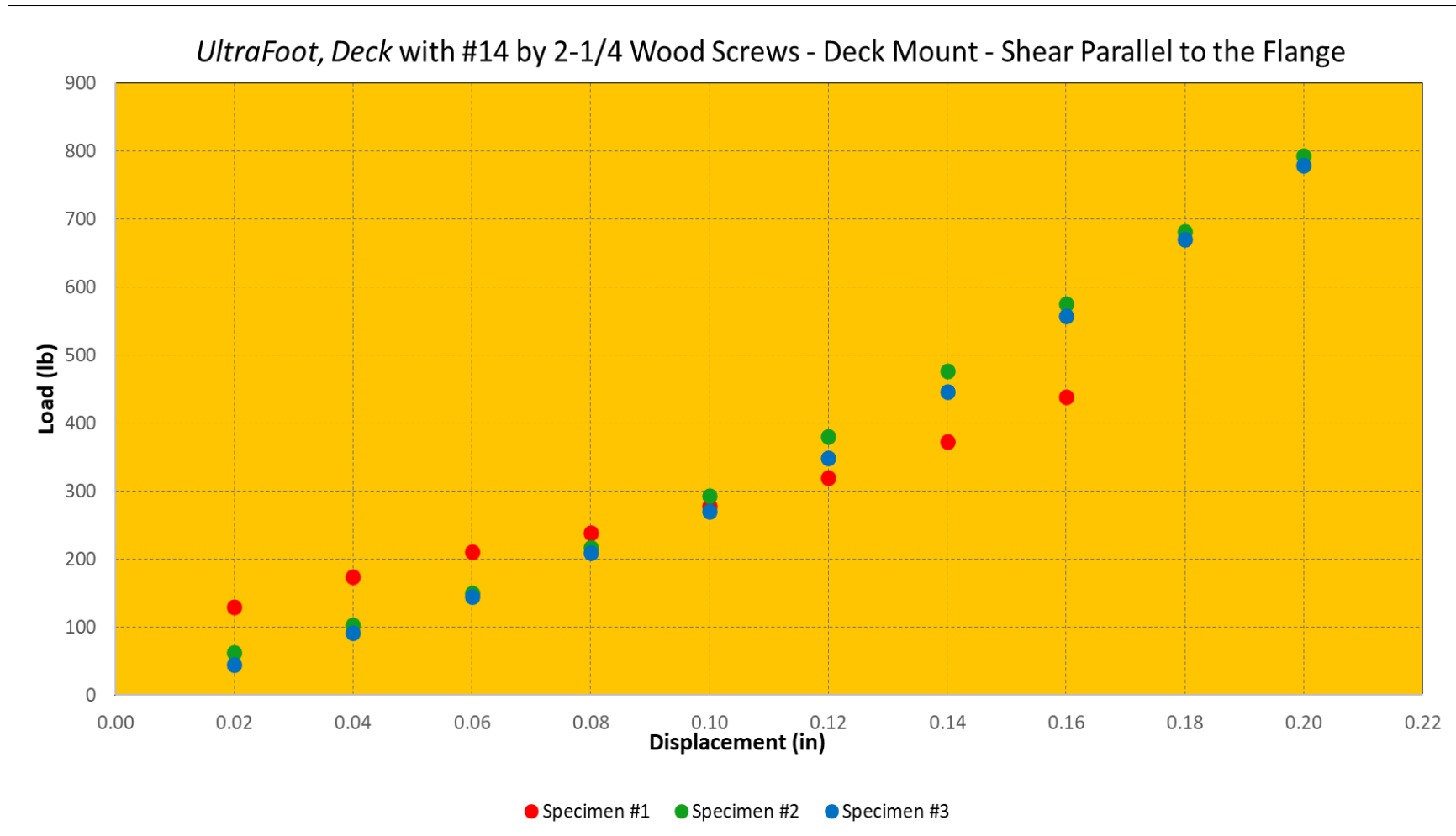
| SPECIMEN NO.    | ULTIMATE LOAD (lbf) | DEVIATION FROM AVERAGE           | LOAD @ 1/8 in DISPLACEMENT (lb) | MODE OF FAILURE                               |
|-----------------|---------------------|----------------------------------|---------------------------------|---|
| 1               | 1014                | -8.3%                            | 333                             | Wood screws bent and pulled through mock roof |
| 2               | 1302                | +17.7%                           | 404                             |   |
| 3               | 1002                | -9.4%                            | 373                             |   |
| <b>Average:</b> | <b>1106</b>         | <b>Average:</b>                  | <b>370</b>                      |   |
|                 |                     | <b>Standard Deviation:</b>       | 35                              |   |
|                 |                     | <b>Coefficient of Variation:</b> | 10%                             |   |

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

**UltraFoot, Deck with Two, #14 by 3 in Wood Screws - Rafter Mount (Shear Perpendicular to the Flange)**

Test Date: 12/17/24

| BASE DISPLACEMENT<br>RELATIVE TO MOCK<br>ROOF (in) | SPECIMEN NO. |      |      |
|--|--------------|------|------|
|  | 1            | 2    | 3    |
|  | LOAD (lbs)   |      |      |
| 0.020  | 220          | 94   | 162  |
| 0.040  | 280          | 208  | 277  |
| 0.060  | 325          | 311  | 388  |
| 0.080  | 400          | 404  | 487  |
| 0.100  | 466          | 493  | 634  |
| 0.120  | 538          | 575  | 778  |
| 0.140  | 622          | 660  | 906  |
| 0.160  | 715          | 767  | 1018 |
| 0.180  | 799          | 875  | 1127 |
| 0.200  | 880          | 982  | 1237 |
| <b>Ultimate Load:</b>                              | 2603         | 3471 | 3109 |

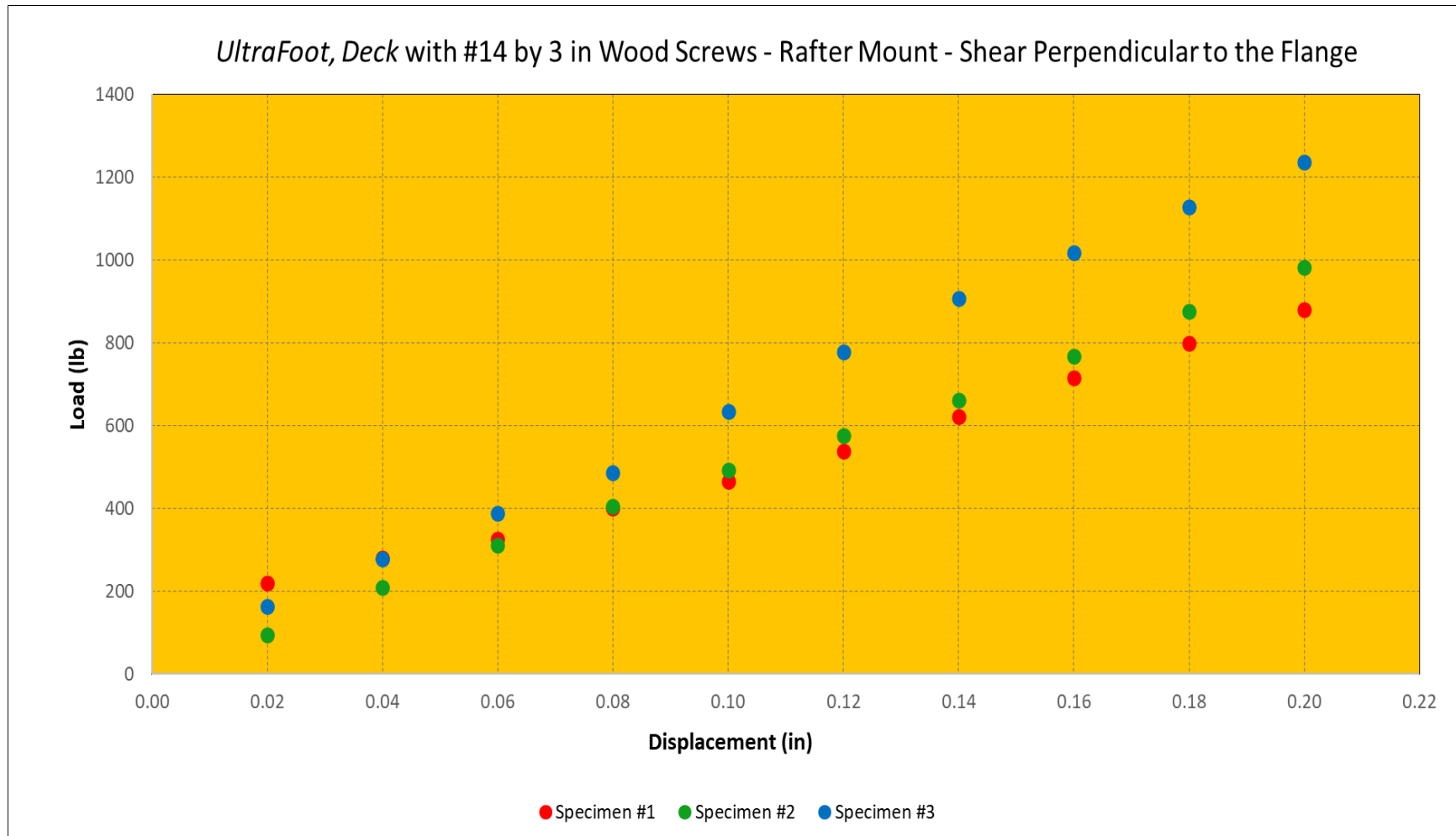
| SPECIMEN NO.    | ULTIMATE LOAD (lbf) | DEVIATION FROM AVERAGE           | LOAD @ 1/8 in DISPLACEMENT (lb) | MODE OF FAILURE                               |
|-----------------|---------------------|----------------------------------|---------------------------------|---|
| 1               | 2603                | -15.0%                           | 559                             | Wood screws bent and pulled through mock roof |
| 2               | 3471                | +13.4%                           | 596                             |   |
| 3               | 3109                | +1.6%                            | 810                             |   |
| <b>Average:</b> | <b>3061</b>         | <b>Average:</b>                  | <b>655</b>                      |   |
|                 |                     | <b>Standard Deviation:</b>       | 135                             |   |
|                 |                     | <b>Coefficient of Variation:</b> | 21%                             |   |

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

### *UltraFoot, Deck with Two, #14 by 3 in Wood Screws - Rafter Mount (Shear Parallel to the Flange)*

Test Date: 12/18/24

| BASE DISPLACEMENT<br>RELATIVE TO MOCK<br>ROOF (in) | SPECIMEN NO. |             |             |
|--|--------------|-------------|-------------|
|  | 1            | 2           | 3           |
|  | LOAD (lbs)   |             |             |
| 0.020  | 178          | 81          | 110         |
| 0.040  | 264          | 133         | 204         |
| 0.060  | 370          | 223         | 324         |
| 0.080  | 484          | 306         | 562         |
| 0.100  | 640          | 374         | 812         |
| 0.120  | 850          | 456         | 1030        |
| 0.140  | 1005         | 520         | 1210        |
| 0.160  | 1168         | 578         | 1343        |
| 0.180  | 1313         | 637         | 1490        |
| 0.200  | 1426         | 694         | 1620        |
| <b>Ultimate Load:</b>                              | <b>3527</b>  | <b>3639</b> | <b>3328</b> |

| SPECIMEN NO.    | ULTIMATE LOAD (lbf) | DEVIATION FROM AVERAGE           | LOAD @ 1/8 in DISPLACEMENT (lb) | MODE OF FAILURE                               |
|-----------------|---------------------|----------------------------------|---------------------------------|---|
| 1               | 3527                | +0.8%                            | 889                             | Wood screws bent and pulled through mock roof |
| 2               | 3639                | +4.0%                            | 472                             |   |
| 3               | 3328                | -4.9%                            | 1075                            |   |
| <b>Average:</b> | <b>3498</b>         | <b>Average:</b>                  | <b>812</b>                      |   |
|                 |                     | <b>Standard Deviation:</b>       | 309                             |   |
|                 |                     | <b>Coefficient of Variation:</b> | 38%                             |   |

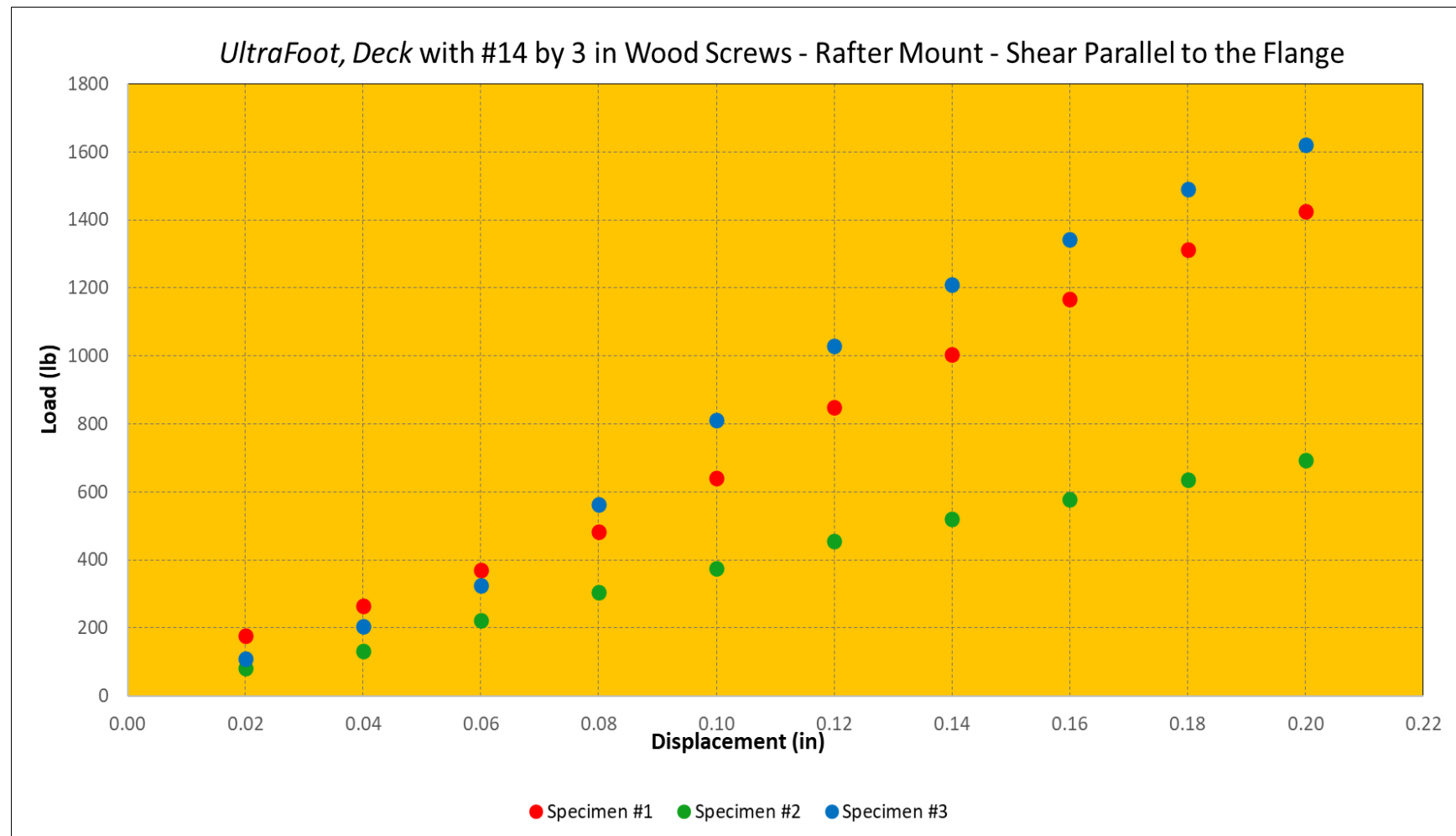


## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

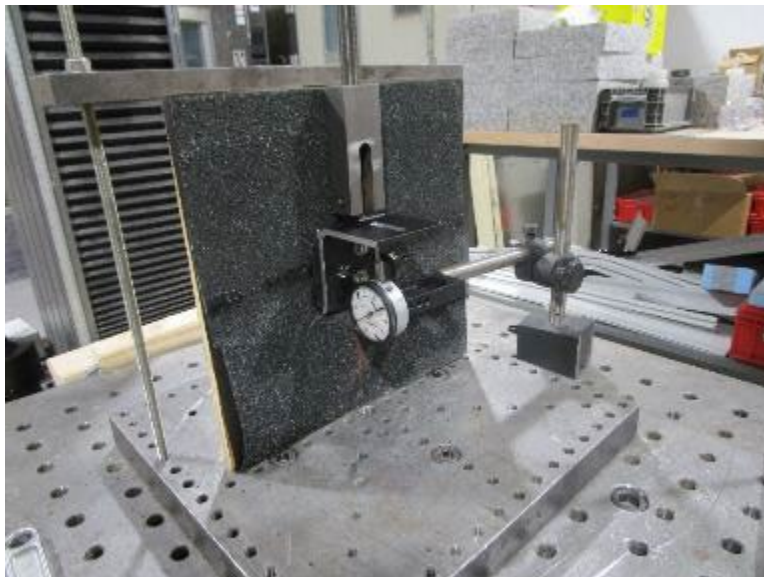
Date: 01/21/25

Revised Date: 02/04/25

### SECTION 10 PHOTOGRAPHS



**Photo No. 1**  
**Uplift Testing**



**Photo No. 2**  
**Shear Perpendicular to the Flange**

## TEST REPORT FOR SNR SOLAR LLC. DBA SNAPRACK

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25



**Photo No. 3**  
**Shear Parallel to the Flange**

### **SECTION 11** **DRAWINGS**

The "As-Built" drawings for the *UltraFoot, Deck* mount, which follow, have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



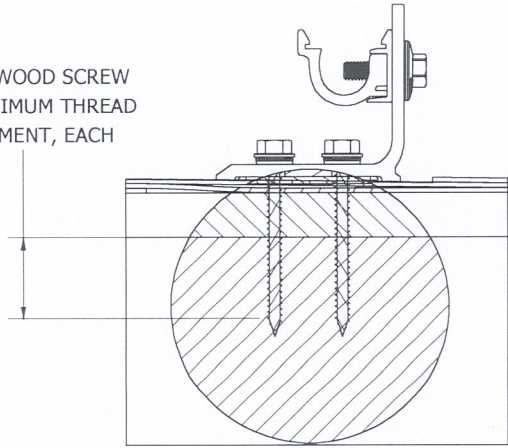
Test sample complies with these details.  
Deviations are noted.

Report # 51170.02-119-18

Date 2/4/25 Tech AJS

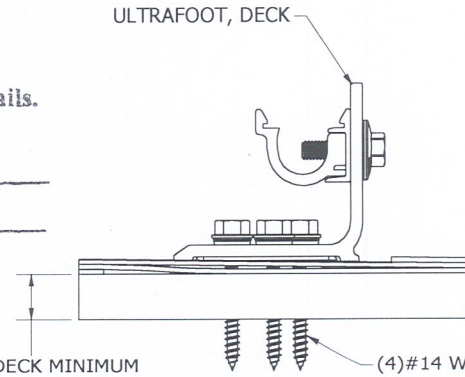
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| REVISION: | A | 2/3/2025 | RELEASED | MJA |
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|           |   |          |          |     |
|           |   |          |          |     |

(2) #14 WOOD SCREW  
1-1/2" MINIMUM THREAD  
EMBEDMENT, EACH



RAFTER, TYP.

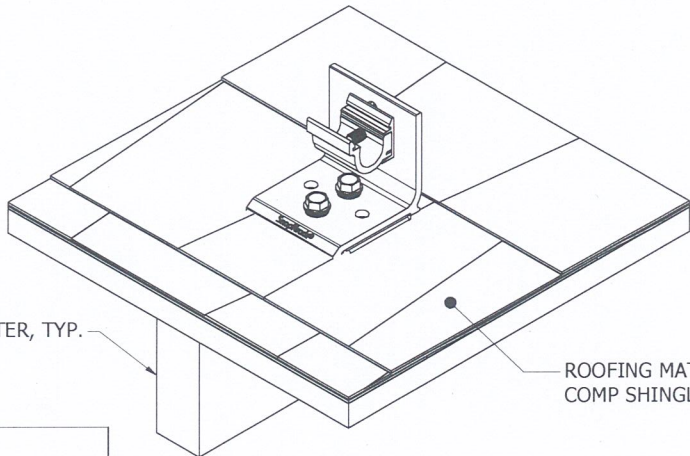
ULTRAFOOT, DECK



WOOD DECK MINIMUM  
1/2" TRADE THICKNESS

(4)#14 WOOD SCREW

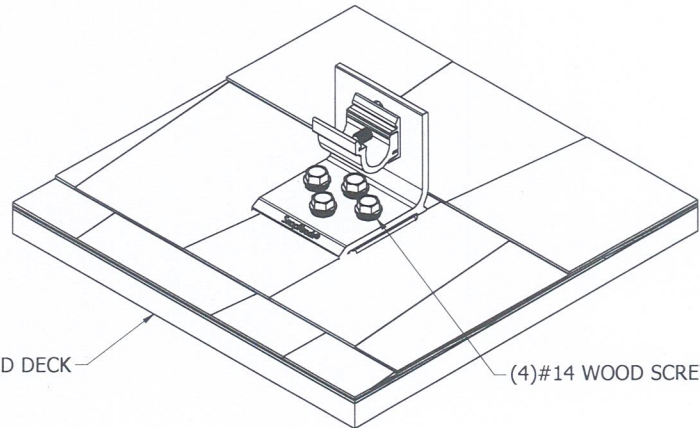
RAFTER, TYP.



ROOFING MATERIAL,  
COMP SHINGLE SHOWN

RAFTER ATTACHMENT

WOOD DECK



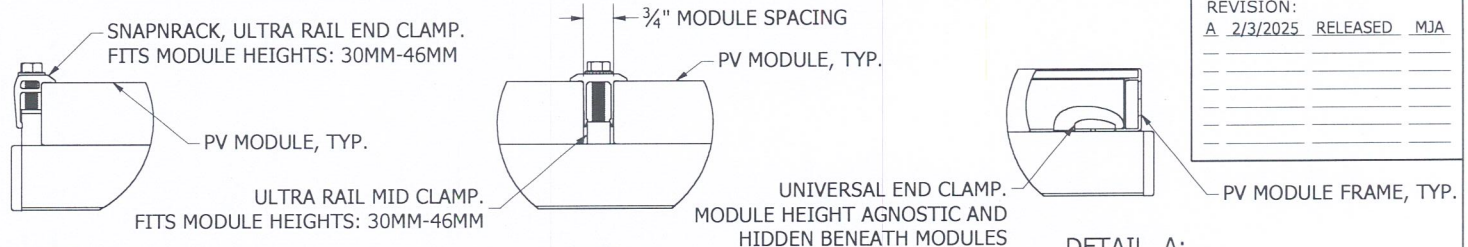
(4)#14 WOOD SCREW

DECK ATTACHMENT

|               |   |  |                 |               |               |
|---------------|---|--|-----------------|---------------|---------------|
| PE SIGNATURE: | PE DATE:  | DESCRIPTION:   | DRAWING NUMBER: |               | REV:          |
|               |   | ULTRA RAIL PV MOUNTING SYSTEM WITH ULTRAFOOT ROOF ATTACHMENTS FAMILY | SNR-DC-00485    |               | A             |
| SNR SOLAR LLC | 775 FIERO LANE, SUITE 200<br>SAN LUIS OBISPO, CA 93401<br>CONTACT@SNAPNRACK.COM | UNITS:   | DATE:           | SHEET SIZE:   | SHEET NUMBER: |
|               |   | IN, LB, DEG<br>[MM, KG, DEG]   | 2/3/2025        | 11 IN X 17 IN | 5 OF 5        |
|               |   |  | SCALE:          |               |               |
|               |   |  | NTS             |               |               |

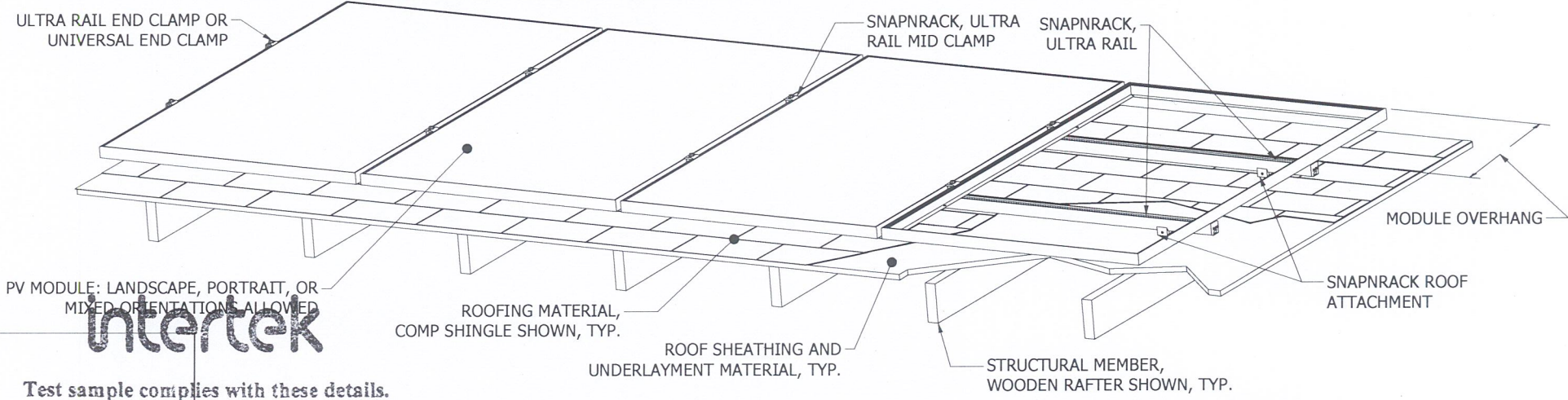
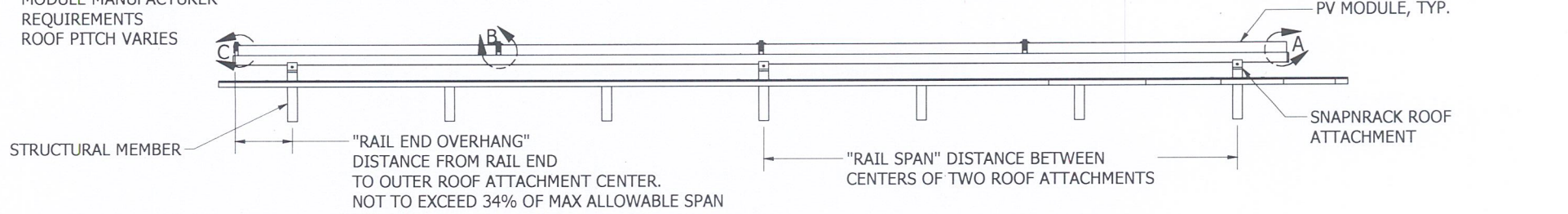
**NOTES:**

1. BOTH THE UNIVERSAL END CLAMP AND ULTRA RAIL END CLAMP MAY BE USED ON END MODULES
2. MODULES MAY BE CLAMPED ON SHORT OR LONG SIDE PER MODULE MANUFACTURER REQUIREMENTS
3. RAILS MAY BE MOUNTED UP/DOWN OR ACROSS THE SLOPE OF THE ROOF
4. A THIRD RAIL MAY BE ADDED IN THE MIDDLE OF THE PANEL FOR INCREASED LOAD CAPACITY, PER MODULE MANUFACTURER REQUIREMENTS
5. ROOF PITCH VARIES



|           |          |          |     |
|-----------|----------|----------|-----|
| REVISION: |          |          |     |
| A         | 2/3/2025 | RELEASED | MJA |
|           |          |          |     |
|           |          |          |     |
|           |          |          |     |
|           |          |          |     |

DETAIL C: SNAPRACK, ULTRA RAIL END CLAMP      DETAIL B: SNAPRACK, ULTRA RAIL MID CLAMP      DETAIL A: SNAPRACK, UNIVERSAL END CLAMP



Test sample complies with these details.  
Deviations are noted.

|                                 |                 |  |                                 |                         |
|---------------------------------|-----------------|--|---------------------------------|-------------------------|
| Report # <u>SI170.02-119-18</u> | PE DATE:        | DESCRIPTION:<br>ULTRA RAIL PV MOUNTING SYSTEM WITH ULTRAFOOT ROOF ATTACHMENTS FAMILY | DRAWING NUMBER:<br>SNR-DC-00485 | REV:<br><b>A</b>        |
| Date <u>2/4/25</u>              | Tech <u>AJS</u> | UNITS:<br>IN, LB, DEG<br>[MM, KG, DEG]   | SHEET SIZE:<br>11 IN X 17 IN    | SHEET NUMBER:<br>2 OF 5 |
| SNR SOLAR LLC                   |                 | 775 FIERO LANE, SUITE 200<br>SAN LUIS OBISPO, CA 93401<br>CONTACT@SNAPRACK.COM       | SCALE:<br>NTS                   |                         |

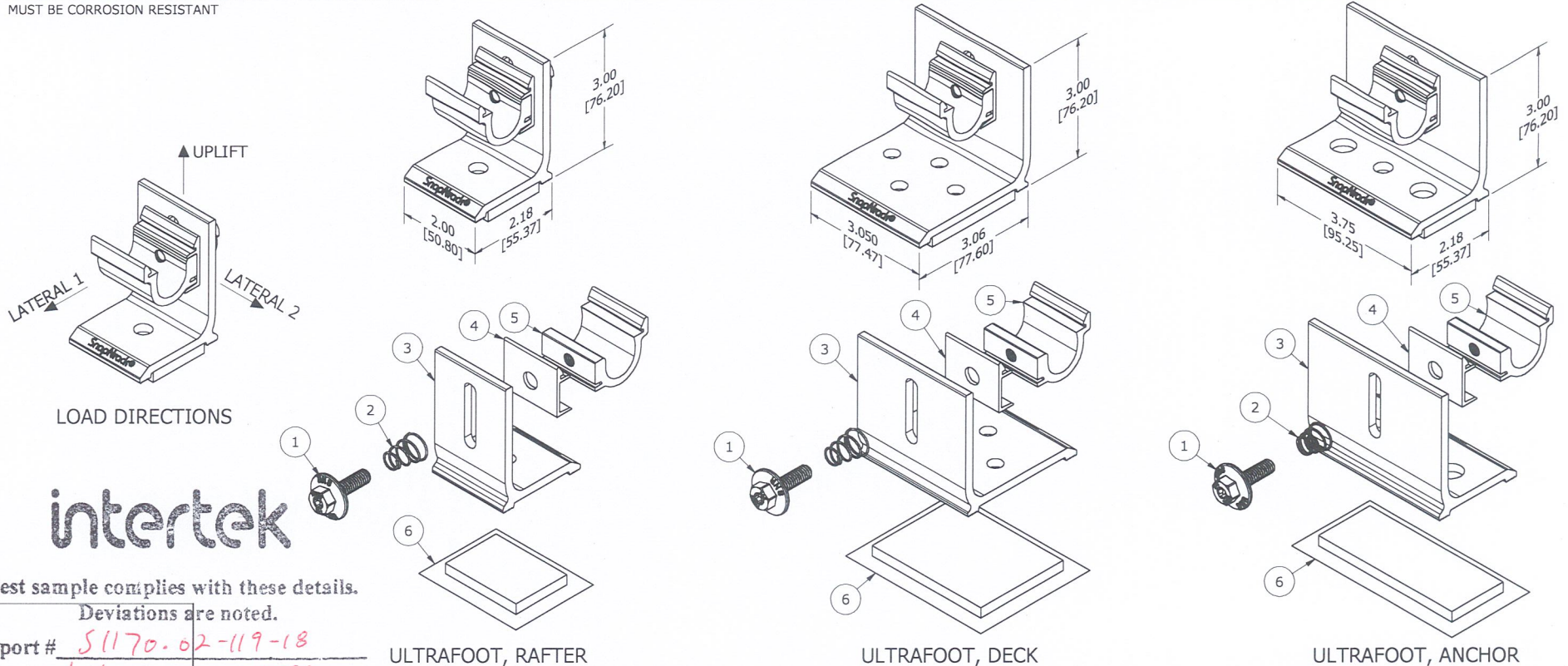
**NOTES:**

1. THIS SYSTEM COMPLIES WITH THE 8TH EDITION (2023) FLORIDA BUILDING CODE, INCLUDING HVHZ
2. THIS SYSTEM HAS BEEN TESTED TO THE TAS100(A) AND ASTM D7147 STANDARDS. IMPACT RESISTANCE IS NOT REQUIRED, AS IT IS NOT PART OF THE BUILDING ENVELOPE
3. INSTALLATIONS MUST FOLLOW THE SNAPRACK ULTRA RAIL SYSTEM INSTALLATION MANUAL
4. PV PANELS ARE NOT PART OF THIS APPROVAL
5. DESIGN OF THE ROOF SUBSTRATE AND STRUCTURE IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD (EOR) AND IS NOT PART OF THIS APPROVAL
6. ALL ANCHORS FASTENING ATTACHMENTS TO THE ROOF SUBSTRATE MUST BE CORROSION RESISTANT

**BOM: ULTRAFOOT PRODUCTS**

| ITEM | DESCRIPTION                              | MATERIAL                    | MIN YIELD (KSI) | MINIMUM ULTIMATE (KSI) |
|------|--|-----------------------------|-----------------|------------------------|
| 1    | BOLT, WIDE FLANGE, 5/16"-18              | STAINLESS STEEL, 300 SERIES | 60              | 95                     |
| 2    | SPRING                                   | STAINLESS STEEL, 300 SERIES | N/A             | N/A                    |
| 3    | ULTRAFOOT BASE (RAFTER, DECK, OR ANCHOR) | ALUMINUM, 6000 SERIES       | 34              | 38                     |
| 4    | UR FLIP CLAMP, THRU                      | ALUMINUM, 6000 SERIES       | 34              | 38                     |
| 5    | UF FLIP CLAMP, TAP                       | ALUMINUM, 6000 SERIES       | 34              | 38                     |
| 6    | SPEEDSEAL+ FLASHING SYSTEM               | BUTYL RUBBER                | N/A             | N/A                    |

REVISION: A 2/3/2025 RELEASED MJA



Test sample complies with these details.  
Deviations are noted.

ULTRAFOOT, RAFTER

ULTRAFOOT, DECK

ULTRAFOOT, ANCHOR

Report # S1170.02-119-18  
Date 2/4/25 Tech SIGNATURE: AJS

|               |  |  |                   |
|---------------|--|--|-------------------|
| PE DATE:      | DESCRIPTION:<br>ULTRA RAIL PV MOUNTING SYSTEM WITH ULTRAFOOT ROOF ATTACHMENTS FAMILY | DRAWING NUMBER:<br>SNR-DC-00485        | REV:<br>A         |
| SNR SOLAR LLC | 775 FIERO LANE, SUITE 200<br>SAN LUIS OBISPO, CA 93401<br>CONTACT@SNAPRACK.COM       | UNITS:<br>IN, LB, DEG<br>[MM, KG, DEG] | DATE:<br>2/3/2025 |
|               |  | SHEET SIZE:<br>11 IN X 17 IN           | SCALE:<br>NTS     |
|               |  | SHEET NUMBER:<br>1 OF 5                |                   |

|   |            |
|---|------------|
| DESCRIPTION:<br><b>SNAPNRACK, TDS, ULTRAFOOT DECK</b> |            |
| PART NUMBER(S):<br><b>242-10057</b>                   |            |
| UNITS: IN, LB, DEG [MM, KG, DEG]                      | SHEET: 2:2 |

|                             |                    |
|-----------------------------|--------------------|
| DOC NUMBER:<br>SNR-DC-01437 |                    |
| DRAWN BY:<br>H.WULFEKOETTER |                    |
| REV:<br><b>A</b>            | DATE:<br>8/28/2024 |

**SnapNrack®**

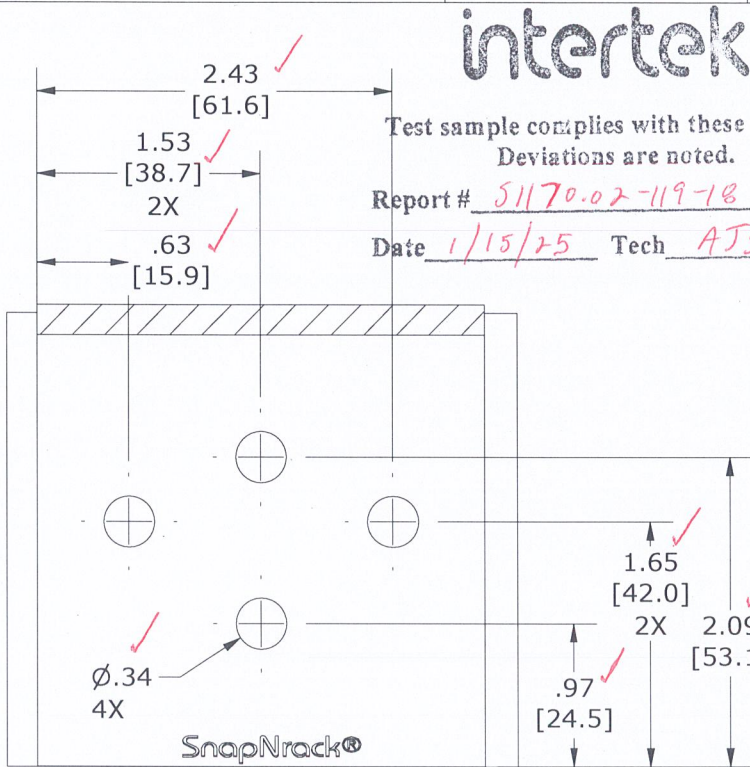
SNR SOLAR LLC  
775 FIERO LANE, SUITE 200  
SAN LUIS OBISPO, CA 93401 USA  
EMAIL: CONTACT@SNAPNRACK.COM

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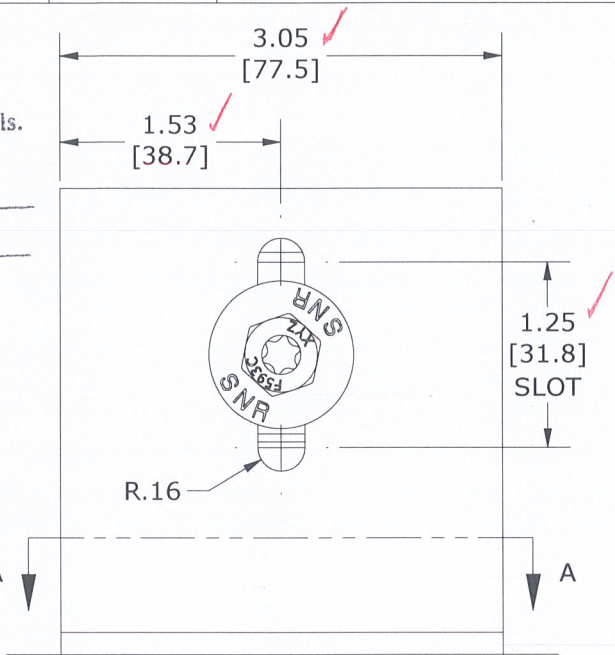
**intertek**

Test sample complies with these details.  
Deviations are noted.

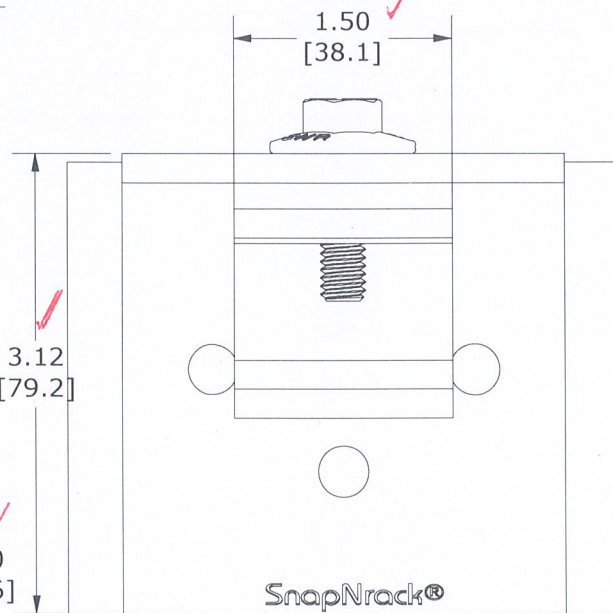
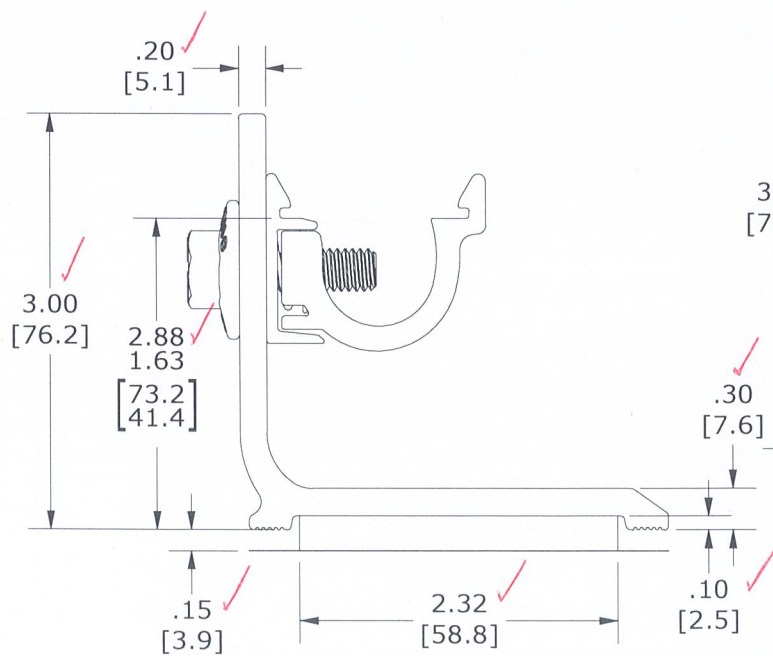
Report # 51170.02-119-18  
Date 1/15/25 Tech AJS



SECTION A-A

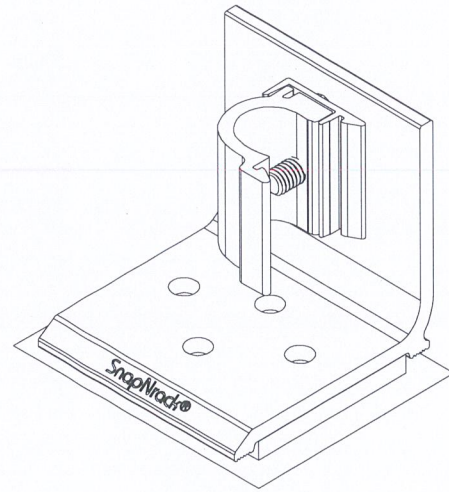
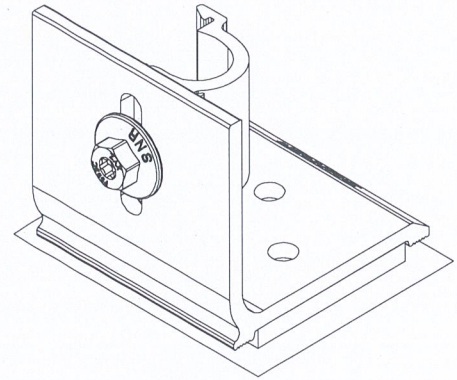
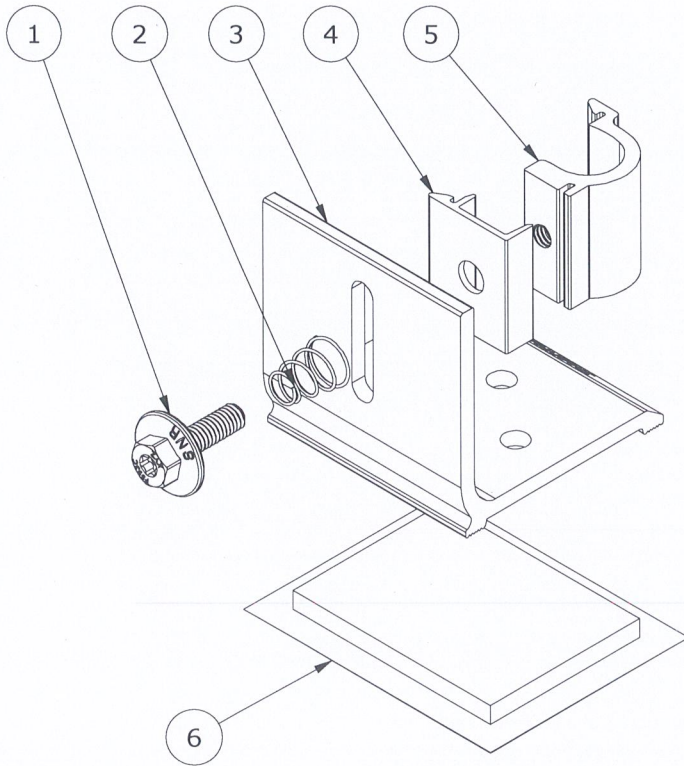


BACK



TOP

|   |   |                    |
|---|---|--------------------|
| DESCRIPTION:<br><b>SNAPNRACK, TDS, ULTRAFOOT DECK</b> | DOC NUMBER:<br>SNR-DC-01437   | <b>SnapNrack®</b>  |
|   | DRAWN BY:<br>H. WULFEKOETTER  |                    |
| PART NUMBER(S):<br><br>242-10057                      | REV:<br><b>A</b>  | DATE:<br>8/28/2024 |
|   | SNR SOLAR LLC<br>775 FIERO LANE, SUITE 200<br>SAN LUIS OBISPO, CA 93401 USA<br>EMAIL: CONTACT@SNAPNRACK.COM<br><small>THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SNR SOLAR LLC.</small> |                    |
| UNITS: IN, LB, DEG [MM, KG, DEG]                      | SHEET: 1:2  |                    |



| PARTS LIST |     |  |
|------------|-----|--|
| ITEM       | QTY | DESCRIPTION                                      |
| 1          | 1   | BOLT, WIDE FLANGE, RECESSED, 5-16IN-18 X 1IN, SS |
| 2          | 1   | SNAPNRACK, ULTRA RAIL MOUNT SPRING, SS           |
| 3          | 1   | SNAPNRACK, ULTRAFOOT BASE, DECK, BLACK           |
| 4          | 1   | SNAPNRACK, UR FLIP CLAMP, THRU, SILVER           |
| 5          | 1   | SNAPNRACK, FLIP CLAMP, TAP, BLACK                |
| 6          | 1   | SNAPNRACK, BUTYL PAD, 2IN X 1.5IN X .25IN        |

**intertek**

Test sample complies with these details.  
Deviations are noted.

Report # 51170.02-119-18

Date 1/15/25 Tech AJS

|                       |   |
|-----------------------|---|
| MATERIALS:            | 6000 SERIES ALUMINUM & 300 SERIES STAINLESS STEEL |
| DESIGN LOAD (LBS):    | VARIABLE, REFER TO SNAPNRACK ENGINEERING          |
| ULTIMATE LOAD (LBS):  | VARIABLE, REFER TO SNAPNRACK ENGINEERING          |
| TORQUE SPECIFICATION: | 16 FT-LBS FT-LBS                                  |
| CERTIFICATION:        | UL 2703, FILE E359313;                            |
| WEIGHT (LBS):         | 0.551   |





Total Quality. Assured.

130 Derry Court  
York, Pennsylvania 17406

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

**TEST REPORT FOR SNR SOLAR LLC. DBA SNAPNRACK**

Report No.: S1170.02-119-18 R1

Date: 01/21/25

Revised Date: 02/04/25

**SECTION 12**

**REVISION LOG**

| REVISION # | DATE     | PAGES | REVISION                |
|------------|----------|-------|-------------------------|
| 0          | 01/21/25 | N/A   | Original Report Issue   |
| 1          | 02/04/25 | 20-24 | Updated Drawing Package |