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TOP RACK TECHNOLOGY, INC.

MIAMI-DADE TEST REPORT

SCOPE OF WORK
ASTM D7147 UPLIFT AND SHEAR LOAD TESTING ON THE *TRT-02* SOLAR MOUNTING BRACKET - DECK MOUNT

REPORT NUMBER
S5019.03-119-18 R0

TEST DATES
04/24/25 - 04/28/25

ISSUE DATE
06/17/25

RECORD RETENTION END DATE
04/28/35

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ATI-25026

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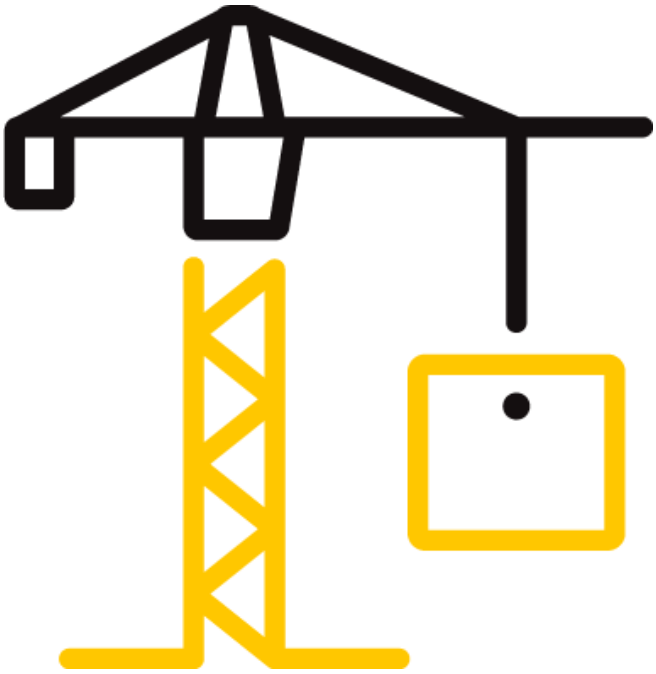

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TEST REPORT FOR TOP RACK TECHNOLOGY, INC.
Report No.: S5019.03-119-18 R0
Date: 06/17/25

REPORT ISSUED TO

TOP RACK TECHNOLOGY, INC.
355 New Albany Road
Suite B
Moorestown, NJ 08057

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Top Rack Technology, Inc. to perform uplift and shear load testing on their TRT-02 solar mounting bracket - deck mount. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at Intertek B&C 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:

COMPLETED BY:	Shawn E. Beamer
TITLE:	Technician I
SIGNATURE:	Digitally Signed by: Shawn Beamer
DATE:	06/17/25

REVIEWED BY:	V. Thomas Mickley, Jr., P.E.
TITLE:	Senior Staff Engineer
SIGNATURE:	Digitally Signed by: Virgal Thomas Mickley, Jr.
DATE:	06/17/25

COMPLETED BY:	Tanya A. Dolby, P.E.
TITLE:	Engineering Manager
SIGNATURE:	Digitally Signed by: Tanya Dolby
DATE:	06/17/25

TANYA A. DOLBY LICENSE No. 93536 STATE OF FLORIDA PROFESSIONAL ENGINEER

2025.06.18 15:51:20 -04'00'

JRZ:vtm/aas

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SECTION 2
SUMMARY OF TEST RESULTS

UPLIFT RESISTANCE [1]	Average Load at 1/8 in Displacement - 512 lbf Average Ultimate Load - 779 lbf
SHEAR LOAD PARALLEL TO BRACKET FLANGE [1]	Average Load at 1/8 in Displacement - 303 lbf Average Ultimate Load - 742 lbf
SHEAR LOAD PERPENDICULAR TO BRACKET FLANGE [1]	Average Load at 1/8 in Displacement - 467 lbf Average Ultimate Load - 918 lbf

[1] *Test/Ultimate loads should not be used as design loads or safe working loads*

SECTION 3
TEST METHOD

The specimens were evaluated in general accordance with the following:

> **ASTM D7147-21**, *Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers*

The load testing reported herein evaluated the connection of the *TRT-02* solar mounting bracket to the mock roof and did not evaluate the *TRT-02* solar mounting bracket with an attached solar panel.

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.

Each tested specimen was installed on a 12 in square mock roof consisting of one piece of 15/32 in plywood sheathing, one piece of 30# felt underlayment, and one, three-tab shingle. See photograph of test specimens in Section 10.

SECTION 5
EQUIPMENT

Testing was performed in a SATEC Unidrive, Model MII 50 UD Universal Testing Machine (ICN: Y002011). Load and deflection were recorded electronically using the crosshead of the test machine.

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Gene Li	Top Rack Technology, Inc.
Shawn E. Beamer	Intertek B&C
Adam J. Schrum	Intertek B&C

SECTION 7
TEST SPECIMEN DESCRIPTION

The *TRT-02* mount is an A380 cast aluminum member measuring 3-3/4 in wide by 2-3/4 in deep by 2-3/4 in high and has an EPDM and butyl seal adhered to the bottom. Each mount was fastened to the mock roof (plywood only) with four, 1/4-14 by 3 in, stainless steel, hex- head, Type 17 point lag screws with sealing washer.

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 a SATEC Unidrive, Model MII 50 UD Universal Test Machine. A clamping device was used to grip the flange of the bracket for application of the test load. The load was applied to the mount through a load cell attached to the testing machine crosshead. Test speed was 0.05 in/min. Displacement was taken with the crosshead of the test machine, which was 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.

Shear Load Testing
The mock roof assemblies were rigidly mounted to the base of a SATEC Unidrive, Model MII 50 UD Universal Test Machine. Load was applied to the base of the flange through a steel plate attached to a load cell and testing machine crosshead. Parallel load direction was parallel to the bracket flange; Perpendicular load direction was perpendicular to the bracket flange. Test speed was 0.05 in/min. Displacement was taken with the crosshead of the test machine, which was 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.