

# ESDEC, INC. TEST REPORT

**SCOPE OF WORK**

UL 441 TESTING ON ECOFASTEN JUNCTION BOX

**REPORT NUMBER**

104779499LAX-004

**ISSUE DATE**

5-JANUARY-2022

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## TEST REPORT

5-JANUARY-2022

Intertek Report No.: 104779499LAX-004

Intertek Project No.: G104779499

Yann Schwarz  
ESDEC, Inc.  
28357 Industrial Blvd.  
Hayward, CA 94545

Ph: 510 225-0973  
Email: yann.schwarz@esdec.com

**Subject:** Project Summary of the Rain Testing per UL 441 on ECOFASTEN's Junction Box



Dear Mr. Yann Schwarz

Intertek was contracted by ESDEC, Inc. to perform testing in general accordance with UL 441 on ECOFASTEN's Junction Box. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at ESDEC's Intertek Satellite Lab test facility at 28357 Industrial BLVD, Hayward, CA 94545.

This letter report represents the summary of our evaluation of the above referenced product(s).

*UL 441, Safety for Gas Vents, Section 27: Rain Test*

This letter report does not constitute certification of this product or any opinion or endorsement by this laboratory. If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact your dedicated Intertek Project Manager – Ms. Selena Jesser (selena.jesser@intertek.com).

Completed by:	Adam Muliawan	Reviewed by:	Samantha Doshi
Title:	Engineer	Title:	Team Lead - Solar
Signature:		Signature	
Date	January 5, 2022	Date:	January 6, 2022

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**TEST REPORT**

**SECTION 1**

**MATERIAL SOURCE/INSTALLATION**

The test specimen was provided by the client.

The specimen was installed onto a Spruce-Pine-Fir wood deck. The test deck measured 3' wide by 3' high and was constructed of #2 Spruce Pine Fir nominal 2x4 lumber. No center rafter was used in test deck since test specimen was tested in a deck mount only configuration. Test specimen was mounted to center of test deck. A sheet of nominal 7/16" thick plywood was secured to the studs with #8 x 1-5/8" roofing screws. The test deck was then covered with #15 felt paper and three-tab asphalt shingles.

**Description/Installation (Ecofasten Junction Box):** The test specimen was composed of a polymeric enclosure 8" x 9" x 3" with an EPDM Foam gasket in rear of enclosure and 9"x12"x0.032" thick aluminum flashing. The enclosure was secured with Qty 2 - #12 - 1-3/4" deck screws with EPDM bonded washers through the enclosure interior and flashing and into the center of the test deck. The enclosure was also installed with Qty 3 - 1-1/4" conduit hubs with 1-1/4"x6" conduit. Lid was secured prior to testing.

**SECTION 2**

**LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Jae Hendrickson	ESDEC, Inc.

**SECTION 3**

**TEST RESULTS**

The temperature during testing was 23°C (71°F) and the humidity was 55%. The results are tabulated as follows:

**Test Specimen #1 (Ecofasten Junction Box):**

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration, Per UL 441 - One hour of water spray	Pass	No leakage	1, 2

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

Note 1: Tested at 2/12 pitch

Note 2: Test results are applicable for asphalt shingle roofs having a slope of 2:12 or greater

**TEST REPORT**

**SECTION 4**  
**PHOTOGRAPHS**



**Photo No. 1**  
**Front View**



**Photo No. 2**  
**Rear View**

**TEST REPORT**



**Photo No. 3**  
**Flashing**



**Photo No. 4**  
**Test Specimen Under Test**

**TEST REPORT**



**Photo No. 5**  
**Test Specimen After Test**

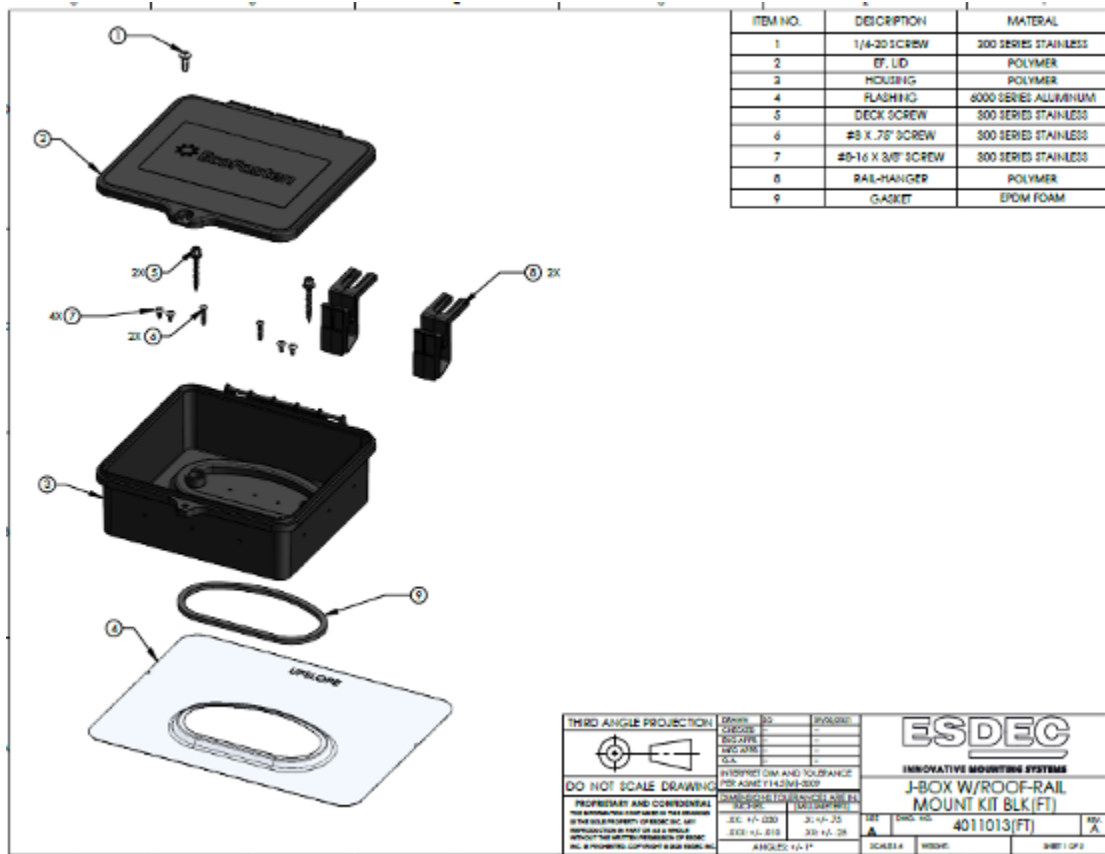


**Photo No. 6**  
**Underside of Test Desk After Test – no visible water penetration**

**TEST REPORT**

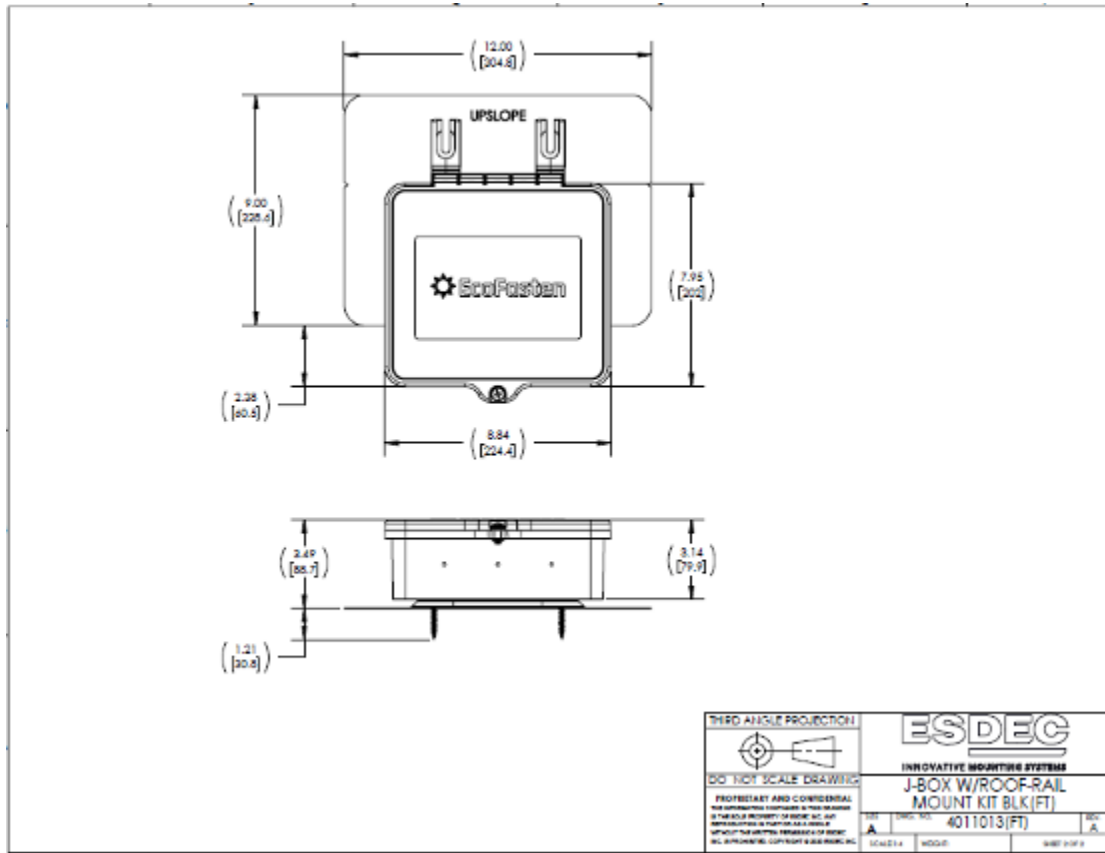
**SECTION 5  
DRAWINGS**

The test specimen drawings have been reviewed by Intertek and are representative of the test specimen(s) reported herein. Any deviations are documented herein or on the drawings.



**Drawing No. 1  
Assembly Drawing**

**TEST REPORT**



**Drawing No. 2**  
**Dimensional Drawing**