

# ESDEC, INC. TEST REPORT

**SCOPE OF WORK**

UL 441 TESTING ON ECOFASTEN'S GF1

**REPORT NUMBER**

104500499LAX-001

**ISSUE DATE**

09-DECEMBER-2020

**PAGES**

6

**DOCUMENT CONTROL NUMBER**

GFT-OP-10a (21-June-2019)

© 2019 INTERTEK



## SUMMARY REPORT

09-DECEMBER-2020

Intertek Report No.: 104500499LAX-001

Intertek Project No.: G104500499

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 GF1

Dear Mr. Yann Schwarz

Intertek was contracted by ESDEC, Inc. to perform testing in general accordance with UL 441 on Ecofasten's GF1 photovoltaic (PV) module attachment. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at ESDEC's 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.

Completed by:	Deep Vora	Reviewed by:	Samantha Doshi
Title:	Project Engineer	Title:	Team Lead - Solar
Signature:		Signature	
Date	December 09, 2020	Date:	December 09, 2020

Please note: this Letter Report does not represent authorization for the use of any Intertek certification marks.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

**SUMMARY 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. One rafter was centered on deck for bolt attachment. The rafters were attached to the top and bottom plates with 3" long roofing screws. A sheet of nominal 15/32" thick plywood was secured to the studs with #8 x 1-5/8" roofing screws. The test deck was then covered with #30 felt paper and three-tab asphalt shingles.

**Description/Installation (GF1 by Ecofasten):** The test specimen was composed of an 8" x 12" x 0.03125" thick galvalume flashing and a 1-7/8" wide by 3" high extruded aluminum L-foot. The underside of the L-foot was secured with one 5/16"x 4" lag screw with a EPDM backed washer through the L-foot, flashing and into the center rafter of the test deck. The GF1 assembly was installed without sealant.

GF1 L-Foot Part numbers covered by this test report are as follows:

Part Number	Description
3011015 or L-102-3-ANOD BLK	L-FOOT L-102 BLK 3"
3011017 or SCL-101-3 ANOD BLK	L-FOOT SCL-1010 MLL 3"
3011018 or SCL-101-3	L-FOOT SCL-1010 BLK 3"

**SECTION 3**

**LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Jae Hendrickson	ESDEC, Inc.

**SECTION 4**

**TEST RESULTS**

The temperature during testing was 18°C (64°F) and the humidity was 57%. The results are tabulated as follows:

**Test Specimen #1 (GF1 by Ecofasten):**

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration, Per UL 441 - One hour of water spray	Pass	No leakage	1, 2, 3

**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*

*Note 3: No sealant was used in this test. Any Roofing manufacturer approved sealant is allowed*

**SUMMARY REPORT**

**SECTION 5**  
**PHOTOGRAPHS**



**Photo No. 1**

**Unassembled Test Specimen (including 1 lag screw, 1 flashing, and 1 aluminium L-foot)**



**Photo No. 2**

**Test Specimen Under Test**

**SUMMARY REPORT**



**Photo No. 3**  
**Test Specimen After Test**

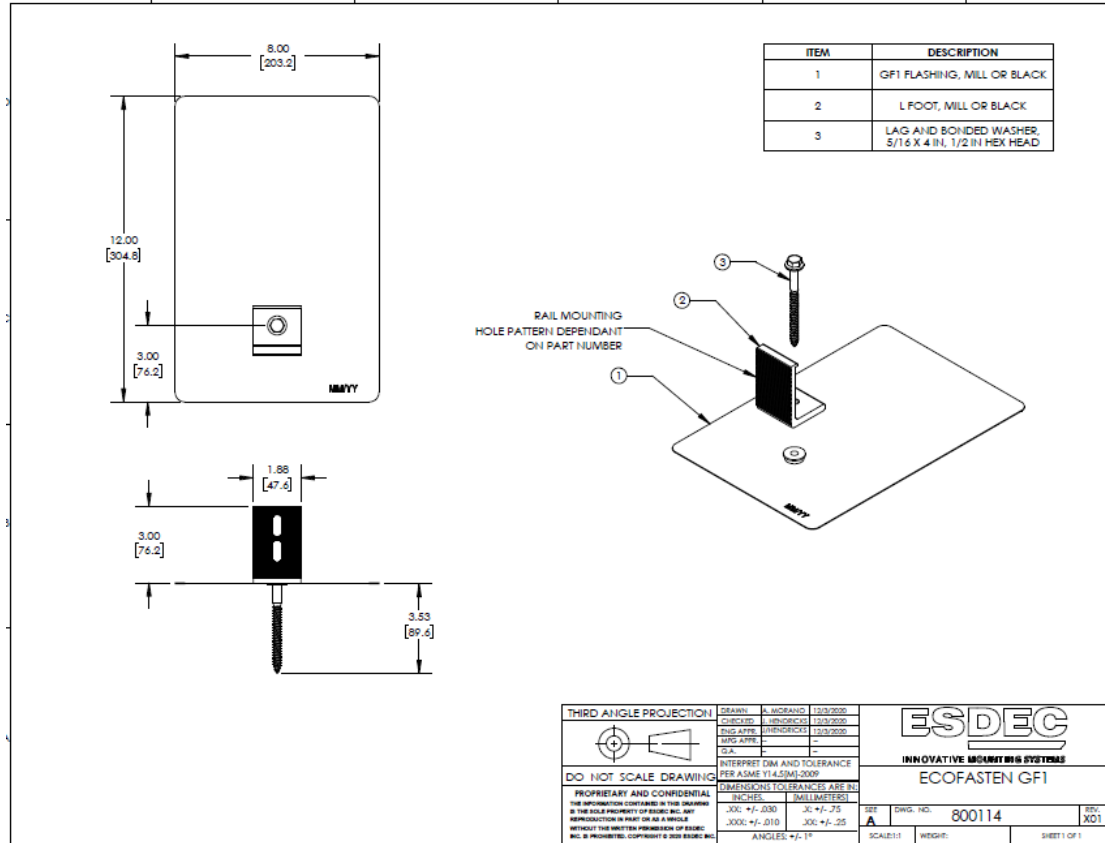


**Photo No. 4**  
**Underside of Test Desk After Test – no visible water penetration**

**SUMMARY REPORT**

**SECTION 6**  
**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**  
**Ecofasten's GF1**