

UNIRAC, INC. TEST REPORT

SCOPE OF WORK

UL 441, SECTION 27: RAIN TEST TESTING ON FLASHLOC, ROOF MOUNT

REPORT NUMBER

K1190.01-109-44

TEST DATE(S)

09/04/19 - 09/09/19

ISSUE DATE

09/19/19

RECORD RETENTION END DATE

09/09/23

PAGES

15

DOCUMENT CONTROL NUMBER

ATI 00479 (07/24/17)
RT-R-AMER-Test-2805
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TEST REPORT FOR UNIRAC, INC.

Report No.: K1190.01-109-44

Date: 09/19/19

REPORT ISSUED TO

UNIRAC, INC.

1411 Broadway Blvd. NE

Albuquerque, New Mexico 87102-1545

SECTION 1


SCOPE

Intertek Building & Construction (B&C) was contracted by Unirac, Inc. to perform testing in accordance with UL 441 Section 27: Rain Test, on their FLASHLOC, Roof Mount. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Robert J. Beatty
TITLE:	Technician– Product Testing
SIGNATURE:	 <small>Digitally Signed by: Robert Beatty</small>
DATE:	09/19/19

REVIEWED BY:	Timothy J. McGill
TITLE:	Manager – Product Testing
SIGNATURE:	 <small>Digitally Signed by: Timothy J. McGill</small>
DATE:	09/19/19

RJB:wnl

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TEST REPORT FOR UNIRAC, INC.

Report No.: K1190.01-109-44

Date: 09/19/19

SECTION 2

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

UL 441 Eleventh Edition dated August 28, 2019, UL Standard for Safety for Gas Vents, Section 27: Rain Test

SECTION 3

MATERIAL SOURCE/INSTALLATION

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

Test Specimens #1 and #2 Deck Construction: The test deck measured 3' wide by 3' high and was constructed of #2 Spruce-Pine-Fir nominal 2x6 lumber. One stud was centered on the deck for bolt attachment. Studs were attached to the top and bottom plates with 3" long drywall screws. A sheet of nominal 1/2" thick plywood was secured to the studs with #8 x 1-5/8" drywall screws. Silicone was utilized on the backside of the test panel to seal the perimeter. The test deck was then covered with #30 felt paper and asphalt shingles.

Test Specimen #3 and #4 Deck Construction: The test deck measured 3' wide by 3' high and was constructed of #2 Spruce-Pine-Fir nominal 2x6 lumber. One stud was centered on the deck for bolt attachment. Studs were attached to the top and bottom plates with 3" long drywall screws. A sheet of nominal 1/2" thick plywood was secured to the studs with #8 x 1-5/8" drywall screws. Silicone was utilized on the backside of the test panel to seal the perimeter. The test deck was then covered with torch applied roof membrane.

Test Specimen Installation: Each specimen was centered on a 2x6 stud and was secured with a 5/16" x 4" hex head lag bolt with a stainless steel-back EPDM washer through the Flashloc Comp Mount into the stud. The Flashloc Comp Mounts were completely filled with sealant. Test Specimens #1 and #3 utilized DuraLink™ 50 sealant. Test Specimens #2 and #4 utilized M-1® sealant. The sealant was allowed to cure for 24 hours.



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TEST REPORT FOR UNIRAC, INC.

Report No.: K1190.01-109-44

Date: 09/19/19

SECTION 4

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Timothy J. McGill	Intertek B&C
Robert J. Beatty	Intertek B&C

SECTION 5

TEST SPECIMEN DESCRIPTION

Product Type: Roof Mount

Series/Model: FLASHLOC

The following descriptions apply to all specimens.

Test Specimen Description: The test specimens were formed from cast aluminum and measured approximately 3-3/4" (95 mm) wide by 2-1/4" (57.2 mm) high by 3-1/2" (88.9 mm) tall. (Reference Drawing Number P28503006)

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SECTION 6

TEST RESULTS

The temperature during testing ranged from 77°F (25°C) to 82°F (28°C). The results are tabulated as follows:

Test Specimen #1:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	1

Test Specimen #1:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	2

Test Specimen #2:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	1

Test Specimen #2:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	2

Test Specimen #3:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	1

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Test Specimen #3:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	2

Test Specimen #4:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	1

Test Specimen #4:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration per UL 441 One hour of water spray	No leakage	No leakage	2

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

Note 1: Tested at a 2:12 roof pitch.

Note 2: Tested at a 12:12 roof pitch

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SECTION 7
PHOTOGRAPHS



Photo No. 1
Test Specimen #1



Photo No. 2
Test Specimen #2

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Photo No. 3
Test Specimen #3

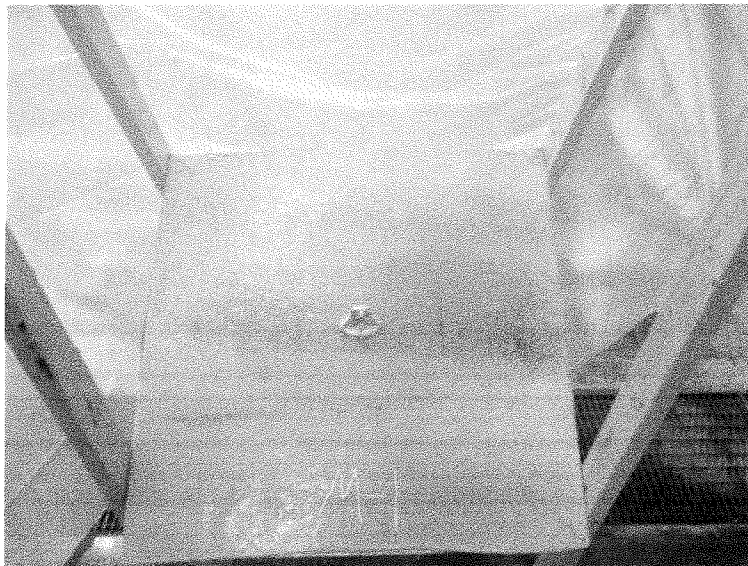


Photo No. 4
Test Specimen #4



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Report No.: K1190.01-109-44

Date: 09/19/19

SECTION 8

DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



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Date: 09/19/19

SECTION 9
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	09/19/19	N/A	Original Report Issue

UNIRAC, INC. MIAMI-DADE TEST REPORT

SCOPE OF WORK

TAS 100(A) TESTING ON FLASHLOC, ROOF MOUNTS

REPORT NUMBER

K1187.01-109-18

TEST DATE(S)

09/09/19

ISSUE DATE

09/24/19

REVISED DATE

09/24/19

RECORD RETENTION END DATE

09/09/29

MIAMI-DADE COUNTY NOTIFICATION NO.

ATI 19048

LABORATORY CERTIFICATION NO.

18-0524.13

PAGES

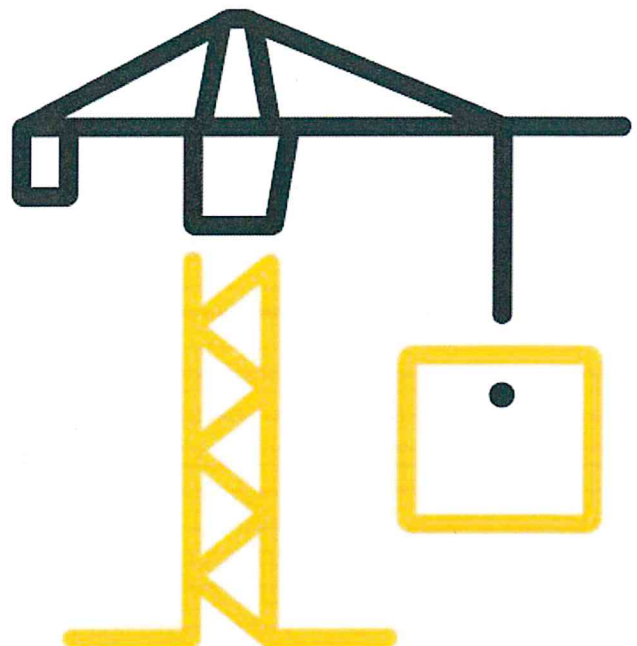
18

DOCUMENT CONTROL NUMBER

ATI 00651 (08/21/17)

RT-R-AMER-Test-2816

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TEST REPORT FOR UNIRAC, INC.

Report No.: K1187.01-109-18

Revision 1: 09/24/19

Date: 09/24/19

REPORT ISSUED TO

UNIRAC, INC.

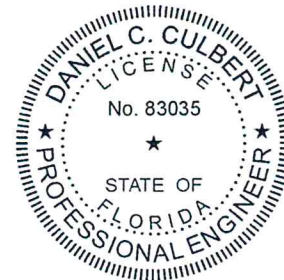
1411 Broadway Blvd. NE

Albuquerque, New Mexico 87102-1545

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Unirac, Inc. to perform TAS 100(A) testing in accordance with Miami-Dade County requirements on their FLASHLOC, Roof Mounts. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at the Intertek B&C test facility in York, Pennsylvania. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.



For INTERTEK B&C:

COMPLETED BY: Robert J. Beatty

Technician –
Product Testing

TITLE:

SIGNATURE:

Digitally Signed by: Robert Beatty

DATE:

09/24/19

REVIEWED BY: Daniel C. Culbert, P.E.

TITLE:

Senior Project Engineer

SIGNATURE:

Digitally Signed by: Daniel Craig Culbert

DATE:

09/24/19

RJB:wnl

2019.09.25 09:59:46 -04'00'

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TEST REPORT FOR UNIRAC, INC.

Report No.: K1187.01-109-18

Revision 1: 09/24/19

Date: 09/24/19

SECTION 2

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

TAS 100(A)-95, Test Procedure for Wind and Wind Driven Rain Resistance and/or Increased Windspeed Resistance of Soffit Ventilation Strip and Continuous or Intermittent Ventilation System Installed at the Ridge Area.

SECTION 3

CALIBRATION

Windstream, water supply, and water distribution calibration were performed prior to testing. Reference Intertek B&C Calibration Report No. K1181.01-109-18, dated 9/16/19, for descriptions and results.

SECTION 4

MATERIAL SOURCE

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

SECTION 5

EQUIPMENT

Vane Axial Fan – Y003346

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Tyler J. Holland	Intertek B&C
Timothy J. McGill	Intertek B&C
Daniel C. Culbert, P.E.	Intertek B&C
Robert J. Beatty	Intertek B&C

TEST REPORT FOR UNIRAC, INC.

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SECTION 7

TEST SPECIMEN DESCRIPTION

Test Deck Description: An 8' 0" wide by 6' 0" long roof deck with 2:12 slope was utilized. The roof deck consisted of #2 Spruce-Pine-Fir nominal 2x6 rafters sheathed with 15/32" plywood. The rafters were spaced 24" on center. The plywood was secured to the rafters with 1-5/8" drywall screws spaced 6" on center around the perimeter and 12" on center at the intermediate supports. The plywood sheathing was covered with torch-applied roof membrane.

Test Specimen Installation: Each specimen was centered on a 2x6 rafter and was secured with a 5/16" x 4" hex head lag bolt with a stainless steel-back EPDM washer through the Flashloc Comp Mount into the rafter. The Flashloc Comp Mounts were completely filled with sealant. Test Specimens #1 and #2 utilized DuraLink™ 50 sealant. Test Specimens #3 and #4 utilized M-1® sealant. The sealant was allowed to cure for 24 hours.

Test Specimen Description: The test specimens were formed from cast aluminum and measured approximately 3-3/4" wide by 2-1/4" high by 3-1/2" tall. (Reference Drawing Number P28503006)

General Note: *Four specimens were installed to each test deck. The specimens were spaced 24" on center to facilitate separate performance evaluation and water collection for each test specimen.*

TEST REPORT FOR UNIRAC, INC.

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SECTION 8

TEST RESULTS

Protocol TAS 100(A)-95, Wind Driven Rain

Test Specimens #1 and #2 with DuraLink™ 50 sealant

Test Date(s): 09/09/19

The temperature during testing was 22°C (71°F). The results are tabulated as follows:

Test Procedure: The wind speed intervals were conducted as follows:

Interval No.	Wind Speed (mph)	Time (min)	Water Spray
1	35	15	On
2	0	5	Off
3	70	15	On
4	0	5	Off
5	90	15	On
6	0	5	Off
7	110	5	On
8	0	5	Off

Test Results: The TAS 100(A) test results are as follows:

Wind Speed	Results	Allowed
35 mph	0 oz.	N/A
70 mph	0 oz.	N/A
90 mph	0 oz.	N/A
110 mph	0 oz.	N/A
Total	0 oz.	13.6 oz.

Results: Pass

General Note: Each configuration was evaluated separately with no leakage at the mount locations during or after the test.

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Test Specimens #3 and #4 with M-1® sealant**Test Procedure:** The wind speed intervals were conducted as follows:

Interval No.	Wind Speed (mph)	Time (min)	Water Spray
1	35	15	On
2	0	5	Off
3	70	15	On
4	0	5	Off
5	90	15	On
6	0	5	Off
7	110	5	On
8	0	5	Off

Test Results: The TAS 100(A) test results are as follows:

Wind Speed	Results	Allowed
35 mph	0 oz.	N/A
70 mph	0 oz.	N/A
90 mph	0 oz.	N/A
110 mph	0 oz.	N/A
Total	0 oz.	13.6 oz.

Results: Pass**General Note:** Each configuration was evaluated separately with no leakage at the mount locations during or after the test.

TEST REPORT FOR UNIRAC, INC.

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Date: 09/24/19

SECTION 9

PHOTOGRAPHS



Photo No 1

Test Specimens #1 and #2 Before Testing



Photo No. 2

Test Specimens #3 and #4 Before Testing

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Photo No. 3

Underside of Test Specimens #1 and #2 Before Testing



Photo No. 4

Underside of Test Specimens #3 and #4 Before Testing

TEST REPORT FOR UNIRAC, INC.

Report No.: K1187.01-109-18

Revision 1: 09/24/19

Date: 09/24/19



Photo No. 5
35 MPH

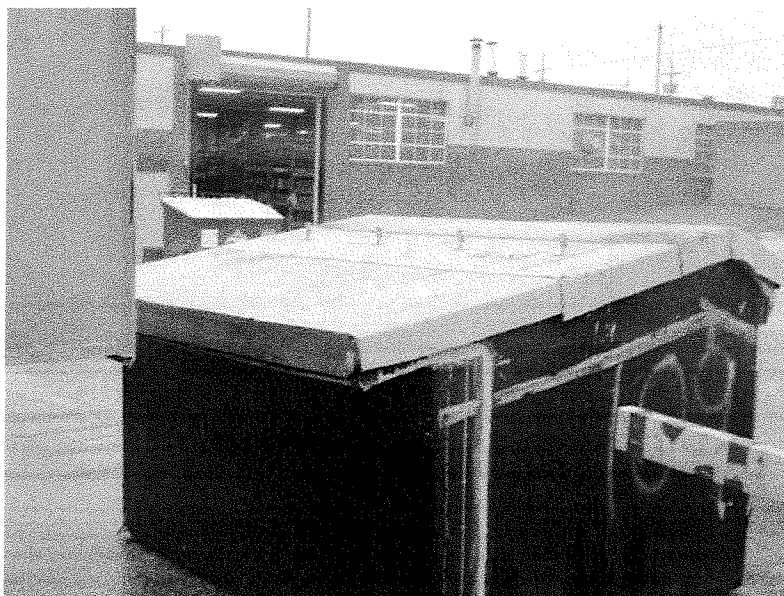


Photo No. 6
70 MPH

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Revision 1: 09/24/19

Date: 09/24/19

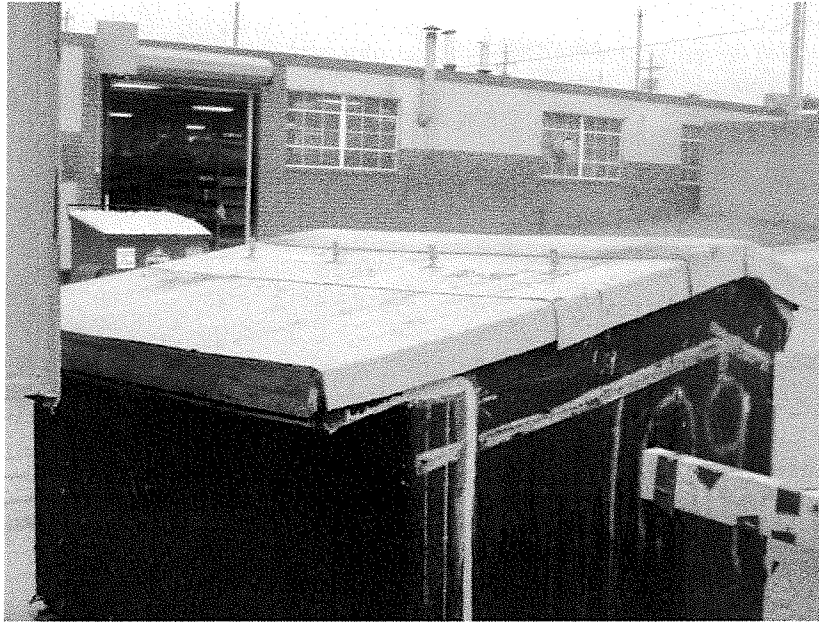


Photo No. 7
90 MPH



Photo No. 8
110 MPH

TEST REPORT FOR UNIRAC, INC.

Report No.: K1187.01-109-18

Revision 1: 09/24/19

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Photo No. 9
Underside of Test Specimens #1 and #2 After Testing



Photo No. 10
Underside of Test Specimens #3 and #4 After Testing



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Facsimile: 717-764-4129
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Report No.: K1187.01-109-18

Revision 1: 09/24/19

Date: 09/24/19

SECTION 10

DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



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Telephone: 717-764-7700
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Revision 1: 09/24/19

Date: 09/24/19

SECTION 11
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	09/24/19	N/A	Original Report Issue
1	09/24/19	4	Added statement: "The sealant was allowed to cure for 24 hours."