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BASILICATO NORTH AMERICA
FIRE TEST REPORT

SCOPE OF WORK
ASTM E108 COMPLETE CLASS A TESTING ON ROOF ASSEMBLY CONTAINING WALLABA HARDWOOD SHINGLES

REPORT NUMBER
M0287.02-121-24 R0

TEST DATE(S)
11/04/21 - 11/05/21

ISSUE DATE
11/19/21

RECORD RETENTION END DATE
11/05/25

PAGES
37

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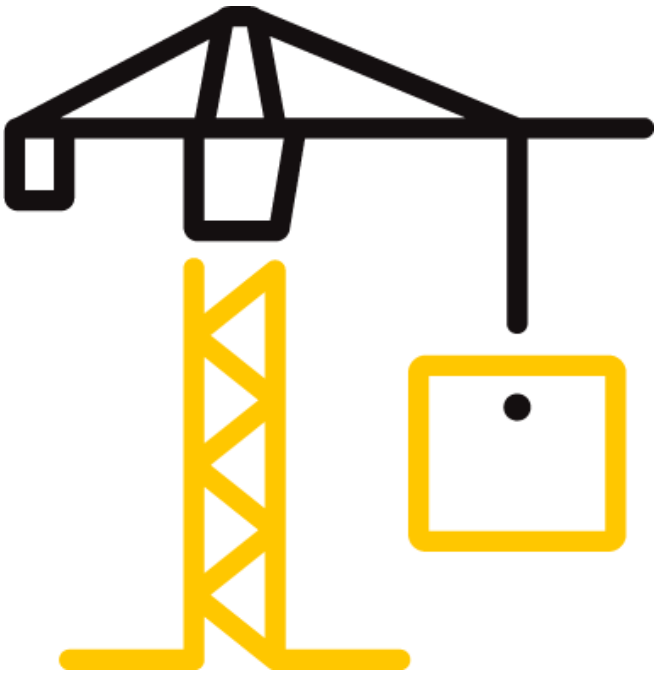
RT-R-AMER-Test-2847 (03/07/18)



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TEST REPORT FOR BASILICATO NORTH AMERICA

Report No.: M0287.02-121-24 R0
Date: 11/19/21

REPORT ISSUED TO

Basilicato North America
1001 South Myrtle Avenue, Suite 1
Clearwater, Florida 33756

Contact: Francois Sezionale
E-mail: fsb@basilicato.co

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Basilicato North America to evaluate the fire performance of the assembly described in Section 5 of this report. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania. Results obtained are tested values and were secured by using the designated test method. A summary of test results is reported herein and the complete assembly construction details are included in this report. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

DECK #	TYPE OF TEST	SLOPE	CLASSIFICATION	RESULTS
1	Burning Brand	5:12	Class A	Pass
2	Burning Brand	5:12	Class A	Pass
3	Burning Brand	5:12	Class A	Pass
4	Burning Brand	5:12	Class A	Pass
5	Intermittent Flame	5:12	Class A	Pass
6	Intermittent Flame	5:12	Class A	Pass
7	Spread of Flame	5:12	Class A	Pass
8	Spread of Flame	5:12	Class A	Pass

For INTERTEK B&C:

COMPLETED BY:	Timothy Feltman	**REVIEWED BY:**	Ethan Grove
TITLE:		**TITLE:**	
DEPARTMENT:	Technician – Fire Testing	**DEPARTMENT:**	Manager – Fire Testing
SIGNATURE:	Digitally Signed for: Tim Feltman by Dottie Rushing	**SIGNATURE:**	Digitally Signed by: Ethan Grove
DATE:	11/19/21	**DATE:**	11/19/21

TRF:ddr

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SECTION 3
TESTING AND EVALUATION METHODS

The samples were evaluated in accordance with the following:

ASTM E108-20a, *Standard Test Methods for Fire Tests of Roof Coverings*

The following test equipment was used to conduct the test.

ROOFING LAB EQUIPMENT	INVENTORY NUMBER	CALIBRATION DUE DATE
Data Acquisition/ Logger	63656	10-26-22
Anemometer	INT02439	06-01-22
Thermocouple	INT01652	09-02-22
Thermocouple Reader	INT243	07-19-22
Tape Measure	65101	08-04-22
Stopwatch	65100	07-31-22
Moisture Meter	INT0962	02-02-22
Bench Top Scale	INT0024	04-01-22
Temp. Transmitter	65411	06-10-22

SECTION 4
MATERIAL SOURCE/INSTALLATION

The test specimen was submitted to Intertek directly from the client. Samples were not independently selected for testing. Intertek has not verified the composition, manufacturing techniques or quality assurance procedures.

SECTION 5
SPECIMEN DESCRIPTION

The plywood decks were constructed by Intertek technicians according to the specifications of test standard ASTM E108-20a Edition, *"Standard Test Methods for Fire Tests of Roof Coverings."*

Moisture Content: Moisture content of the lumber was verified prior to testing to be within the limits of the standard.

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SECTION 5
SPECIMEN DESCRIPTION

The samples are described in more detail in the table below.

DECK #	DECK TYPE	DECK SURFACE	**SYSTEM** Systems are described in assembly from wood deck to top surface.
1-4	Class A BB	Swanson Group 15/32" AC Grade Group 1, APA rated exterior plywood	Plywood, Georgia Pacific® ½" DensDeck, Basilicato Wallaba hardwood shingles.
5&6	Class A IF	Swanson Group 15/32" AC Grade Group 1, APA rated exterior plywood	Plywood, Georgia Pacific® ½" DensDeck, Basilicato Wallaba hardwood shingles.
7&8	Class A SOF	Swanson Group 15/32" AC Grade Group 1, APA rated exterior plywood	Plywood, Georgia Pacific® ½" DensDeck, Basilicato Wallaba hardwood shingles.

Storage Information: Decks were stored in the fire laboratory prior to testing. Typical laboratory conditions are 60-80°F and 50-65% relative humidity

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Jeremy Flavin	Basilicato North America
Timothy Feltman	Intertek B&C

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SECTION 7
TEST RESULTS

Calibration Information

TEST CONDITIONS (CLASS A)	
Test Date	11/04/2021
Air Velocity	1052 average fpm
Slope of Cal. Deck	5:12
Ambient Air Temperature	64°F

TEST CONDITIONS (CLASS A)	
Test Date	11/05/2021
Air Velocity	1057 average fpm
Slope of Cal. Deck	5:12
Average Flame Temperature	1392°F
Ambient Air Temperature	67°F

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SECTION 7 (Continued)

TEST RESULTS

BURNING BRAND TESTS

Test Observations Deck: 1

Test Date	11/04/2021
Ambient Air Temperature	62°F
Brand Type	Class A, 4.5 lbs.
Slope of Test Deck	5:12

TIME (min:sec)	OBSERVATIONS
00:00	Brand placed on deck.
00:57	Sample ignition
04:10	Shingle lifting away from the deck at the front of brand placement
15:18	Flaming under lifted shingle at the front of brand placement
19:50	Brand consumed
32:30	Smoke at horizontal plywood joint
54:56	Discoloration at horizontal plywood joint and vertical 2X4
58:27	Reignition of exposed shingle behind brand placement
90:00	End of Test

Acceptance Level: Class A – No flaming occurred on the underside of the deck.

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SECTION 7 (Continued)

TEST RESULTS

Test Observations Deck: 2

Test Date	11/04/2021
Ambient Air Temperature	62°F
Brand Type	Class A, 4.5 lbs.
Slope of Test Deck	5:12

TIME (min:sec)	OBSERVATIONS
00:00	Brand placed on deck.
01:05	Sample ignition
02:28	Ignition in front of brand placement
02:59	Shingle lifting away from the deck at the front of brand placement
12:07	Flaming under lifted shingle at the front of brand placement
21:43	Brand consumed
29:19	Smoke at horizontal plywood joint
49:30	Discoloration at horizontal plywood joint
90:00	End of Test

Acceptance Level: Class A – No flaming occurred on the underside of the deck.

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SECTION 7 (Continued)

TEST RESULTS

Test Observations Deck: 3

Test Date	11/04/2021
Ambient Air Temperature	65°F
Brand Type	Class A, 4.5 lbs.
Slope of Test Deck	5:12

TIME (min:sec)	OBSERVATIONS
00:00	Brand placed on deck.
01:08	Sample ignition
01:55	Shingle lifting away from the deck at the front of brand placement
15:09	Flaming under lifted shingle at the front of brand placement
19:27	Brand consumed
28:50	Smoke at horizontal plywood joint
53:15	Discoloration at horizontal plywood joint
90:00	End of Test

Acceptance Level: Class A – No flaming occurred on the underside of the deck.

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SECTION 7 (Continued)

TEST RESULTS

Test Observations Deck: 4

Test Date	11/04/2021
Ambient Air Temperature	65°F
Brand Type	Class A, 4.5 lbs.
Slope of Test Deck	5:12

TIME (min:sec)	OBSERVATIONS
00:00	Brand placed on deck.
01:17	Sample ignition
01:49	Ignition in front of brand placement
09:44	Shingle lifting away from the deck at the front of brand placement
19:52	Brand consumed
37:33	Smoke at horizontal plywood joint
90:00	End of Test

Acceptance Level: Class A – No flaming occurred on the underside of the deck.

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SECTION 7 (Continued)

TEST RESULTS

INTERMITTENT FLAME TESTS

Test Observations Deck: 5

Test Date	11/05/2021
Ambient Air Temperature	66°F
Slope of Test Deck	5:12

CYCLE		Flame	
NO.	**TIME.**	**ON/OFF**	**OBSERVATIONS/COMMENTS**
1	00:28	ON	Smoke emitting from test assembly
1	02:00	OFF	Glowing of exposed shingles
3	08:46	ON	Smoke at leading edge of underdeck
3	09:38	ON	Sample ignition
3	10:03	OFF	Sample extinguished
4	13:11	ON	Reignited
4	14:58	OFF	Extinguished
4	15:00	OFF	Flaming of exposed shingles at the leading edge causing transient flaming of the underdeck at the leading edge.
5	18:00	OFF	Reignited
7	30:13	OFF	Smoke at vertical 2X4 and horizontal plywood joint
XXX	60:00	XXXXX	All flame cycles complete; start observation period
XXX	120:00	XXXXX	End of Test

Acceptance Level: Class A – No flaming occurred on the underside of the deck.

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SECTION 7 (Continued)

TEST RESULTS

Test Observations Deck: 6

Test Date	11/05/2021
Ambient Air Temperature	59°F
Slope of Test Deck	5:12

CYCLE		Flame	
NO.	**TIME.**	**ON/OFF**	**OBSERVATIONS/COMMENTS**
1	00:34	ON	Smoke emitting from test assembly
1	02:00	OFF	Glowing of exposed shingles
2	05:22	ON	Sample ignition
2	06:00	OFF	Extinguished
3	09:19	ON	Reignited
3	10:02	OFF	Extinguished
4	13:24	ON	Reignited
11	42:32	OFF	Smoke at horizontal plywood joint
XXX	60:00	XXXXX	All flame cycles complete; start observation period
XXX	120:00	XXXXX	End of Test

Acceptance Level: Class A – No flaming occurred on the underside of the deck.

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SECTION 7 (Continued)

TEST RESULTS

SPREAD OF FLAME TESTS

Test Observations Deck: 7

Test Date	11/05/2021
Ambient Air Temperature	63°F
Slope of Test Deck	5:12

TIME (min:sec)	OBSERVATIONS/COMMENTS
00:00	Burner ignited.
00:28	Smoke emitting from test assembly
03:13	Sample ignition
03:35	Sample extinguished
05:44	Reignited
06:20	Flame spread to 1 ft.
07:19	Flame spread receding below 1 ft.
07:42	Flame spread to 1 ft.
09:29	Flame spread receding below 1 ft.
10:00	Test stop.

Acceptance Level: Class A, maximum spread of flames is 1 ft.

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SECTION 7 (Continued)
TEST RESULTS

Test Observations Deck: 8

Test Date	11/05/2021
Ambient Air Temperature	64°F
Slope of Test Deck	5:12

TIME (min:sec)	OBSERVATIONS/COMMENTS
0:00	Burner ignited.
00:25	Smoke emitting from test assembly
02:56	Sample ignition
02:56	Flame spread to 1 ft.
05:40	Flame spread to 2 ft.
10:00	Test stop.

Acceptance Level: Class A, maximum spread of flames is 2 ft.

SECTION 8
CONCLUSION

The Basilicato North America Wallaba hardwood shingles in the system described in this test report **met** the criteria of ASTM E108 (2020a) for a Class “A” rating at a 5:12 slope.

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SECTION 9
PHOTOGRAPHS

Photo No. 1
TEST #1 Pre-test

Photo No. 2
TEST #1 Underdeck Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 3
TEST #1 During Test

Photo No. 4
TEST #1 Underdeck During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 5
TEST #1 Post Test

Photo No. 6
TEST #1 Underdeck Post Test

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SECTION 9 (Continued)
PHOTOGRAPHS

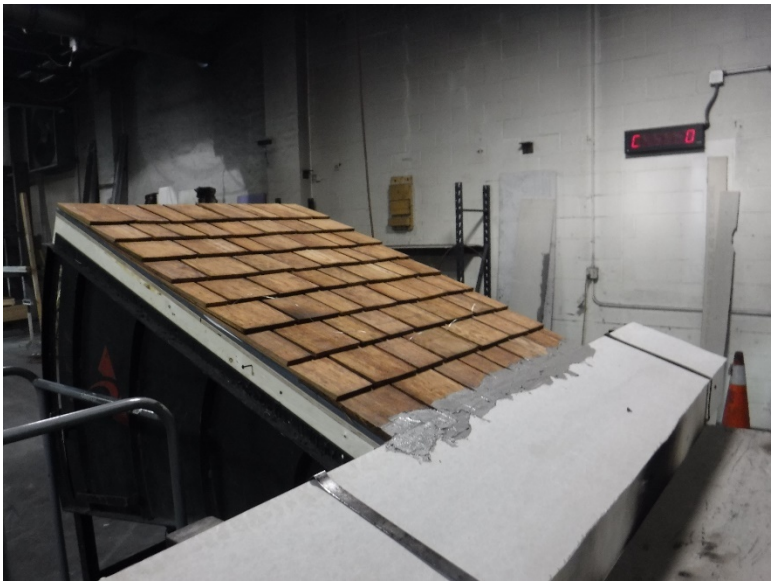

Photo No. 7
TEST #2 Pre-test

Photo No. 8
TEST #2 Underdeck Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 9
TEST #2 During Test

Photo No. 10
TEST #3 Underdeck During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

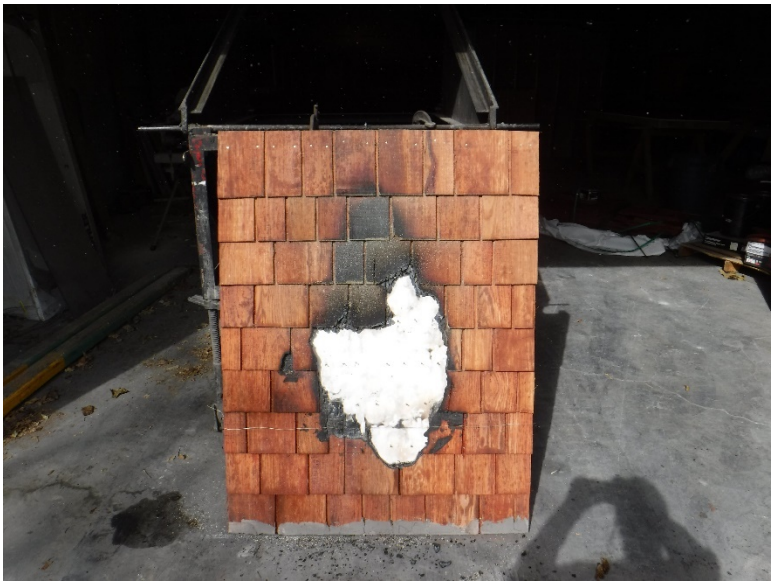

Photo No. 11
TEST #2 Post Test

Photo No. 12
TEST #2 Underdeck Post Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 13
TEST #3 Pre-test

Photo No. 14
TEST #3 Underdeck Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 15
TEST #3 During Test

Photo No. 16
TEST #3 Underdeck During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 17
TEST #3 Post Test

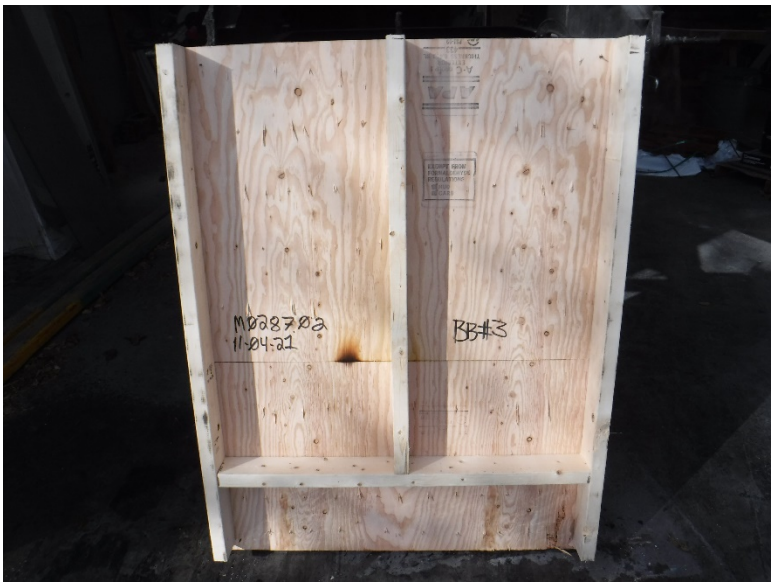

Photo No. 18
TEST #3 Underdeck Post Test

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SECTION 9 (Continued)
PHOTOGRAPHS

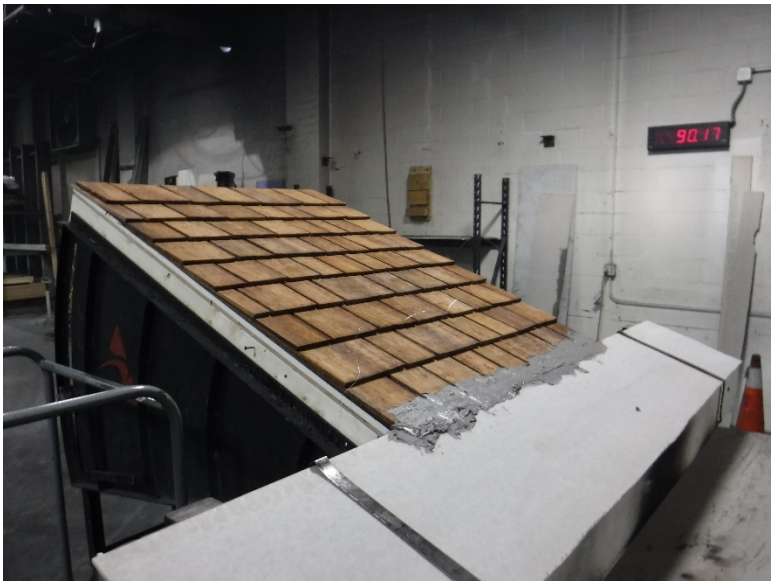

Photo No. 19
TEST #4 Pre-test

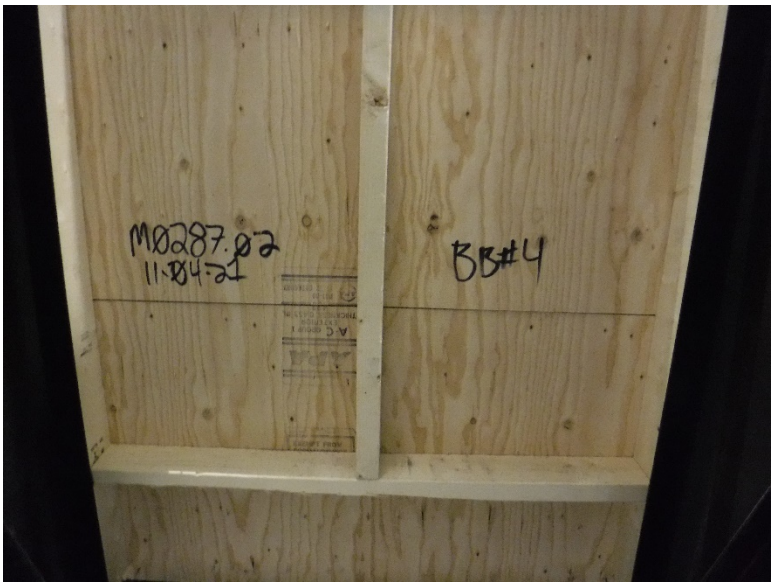

Photo No. 20
TEST #4 Underdeck Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 21
TEST #4 During Test

Photo No. 22
TEST #4 Underdeck During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 23
TEST #4 Post Test

Photo No. 24
TEST #4 Underdeck Post Test

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SECTION 9 (Continued)
PHOTOGRAPHS

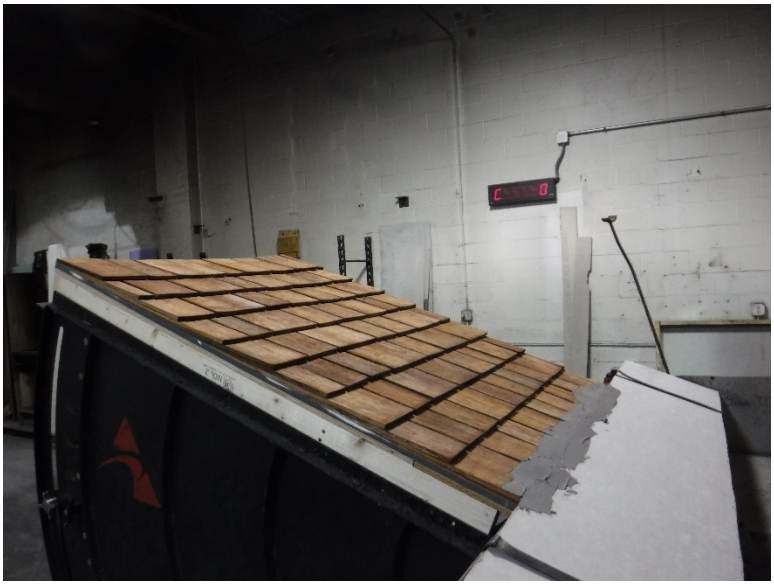

Photo No. 25
TEST #5 Pre-test

Photo No. 26
TEST #5 Underdeck Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 27
TEST #5 During Test

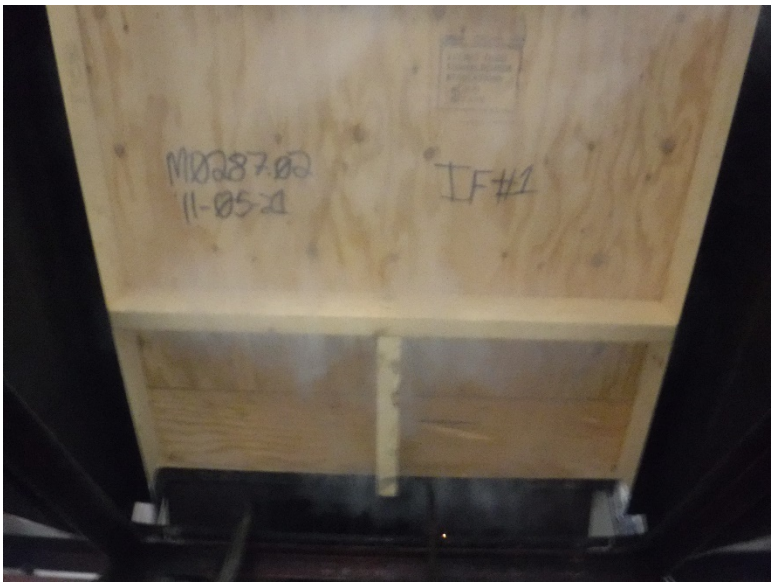

Photo No. 28
TEST #5 Underdeck During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 29
TEST #5 Post Test

Photo No. 30
TEST #5 Underdeck Post Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 31
TEST #6 Pre-test

Photo No. 32
TEST #6 Underdeck Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 33
TEST #6 During Test

Photo No. 34
TEST #6 Underdeck During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 35
TEST #6 Post Test

Photo No. 36
TEST #6 Underdeck Post Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 37
TEST #7 Pre-test

Photo No. 38
TEST #7 During Test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 39
TEST #7 Post Test

Photo No. 40
TEST #8 Pre-test

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SECTION 9 (Continued)
PHOTOGRAPHS

Photo No. 41
TEST #8 During Test

Photo No. 42
TEST #8 Post Test

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Date: 11/19/21

SECTION 10
DRAWINGS

Wallaba Hardwood Shingles

NO. 1 PERFECTION GRADE SPECIFCATIONS

Size: 18" x 1/16" x 7/16"

Material:

Wallaba *Eperua spp.*

Mechanical Properties (2 cm typ)

Moisture Content (%)	Bending Strength (Psi)	Modulus of Elasticity (1,000 psi)	Maximum Crushing Strength (Psi)
Green (42)	15,100	2,180	8,380
12	20,200	2,130	11,210

Janka side hardness 1,540 lb for green material and 2,040 lb at 12% moisture content

Grade:

- 100% Clearwood - No knots, worm holes, decay or crimp permitted.
- Edge Grain - No Flat grain, no Cross grain and no Diagonal grain,
- Minimum of 90% quartersawn.
- Manufactured in general accordance with Guyana Forestry Commission grading rules (grade and tolerances for #1 perfection exceed GR11)

Tolerances:

- Tip Thickness: 1/16" (2mm) +2mm/ -0mm
- Butt Thickness: 7/16" (11mm) +1mm/-1mm
- Lengths: 18" (457.2mm) +3mm/-0 mm
- Widths: 3" -9" 75-250mm – maximum of 10% less than 4"
- Ends cut square, sides are true to the length of the piece and parallel.

Packaging:

- 20 Square Feet per Bundle / 5 Bundles per Square (100 square feet) 5 squares per pallet of 25 Bundles

Sustainability:

Manufactured and imported in strict accordance with the sustainable forestry laws and regulations outlined by the Guyana Forestry Commission, the USCBP, The USDA, APHIS, and in compliance with the 2008 Lacey Act

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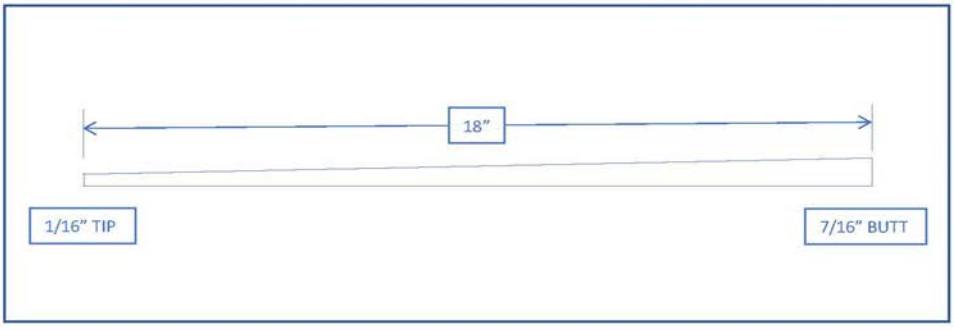

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SECTION 10 (Continued)
DRAWINGS

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Fax: +1 (727) 584-3747

Guyana Operations:
Prestige Timber, Inc.
Lot 32 Windsor Estate Peter's Hall
East Bank Demerara, Guyana

Wallaba Shingle:
U.S. Specification

INSTALLATION DETAILS

Regardless of style, the following basic installation details (Figure 4 below) must be observed.

1. Shingles must be doubled or tripled at all eaves.
2. Butts of first course shingles should project 1½" beyond the fascia.
3. Spacing between adjacent shingles (joints) should be a minimum of 1/4" and a maximum of 3/8" .
4. Joints in any one course should be separated not less than 1/2" from joints in adjacent courses; and in any three courses, no two joints should be in direct alignment.
5. In lesser grade shingles containing both flat and vertical grain, joints should not be aligned with centerline of heart.
6. Flat grain shingles wider than 8" should be split in two before nailing. Knots and similar defects should be treated as the edge of the shingle and the joint in the course above placed 1½" from the edge of the defect.
7. Minimum length 1 ¾" Stainless Steel 5d Ring Shank Nails.

Figure 4. Shingle Installation
Class A, B, or C Fire Rated

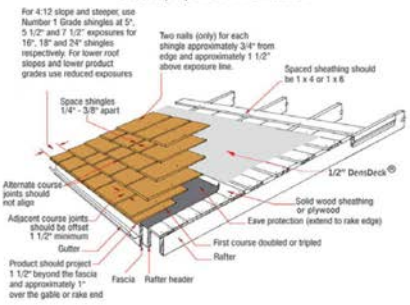
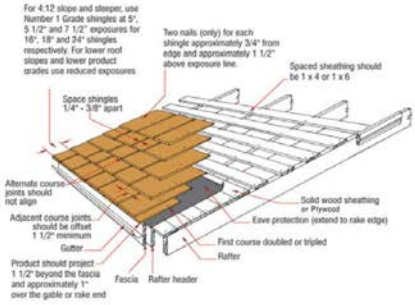
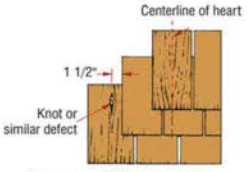


Figure 4. Shingle Installation
Non-Rated





Course Alignment

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SECTION 11

REVISION LOG

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