



Western Fire Center, Inc.

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Testing of NOVA Decking in Accordance with
CSFM Test Procedure 12-7A-4, *Part A, and the San
Diego County Modification to the SFM 12-7A-4 Part
B Requirements*

Covered Products:

5/4- and 4/4x6" Hardwood Decking-

IPE

Cumaru

Batu

Report # 10133

WFCi Project# 10133

Rendered to:

**NOVA USA Wood Products
1022 NW Marshall St.
Portland, OR 97209**

TESTING COMPLETED: DECEMBER 22, 2010

REPORT ISSUED: JANUARY 17, 2010

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INTRODUCTION

This report documents the testing of **Nova USA Wood Products- IPE, Cumaru and Batu** decking in accordance with the requirements described in the 2010 California Building Code (CBC), Chapter 7A, "*Materials and Construction Methods for Exterior Wildfire Exposure*", Section 709A, and *San Diego County Wildland Building Code, Section 26.3.6.2.1*.

Testing under CBC Chapter 7A requirements was performed in accordance with SFM Standard 12-7a-4a.

Testing in conformity with the San Diego County requirements is delineated as follows:

26.3.6.2.1 Testing of Alternative Decking Materials

Alternative decking materials may be approved when tested to demonstrate passing of the performance requirements of State Fire Marshal standard 12-7A-4. The decking surface shall pass the tests in both Parts A and B of SFM 12-7A-4, however, the burning brand exposure test of Part B may be conducted with a Class "B" sized brand as specified in ASTM E-108 or UL-790.

The Conditions of Acceptance of State Fire Marshal standard 12-7A-4 shall be modified to read as follows:

Part A: Underflame Test

1. Peak heat release rate of less than or equal to 25 kW/ft² (269 kW/m²)
2. Absence of sustained flaming at the conclusion of the 40-minute observation period.
3. Absence of structural failure of any deck board.
4. Absence of falling particles that are still burning when reaching the floor.

Part B: Burning Brand Test

1. Absence of sustained flaming at the conclusion of the 40-minute observation period.
2. Absence of structural failure of any deck board.
3. Absence of falling particles that are still burning when reaching the floor.

SAMPLE DESCRIPTION

Test decks were constructed at WFCi using deck boards submitted directly from the client. The three test materials were received at WFCi on November 23, 2010 and placed in the conditioning room in an atmosphere of 73+/-5 degrees F and 50+/-5% relative humidity until testing was initiated on December 20. At the time of testing, the test specimens had achieved a constant weight.

The ends of the test specimens were labeled as IPE, Cumaru and/or Batu, referencing the individual wood species.

All test boards were square edge, 3/4" thick x 5-1/2" wide (nominal 1" x 6") and brown in color. The unit weights and densities at 10% moisture content were calculated as follows:

IPE: 1.8 lb/lineal foot (62.7 lb/cu.ft)

Cumaru: 1.9 lb/lineal foot (66.3 lb/cu.ft)

Batu: 1.6 lb/lineal foot (55.8 lb/cu.ft)

The deck boards were tested at a moisture content of 10%, as measured by the ASTM D4442 'oven dry' method.

NOVA USA IPE, Cumaru and Batu Deck Testing
WFCi PN# 10133

Care was taken to maintain an edge to edge spacing of the deck planks at 3/16". The resulting top deck surface area was 4.6 sq.ft.

The deck planks were supported by two 2x6 Douglas fir joists, 28 inches long with 16 inch center to center spacing. The edge to edge spacing of the deck planks was 3/16", with boards attached to the joists with supplied hidden fasteners.

TEST RESULTS

Summaries of test results are presented in the following. The test program took place over the period 12/20 through 12/22/2010.

IPE Underdeck (CSFM 12-7a-4)

Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Average	Result (Pass/Fail)
Net Peak HRR (kW/sq.ft)	25 (max)	15.7	17.8	16.7	16.7	Pass
Sustained Flaming	No	No	No	No	--	Pass
Flaming drops or embers	No	No	No	No	--	Pass
Structural Failure	No	No	No	No	--	Pass

IPE San Diego Class B Burning Brand

Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Result (Pass/Fail)
Sustained Flaming	No	No	No	No	Pass
Flaming drops or embers	No	No	No	No	Pass
Structural Failure	No	No	No	No	Pass

Cumaru Underdeck (CSFM 12-7a-4)

Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Average	Result (Pass/Fail)
Net Peak HRR (kW/sq.ft)	25 (max)	14.6	16.5	15.8	15.6	Pass
Sustained Flaming	No	No	No	No	--	Pass
Flaming drops or embers	No	No	No	No	--	Pass
Structural Failure	No	No	No	No	--	Pass

Cumaru San Diego Class B Burning Brand

Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Result (Pass/Fail)
Sustained Flaming	No	No	No	No	Pass
Flaming drops or embers	No	No	No	No	Pass
Structural Failure	No	No	No	No	Pass

Batu Underdeck (CSFM 12-7a-4)

Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Average	Result (Pass/Fail)
Net Peak HRR (kW/sq.ft)	25 (max)	15	13.5	14.3	14.2	Pass
Sustained Flaming	No	No	No	No	--	Pass
Flaming drops or embers	No	No	No	No	--	Pass
Structural Failure	No	No	No	No	--	Pass

Batu San Diego Class B Burning Brand

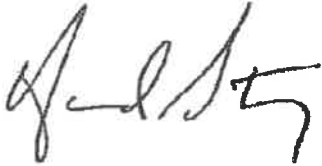
Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Result (Pass/Fail)
Sustained Flaming	No	No	No	No	Pass
Flaming drops or embers	No	No	No	No	Pass
Structural Failure	No	No	No	No	Pass

CONCLUSIONS

The IPE, Cumaru and Batu deck materials as described herein are deemed to have met the fire test requirements of Section 709A of the 2010 California Building Code, Chapter 7A, and San Diego County Building Code, Section 26.3.6.2.1. Building Code, Section 26.3.6.3.2.1. Nominal 1x6" (0.75x5.5") dimension deck boards were evaluated in this program. Based on previous experience with a variety of hardwood and softwood decking materials, the testing of thinner dimension boards is considered to be the more severe condition; therefore the results of this testing are deemed to apply to nominal 5/4 and greater product thicknesses.

SIGNATURE PAGE

Prepared and Approved by,

A handwritten signature in black ink, appearing to read 'H. Stacy', written in a cursive style.

Howard Stacy

Director, Testing Services

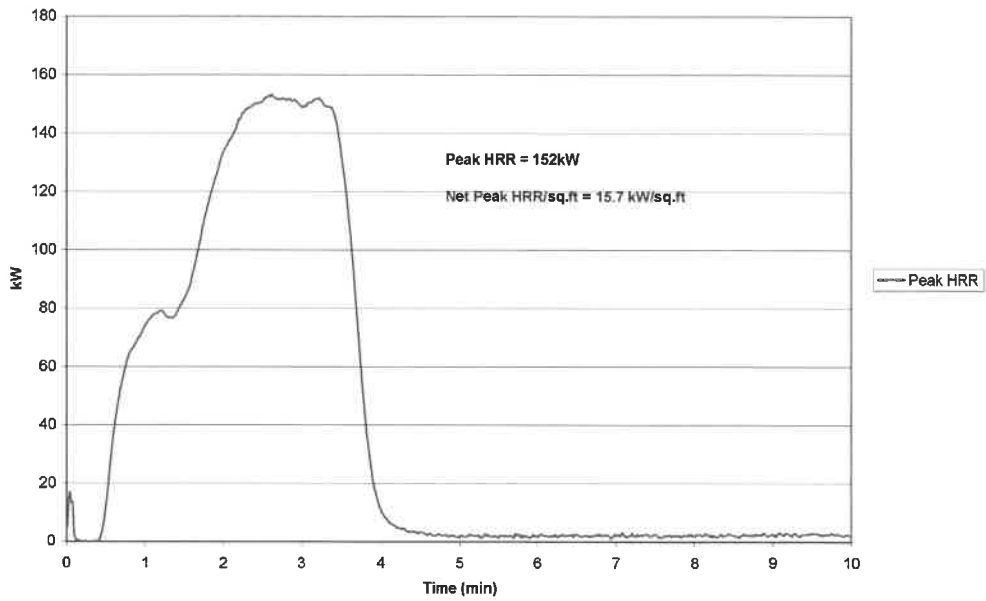
**WESTERN FIRE CENTER AUTHORIZES THE CLIENT NAMED HEREIN TO REPRODUCE
THIS REPORT ONLY IF REPRODUCED IN ITS ENTIRETY**

The test specimen identification is as provided by the client and WFCi accepts no responsibilities for any inaccuracies therein. WFCi did not select the specimen from inventory, and has not verified the composition, manufacturing techniques or quality assurance procedures.

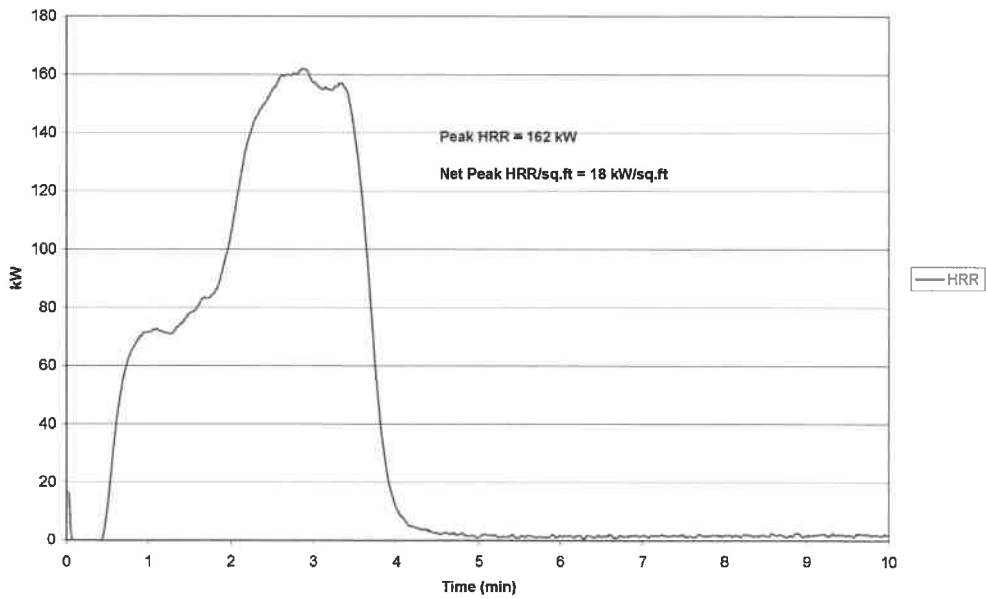
Appendix A Heat Release Data

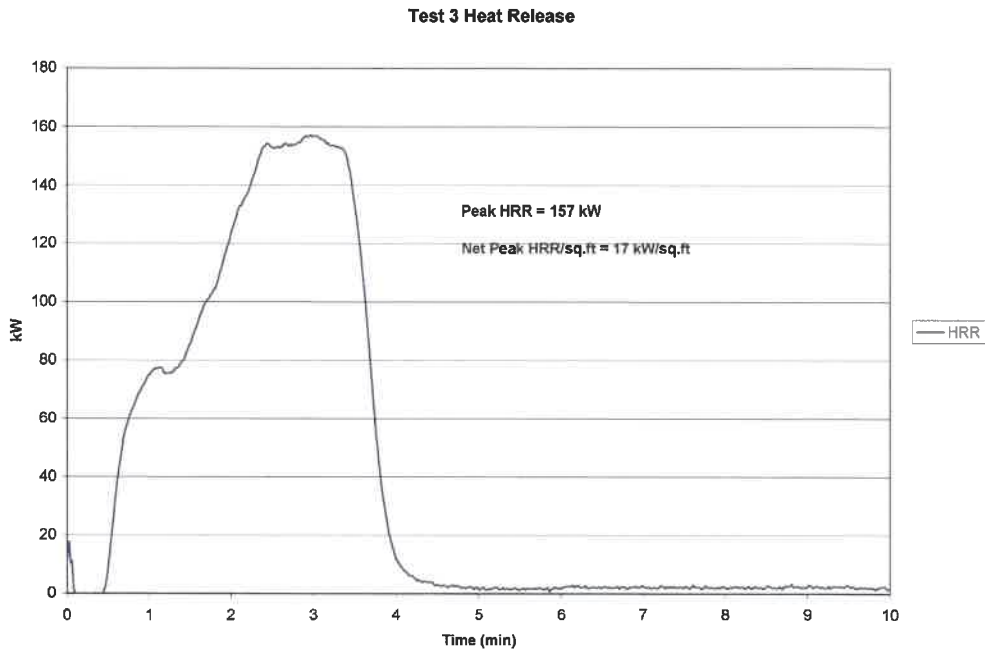
IPE

Test 1 Peak HRR

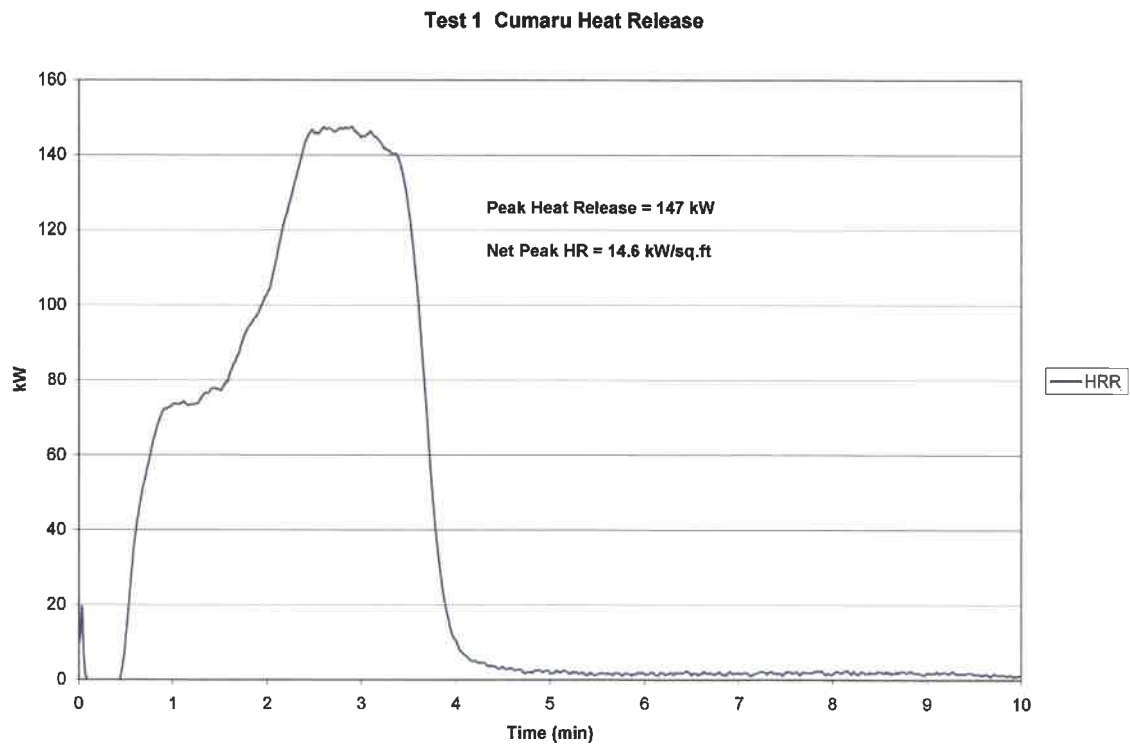


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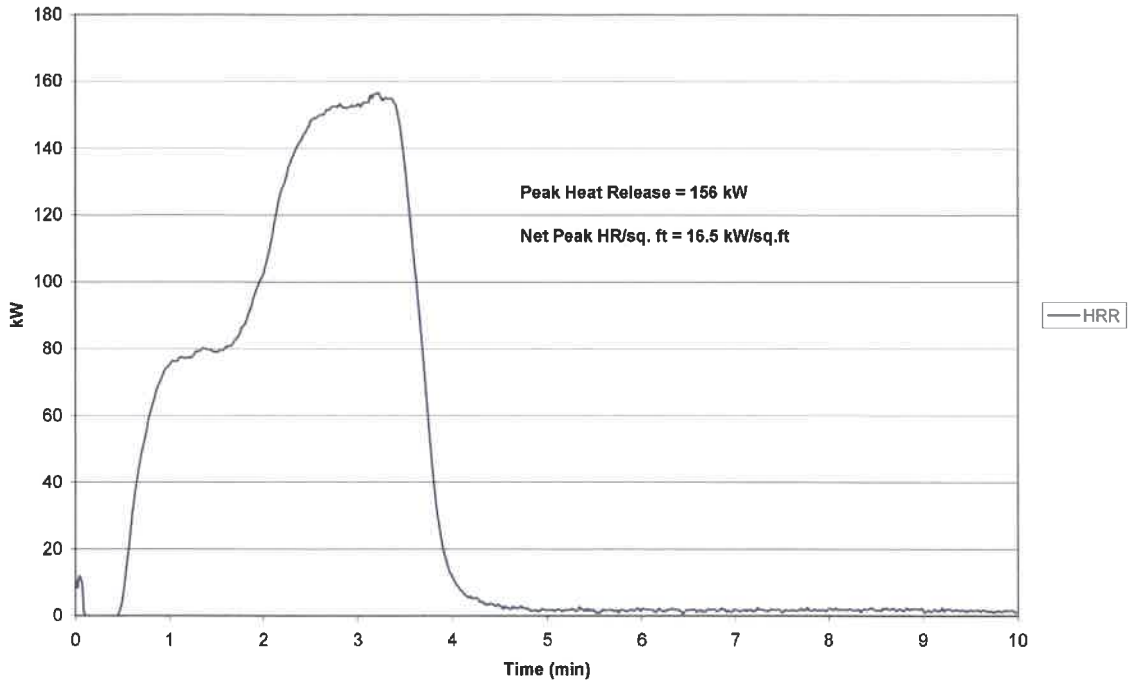




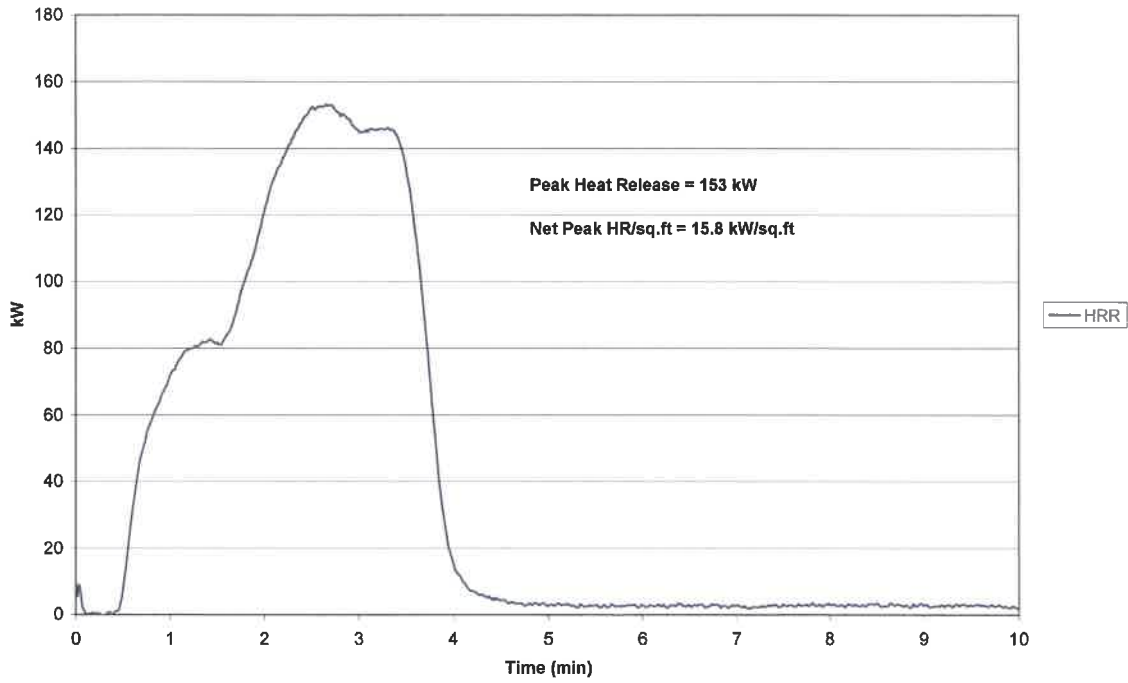
Cumaru



Test 2 Cumaru Heat Release

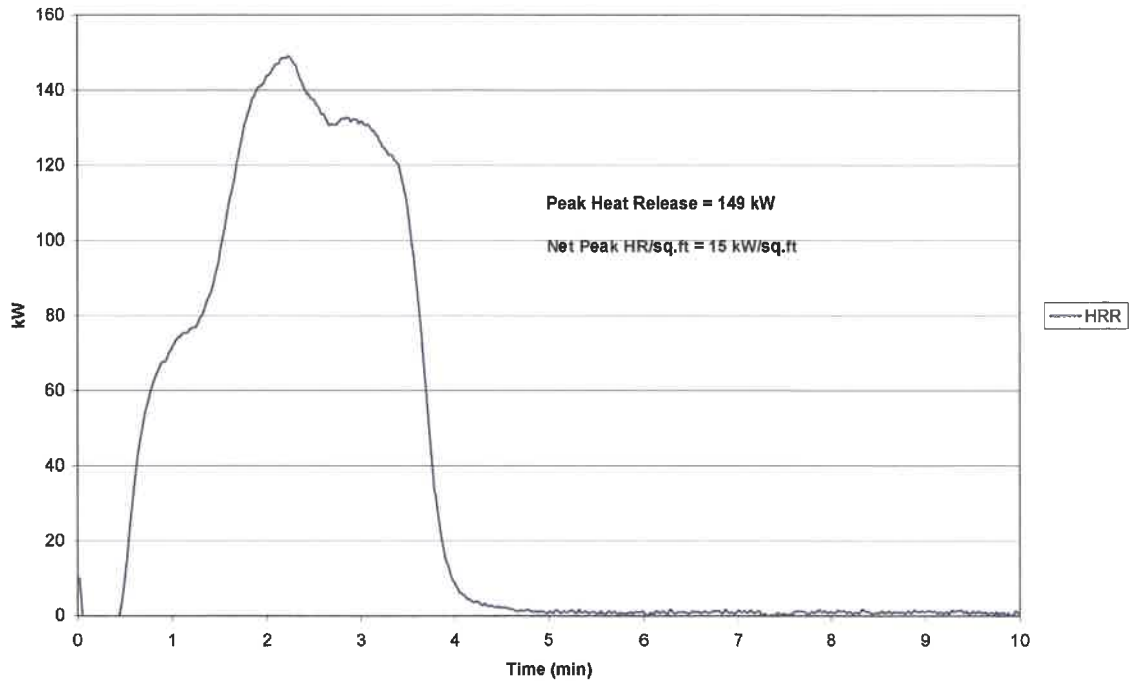


Test 3 Cumaru Heat Release

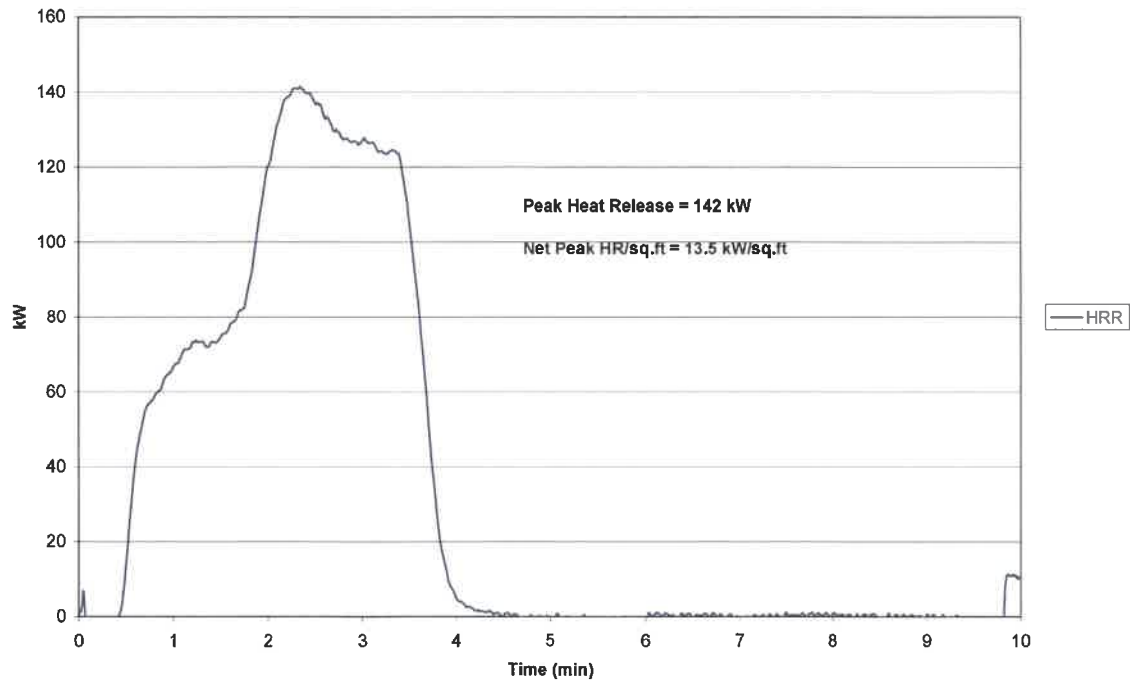


Batu

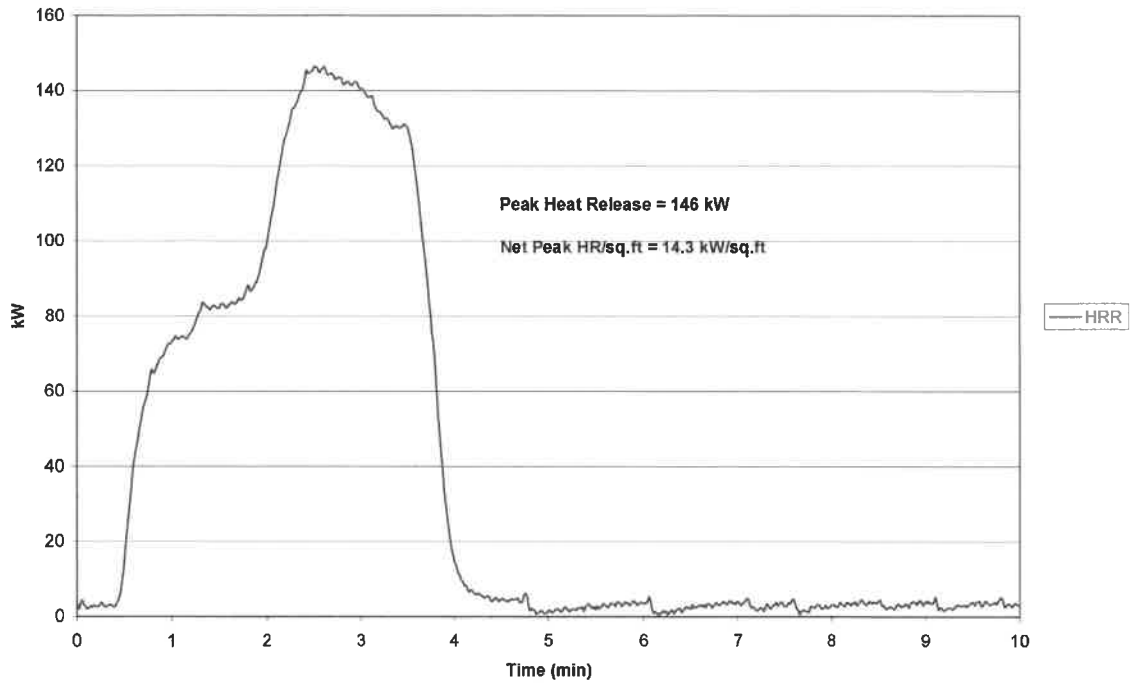
Test 1 Batu Heat Release



Test 2 Batu Heat Release



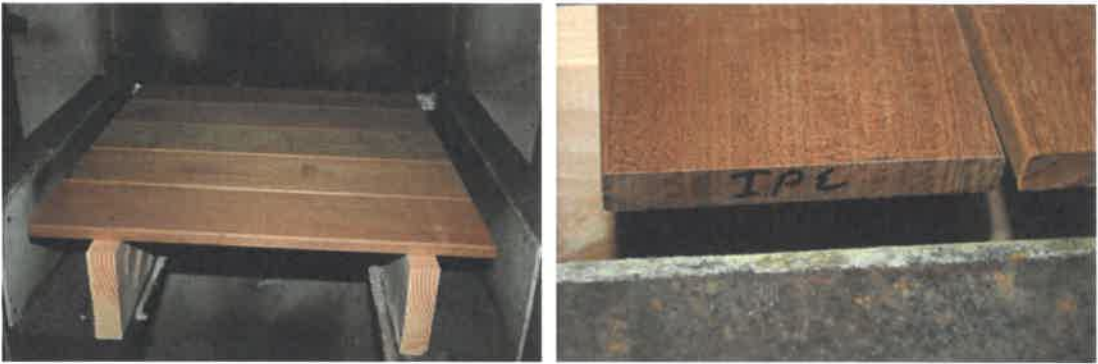
Test 3 Batu Heat Release



Appendix B- Photographs from representative tests

Underdeck Test

IPE



IPE prior to test



Post test

IPE Burning Brand



Post test

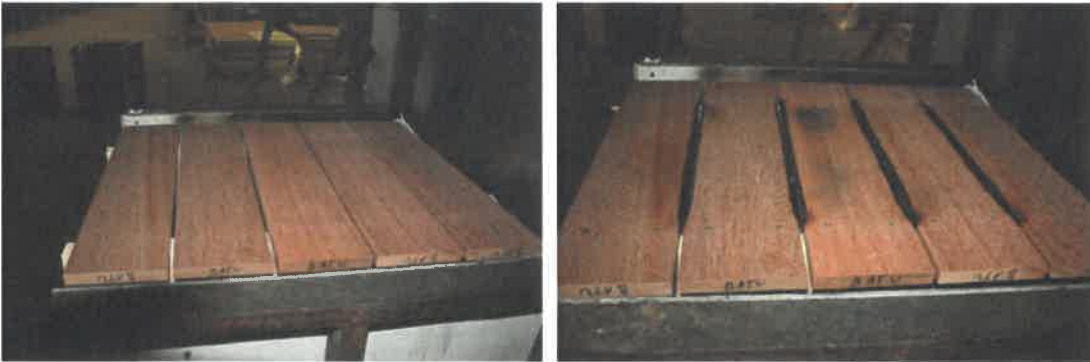
Cumaru Underdeck Test



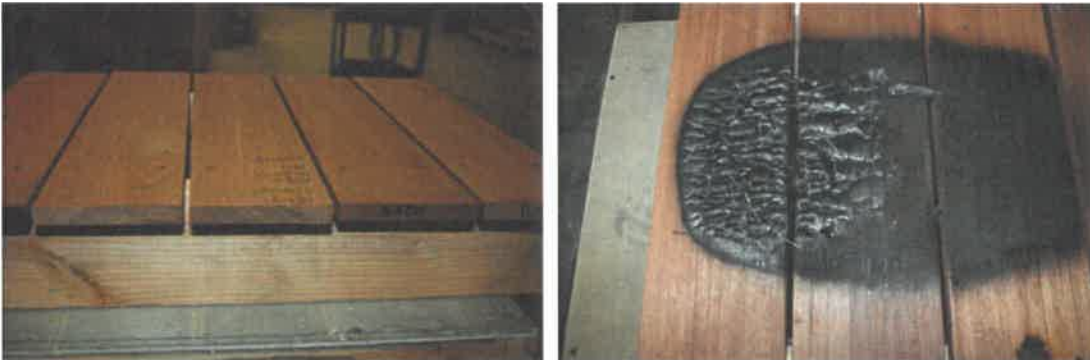
Cumaru Burning Brand Test



Batu Underdeck Test



Batu Burning Brand Test



CLIENT: NOVA USA WOOD PRODUCTS
1022 NW Marshall Street
Portland, OR. 97209
Steve Getsiv

Test Report No: RJ1382-1

Date: June 1, 2011

SAMPLE ID: Test samples were identified as Batu Tropical Hardwood Exterior Decking.

SAMPLING DETAIL: Test samples were submitted to the laboratory directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: Samples were received at QAI on May 26, 2011.

TESTING PERIOD: June 1, 2011.

AUTHORIZATION: Testing authorized by Steve Getsiv.

TEST REQUESTED: Perform standard flame spread and smoke density developed classification tests on the sample supplied by the Client in accordance with ASTM Designation E84-10, "Standard Method of Test for Surface Burning Characteristics of Building Materials". The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1.

TEST RESULTS:	<u>Flame Spread</u>	<u>Smoke Developed</u>
	25	65

Detailed test results are presented in the subsequent pages of this report

Prepared By



Brian Ortega
Test Technician

**Signed for and on behalf of
QAI Laboratories, Inc.**



Greg Banasky
Senior Test Technician



PREPARATION AND CONDITIONING: The sample material was submitted in sufficient quantities, conforming to test chamber dimensions. The sample was supported during testing by 1/4" round metal rods placed at 24" intervals across the width of the chamber.

E 84 TEST DATA SHEET:

CLIENT: NOVA USA WOOD PRODUCTS **DATE:** 06/01/11

SAMPLE: BATU-Tropical Hardwood Exterior Decking.

FLAME SPREAD:

IGNITION: 1 minute, 29 seconds.

FLAME FRONT: 9 feet maximum

TIME TO MAXIMUM SPREAD: 9 minutes, 02 seconds

TEST DURATION: 10 minutes.

CALCULATION: 52.71 X 0.515=27.14

SUMMARY: FLAME SPREAD: 25 SMOKE DEVELOPED: 65

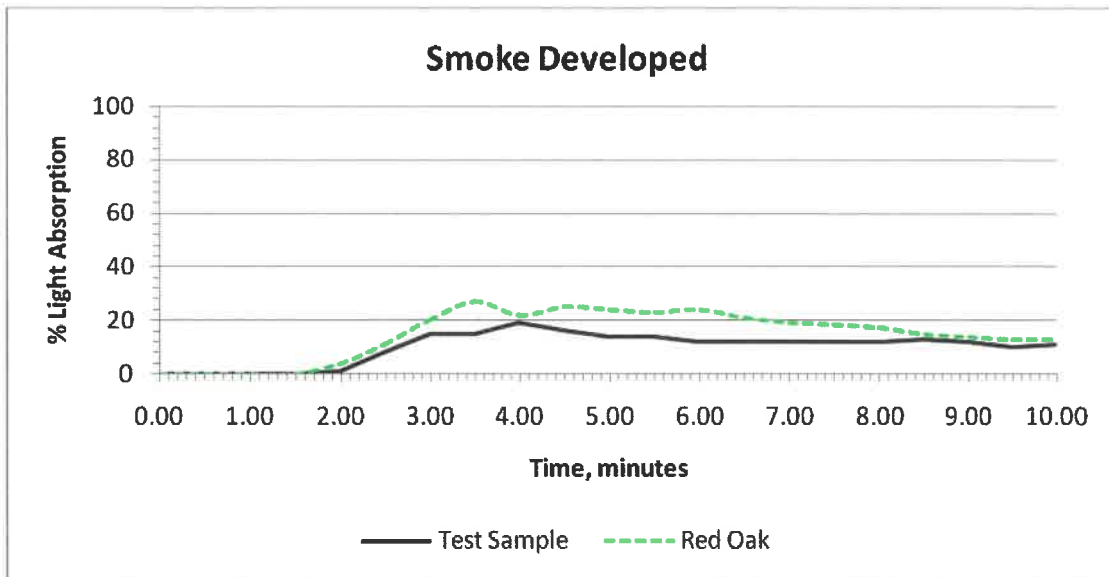
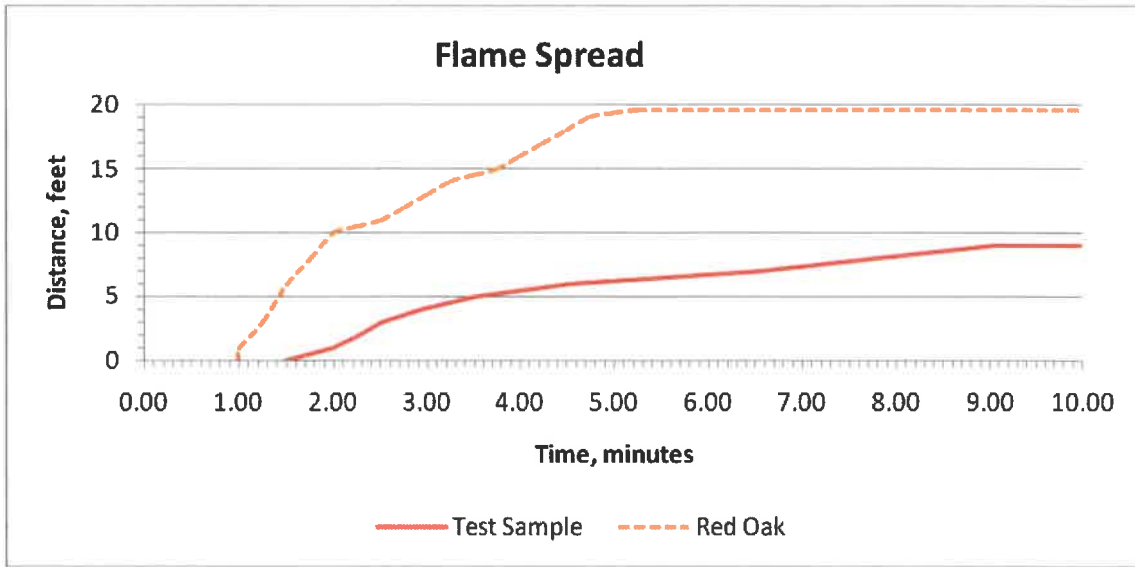
Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5. Smoke Density values over 200 are rounded to the nearest figure divisible by 50.

In order to obtain the Flame Spread Classification, the above results should be compared to the following table:

<u>NFPA CLASS</u>	<u>IBC CLASS</u>	<u>FLAME SPREAD</u>	<u>SMOKE DEVELOPED</u>
A	A	0 through 25	Less than or equal to 450
B	B	26 through 75	Less than or equal to 450
C	C	76 through 200	Less than or equal to 450

BUILDING CODES CITED:

1. National Fire Protection Association, ANSI/NFPA No. 101, "Life Safety Code", 2006 Edition.
2. International Building Code, 2006 Edition, Chapter 8, Interior Finishes, Section 803.



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MR. STEVE GETSIV
NOVA PRODUCTS INC
3428 NW YEON AVE
PORTLAND , OR 97210
US

June 11, 2013

Reference: File TC9540 Project 13CA21838
Subject: Surface Burning Characteristics of Batu Hardwood Decking

The following is a summary of the test results obtained on wood decking designated by NOVA PRODUCTS INC as "Batu Hardwood Decking" under Project 13CA21838. The testing was conducted at ULC's test facility in Toronto and completed on June 10, 2013.

The tests were conducted in general accordance with the Standard, CAN/ULC-S102.2-10, *Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies*, Seventh Edition.

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Underwriters Laboratories of Canada authorizes the above named company to reproduce this Report provided it is reproduced in its entirety. Underwriters Laboratories Canada did not witness the production of the test samples nor were we provided with information relative to the formulation or identification of component materials used in the test samples. The test results relate only to the items tested and may not apply to subsequently produced samples or assemblies.

The sole purpose of this investigation was to provide fire test data for the wood decking submitted and tested in general accordance with the requirements of CAN/ULC-S102.2-10. This data should not be considered representative of test results for other products in the absence of testing the product in accordance with CAN/ULC-S102.2-10.

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Very truly yours,

Handwritten signature of Beny Spensieri, Jr. in black ink.

Beny Spensieri, Jr., BASc
Project Handler
Building Materials & Systems

Reviewed by:

Handwritten signature of G. Abbas Nanji in black ink.

G. Abbas Nanji, P.Eng.
Section Manager
Building Materials & Systems

TEST METHOD:

The tests were conducted in general accordance with the Standard, CAN/ULC-S102.2-10, *Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies*, Seventh Edition.

The sample consisted of nine pieces of decking measuring 24 mm thick, 138 mm wide, and 2473 mm long. The pieces were laid side by side and end to end to form a sample 414 mm wide and 7419 mm long.

The test specimens were conditioned to constant mass at a temperature of $23 \pm 3^\circ\text{C}$ and at a relative humidity of 50 ± 5 percent prior to testing.

The test specimens were laid on the floor of the tunnel furnace. A 350 mm long by 560 mm wide by 1.6 mm thick, uncoated, steel plate was placed on the specimen mounting ledge at the fire end of the tunnel furnace “upstream” from the gas burners to complete the 7620 mm chamber length. An airtight water seal was maintained around the furnace lid during the test.

RESULTS

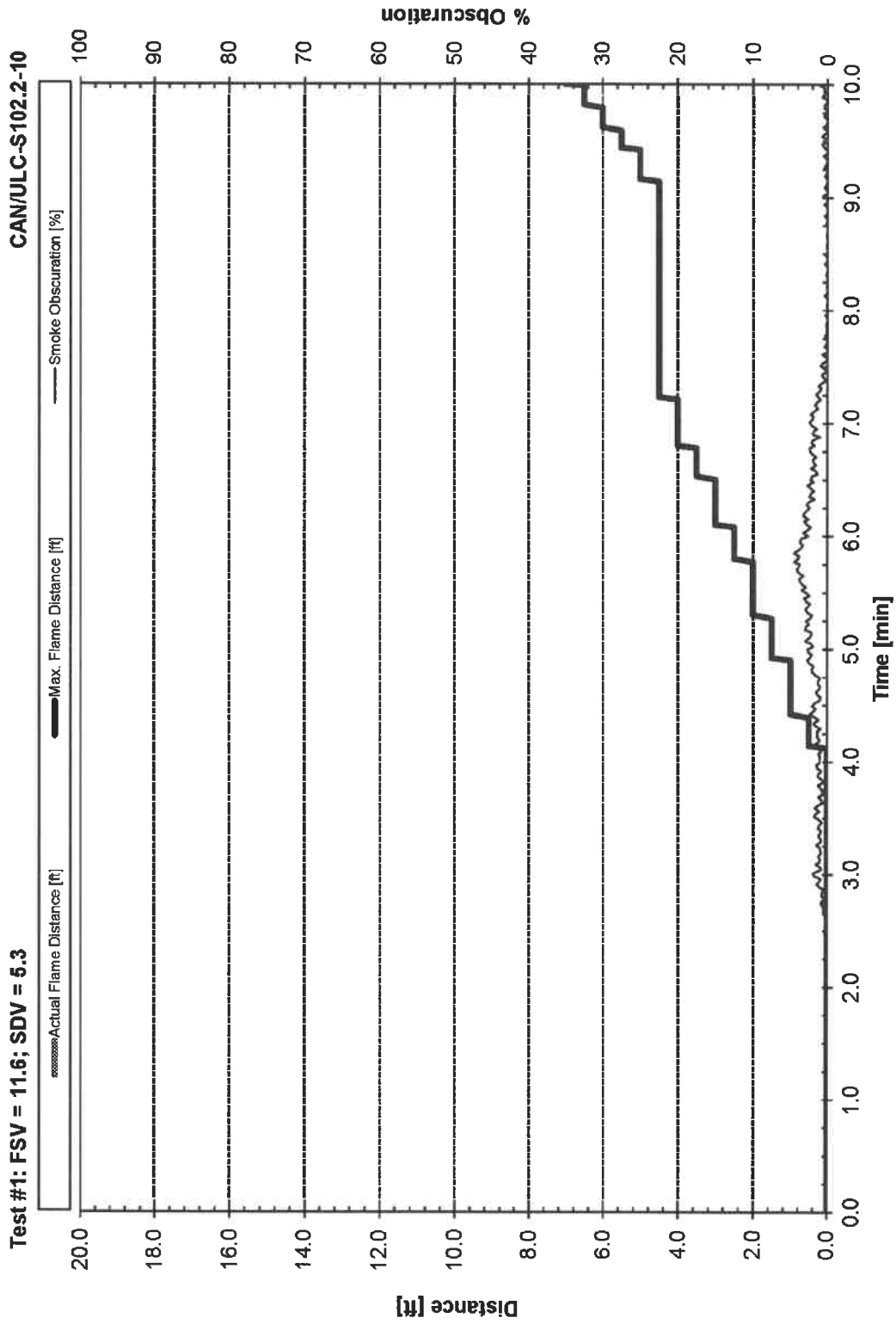
A summary of test results is tabulated below. Graphical plots of flame spread and light transmission data are attached. The test results relate only to the actual samples tested.

Test No.	Sample Description	Calculated Values	
		Flame Spread Value (FSV)	Smoke Developed Value (SDV)
1	Batu Hardwood Decking	11.6	5.3
2	Batu Hardwood Decking	10.5	1.5
3	Batu Hardwood Decking	11.0	5.4

The surface burning characteristics of the “Batu Hardwood Decking” described herein warrants the assignment of the following rating or classification in comparison to untreated red oak as 100 and inorganic reinforced cement board as 0.

Material Details	Rating or Classification	
	Flame Spread Rating (FSR)	Smoke Developed Classification (SDC)
Batu Hardwood Decking	10	5

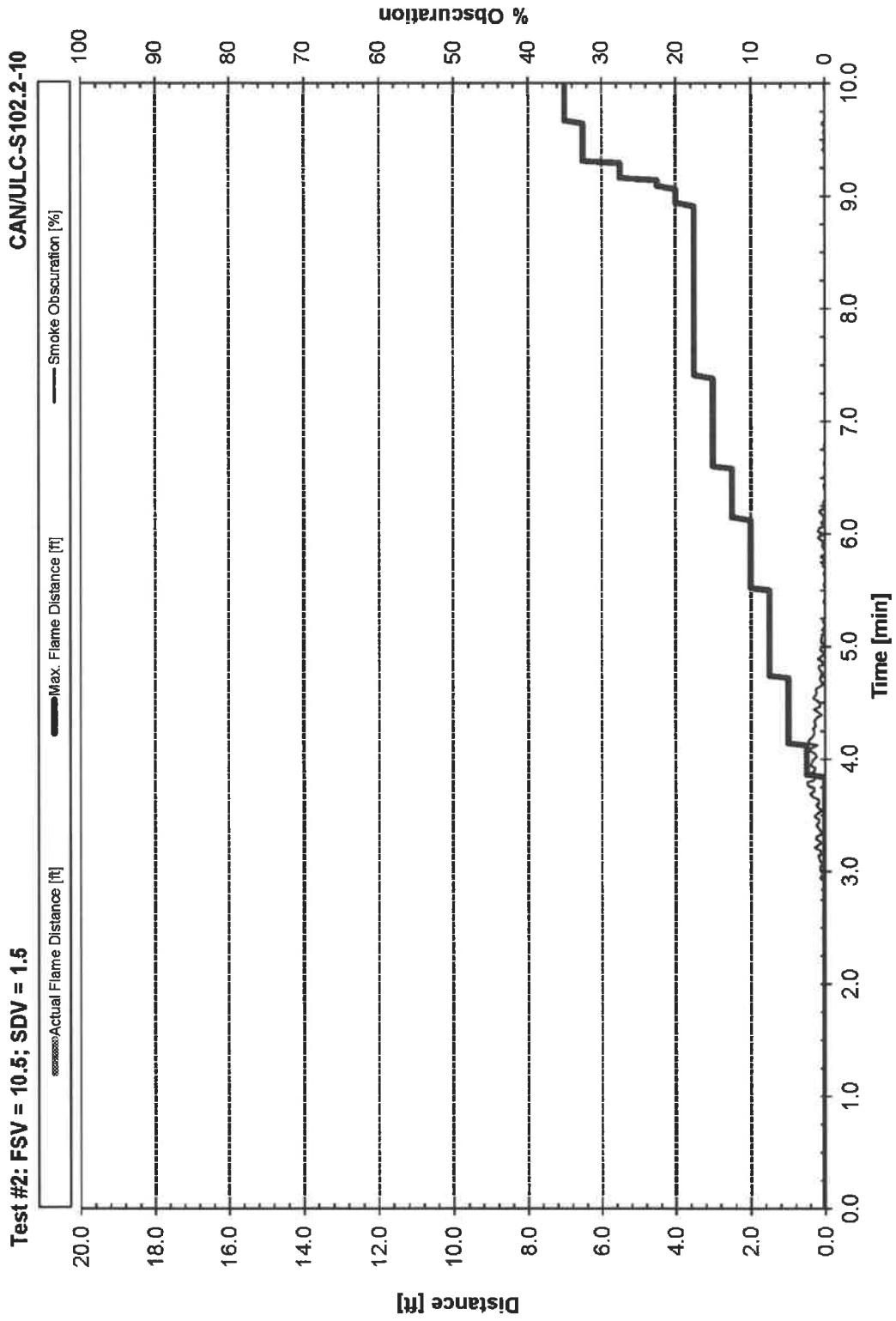
**SURFACE BURNING CHARACTERISTICS
NOVA PRODUCTS INC
Batu Hardwood Decking**



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File: TC9540 Project: 13CA21838

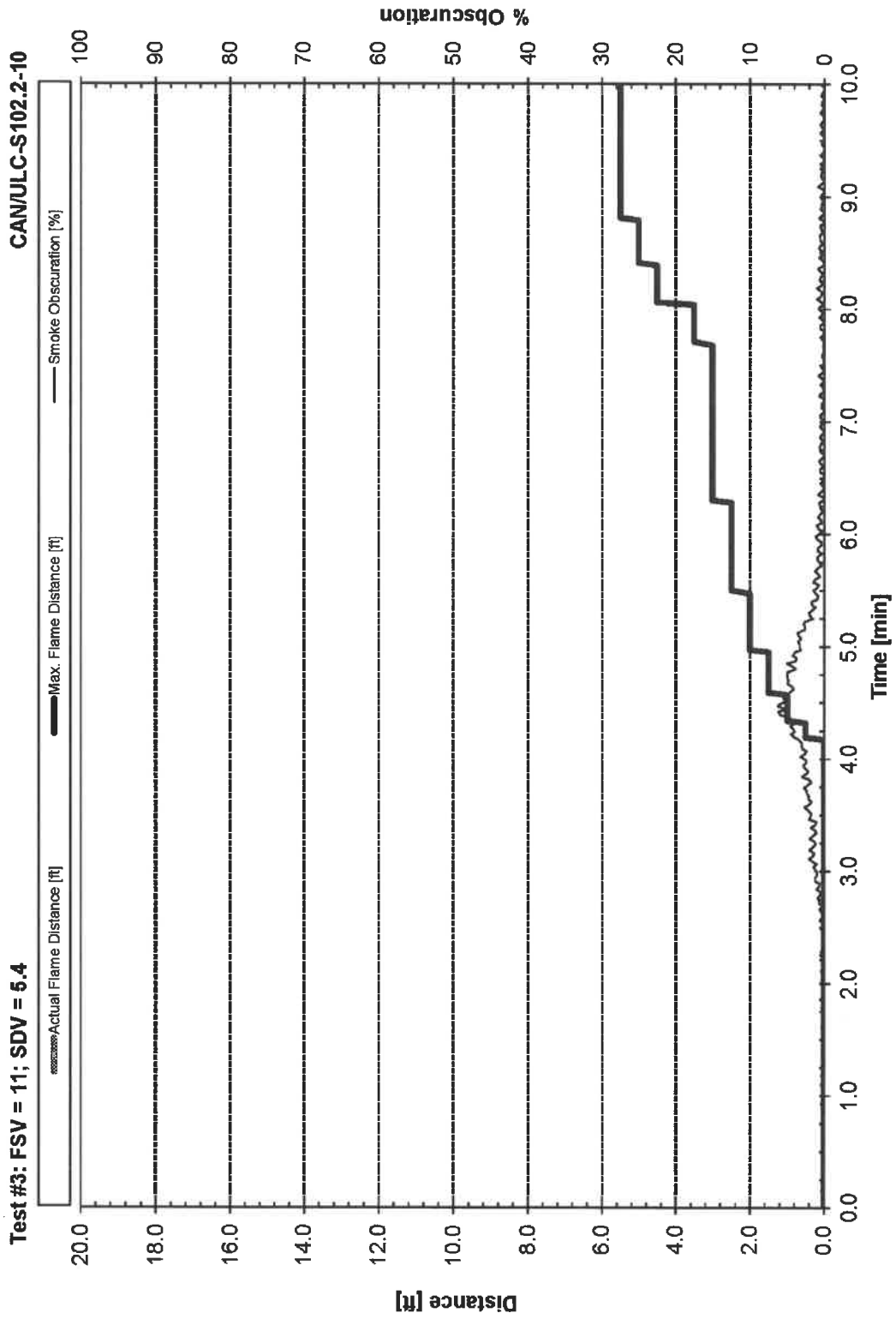
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NOVA PRODUCTS INC
Batu Hardwood Decking**



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**SURFACE BURNING CHARACTERISTICS
NOVA PRODUCTS INC
Batu Hardwood Decking**



Test Date: June 10, 2013 1:40:21 PM

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