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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

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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

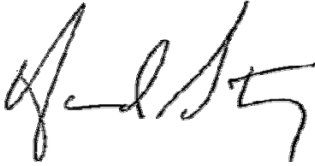
Test Parameters	Test Criteria	Test 1	Test 2	Test 3	Result (Pass/Fail)
Sustained Flaming	No	No	No	No	Pass
Flaming drops or embers	No	No	No	No	Pass
Structural Failure	No	No	No	No	Pass

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

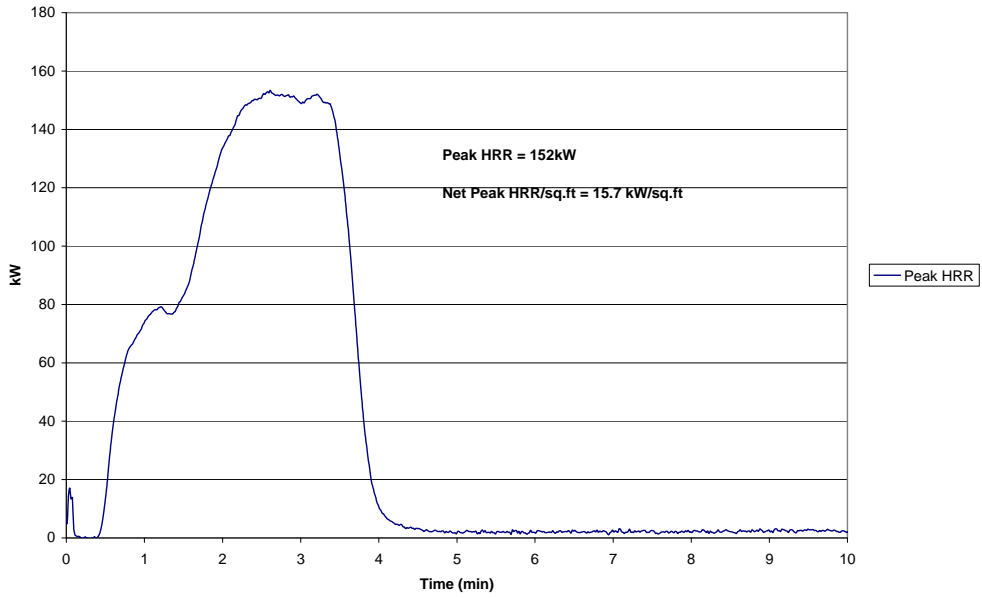
**WESTERN FIRE CENTER AUTHORIZES THE CLIENT NAMED HEREIN TO REPRODUCE
THIS REPORT ONLY IF REPRODUCED IN ITS ENTIRETY**

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.

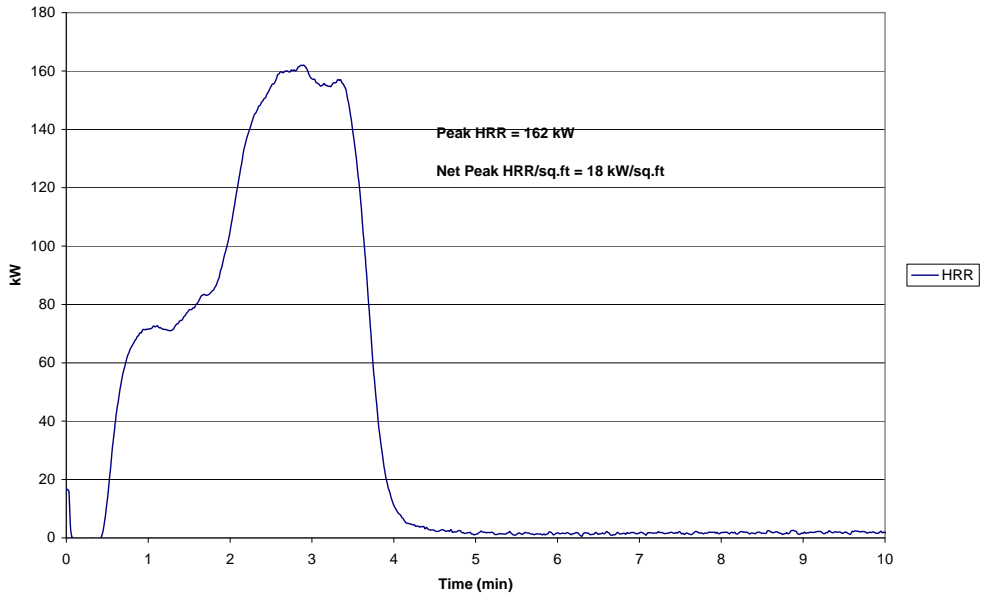
Appendix A Heat Release Data

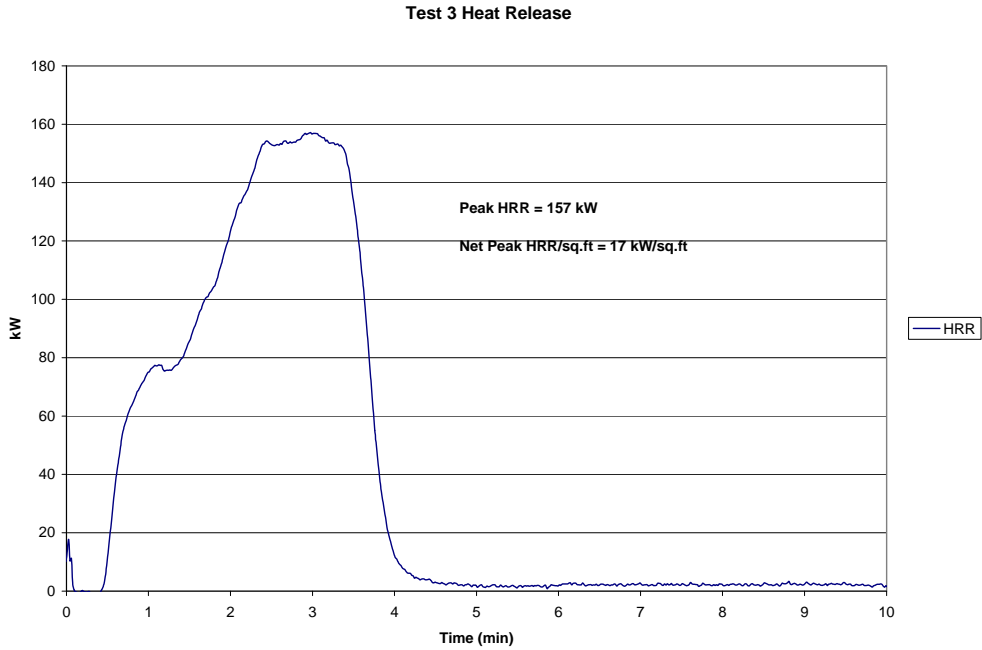
IPE

Test 1 Peak HRR

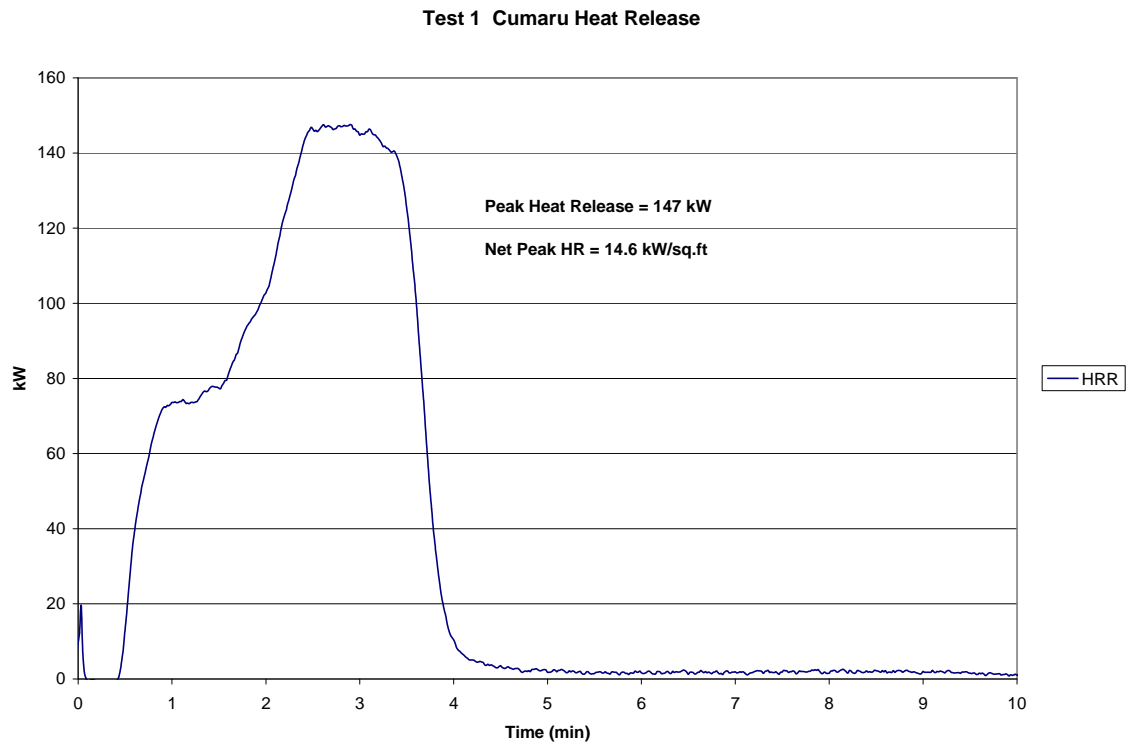


Test 2 Heat Release

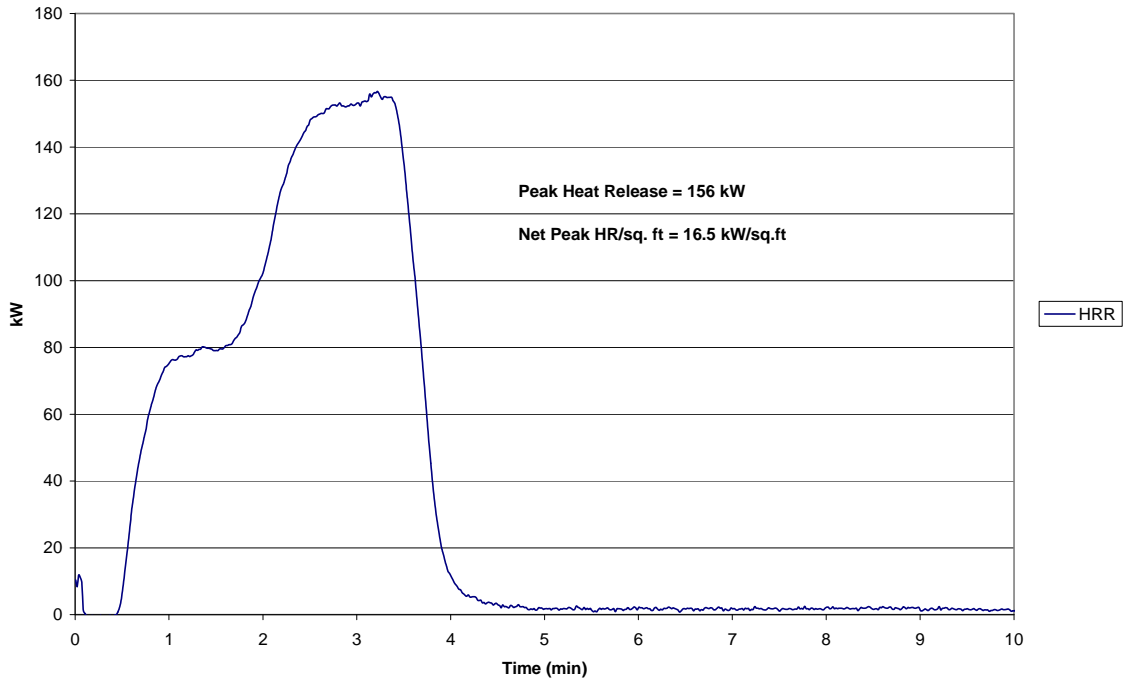




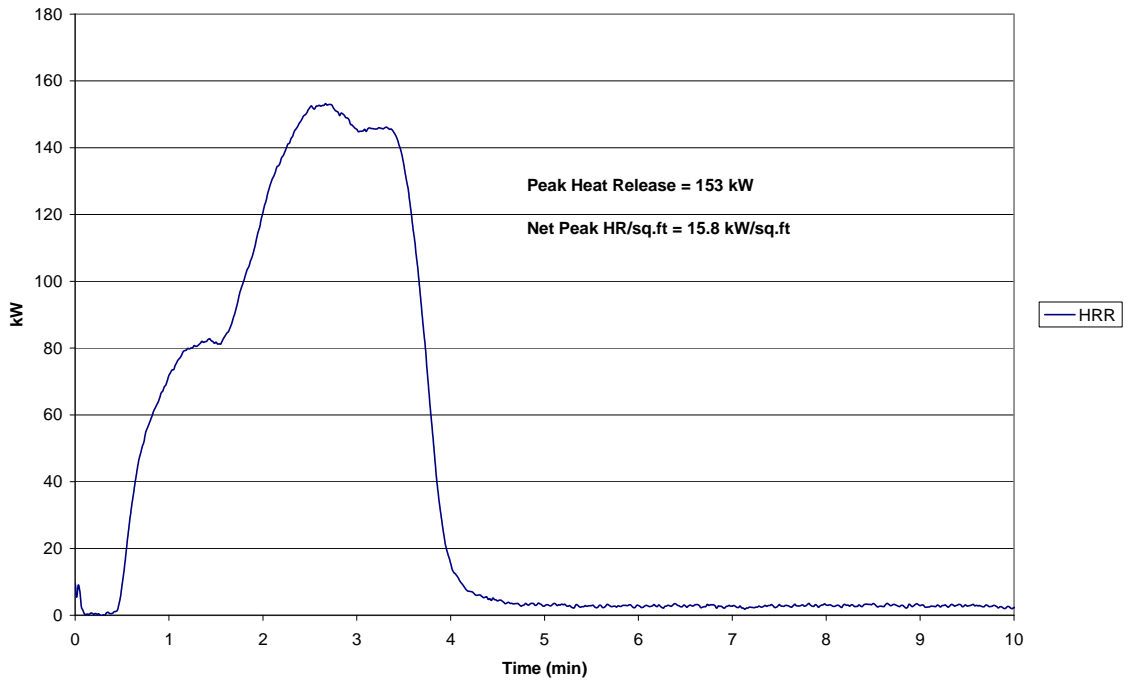
Cumaru



Test 2 Cumaru Heat Release

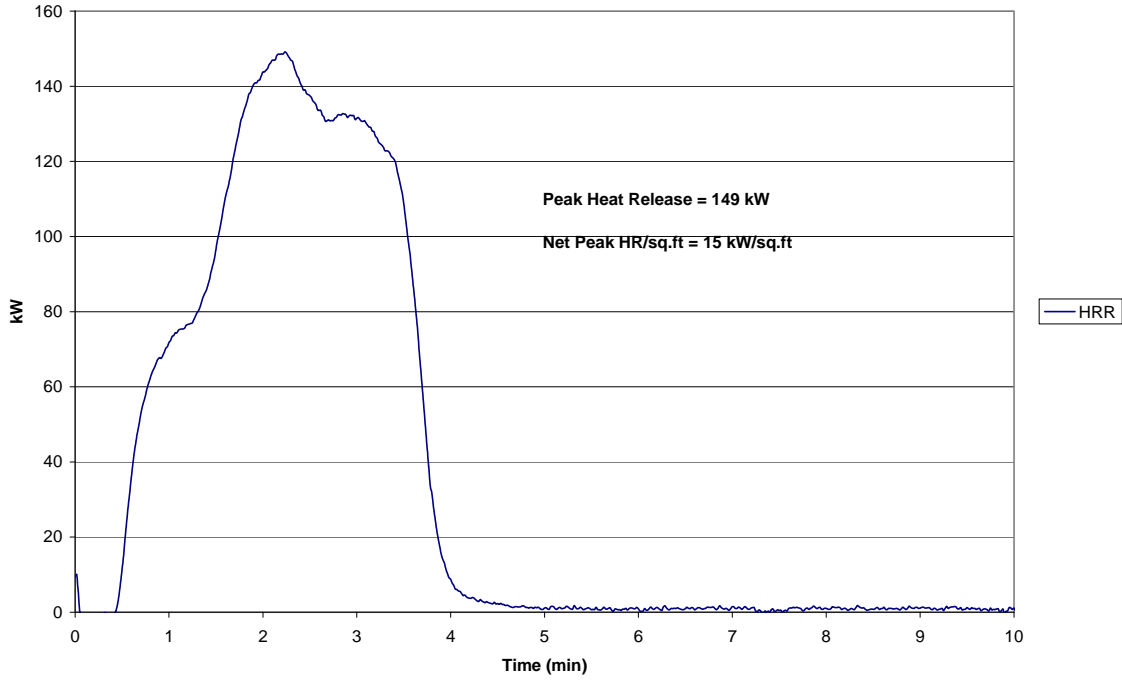


Test 3 Cumaru Heat Release

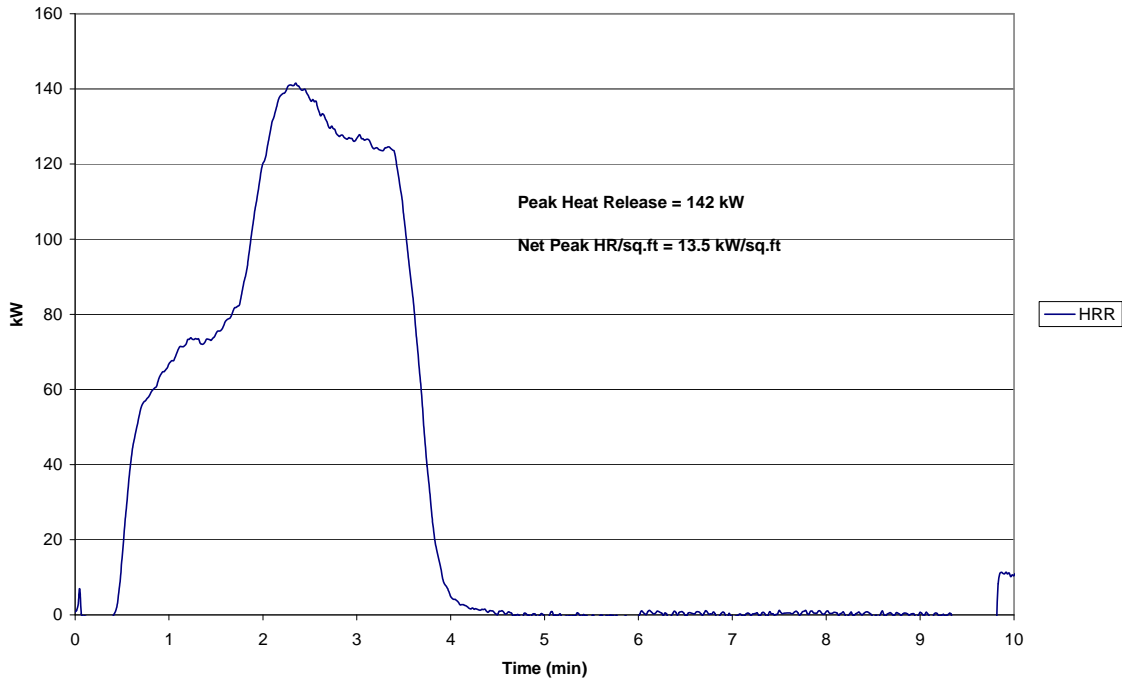


Batu

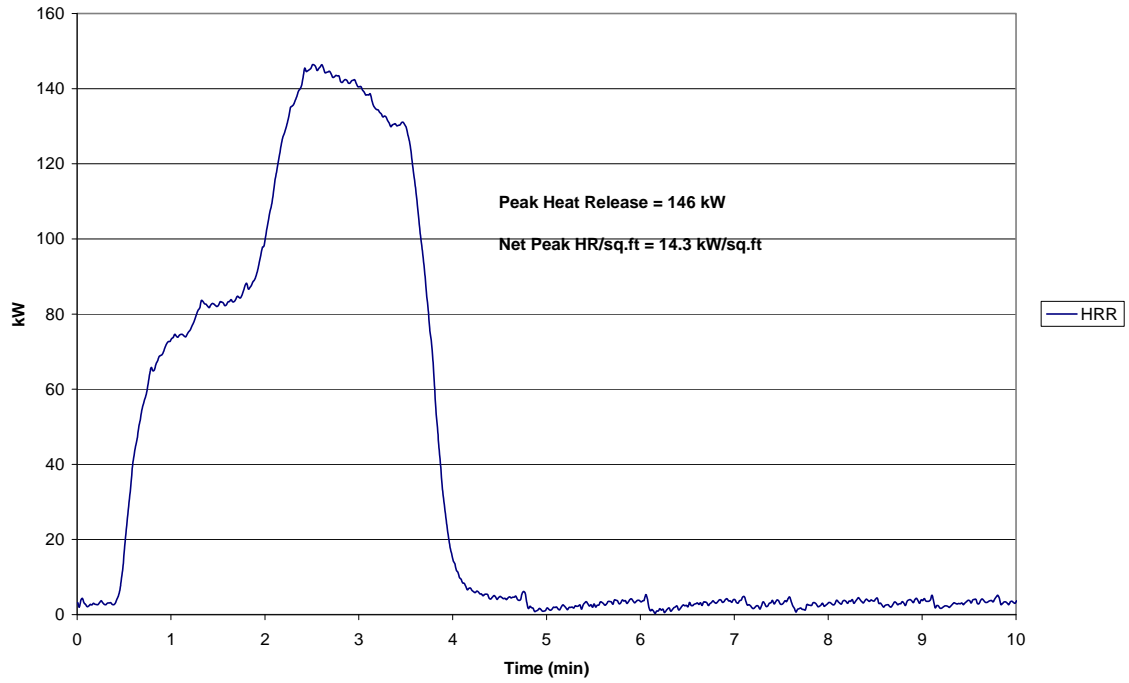
Test 1 Batu Heat Release



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

