Test Results | THERMORY® White Ash
Fire Rating

Fire Rating

TESTED

- The rate of fire spread and smoke production in THERMORY® White Ash.

RESULTS

- Class B was achieved, in comparison to kiln-dried Red Oak which results show to be a Class C.

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TEST REPORT

FOR

THERMORY® USA, LLC

1213 Wilmette Avenue, Suite 208
Wilmette, IL 60091

Standard Test Method for
Surface Burning Characteristics of Building Materials
ASTM E84 – 12a

Test Report No: FH-2403

Assignment No: H-977

Test Date: 05/09/2013

Report Date: 05/09/2013

Subject Material: 0.79" x 5.9" T.M. Ash Decking and 1.02" x 5.7" T.M. Ash Decking

Prepared by: _____
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Reviewed by: _____
Robert J. Menchetti
Director, Laboratory Facilities and Testing Services

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INTRODUCTION:

This report presents the results of specimens tested in accordance with the requirements of ASTM E84-12a Standard Test Method for Surface Burning Characteristics of Building Materials. This test method is also published under the designations ANSI/UL 723, NFPA 255, and UBC 8-1(42-1).

The purpose of this test method is to determine the relative behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled laboratory conditions. It should not alone be used for fire hazard or fire risk assessment of the materials, products, or assemblies under actual fire conditions.

MATERIAL TESTED:

Material submitted by Thermory® USA, of Wilmette, IL was identified by the client as:

- **"0.79" x 5.9" T.M. Ash Decking"**
- **"1.02" x 5.7" T.M. Ash Decking"**

The material was received, in good condition, by NGC Testing Services on April 30, 2013. The material was submitted as nominally 95 in. long boards; twelve (12) boards were submitted for each sample material.

From the boards submitted, NGCTS personnel constructed (3) test specimen decks for each sample material, per ASTM Practice E2579. The specimen decks were constructed on May 8, 2013.

MOUNTING METHOD:

The specimen decks were placed end-to-end, directly on the tunnel ledges, and butted tightly together, to achieve the required 24 ft. length. No additional support was required.

Non-combustible, fiber-reinforced cement board (1/4 in. thick) was placed over the specimen decks as lid protection.

TEST RESULTS:

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the table below.

The reported flame spread and smoke developed indices, as presented below, are the computed comparison to the standard calibration materials – mineral fiber-reinforced cement board and select grade red oak flooring. The cement board is used to establish relative 0 values for flame spread and smoke developed; red oak decks are used to establish relative 100 values for flame spread and smoke developed.

TEST NO.	MATERIAL TESTED	SIDE EXPOSED	SUPPORT	CALCULATED FLAME SPREAD	CALCULATED SMOKE DEVELOPED
1	0.79" x 5.9" T.M. Ash Decking	Symmetrical	Self Supporting	36.85	246.91
2	1.02" x 5.7" T.M. Ash Decking	Symmetrical	Self Supporting	36.83	85.52

	MATERIAL TESTED	SIDE EXPOSED	SUPPORT	FLAME SPREAD INDEX *	SMOKE DEVELOPED INDEX*
	RED OAK FLOORING	Finished	Self Supporting	100	100
	REINFORCED CEMENT BOARD	Symmetrical	Self Supporting	0	0
1	0.79" x 5.9" T.M. Ash Decking	Symmetrical	Self Supporting	**35**	**250**
2	1.02" x 5.7" T.M. Ash Decking	Symmetrical	Self Supporting	**35**	**85**

* Flame Spread / Smoke Developed Index is the result (or the average of the results of multiple tests), rounded to the nearest multiple of 5. Smoke developed results in excess of 200 are rounded to the nearest multiple of 50.

CLASSIFICATION	FSI	SDI
CLASS "A"	0 - 25	0 - 450
CLASS "B"	26 - 75	0 - 450
CLASS "C"	76 - 200	0 - 450

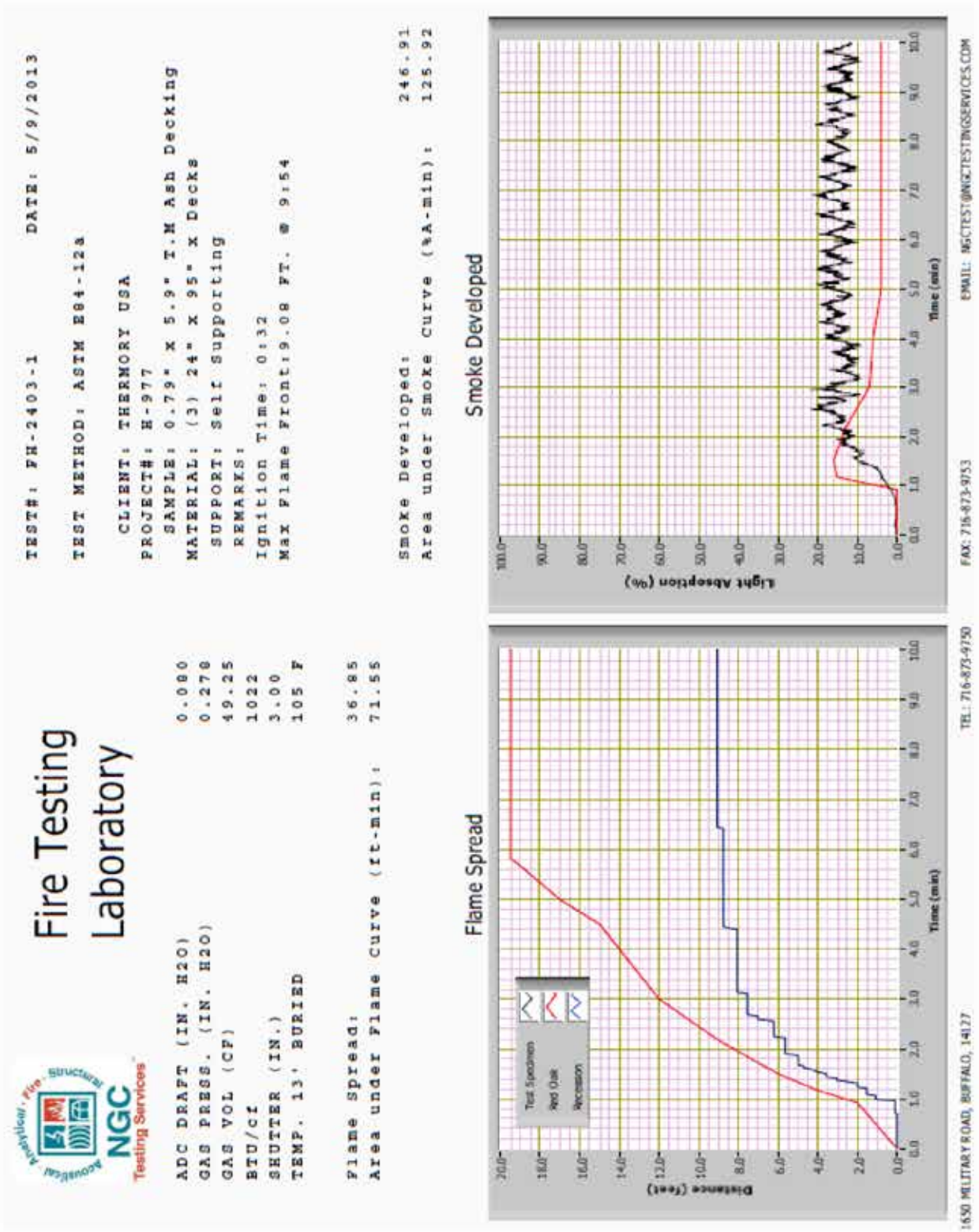
0.79" x 5.9" T.M. Ash Decking		1.02" x 5.7" T.M. Ash Decking	
FLAME SPREAD INDEX	**35**	**FLAME SPREAD INDEX**	**35**
SMOKE DEVELOPED INDEX	**250**	**SMOKE DEVELOPED INDEX**	**85**

OBSERVATIONS:

0.79" x 5.9" T.M. Ash Decking: The test specimen exhibited steady ignition at 00:32 (min:sec). The flame front reached a maximum distance of 9.08 feet, achieved at 09:54 (min:sec). After the ignition flame was extinguished, the test specimen continued to flame and was manually extinguished. Once the test specimen was cooled and removed from the furnace, it was observed to have a char length of 9 feet and was discolored to 24 feet.

1.02" x 5.7" T.M. Ash Decking: The test specimen exhibited steady ignition at 00:51 (min:sec). The flame front reached a maximum distance of 11.98 feet, achieved at 09:46 (min:sec). After the ignition flame was extinguished, the test specimen briefly continued to flame before self-extinguishing. Once the test specimen was cooled and removed from the furnace, it was observed to have a char length of 10 feet and was discolored to 24 feet.

The following data sheets are actual printouts of the computerized data system which monitors the tunnel furnace. The sheets contain all calibration and specimen data needed to calculate the test results.



NGC Testing Services

Fire Testing Laboratory

TEST#: FH-2403-1 DATE: 5/9/2013

TEST METHOD: ASTM E84-12a

CLIENT: THERMORY USA
PROJECT#: H-977
SAMPLE: 0.79" X 5.9" T.M Ash Decking
MATERIAL: (3) 24" X 95" X Decks
SUPPORT: Self Supporting
REMARKS:
Ignition Time: 0:32
Max Flame Front:9.08 FT. @ 9:54

ADC DRAFT (IN. H2O)	0.000
GAS PRESS. (IN. H2O)	0.270
GAS VOL (CF)	49.25
BTU/cf	1022
SHUTTER (IN.)	3.00
TEMP. 13' BURIED	105 F
Flame Spread:	36.85
Area under Flame Curve (ft-min):	71.55
Smoke Developed:	246.91
Area under Smoke Curve (%A-min):	125.92

Smoke Developed

Light Absorption (%)

Time (min)

Flame Spread

Distance (feet)

Time (min)

Test Specimen
Red Oak
Recession

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Fire Testing Laboratory

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ADC DRAFT (IN. H2O)	0.080
GAS PRESS. (IN. H2O)	0.277
GAS VOL (CF)	49.40
BTU/cf	1022
SHUTTER (IN.)	3.00
TEMP. 13' BURIED	105 F
Flame Spread:	36.93
Area under Flame Curve (ft-min):	71.51

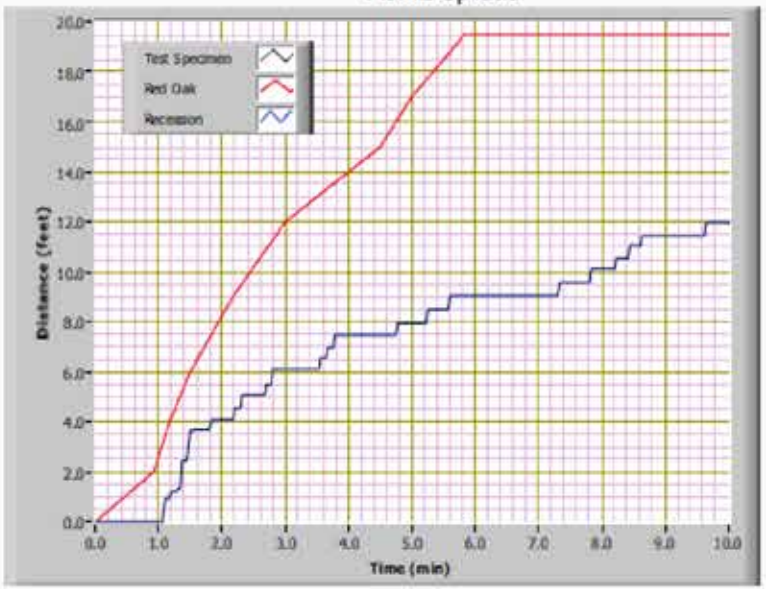
TEST#: FH-2403-2 DATE: 5/9/2013

TEST METHOD: ASTM E84-12a

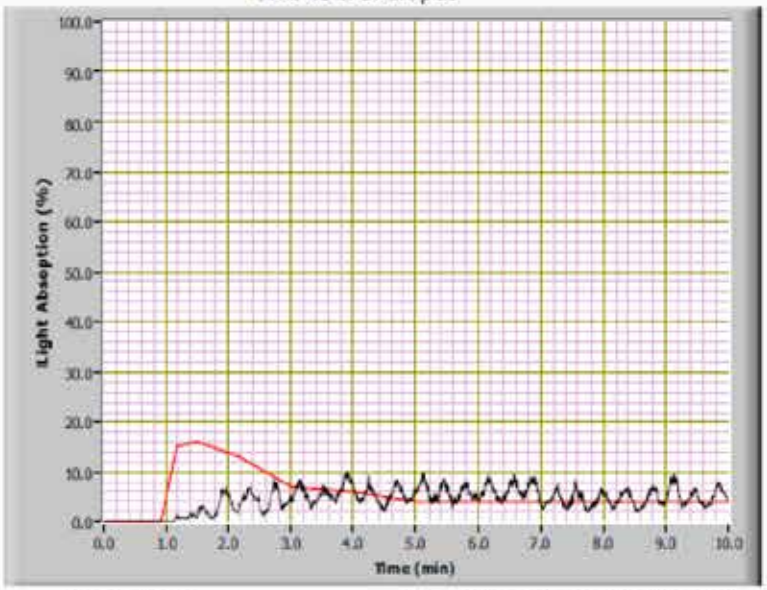
CLIENT: THERMORY USA
PROJECT#: H-977
SAMPLE: 1.02" x 5.7" T.M Ash Decking
MATERIAL: (3) 23" x 95" x Decks
SUPPORT: Self Supporting
REMARKS:
Ignition Time: 0:51
Max Flame Front:11.99 FT. @ 9:46

Smoke Developed:	95.52
Area under Smoke Curve (%A-min):	43.62

Flame Spread



Smoke Developed



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