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FIRE PERFORMANCE EVALUATION IN ACCORDANCE WITH ASTM E84-18, STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS

MATERIAL ID: *E84 Sample*
TRADE NAME: HPC Coating

FINAL REPORT
Consisting of 8 Pages

SwRI[®] Project No.: 01.24101.02.015a
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Prepared for:

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1.0 INTRODUCTION

This report describes a fire performance evaluation conducted for Superior Products International II, Inc. in accordance with ASTM E84-18, *Standard Test Method for Surface Burning Characteristics of Building Materials* (NFPA 255, ANSI/UL 723 and UBC 8-1). Testing was conducted at the Fire Technology Department of Southwest Research Institute (SwRI), located in San Antonio, Texas.

This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of the test may be used as elements of a fire-hazard assessment or a fire-risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard or fire risk of a particular end use.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

2.0 SAMPLE DESCRIPTION

SwRI received four samples measuring 5 × 2 ft and one sample measuring 4 × 2 ft on November 2, 2018. The samples are described below in Table 1. The panels were conditioned to a constant mass at an ambient temperature of 73°F ± 5°F (23°C ± 3°C) and a relative humidity of 50% ± 5%. Constant mass was achieved on November 18, 2018.

Table 1. Sample Description.

Material ID	Trade Name	Description	Color*	Thickness*
E84 Sample	HPC Coating	Plaster type coating	Light tan	0.5 in.

*Assessed by SwRI personnel.

3.0 TEST SETUP

The samples were mounted end-to-end in the furnace. Cement board was placed on the unexposed side of the specimen to protect the furnace lid assembly. The test assembly did not require any additional supporting materials on the underside.

4.0 TEST RESULTS

The test results for the material identified as *E84 Sample* is presented below and the detailed test results can be found in Appendix A. Photographic documentation is presented in Appendix B. Two model building codes (2015 International Building Code®, Chapter 8 *Interior Finishes*, Section 803 *Wall and Ceiling Finishes*; NFPA 5000, Chapter 10 *Interior Finish*, Section 10.3 *Interior Wall or Ceiling Finish Testing and Classification*) classify materials based on the Flame Spread and Smoke Developed indices which are defined below in Table 2. However, there is not necessarily a relationship

between these two measurements.

Table 2. Test Criteria.

Classification	Flame Spread Index	Smoke Developed Index
A	0 – 25	0 – 450
B	26 – 75	0 – 450
C	76 – 200	0 – 450

- Flame Spread Index (FSI): 15
- Smoke Developed Index (SDI): 0

APPENDIX A
TEST RESULTS
(CONSISTING OF 2 PAGES)

TEST RESULTS

ROUNDED FLAME SPREAD INDEX (FSI):	15
ROUNDED SMOKE DEVELOPED INDEX (SDI):	0

TEST DATA

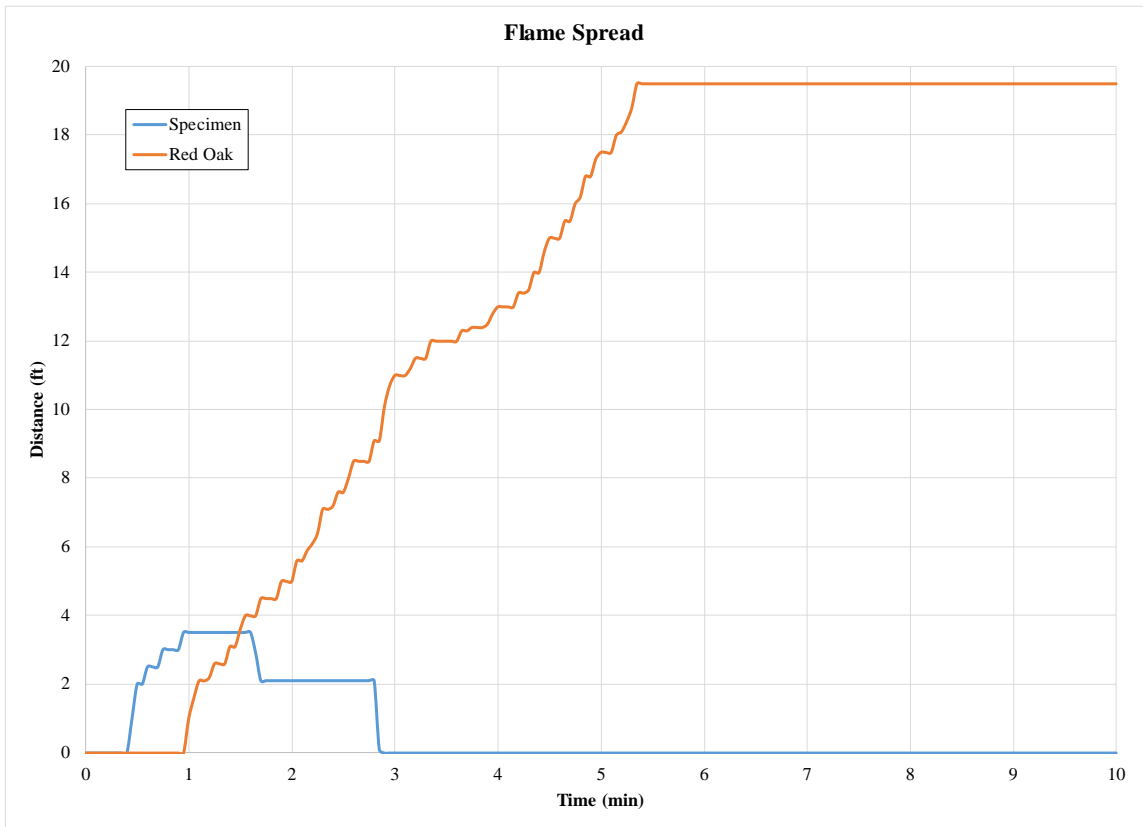
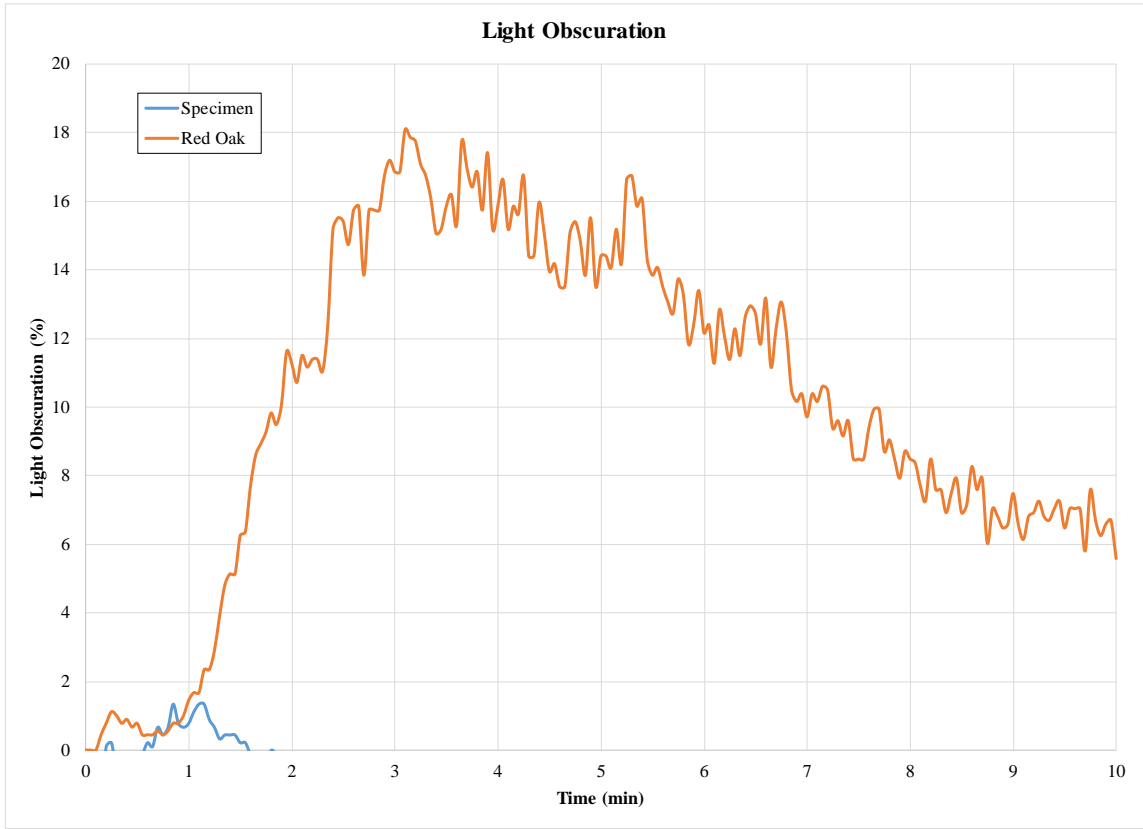
UNROUNDED FSI:	16.9
UNROUNDED SDI:	0
FS*TIME AREA (Ft*Min):	32.8
SMOKE AREA (%*Min):	-5.8
FUEL AREA (°F*Min):	5050.2

OBSERVATIONS DURING TEST

IGNITION TIME (Min: S):	0:18
MAXIMUM FLAME FRONT ADVANCE (Ft.):	3.5
TIME TO MAXIMUM ADVANCE (Min: S):	0:57
MAXIMUM TEMP. AT EXPOSED TC (°F):	568
TIME TO MAXIMUM TEMP. (Min: S):	9:45
TOTAL FUEL BURNED (Cu. Ft.):	52.0
DRIPPING (Min: S):	None
FLAMING ON FLOOR (Min: S):	None
AFTERFLAME TOP (Min: S):	None
AFTERFLAME FLOOR (Min: S):	None
SAGGING (Min: S):	None
DELAMINATION (Min: S):	None
SHRINKAGE (Min: S):	None
FALLOUT (Min: S):	None

CALIBRATION DATA

RED OAK SMOKE AREA (%*Min):	111.3
RED OAK FUEL AREA (°F*Min):	1133.2
GRC BOARD FUEL AREA (°F*Min):	4800



APPENDIX B
PHOTOGRAPHIC DOCUMENTATION
(CONSISTING OF 2 PAGES)



Figure B-1. Exposed side of the deck boards before fire exposure.



Figure B-2. Exposed side of test decks after fire exposure.