

TEST REPORT



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EVALUATION CENTER
Intertek Testing Services NA Inc.
16015 Shady Falls Road
Elmendorf, TX 78112

RENDERED TO

Burtin Polymer Laboratories
100 Enterprise Drive
Cartersville, GA 30120

Report of Testing 1445-1.8 or FX-245 for compliance with the applicable requirements of the following criteria: ASTM E84-10 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

ABSTRACT

Test Material:	1445-1.8 or FX-245
Test Standard:	ASTM E84-10 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)
Test Date:	3/19/2010
Test Sponsor:	Burtin Polymer Laboratories
Test Results:	FLAME SPREAD INDEX 15 SMOKE DEVELOPED INDEX 350

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Teodoro Alvarado, Jr.
Tunnel Operator

Date: March 23, 2010

Reviewed and Approved:



Servando Romo
Project Manager

Date: March 23, 2010

I. INTRODUCTION

This report describes the results of the ASTM E84-10 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

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

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.”

The specimen was witnessed in production by Myra Devit with PRI Construction Materials Technologies on February 12, 2010 at the Burtin Polymer facility.

This test method is also published under the following designations:

NFPA 255
UL 723
UBC 8-1

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory 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 this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E84-10 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. Mineral fiber cement board forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.

III. DESCRIPTION OF TEST SPECIMENS

Specimen Identification:	1445-1.8 or FX-245
Date Received:	3/2/2010
Date Prepared:	3/2/2010
Conditioning (73°F & 50% R.H.):	17 days
Specimen Width (in):	24
Specimen Length (ft):	24
Specimen Thickness (in):	3.41
Material Weight:	N/A
Total Specimen Weight (lbs):	126
Adhesive or coating application rate:	N/A

Mounting Method:

The specimen was self-supporting.

Specimen Description:

The specimen was described by the client as the "Sprayed Applied Polyurethane Foam". The specimen consisted of (3) 8 foot long x 2 foot wide x 3.41-in yellow sprayed foam panels. The product was received by our personnel in good condition.

IV. TEST PROCEDURE

The tests were conducted in accordance with the procedures outlined in the American Society for Testing and Materials ASTM E84-10. The self-supporting specimens were placed directly on the tunnel ledges. As required by the standard, on or more layers of 0.25 inch thick reinforced concrete board was placed on top of the test sample between the sample and the tunnel lid. After the tests, the samples were removed from the tunnel, examined and disposed of.

The test was conducted on 3/19/2010, and witnessed by Claudio Burtin.



V. TEST RESULTS & OBSERVATIONS

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

While no longer a part of this standard test method, the Fuel Contributed Value has been computed, and may be found on the computer printout sheet in the Appendix.

Test Specimen	Flame Spread Index	Smoke Developed Index
Mineral Fiber Cement Board	0	0
Red Oak Flooring		100
1445-1.8 or FX-245	15	350

The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

The specimen was witnessed in production by Myra Devit with PRI Construction Materials Technologies on February 12, 2010 at the Burtin Polymer facility.

VI. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner: The sample ignited at 0:02 (min:sec). The test continued for the 10:00 duration. After the test burners were shut off a 60 second after-flame was observed.

After the test, the specimen was observed to be damaged as follows: The samples were heavily charred from 0-ft. – 6-ft. Charred from 6-ft. – 17-ft. and discolored from 17-ft. – 24-ft.

APPENDIX
ASTM E84-10
DATA SHEETS

Client: BURTIN POLYMER LABORATORIES

Date: 3/19/2010

Project Number: 100035047SAT-001 A

Test Number: 1

Operator: TA/MP

Specimen Info: "1445-1.8 OR FX-245, SPRAYED APPLIED POLYURETHANE FOAM". THE SPECIMEN WAS SELF-SUPPORTING. THE TEST WAS WITNESSED BY CLAUDIO BURTIN

TEST RESULTS

FLAMESPREAD INDEX: 15

SMOKE DEVELOPED INDEX: 350

SPECIMEN DATA . . .

Time to Ignition (sec): 2

Time to Max FS (sec): 299

Maximum FS (feet): 2.6

Time to 980 F (sec): Never Reached

Time to End of Tunnel (sec): Never Reached

Max Temperature (F): 612

Time to Max Temperature (sec): 471

Total Fuel Burned (cubic feet): 48.94

FS*Time Area (ft*min): 24.4

Smoke Area (%A*min): 367.4

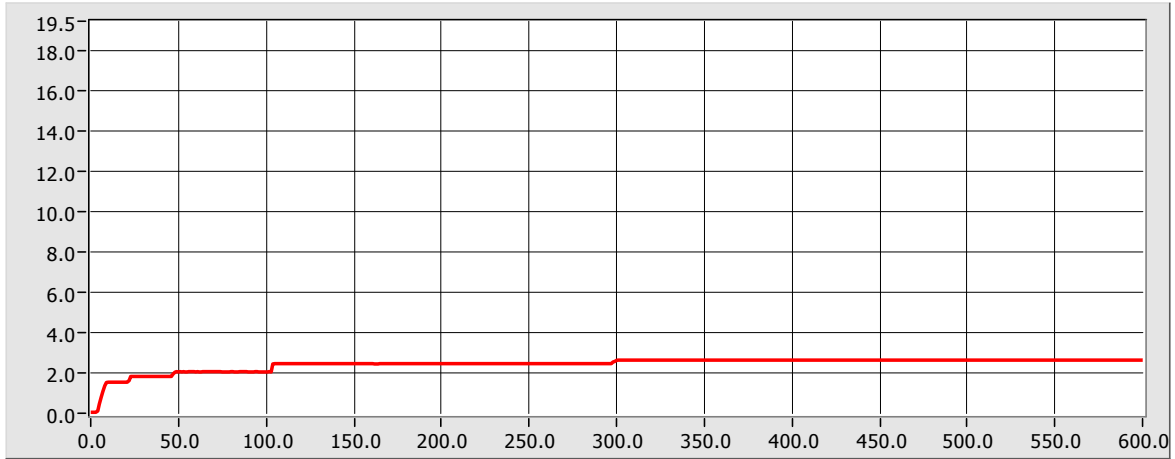
Unrounded FSI: 12.6

CALIBRATION DATA . . .

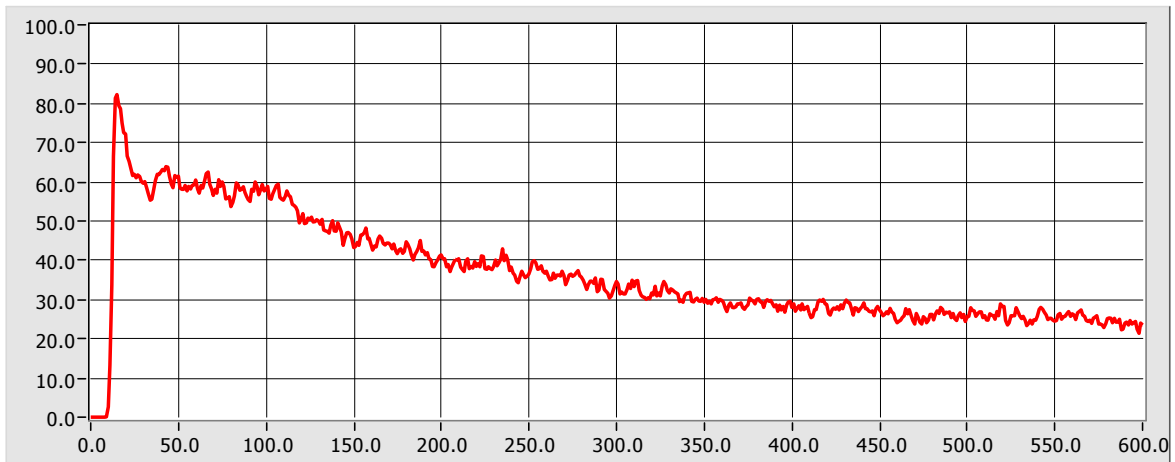
Time to Ignition of Last Red Oak (Sec): 38.0

Red Oak Smoke Area (%A*min): 108.2

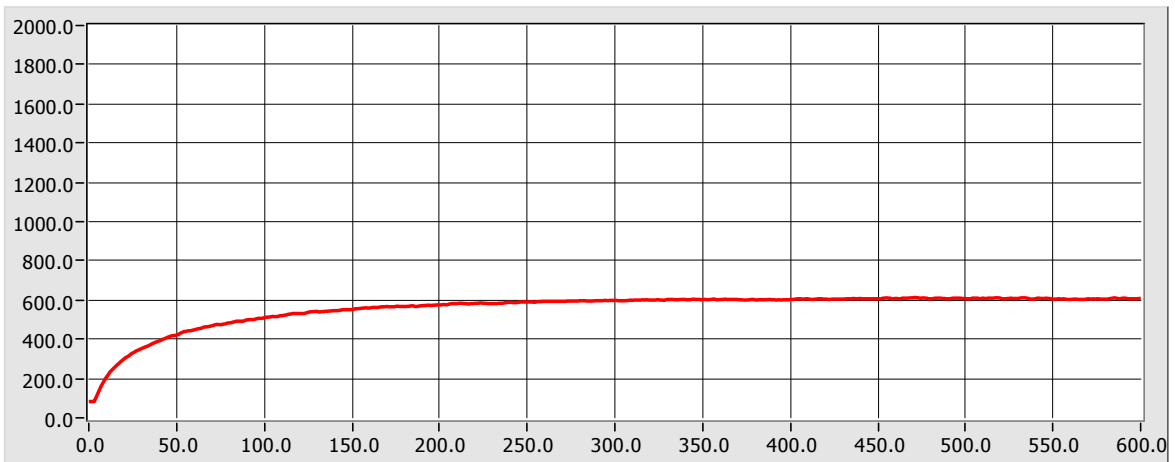
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600