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**CAN/ULC-S102 Surface Burning Characteristics
of "8 mm Fire Rated High Pressure Laminate Phenolic Panel"**

A Report To:	ABET Corporation 50 Paxman Road, Unit 10 Toronto, Ontario M9C 1B7
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Attention:	Sean Gregory
Submitted by:	Fire Testing
Report No.	12-002-278 6 Pages
Date:	April 17, 2012

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine the Flame Spread and Smoke Developed Classifications based upon triplicate testing conducted in accordance with CAN/ULC-S102-10, as per Exova Warringtonfire North America Quotation No. 12-002-03510 accepted April 2, 2012.

SAMPLE IDENTIFICATION (Exova sample identification number 12-002-S0278)

High Pressure Laminate Panel System identified as:
"8 mm Fire Rated High Pressure Laminate Phenolic Panel"

TEST PROCEDURE

The method, designated as CAN/ULC-S102-10, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results of less than three identical specimens are expressed in terms of Flame Spread Value (FSV) and Smoke Developed Value (SDV). Results of three or more replicate tests on identical samples produce average values expressed as Flame Spread Rating (FSR) and Smoke Developed Classification (SDC).

Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, the test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions.

SAMPLE PREPARATION

Each test sample consisted of a total of 3 sections of material, each approximately 8 mm in thickness by 533 mm in width. For each test, two sections were approximately 3048 mm in length and one section was approximately 1219 mm in length. The sections were butted together to form the requisite specimen size. Since no specific definition, procedure or criteria are provided in CAN/ULC-S102-10 with regard to determining "constant mass" (as stated in section 6.2), each sample was conditioned at a temperature of $23 \pm 3^\circ\text{C}$ and a relative humidity of $50 \pm 5\%$ for a minimum period of 24 hours prior to testing. During testing the samples were self-supporting.

The testing was performed on: Test #1: 2012-04-10 Test #2: 2012-04-10 Test #3: 2012-04-10

SUMMARY OF TEST PROCEDURE

The tunnel is preheated to 85°C , as measured by the backwall-embedded thermocouple located 7090 mm downstream of the burner ports, and allowed to cool to 40°C , as measured by the backwall-embedded thermocouple located 4000 mm from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7315 mm long, 305 mm above the floor. The lid is then lowered into place.

SUMMARY OF TEST PROCEDURE (continued)

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 15 seconds. Flame spread distance versus time is plotted, ignoring any flame front recessions. Calculations are based on comparison with flame spread characteristics of select red oak, determined in calibration trials and arbitrarily established as 100. If the area under the curve (A) is less than or equal to 29.7 m·min, FSV = 1.85·A; if greater, FSV = 1640/(59.4·A). The Smoke Developed Value is determined by comparing the area under the obscuration curve for the test sample to that of inorganic reinforced cement board and red oak, established as 0 and 100, respectively.

TEST RESULTS

<u>SAMPLE</u>		<u>FSV</u>	<u>SDV</u>
"8 mm Fire Rated High Pressure Laminate Phenolic Panel"	Test #1	13	72
	Test #2	11	55
	Test #3	<u>12</u>	<u>87</u>
	Average:	12	71

Rounded Average Flame Spread Rating (FSR): **10**

Rounded Average Smoke Developed Classification (SDC): **70**

Observations of Burning Characteristics

- The test samples ignited approximately 1 to 1.25 minutes after exposure to the test flame. Blistering, delamination and spalling behavior was observed prior to ignition.
- The flame fronts advanced to maximum distances of 1.4, 1.4, and 1.5 metres at approximately 9, 9.5, and 9.75 minutes into each respective test.
- Smoke Developed and temperature were recorded during the tests (see accompanying charts).

Note: This is an electronic copy of the report. Signatures are on file with the original report.

Robert A. Carleton,
Fire Testing.

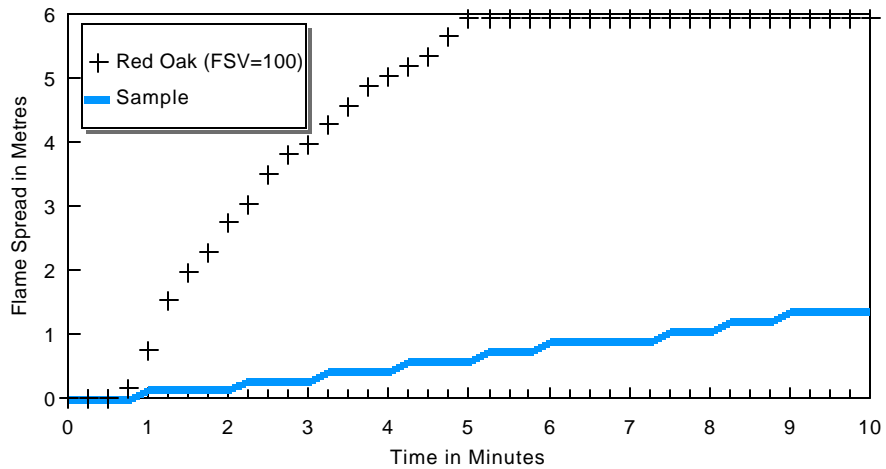
Ian Smith,
Fire Testing.

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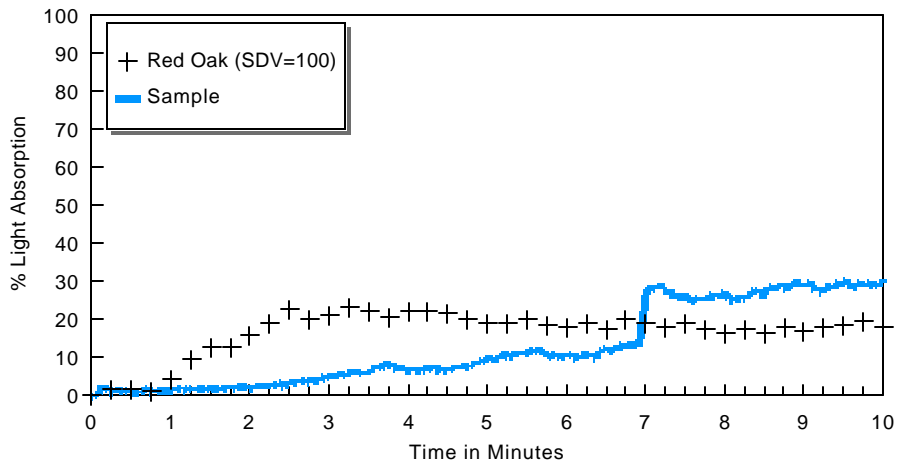
Sample: "8 mm Fire Rated High Pressure Laminate Phenolic Panel"

Test #1 of 3

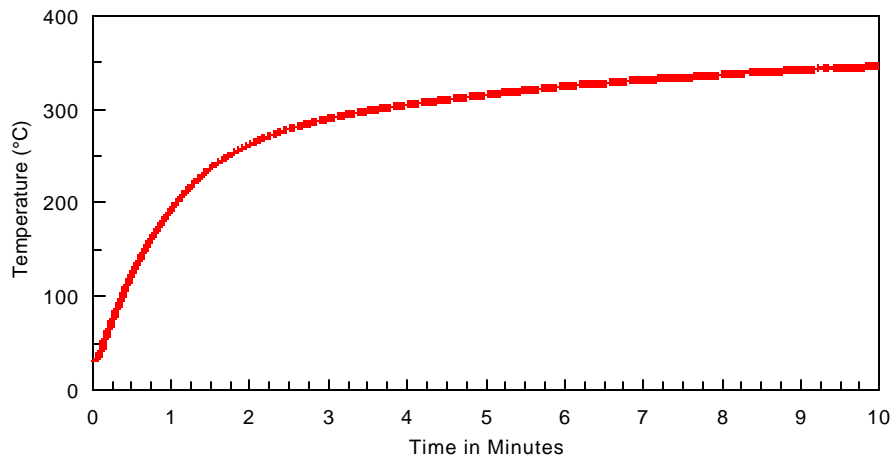
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE



FSV
13

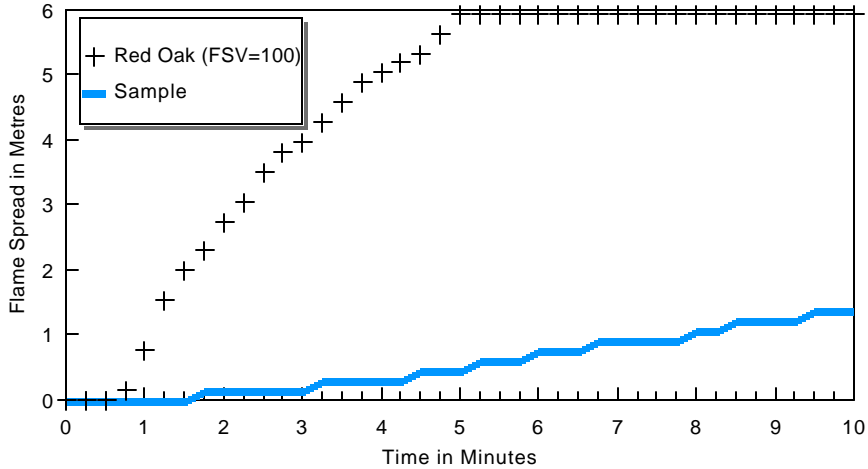
SDV
72

Max. Temp. (°C)
348

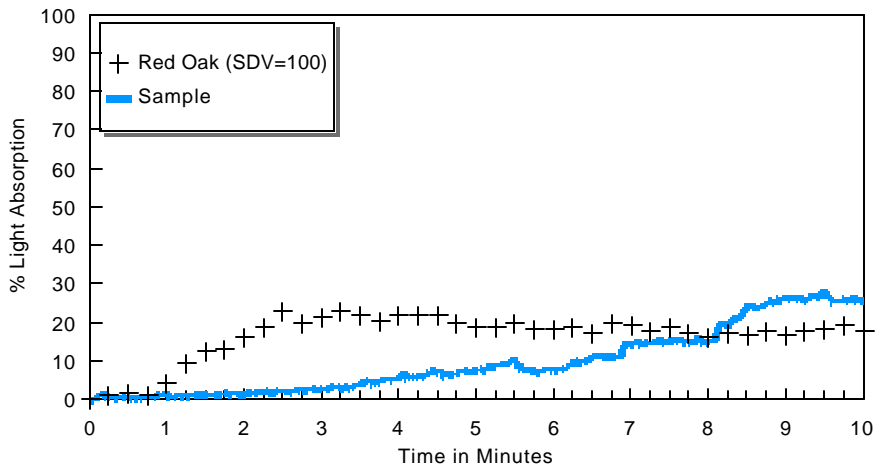
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Test #2 of 3

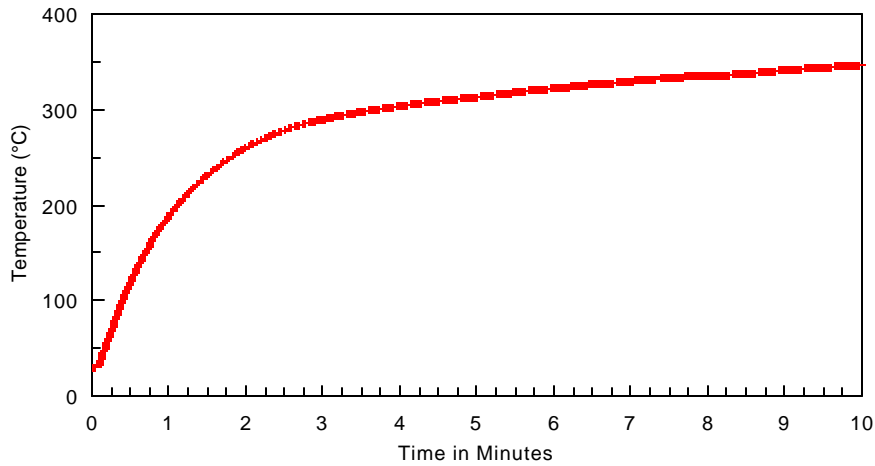
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE



FSV
11

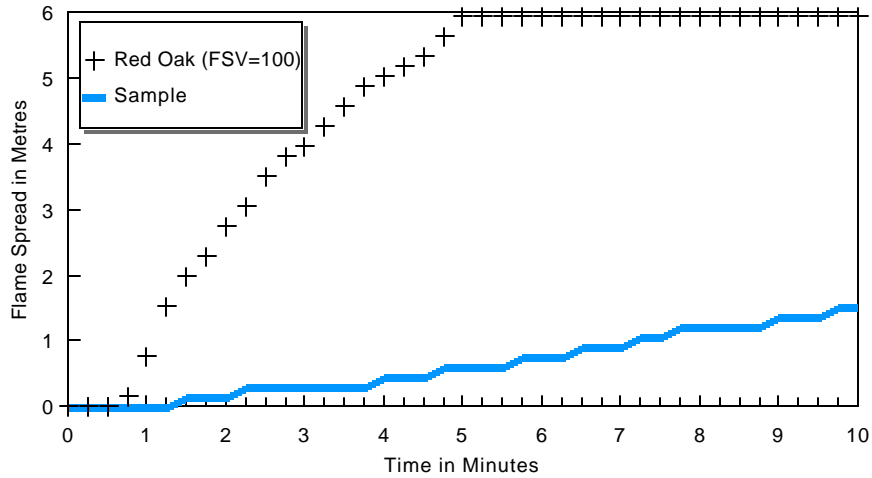
SDV
55

Max. Temp. (°C)
349

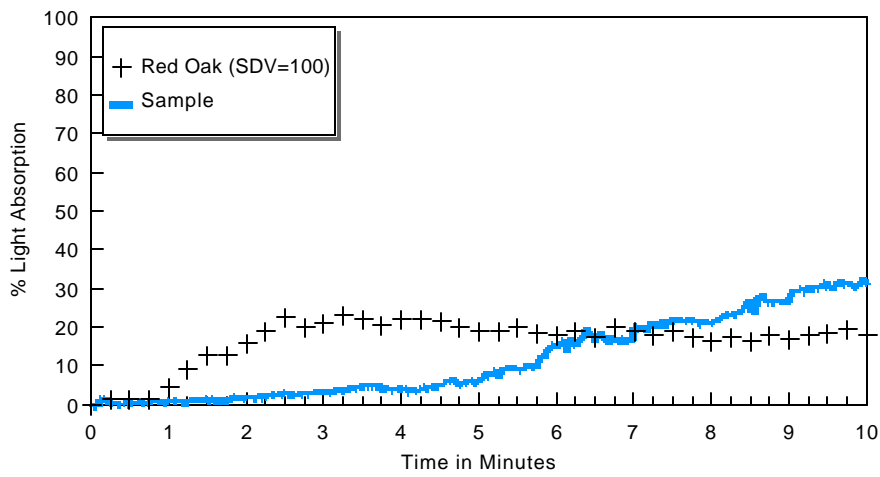
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Test #3 of 3

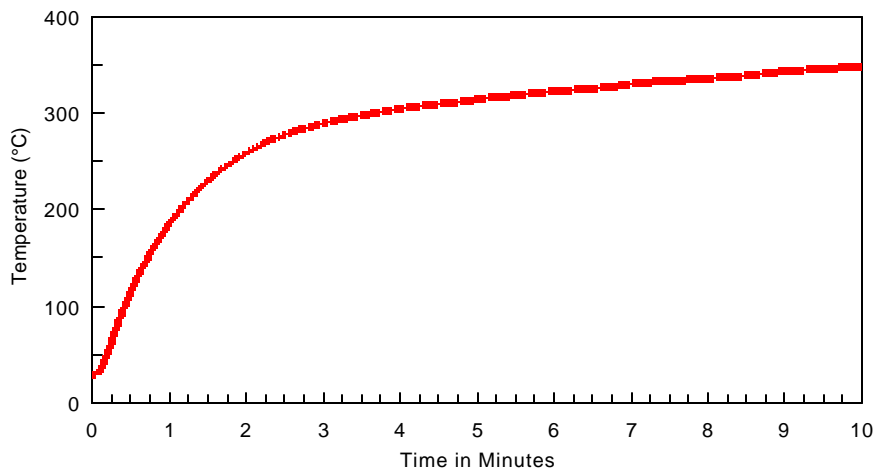
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE



FSV

12

SDV

87

Max. Temp. (°C)

350