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CAN/ULC-S102 Surface Burning Characteristics of Rock Climbing Wall System

A Report To:	**Rock Climbing School** 692 Summers Common Burlington, Ontario L7L 0A5
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Attention:	Kyle Wilson
Submitted by:	Fire Testing
Report No.	09-002-752(B) 6 Pages
Date:	November 6, 2009

ACCREDITATION Standards Council of Canada, Registration #1.

SPECIFICATIONS OF ORDER

Determine the Flame Spread and Smoke Developed Classifications based upon triplicate testing conducted in accordance with CAN/ULC-S102-07, as per our Quotation No. 09-002-5824 RV1 accepted October 19, 2009.

SAMPLE IDENTIFICATION (Exova sample identification number 09-002-S0752-2)

Rock climbing wall panel system identified as: "AS-Acrylic 4".

TEST PROCEDURE

The method, designated as CAN/ULC-S102-07, "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 sample consisted of 3 sections of material, each section approximately 521 mm in width by 2438 mm in length by 20 mm in thickness. The sections were butted together to form the requisite specimen length. Prior to testing, the samples were conditioned at a temperature of 23 ± 3°C and a relative humidity of 50 ± 5%. During testing the samples were self-supporting, with the cement surface exposed.

The testing was performed on: Test #1: 2009-11-02 Test #2: 2009-11-06 Test #3: 2009-11-05

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

SAMPLE		FSV	SDV
"AS-Acrylic 4"	Test #1	120	93
	Test #2	47	45
	Test #3	45	21
	Average:	70	53

Rounded Average Flame Spread Rating (FSR): **70**

Rounded Average Smoke Developed Classification (SDC): **50**

Observations of Burning Characteristics

- In all three tests, the samples ignited after approximately 1 minute exposure to the flame source. Delamination of the samples was observed during the tests.
- The flame fronts propagated to a maximum distances of 6, 3.4, and 3.6 metres at approximately 3.75, 7.0 and 9.0 minutes into each respective test.
- Smoke Developed was 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.

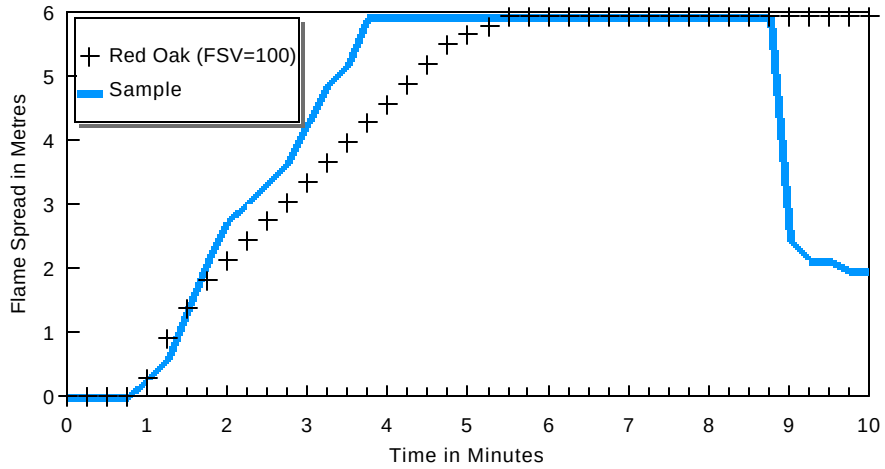
Ian Smith,
Fire Testing.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

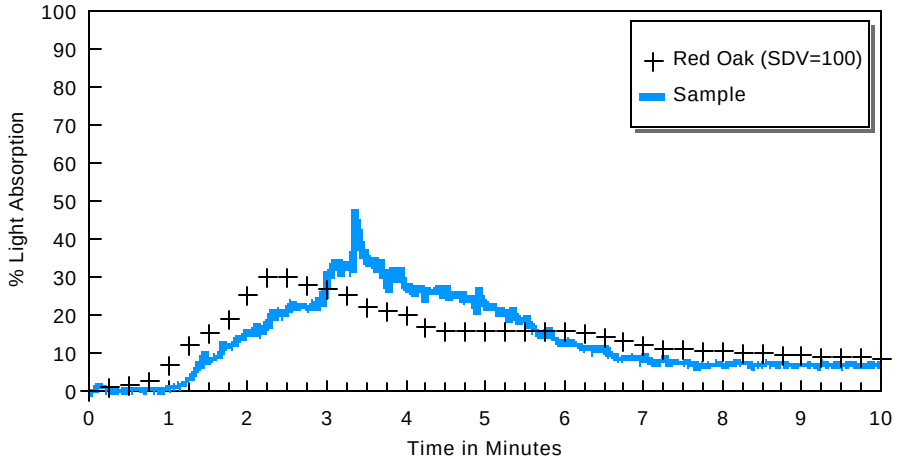
Sample:"AS-Acrylic 4"

Test #1 of 3

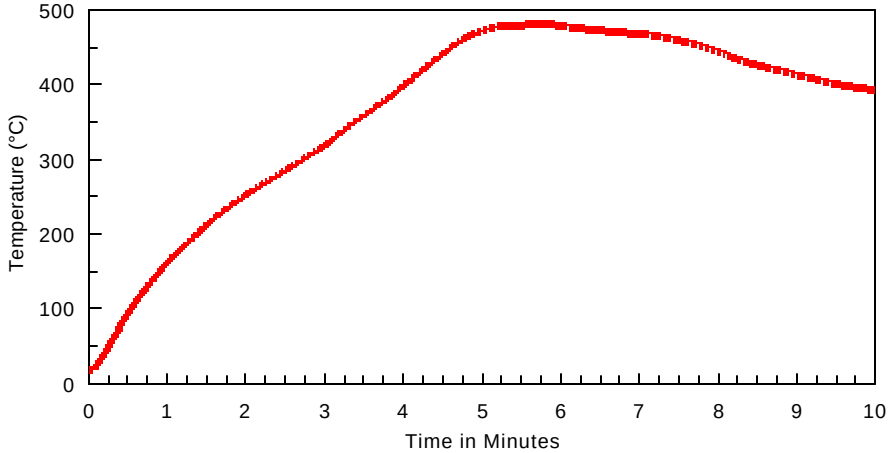
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE

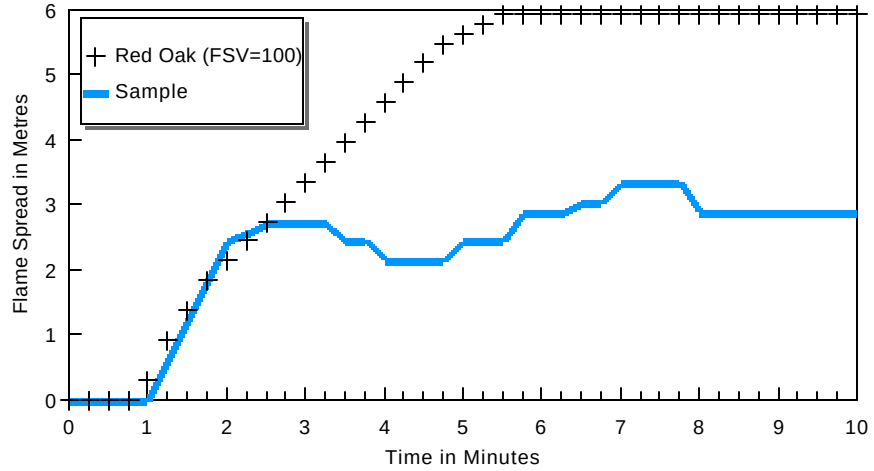


FSV	**SDV**
120	93

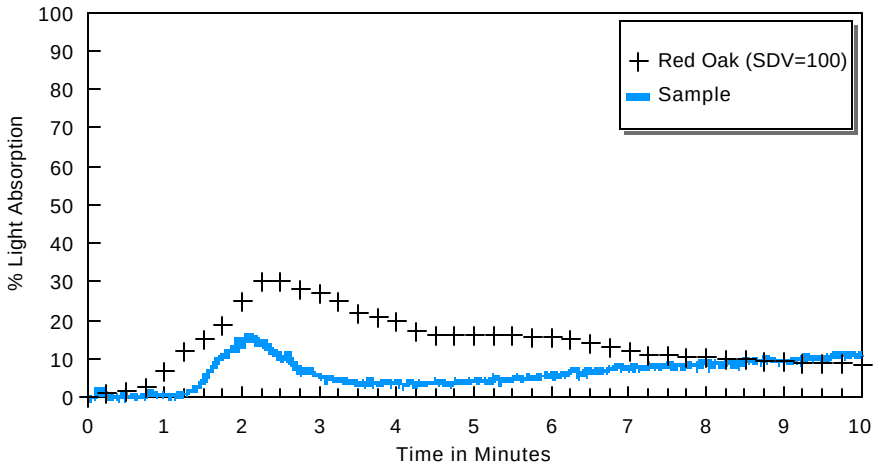
Sample:"AS-Acrylic 4"

Test #2 of 3

FLAME SPREAD



SMOKE DEVELOPED



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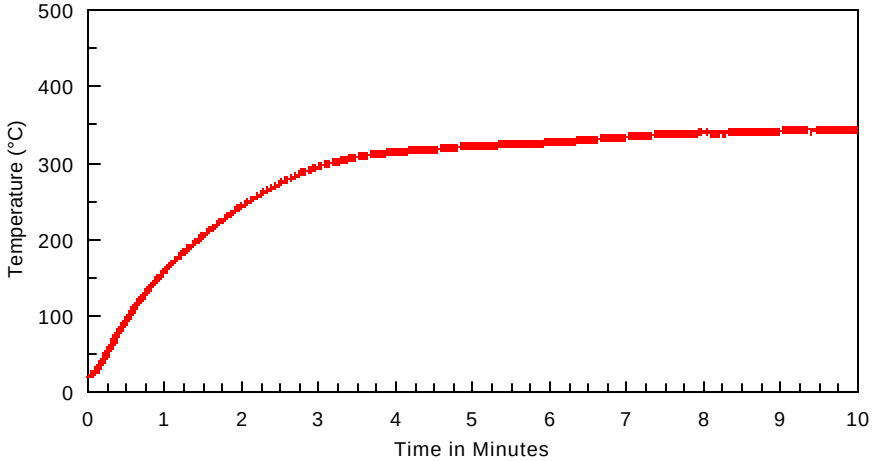
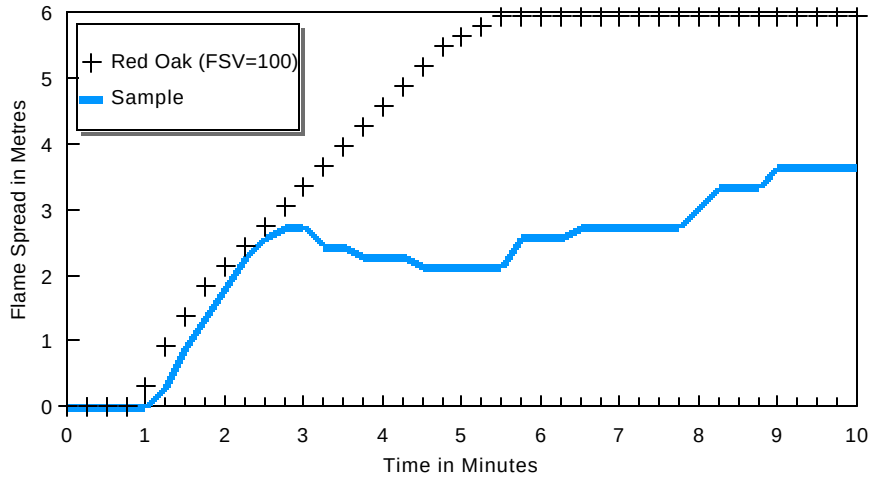


FSV	**SDV**
47	45

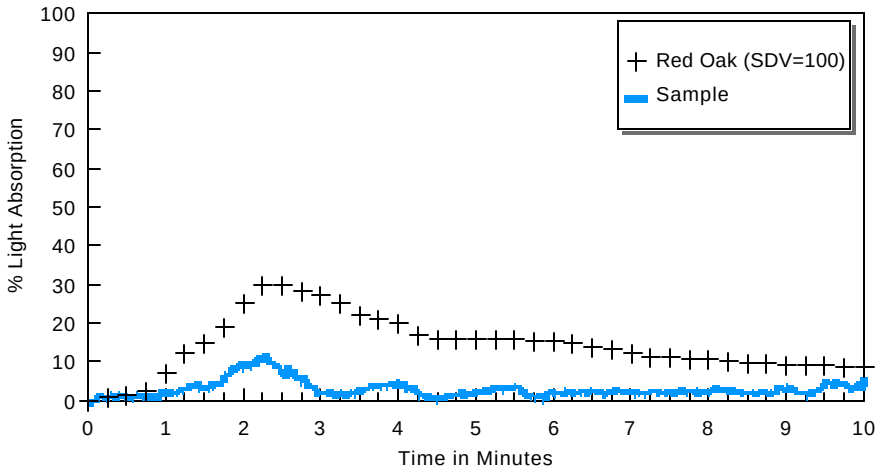
Sample:"AS-Acrylic 4"

Test #3 of 3

FLAME SPREAD



SMOKE DEVELOPED



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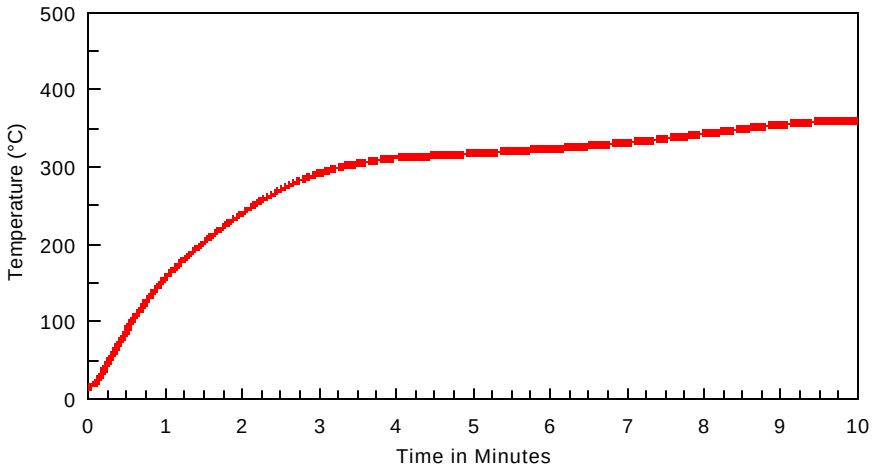

FSV	SDV
45	21