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CAN/ULC-S102 Surface Burning Characteristics of "Neolith" Ceramic Facing

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Report No.	14-002-254(A) 6 Pages
Date:	May 12, 2014

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 accordance with CAN/ULC-S102-10, as per warringtonfire North America Quotation Number 14-002-284,706 accepted February 20, 2014.

SAMPLE IDENTIFICATION (Exova sample identification number 14-002-S0254-1)

Ceramic material, identified as:
"Neolith"

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

The ceramic facing was adhered onto a fiberglass backing by the client. The test sample consisted of 3 sections of material, each approximately 6 mm in total thickness by 533 mm in width by 2438 mm in length. The sections were butted together during testing to create the requisite specimen Prior to testing, the samples were conditioned to constant weight at a temperature of 23 ± 3°C and a relative humidity of 50 ± 5%. During testing the samples were self-supporting.

The testing was performed on: Test #1: 2014-05-06 Test #2: 2014-05-06 Test #3: 2014-05-06

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 second. Flame spread distance versus time is plotted. Calculations ignore all flame front recessions and the Flame Spread Values (FSV) are determined by calculating the total area under the curve for each test sample. If the total area under the curve (AT) is less than or equal to 29.7 m·min, FSV = 1.85·AT; if greater, FSV = 1640/(59.4-AT).

Smoke Developed Values (SDV) are determined by comparing the area under the obscuration curve for each test sample to that of inorganic reinforced cement board and red oak, established as 0 and 100, respectively. Each Smoke Developed Value is determined by dividing the total area under the obscuration curve by that of red oak and multiplying by 100.

TEST RESULTS

SAMPLE		Flame Spread Value (FSV)	Smoke Developed Value (SDV)
"Neolith"	Test #1	0	6
	Test #2	0	5
	Test #3	6	4
	Average:	2	5

Rounded Average Flame Spread Rating (FSR): **0**

Rounded Average Smoke Developed Classification (SDC): **5**

Observations of Burning Characteristics

- The test samples ignited approximately 433 to 506 seconds after exposure to the test flame. Surface cracking and delamination was observed.
- In Test #1, the flame front did not advance past the baseline. In Test #2 and Test #3, the flame fronts advanced to a maximum distances of 0.9 and 1.2 metres at approximately 512 and 439 seconds into each respective test.

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

Robert A. Carleton,
Technologist.

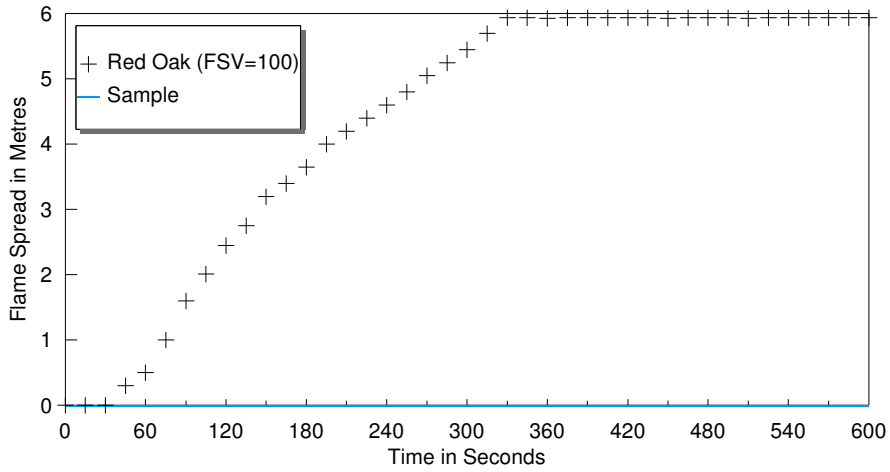
Ian Smith,
Technical Manager.

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.

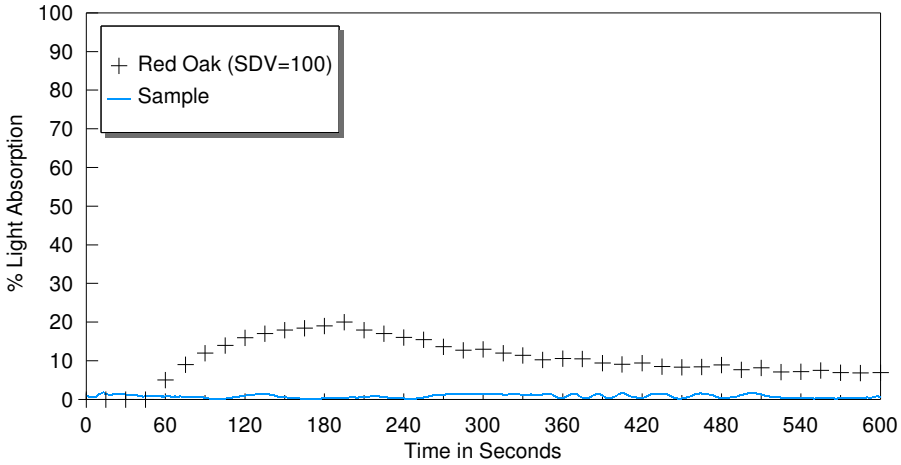
Sample: "Neolith"

Test #1 of 3

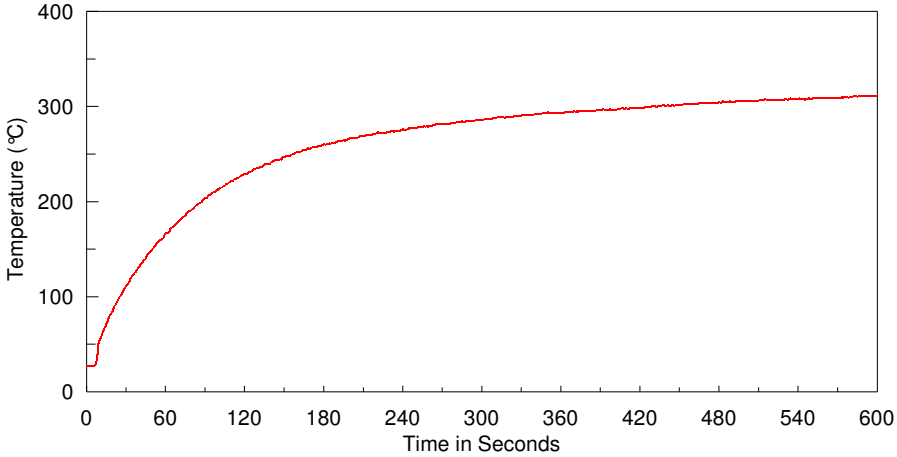
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE

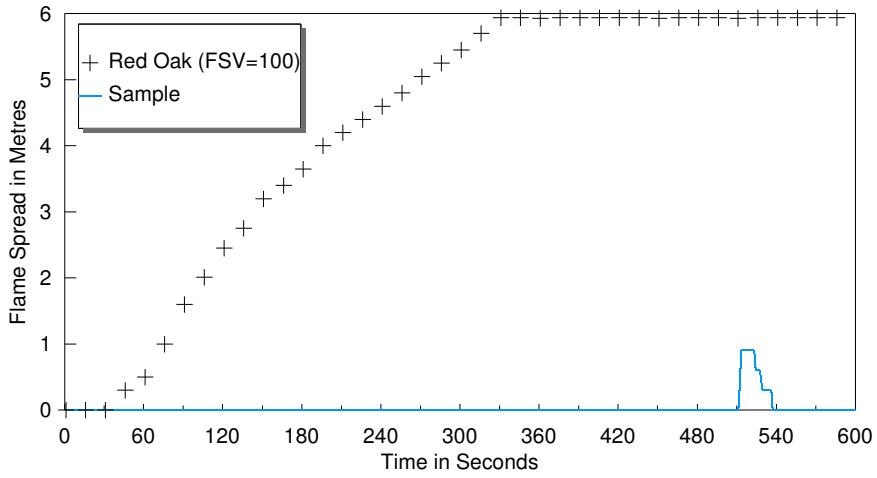


FSV	SDV	Max. Temp. (°C)
0	6	312

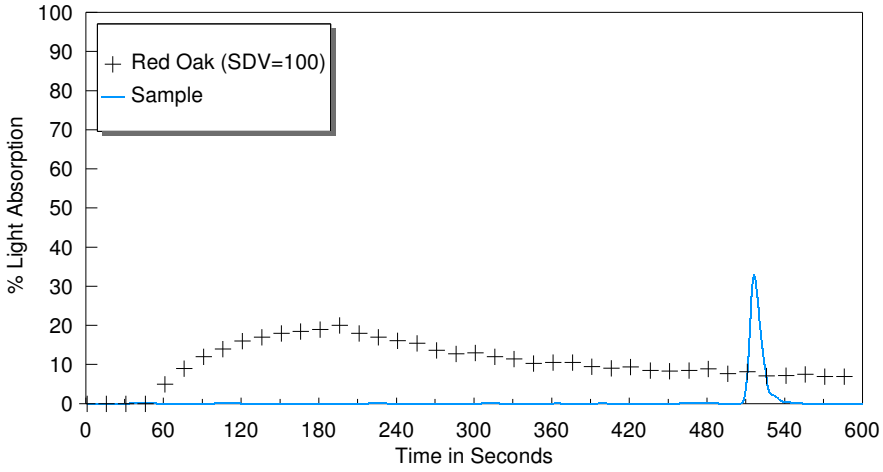
Sample: "Neolith"

Test #2 of 3

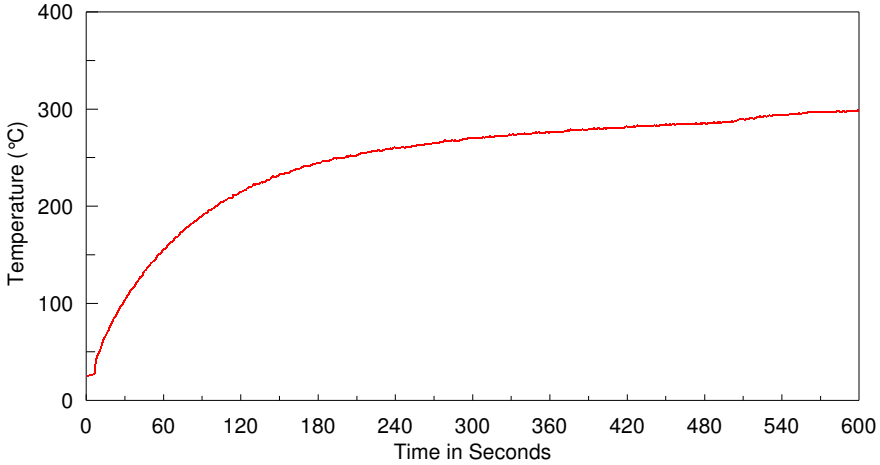
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE

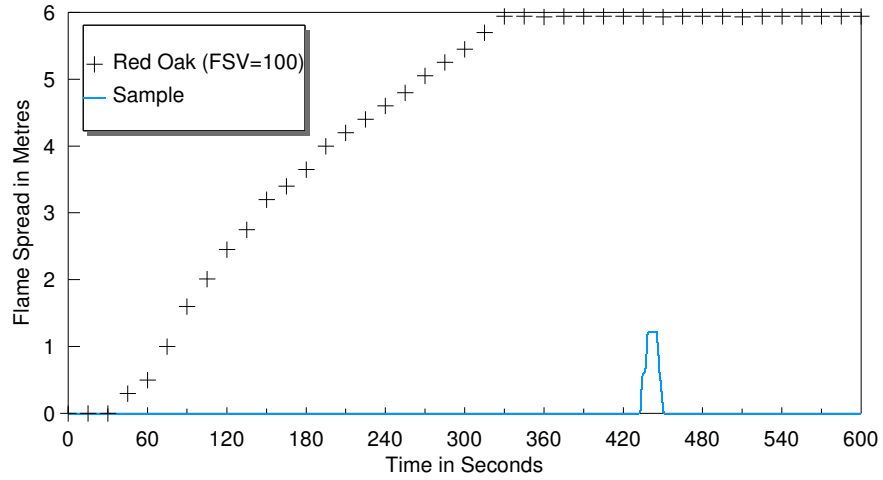


FSV	SDV	Max. Temp. (°C)
0	5	299

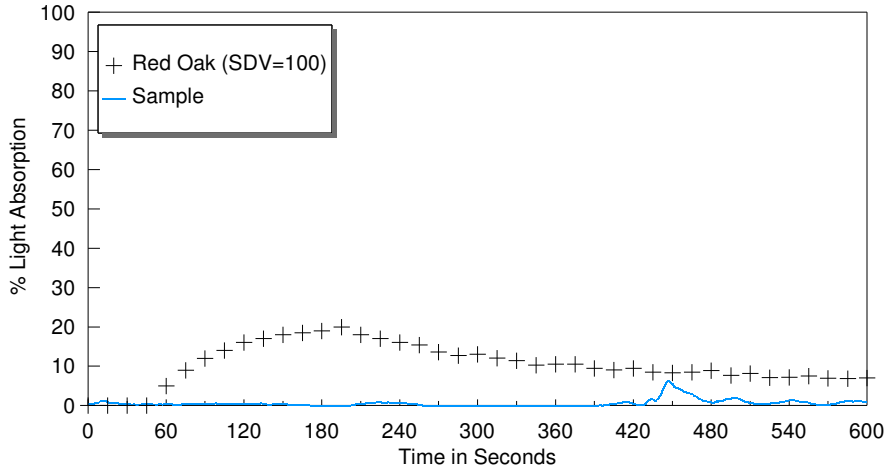
Sample: "Neolith"

Test #3 of 3

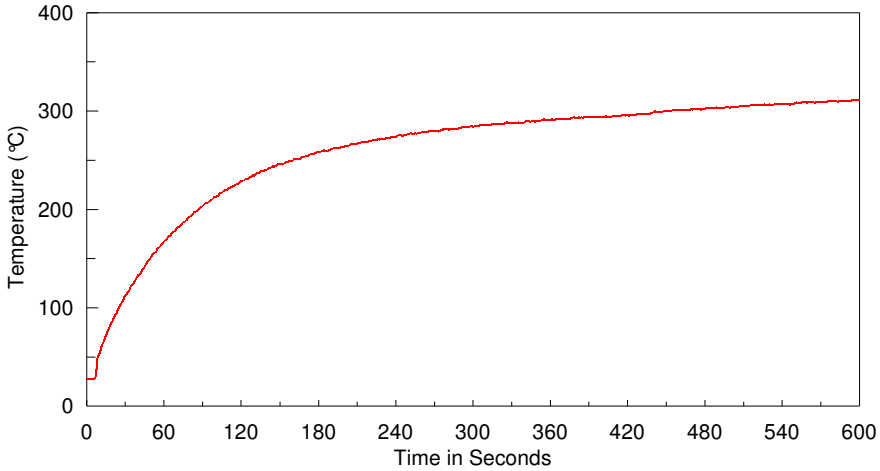
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE



FSV	SDV	Max. Temp. (°C)
6	4	312