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CAN/ULC-S102 Surface Burning Characteristics of "Soft Tone Acoustic Panel"

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6 Pages

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

SPECIFICATIONS OF ORDER

Determine Flame Spread and Smoke Developed Values based upon triplicate testing conducted in accordance with CAN/ULC-S102-10, as per Exova Warringtonfire North America Quotation No. 17-002-531452 dated November 20, 2018.

SAMPLE IDENTIFICATION (Exova sample identification number 18-002-S0103)

Faced acoustic panel material, nominally 25 mm in thickness, identified as:
"Soft Tone Acoustic 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 specimen consisted of a total of six sections of material, each approximately 25 mm in thickness by 533 mm in width by 1219 mm in length. The sections were butted together to create the requisite specimen length. Prior to testing, each specimen was conditioned to constant mass at a temperature of $23 \pm 3^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$. During testing, each specimen was self-supporting and the faced (white) surface was exposed to the test flame.

Testing was performed on: Test #1: 2018-02-23 Test #2: 2018-02-23 Test #3: 2018-02-23

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, $FSV = 1.85 \cdot AT$; if greater, $FSV = 1640 / (59.4 - AT)$.

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. The Smoke Developed Value (SDV) is determined by dividing the total area under the obscuration curve by that of red oak and multiplying by 100.

TEST RESULTS

SAMPLE: "Soft Tone Acoustic Panel"

Test	Approx. Time to Ignition (s)	Maximum Flame Front Distance (m)	Time to Maximum Flame Front (s)	Flame Spread Value (FSV)	Smoke Developed Value (SDV)
1	8	0.20	20	4	33
2	7	0.33	22	6	46
3	7	0.34	442	2	54
Average:				4	45
Rounded Average Flame Spread Rating (FSR):				5	-
Rounded Average Smoke Developed Classification (SDC):				-	45

Observations of Burning Characteristics

The specimens ignited approximately 7 to 8 seconds after exposure to the test flame. Melting, dripping, and flaming dripping behavior was observed. Material that dripped to the floor of the apparatus continued to produce smoke.

Results Interpretation

CAN/ULC-S102-10 contains no performance criteria of its own. The National Building Code of Canada (NBCC) or other jurisdictional documentation should be referenced to determine the FSR and/or SDC performance criteria that is applicable to the product under test for the intended application.



Francis Williams,
Technician.



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.

Test 1 of 3 Sample: "Soft Tone Acoustic Panel"

Chart 1. FLAME SPREAD (Specimen #1)

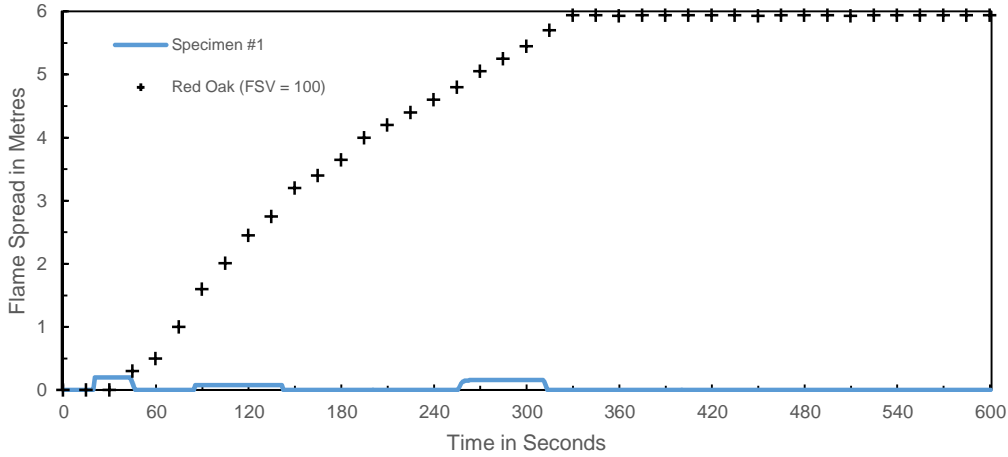


Chart 2. SMOKE DEVELOPED (Specimen #1)

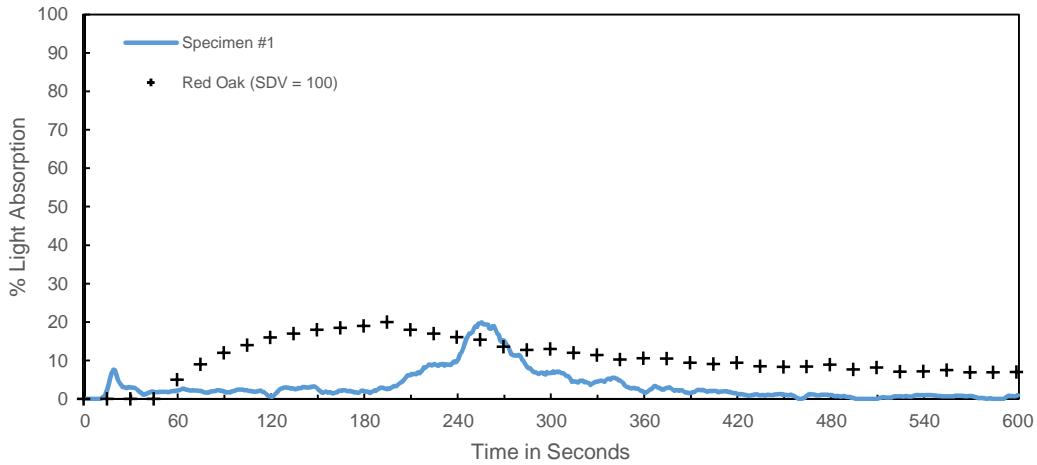
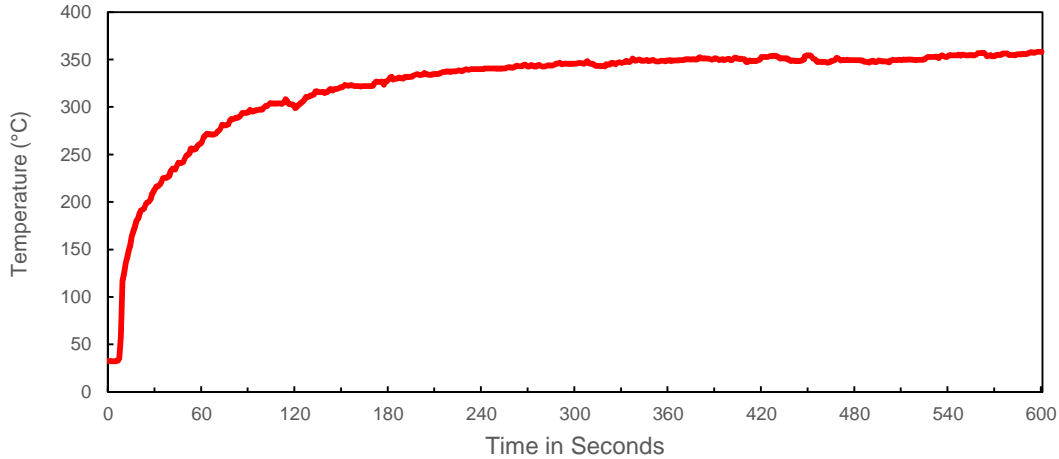


Chart 3. TEMPERATURE (Specimen #1)



Flame Spread
Value (FSV)

4

Smoke Developed
Value (SDV)

33

Maximum Air
Temperature (°C)

358

Test 2 of 3 Sample: "Soft Tone Acoustic Panel"

Chart 4. FLAME SPREAD (Specimen #2)

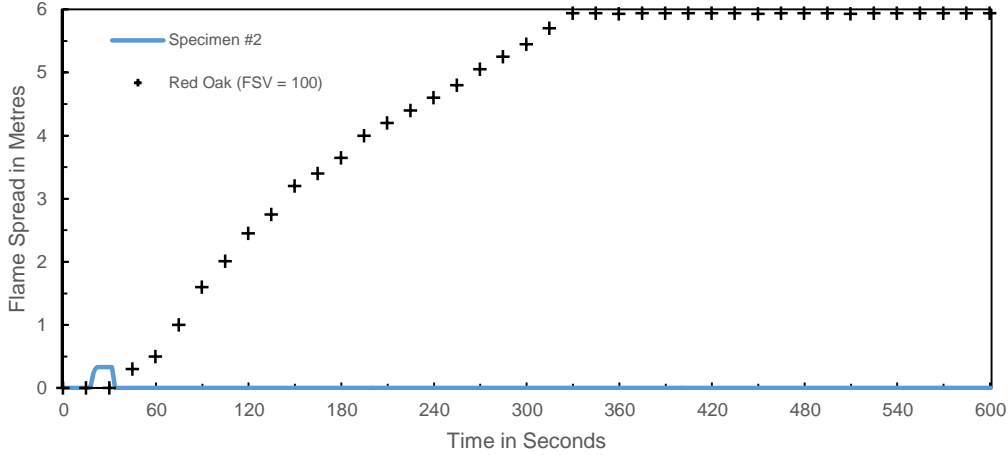


Chart 5. SMOKE DEVELOPED (Specimen #2)

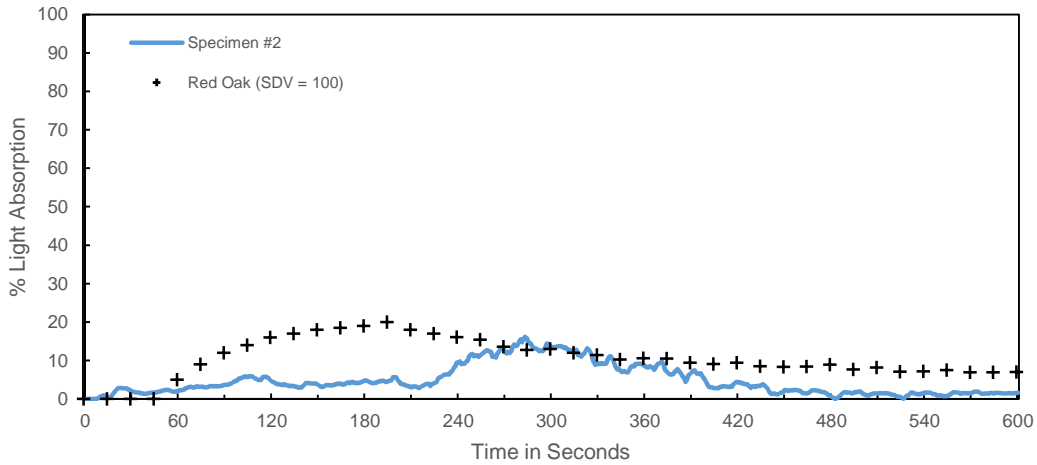
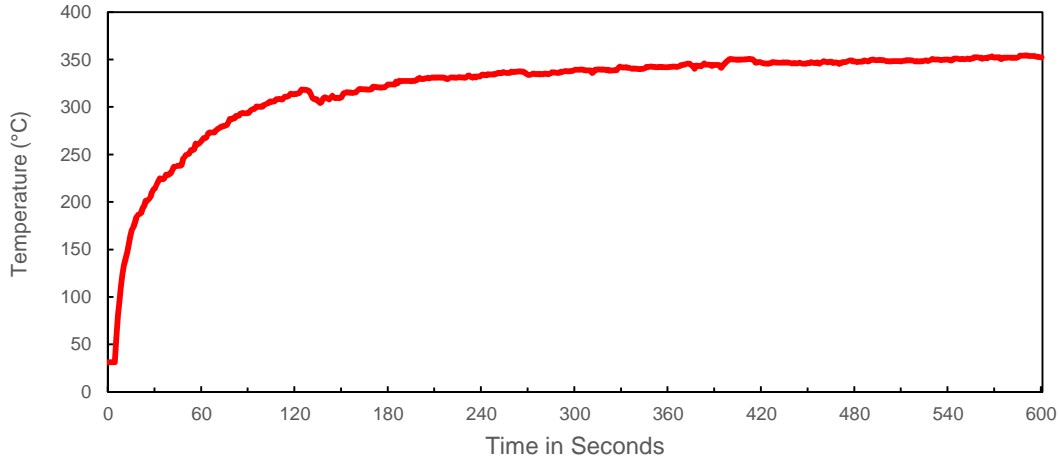


Chart 6. TEMPERATURE (Specimen #2)



Flame Spread
Value (FSV)

6

Smoke Developed
Value (SDV)

46

Maximum Air
Temperature (°C)

354

Test 3 of 3

Sample: "Soft Tone Acoustic Panel"

Chart 7. FLAME SPREAD (Specimen #3)

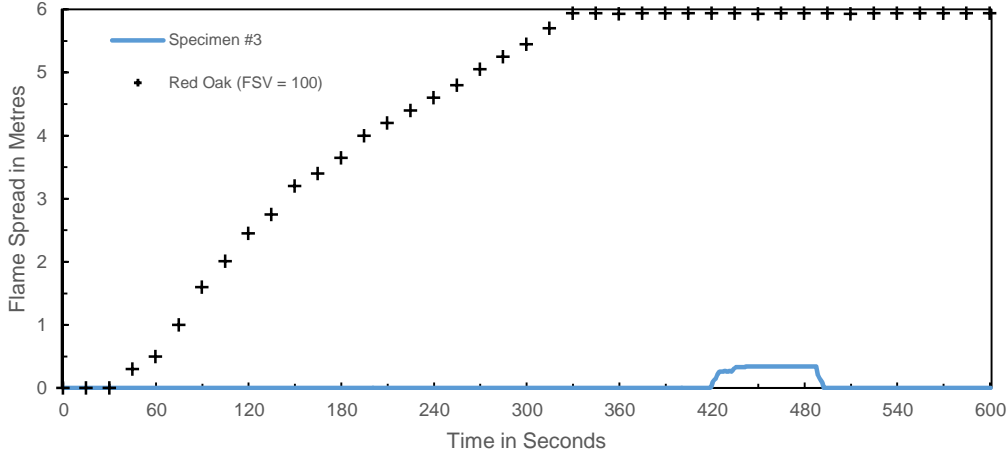


Chart 8. SMOKE DEVELOPED (Specimen #3)

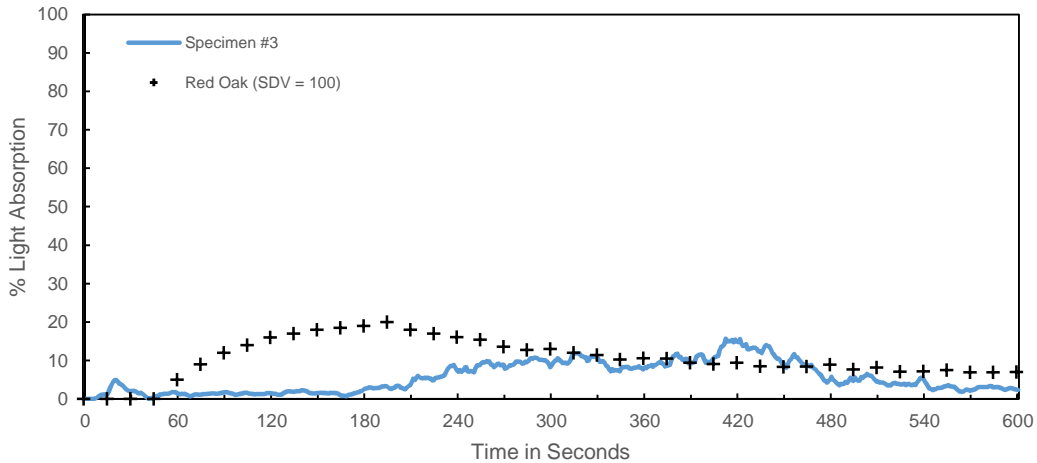
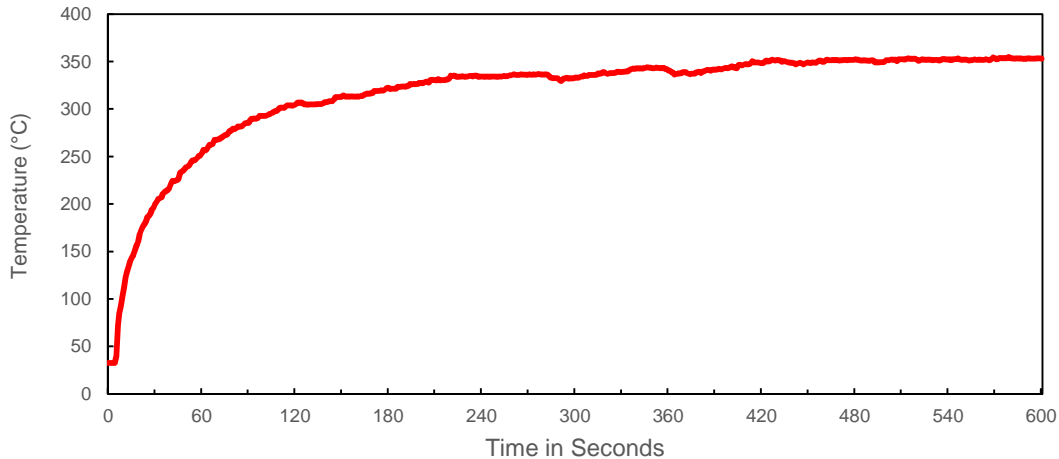


Chart 9. TEMPERATURE (Specimen #3)



Flame Spread
Value (FSV)

2

Smoke Developed
Value (SDV)

54

Maximum Air
Temperature (°C)

355