Flame Spread Report

Les Produits Évolution Acoustique Inc.

4066, Le Corbusier, Laval, Suite#101
Quebec, Canada, H7L 5R2
Canada

Date	January 8, 2021
Report No.	19573-1BP
Revision No.	0
Project No.	19573
Material	Polyester Fiber

ONE STOP GLOBAL CERTIFICATION SOLUTIONS

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TEST REPORT

CAN/ULC S102.2:2018-REV1

Report reference No. ..... :	19573-1BP
Report Revision History ..... :	Revision 0
Report Compiled and Evaluated by..... :	Michael Crossman .....
Tested by (printed name and signature) ..... :	Michael Crossman
	Kaden Burgart
Reviewed by (printed name and signature) ..... :	Dan Ichim
Date of issue..... :	January 8, 2021

Note: By signing this report, both the Testing Technician and the Reviewer hereby declare to abide by the applicable LabTest policies:

1.) Statement of Independence # 3014 (LabTest Employees),

2.) Independence, Impartiality, and Integrity #1039, clause 11 (Engineering Service Subcontractors), or

3.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).

Testing Laboratory Name ..... :	LabTest Certification Inc.
Address ..... :	205 – 8291 92 Street, Delta, BC, V4G 0A4, Canada
Test Location Name ..... :	LabTest Certification Inc.
Address ..... :	205 – 8291 92 Street, Delta, BC, V4G 0A4, Canada
Applicant's Name..... :	Les Produits Évolution Acoustique Inc.
Address ..... :	4066, Le Corbusier, Laval, Suite#101, Quebec, Canada, H7L 5R2, Canada
Test Standard..... :	CAN/ULC S102.2:2018-REV1
Non-standard test method..... :	N/A
Test item description ..... :	Smoke gray acoustic pane
Manufacturer ..... :	Les Produits Évolution Acoustique inc.
Product reference ID ..... :	Canetis CA-11 Smoke Gray
Ratings ..... :	**Flame Spread Value - 77** **Smoke Developed Value – 192.8**

Testing

Date(s) of receipt of test item ..... :	August 04, 2020
Date(s) of performance of test ..... :	2020-11-03, 2020-11-03, 2020-11-06
General product information ..... :	Smoke gray acoustic pane
Description ..... :	Acoustic Pane
Intended use and application ..... :	Acoustic Pane
Nominal thickness ..... :	3/8''
Color ..... :	Smoke gray
Section sizes ..... :	9 sheets: 96 inches x 17 inches
Total sample dimensions per test ..... :	17 in. by 24 ft.
Tunnel mounting ..... :	Sectioned
Conditioning Time ..... :	3 days at 73.4°F ± 5°F (23°C ± 2.8°C), 50% ± 5% Relative Humidity
Safety Data Sheet(s) ..... :	CAS No. 80595-68-2
Quality Control Documents ..... :	Not provided

General remarks

This report does not confirm certification unless appended by a LC Certificate.

The test results presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

☐ Throughout this report a comma is used as the decimal separator.
☒ Throughout this report a period is used as the decimal separator.

TEST EQUIPMENT USED

Type	Equip. No.	Calibration Date		Calibration Certificate No.	Calibration Laboratory
		Last	Due		
Rotary Vane Anemometer	1409	2020-03-24	2021-03-24	1002390599	Precision Metrology
Environmental Logger	1166	2020-02-24	2021-02-24	R0838606	Wescan Calibration
Digital Thermometer	294	2020-07-13	2021-07-13	R0860475	Wescan Calibration
Gas Meter	792	2020-02-19	2021-02-19	12051	Polycontrols
Tape Measure	1407	2020-03-17	2021-03-17	452124	Wescan Calibration
Digital Stopwatch	1413	2020-03-06	2021-03-06	R0840920	Wescan Calibration
Neutral Density Filters	1003	2020-03-27	2021-03-27	003270819	International Light Technologies
Draft Manometer	1004	2020-02-25	2021-02-25	R0838608	Wescan Calibration
Gas Manometer	362	2020-02-26	2021-02-26	R0838607	Wescan Calibration
Calipers	1410	2020-03-17	2021-03-17	R0840923	Wescan Calibration
Scale	1411	2020-03-11	2021-03-11	R0840922	Wescan Calibration
Steiner Test Tunnel	1139	2020-04-02	2021-04-02	1139	Validated by Labtest Certification Inc.

DRAWINGS

Technical drawings not provided.

PICTURES

Figure 1 Pre-Test 1

Figure 2 Post-Test 1

Figure 3 Pre-Test 2

Figure 4 Post-Test 2

Figure 5 Pre-Test 3

Figure 6 Post-Test 3

APPENDIX A – TEST 1 DATA

Project No.:	**19573**	**Date (YYYY-MM-DD):**	**2020-11-03**
Equipment ID#:	**1409, 1166, 294, 792, 1407, 1413, 1003, 1004, 362, 1410, 1411, 1139**	**Env. Temp/Humidity:**	**20.8°C / 49.9%RH**
Model:	**Polyester Fiber**	**Barometric Pressure:**	**1014.6 kPa**
Sample No(s):	**5894**	**Product reference ID:**	**Canetis CA-11 Smoke Gray**

Note: By signing the below, both the Issuer and the Reviewer hereby declare to abide by the applicable LabTest policies:
1.) Statement of Independence # 3014 (LabTest Employees), or
2.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).

Tested By:	**Michael Crossman**		
	Print		Signature
Tested By:	**Kaden Burgart**		
	Print		Signature
Reviewed by:	**Dan Ichim**		
	Print		Signature

Surface Burning Characteristics of Building Materials Test

METHOD
(Standard CAN/ULC S102.2:2018-REV1)
(Clause 8)

8.1 Unless the procedure specified in Clause 7.5.10 or Clause 8.10 has been followed, preheat the test chamber until the temperature indicated by the thermocouple at 7090mm reaches 85 ± 5 °C, then allow the chamber to cool until the temperature indicated by the thermocouple at 4000mm shows a temperature of 40 ± 3 °C (see Note to Clause 7.5.1).

8.2 Ceramic fibre paper with a nominal area density of 0.7 kg/m2shallbe laid on the floor of the test chamber beneath the test specimen and appropriate cut-outs shall be made to accommodate the burners. Additional cut-outs maybe made to accommodate the thermocouple.

8.3 The test specimen including any specified underlayment shall be placed on the above-mentioned ceramic fibre paper and appropriate cut-outs shall be made to accommodate the burners. Additional cut-outs maybe made to accommodate the thermocouple. The burner end of the test specimen shall be held down by the end of the air ramp (see Clause 5.7). A mass (e.g. a piece of steel 25 x 150 x 10 mm) maybe placed near to the burner ports to hold down the test specimen in the region of the cut-outs.

8.4 The lid of the test furnace shall be placed in position and all joints sealed against infiltration of air.

8.5 The completely mounted test specimen shall remain in position, in the test chamber with the test chamber draft operating for 120 ± 15 s prior to the application of the test flame. The air supply shall have a temperature of 23 ± 3 °C and a relative humidity of 50 ± 5 %.

8.6 Ignite the burner gas. With the room darkened, observe and record flame front travel (at distance intervals not exceeding 300 mm or time intervals 15 s) and the distance and time of maximum flame front travel. Continue the test for a 10 min period. The test maybe terminated prior to 10 min if the test specimen is completely consumed in the fire area and no further progressive burning is evident and the photoelectric cell reading has returned to the baseline.

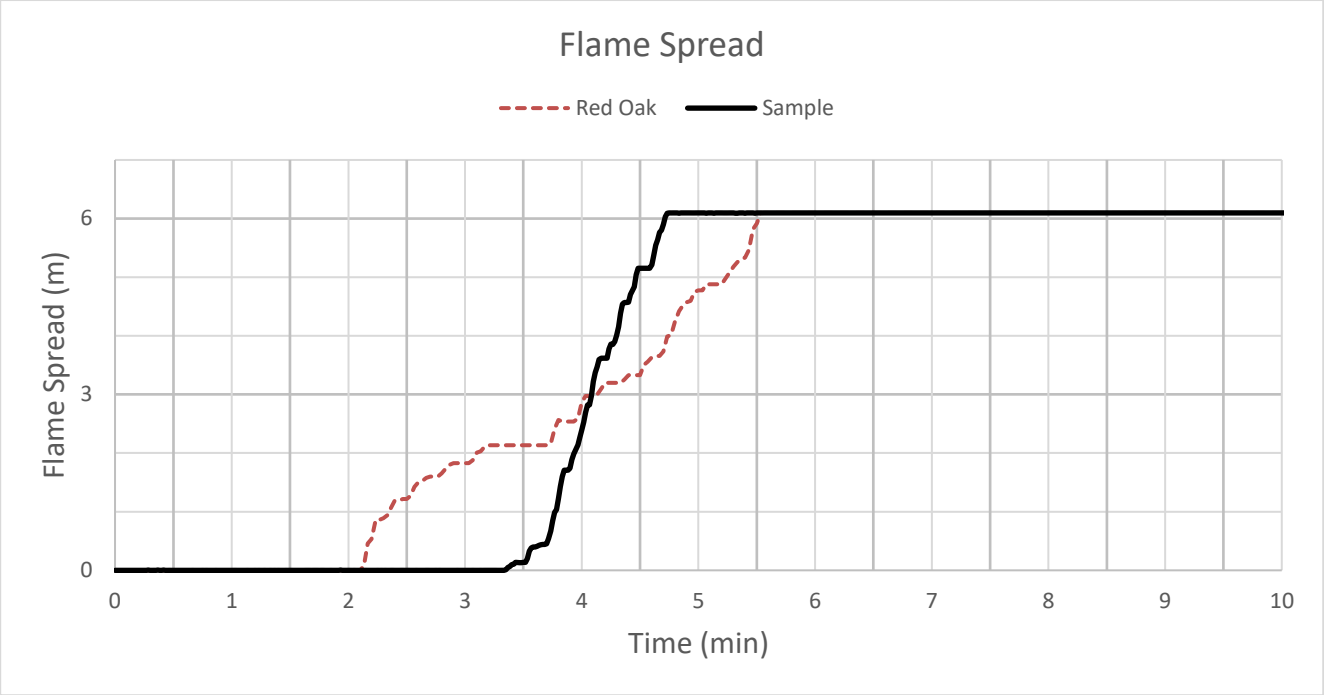
8.7 Record automatically the temperature measured by the thermocouple near the vent end at intervals not longer than 5 s. Record, automatically, the photoelectric cell output immediately prior to the test and at least every 5 s during the test.

8.8 Record the gas pressure, the pressure differential across the orifice plate, and the volume of gas used in each test. If a temperature and pressure compensating mass flow meter is utilized, record only the volume of gas used.

8.9 When the test is ended, shut off the gas supply, observe smouldering and other conditions within the test chamber, and remove the test specimen for further examination.

8.10 Cool the test chamber after the test, when necessary. Install the next test specimen when the thermocouple at 4000mm shows a temperature of 40 ± 3 °C (see Note to Clause 7.5.1).

Test Data



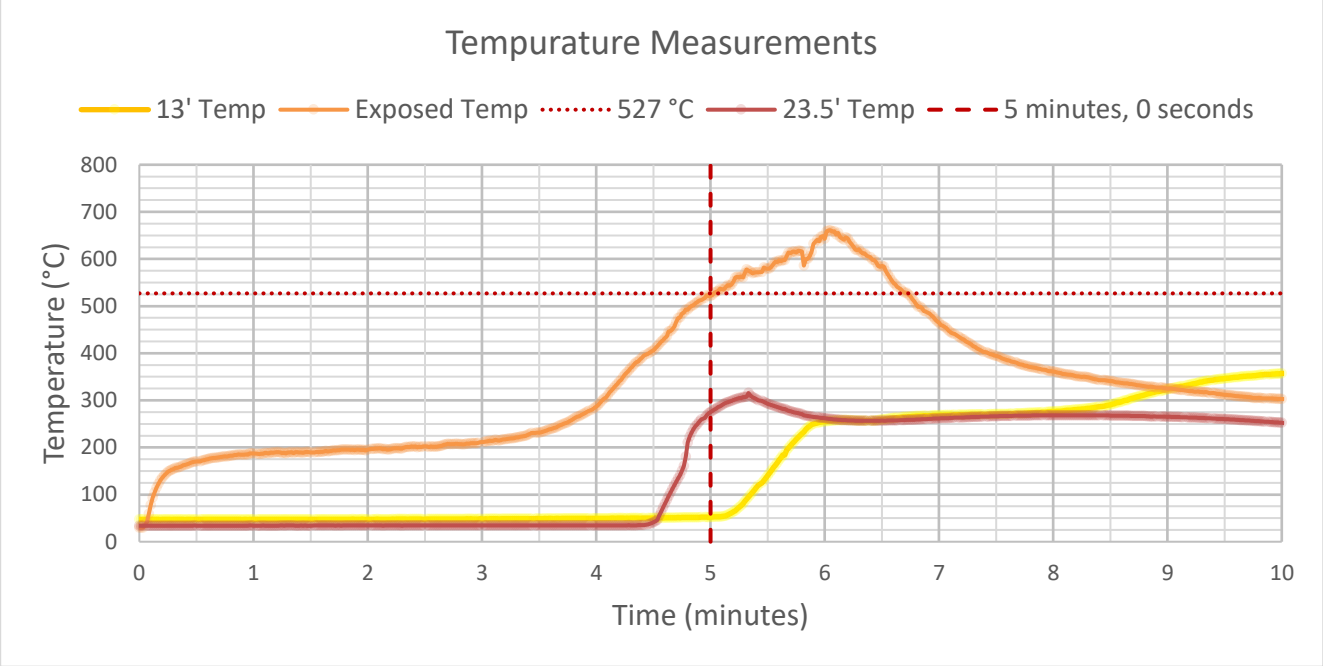
The formula to calculate the Flame Spread Value depends on the area under the curve in the graph above. If the area under the curve is greater than 29.7 (m x min), formula (1) below is used. If the area under the curve is less than or equal to 29.7 (m x min), formula (2) below is used is calculated

$$(1)\ FSV = \frac{1640}{59.4 - A_T}$$

$$(2)\ FSV = 1.85 \times A_T$$

Where A_T = Flame Spread area under the curve

Flame Spread Value	
FS area under the curve [m x min] ..... :	36.0
Flame Spread Index..... :	**70.0**



Time to 527°C at the exposed thermocouple: 300 seconds

Observations:

The ignition of the material: 55 seconds.

An issue during test 1 resulted in the smoke data not being recorded correctly. The smoke data captured during test 2 and test 3 were very similar to each other and an assessment of the flame spread and temperature data also showed similar behaviour between all three tests. Therefore, it has been deemed reasonable to assume that the smoke characteristics of test 1 were also similar to those of test 2 and test 3. For these reasons, the smoke data has not been reported for test 1 and the final smoke developed value reported on page 3 of this report has been calculated by averaging the smoke developed indexes of test 2 and test 3.

Final Result:

- Flame Spread Index: 70.0
- Smoke Development Index: *See Observations above*

APPENDIX B – TEST 2 DATA

Project No.:	**19573**	**Date (YYYY-MM-DD):**	**2020-11-03**
Equipment ID#:	**1409, 1166, 294, 792, 1407, 1413, 1003, 1004, 362, 1410, 1411, 1139**	**Env. Temp/Humidity:**	**25.6°C / 45%RH**
Model:	**Polyester Fiber**	**Barometric Pressure:**	**1014.7 kPa**
Sample No(s):	**5894**	**Product reference ID:**	**Canetis CA-11 Smoke Gray**

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1.) Statement of Independence # 3014 (LabTest Employees), or
2.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).

Tested By:	**Michael Crossman**		
	Print		Signature
Tested By:	**Kaden Burgart**		
	Print		Signature
Reviewed by:	**Dan Ichim**		
	Print		Signature

Surface Burning Characteristics of Building Materials Test

METHOD
(Standard CAN/ULC S102.2:2018-REV1)
(Clause 8)

8.1 Unless the procedure specified in Clause 7.5.10 or Clause 8.10 has been followed, preheat the test chamber until the temperature indicated by the thermocouple at 7090mm reaches 85 ± 5 °C, then allow the chamber to cool until the temperature indicated by the thermocouple at 4000mm shows a temperature of 40 ± 3 °C (see Note to Clause 7.5.1).

8.2 Ceramic fibre paper with a nominal area density of 0.7 kg/m2shallbe laid on the floor of the test chamber beneath the test specimen and appropriate cut-outs shall be made to accommodate the burners. Additional cut-outs maybe made to accommodate the thermocouple.

8.3 The test specimen including any specified underlayment shall be placed on the above-mentioned ceramic fibre paper and appropriate cut-outs shall be made to accommodate the burners. Additional cut-outs maybe made to accommodate the thermocouple. The burner end of the test specimen shall be held down by the end of the air ramp (see Clause 5.7). A mass (e.g. a piece of steel 25 x 150 x 10 mm) maybe placed near to the burner ports to hold down the test specimen in the region of the cut-outs.

8.4 The lid of the test furnace shall be placed in position and all joints sealed against infiltration of air.

8.5 The completely mounted test specimen shall remain in position, in the test chamber with the test chamber draft operating for 120 ± 15 s prior to the application of the test flame. The air supply shall have a temperature of 23 ± 3 °C and a relative humidity of 50 ± 5 %.

8.6 Ignite the burner gas. With the room darkened, observe and record flame front travel (at distance intervals not exceeding 300 mm or time intervals 15 s) and the distance and time of maximum flame front travel. Continue the test for a 10 min period. The test maybe terminated prior to 10 min if the test specimen is completely consumed in the fire area and no further progressive burning is evident and the photoelectric cell reading has returned to the baseline.

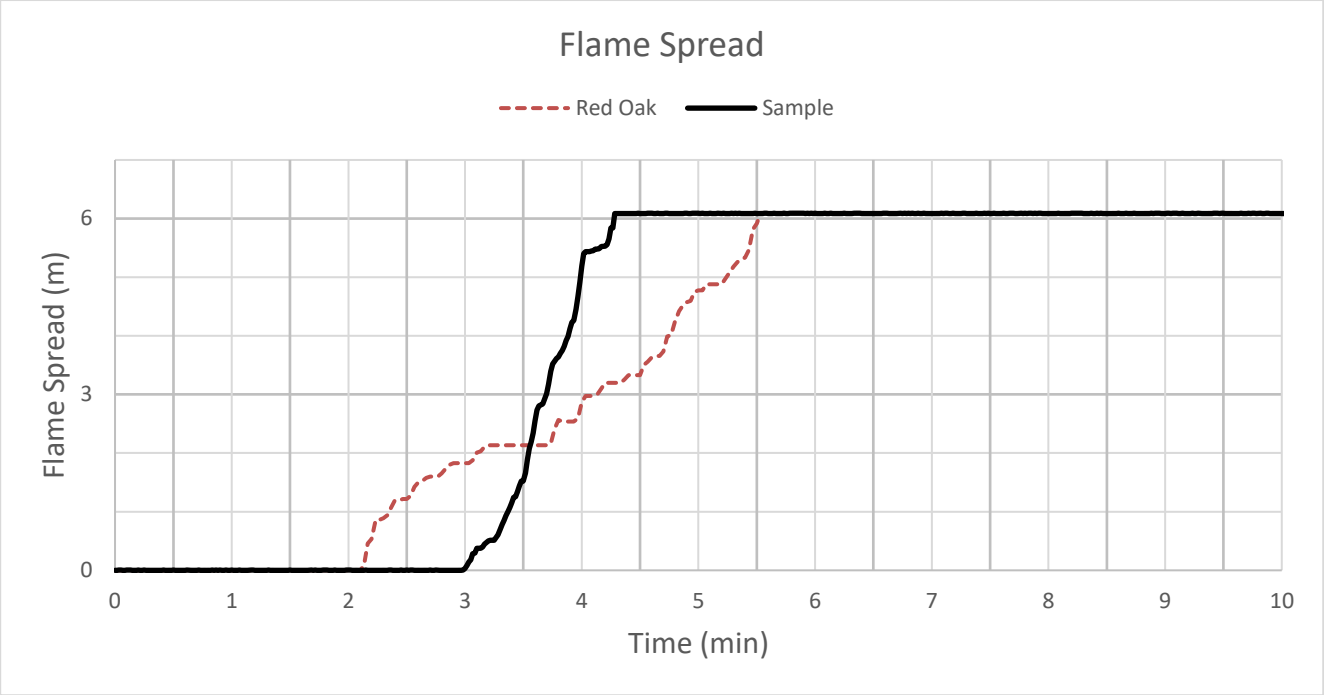
8.7 Record automatically the temperature measured by the thermocouple near the vent end at intervals not longer than 5 s. Record, automatically, the photoelectric cell output immediately prior to the test and at least every 5 s during the test.

8.8 Record the gas pressure, the pressure differential across the orifice plate, and the volume of gas used in each test. If a temperature and pressure compensating mass flow meter is utilized, record only the volume of gas used.

8.9 When the test is ended, shut off the gas supply, observe smouldering and other conditions within the test chamber, and remove the test specimen for further examination.

8.10 Cool the test chamber after the test, when necessary. Install the next test specimen when the thermocouple at 4000mm shows a temperature of 40 ± 3 °C (see Note to Clause 7.5.1).

Test Data



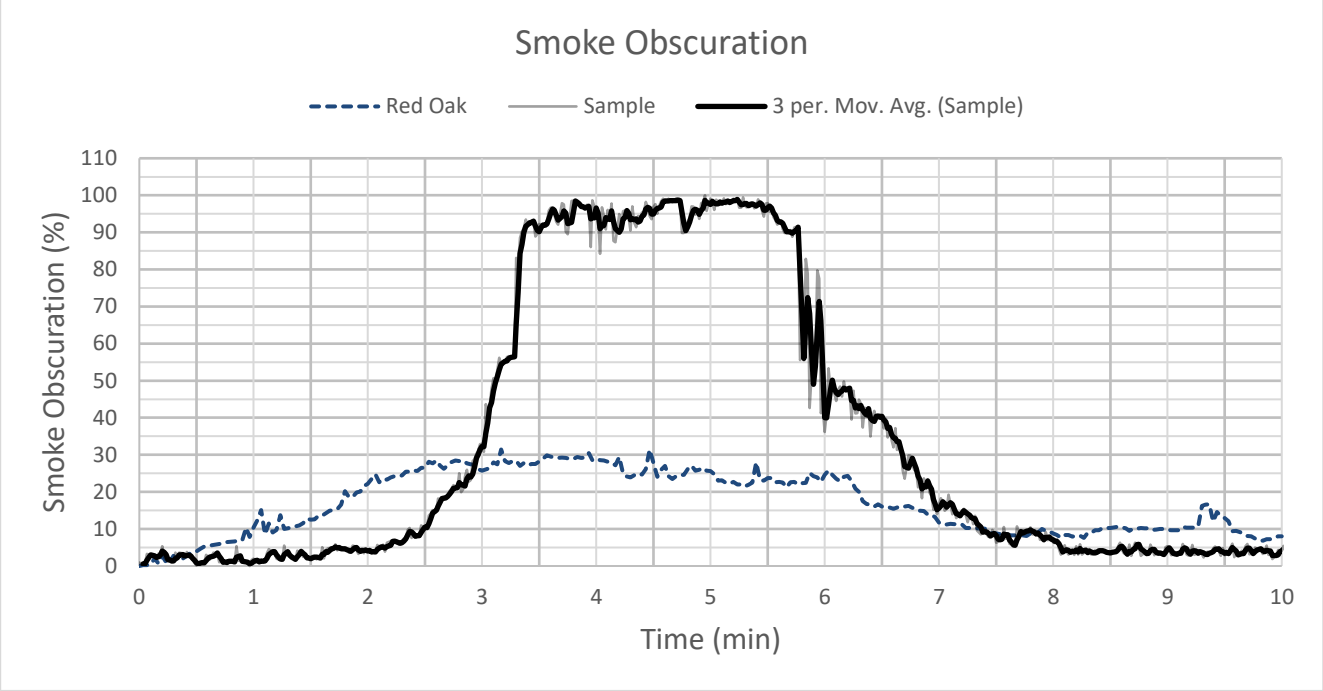
The formula to calculate the Flame Spread Value depends on the area under the curve in the graph above. If the area under the curve is greater than 29.7 (m x min), formula (1) below is used. If the area under the curve is less than or equal to 29.7 (m x min), formula (2) below is used is calculated

$$(1)\ FSV = \frac{1640}{59.4 - A_T}$$

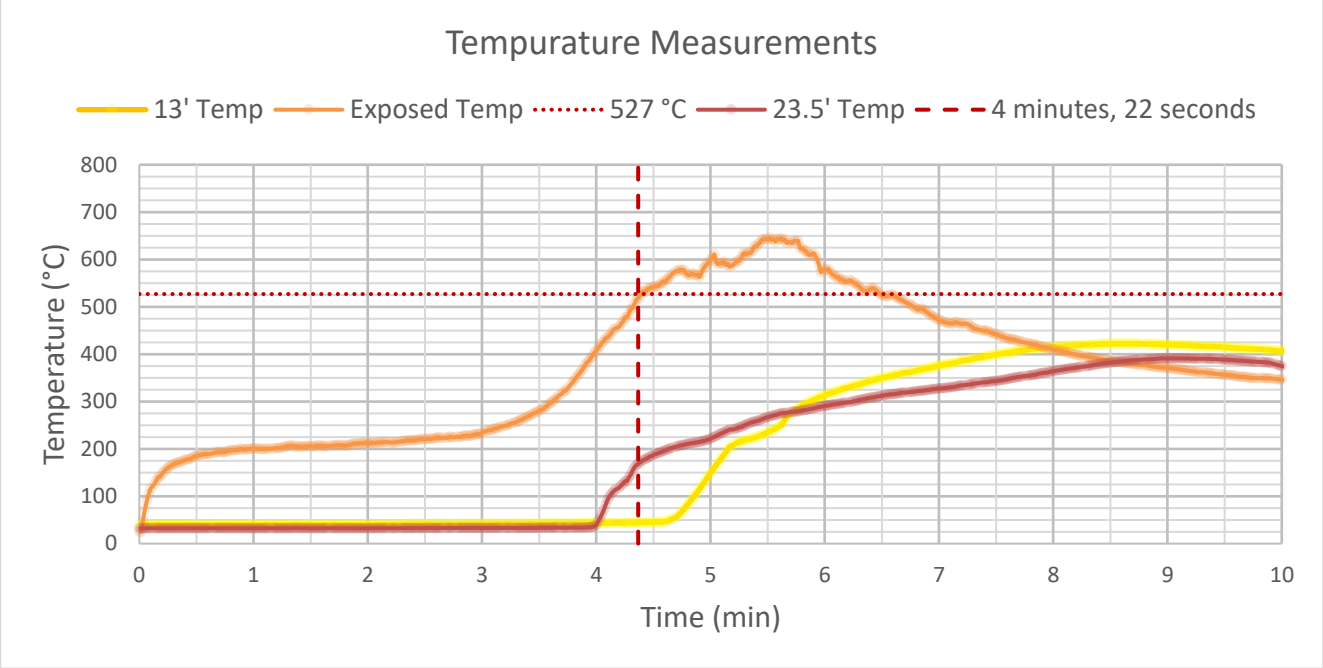
$$(2)\ FSV = 1.85 \times A_T$$

Where A_T = Flame Spread area under the curve

Flame Spread Value	
FS area under the curve [m x min] .....:	38.5
Flame Spread Index.....:	**78.4**



Smoke Obscuration		
Area under the obscuration curve [% x sec] ..... :	20179
Red Oak Calibration Area [% x sec] ..... :	10149
Smoke Developed Index ..... :	**198.8**



Time to 527°C at the exposed thermocouple: 262 seconds

Observations:

The ignition of the material: 55 seconds.

Final Result:

- Flame Spread Index: 78.4
- Smoke Development Index: 198.8

APPENDIX C – TEST 3 DATA

Project No.:	**19573**	**Date (YYYY-MM-DD):**	**2020-11-06**
Equipment ID#:	**1409, 1166, 294, 792, 1407, 1413, 1003, 1004, 362, 1410, 1411, 1139**	**Env. Temp/Humidity:**	**19.5°C / 43%RH**
Model:	**Polyester Fiber**	**Barometric Pressure:**	**1012.6 kPa**
Sample No(s):	**5894**	**Product reference ID:**	**Canetis CA-11 Smoke Gray**

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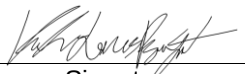
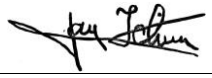
1.) Statement of Independence # 3014 (LabTest Employees), or
2.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).

Tested By:	**Kaden Burgart**		
	Print	Signature	
Reviewed by:	**Dan Ichim**		
	Print	Signature	

Surface Burning Characteristics of Building Materials Test

METHOD
(Standard CAN/ULC S102.2:2018-REV1)
(Clause 8)

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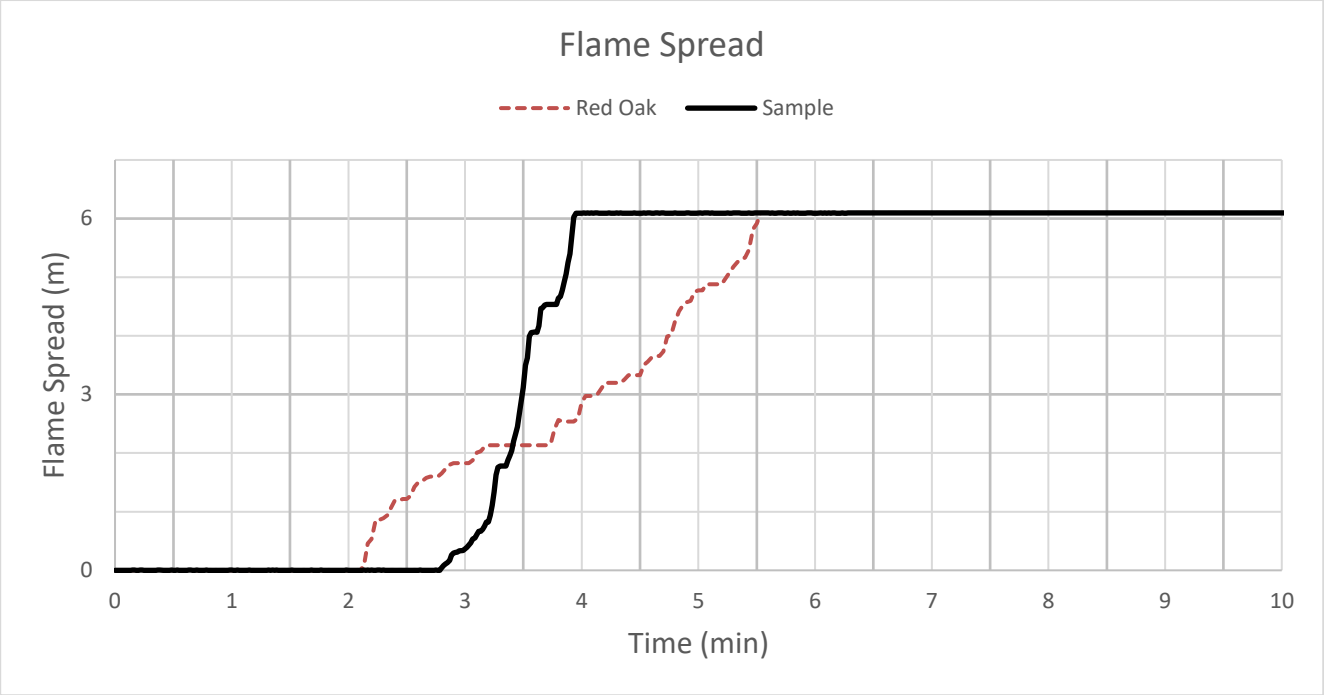
Test Data



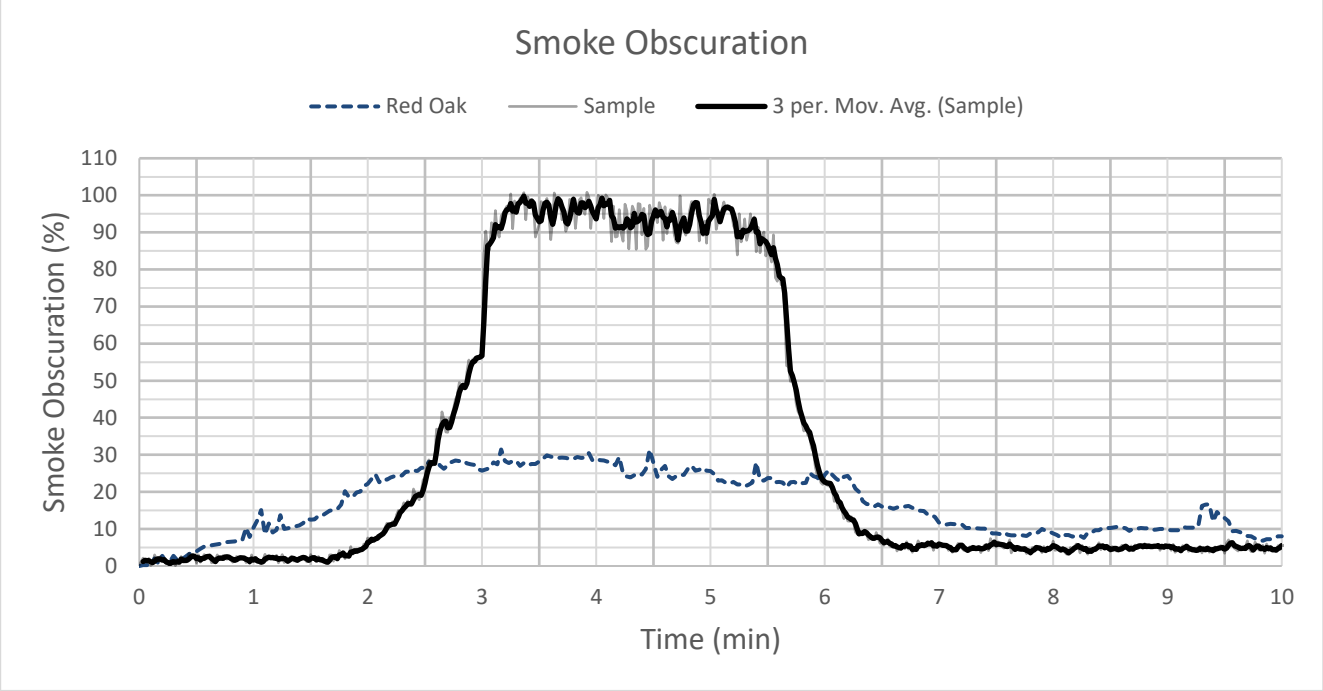
The formula to calculate the Flame Spread Value depends on the area under the curve in the graph above. If the area under the curve is greater than 29.7 (m x min), formula (1) below is used. If the area under the curve is less than or equal to 29.7 (m x min), formula (2) below is used is calculated

$$(1)\ FSV = \frac{1640}{59.4 - A_T}$$

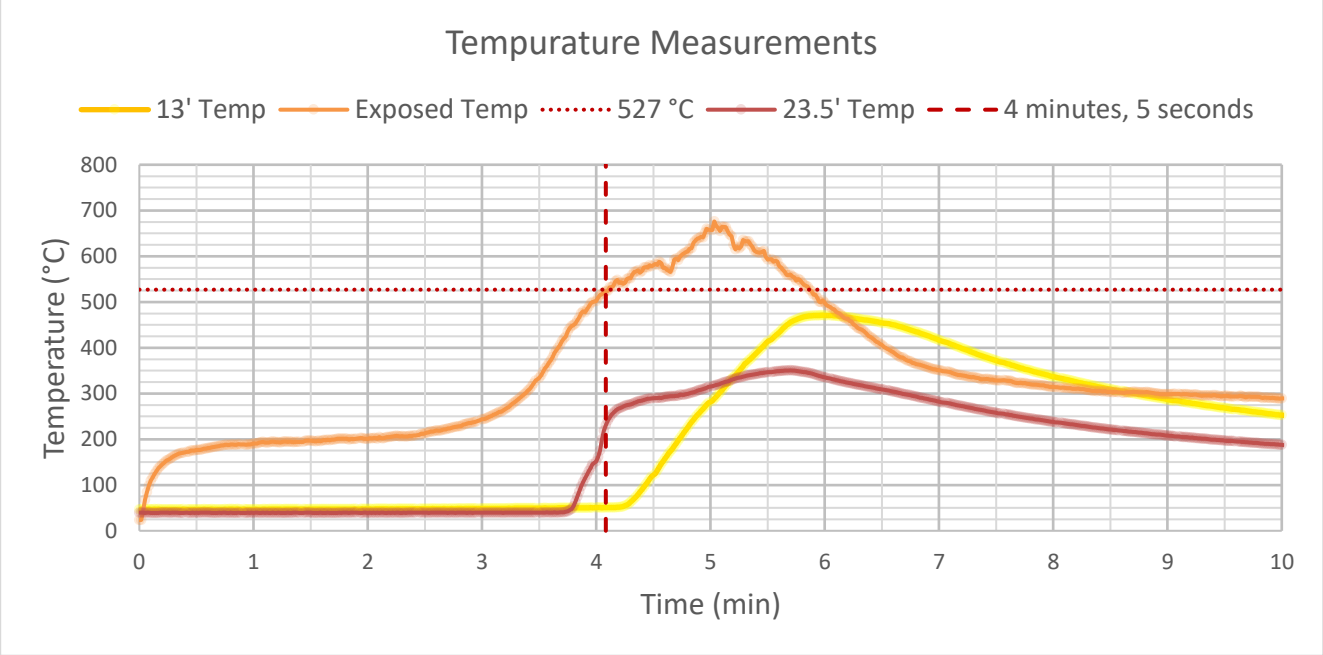
$$(2)\ FSV = 1.85 \times A_T$$

Where A_T = Flame Spread area under the curve

Flame Spread Value	
FS area under the curve [m x min] .....:	39.8
Flame Spread Index.....:	**83.5**



Smoke Obscuration		
Area under the obscuration curve [% x sec] ..... :	18955
Red Oak Calibration Area [% x sec] ..... :	10149
Smoke Developed Index ..... :	**186.8**



Time to 527°C at the exposed thermocouple: 245 seconds

Observations:

The ignition of the material: 66 seconds.

Final Result:

- Flame Spread Index: 83.5
- Smoke Development Index: 186.8

APPENDIX D – IEC/ISO 17025:2005 ACCREDITATION CERTIFICATE

For complete scope of certification use:

https://www.iasonline.org/wp-content/uploads/2017/05/TL-367-cert-New.pdf

END OF REPORT