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QUANTUM TECHNICAL SERVICES
TEST REPORT

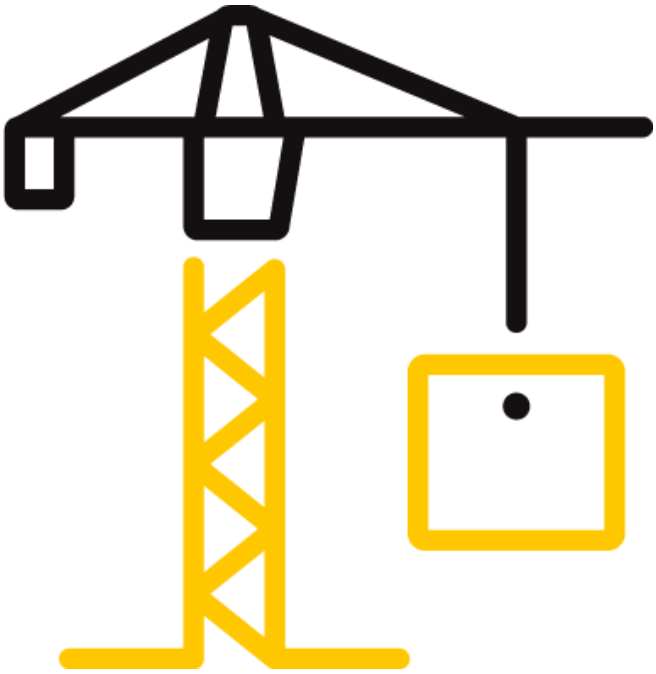
SCOPE OF WORK
REPORT OF TESTING SAFECOAT® CLEAR II APPLIED TO NOMINAL 1 IN. BY 5 IN. T&G DOUGLAS FIR FOR COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING CEITERIA: CAN/ULC S102-18, STANDARD METHOD OF TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS AND ASSEMBLIES.

REPORT NUMBER
10370534COQ-001 R1
TEST DATE(S)
03/28/19 - 03/28/19

ISSUE DATE	**[REVISED DATE]**
04/01/19	**04/10/19**

PAGES
15

DOCUMENT CONTROL NUMBER
GFT-OP-10c (AUGUST 27, 2018)



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TEST REPORT FOR QUANTUM TECHNICAL SERVICES
Report No.: 10370534COQ-001 R1
Date: 04/01/19

REPORT ISSUED TO

Quantum Technical Service
15 Reil Drive
St Albert, AB Canada T8N 3Z2

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by Quantum Technical Services to perform testing in accordance with CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies., on their Safecoat® Clear II applied at a rate of 200 ft² per gallon to nominal 1 in. by 5 in. T&G Douglas Fir. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek Testing Services NA Ltd. (Intertek) test facility in Coquitlam, BC Canada.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2
SUMMARY OF TEST RESULTS

The samples of Safecoat® Clear II applied to nominal 1 in. by 5 in. T&G applied at a rate of 200 ft² per gallon to Douglas Fir submitted by Quantum Technical Services were tested in accordance with CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

The product test results are presented in Section 7 of this report.

For INTERTEK B&C:

COMPLETED BY:	Sean Fewer	**REVIEWED BY:**	Greg Philp
TITLE:	Technician – B&C	**TITLE:**	Reviewer – B&C
SIGNATURE:		**SIGNATURE:**	
DATE:	04/01/19	**DATE:**	04/01/19

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SECTION 3
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

SECTION 4
MATERIAL SOURCE/INSTALLATION

Samples were submitted to Intertek directly from the client and were not independently selected for testing and Intertek accepts no responsibility for any inaccuracies provided. The sample material was received at the Evaluation Center on March 18, 2019.

SECTION 5
EQUIPMENT

ASSET #	DESCRIPTION	MODEL	CAL DUE DATE
WH2189	Photocell	Huygen 856	10/09/19
WH 2190	Smoke Opacity Meter	Huygen	10/09/19
WH 2494	Data Logger	Yokogawa DA100	07/18/19

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Sean Fewer	Intertek B&C
Greg Philp	Intertek B&C

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SECTION 7
TEST CALCULATIONS

The results of the tests are expressed by indexes, which compare the characteristics of the sample under tests relative to that of select grade red oak flooring and inorganic-cement board.

(A) Flame Spread Rating:

This index relates to the rate of progression of a flame along a sample in the 25 foot tunnel. A natural gas flame is applied to the front of the sample at the start of the test and drawn along the sample by a draft kept constant for the duration of the test. An observer notes the progression of the flame front relative to time.

The test apparatus is calibrated such that the flame front for red oak flooring passes out the end of the tunnel in five minutes, thirty seconds (plus or minus 15 seconds).

(B) Smoke Developed:

A photocell is used to measure the amount of light, which is obscured by the smoke passing down the tunnel duct. When the smoke from a burning sample obscures the light beam, the output from the photocell decreases. This decrease with time is recorded and compared to the results obtained for red oak, which is defined to be 100.

SECTION 8
TEST SPECIMEN DESCRIPTION

Upon receipt of the samples at the Intertek Coquitlam laboratory they were placed in a conditioning room where they remained in an atmosphere of 23 $\pm$ 3°C (73.4 $\pm$ 5°F) and 50 $\pm$ 5% relative humidity.

The sample material was identified by the client as Safecoat® Clear II applied at a rate of 200 ft² per gallon to nominal 1 in. by 5 in. by 8 ft. long T&G Douglas Fir.

For each trial run, five nominal 5 in. wide by 8 ft. long pieces were screwed together to form 24 in. wide sample decks. Three decks were then butted together end to end to form the required 24 ft. sample length and placed on the upper ledge of the flame spread tunnel. A layer of 6 mm reinforced cement board was placed over top of the samples, the tunnel lid was lowered into place, and the samples were then tested in accordance with CAN/ULC S102-18.

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SECTION 9
TEST RESULTS

(A) Flame Spread

The resultant flame spread ratings are as follows:
(Rating rounded to nearest 5)

Safecoat® Clear II applied at a rate of 200 ft² per gallon to nominal 1 in. by 5 in. T&G Douglas Fir	Flame Spread	Flame Spread Rating
Run 1	17	15
Run 2	14	
Run 3	16	

(B) Smoke Developed

The areas beneath the smoke developed curve and the related classifications are as follows:
(Classification rounded to nearest 5)

Safecoat® Clear II applied applied at a rate of 200 ft² per gallon to nominal 1 in. by 5 in. T&G Douglas Fir	Smoke Developed	Smoked Developed Classification
Run 1	146	120
Run 2	120	
Run 3	100	

(C) Observations

During the test runs, surface ignition occurred between 23 and 26 seconds; the flame began to progress along the sample until it reached the maximum flame spread.

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SECTION 10
CONCLUSION

The samples of Safecoat® Clear II applied at a rate of 200 ft² per gallon to nominal 1 in. by 5 in. T&G Douglas Fir submitted by Quantum Technical Services exhibited the following flame spread characteristics when tested in accordance with CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

A series of three test runs of material was conducted to conform to the requirements of the National Building Code of Canada.

Sample Material	Flame Spread Rating	Smoke Developed Classification
Safecoat® Clear II applied at a rate of 200 ft² per gallon to nominal 1 in. by 5 in. T&G Douglas Fir	15	120

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

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SECTION 11

TEST DATA (6 PAGES)

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TEST REPORT FOR QUANTUM TECHNICAL SERVICES
Report No.: 10370534COQ-001 R1
Date: 04/01/19

CAN/ULC S102-18 DATA SHEETS
Run 1

Standard: ULC S102

Client: Quantum Technical Services
Date: 03 28 2019
Project Number: 103870534
Test Number: 1
Operator: Sean Fewer

Specimen ID: Safe Coat Clear II on douglas fir

TEST RESULTS

FLAMESPREAD INDEX: 15
SMOKE DEVELOPED INDEX: 145

SPECIMEN DATA . . .

Time to Ignition (sec): 26
Time to Max FS (sec): 63
Maximum FS (mm): 1004.5
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (C): 295
Time to Max Temperature (sec): 596
Total Fuel Burned (cubic feet): 45.70

FS*Time Area (M*min): 9.3
Smoke Area (%A*min): 229.6
Unrounded FSI: 17.2
Unrounded SDI: 145.8

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 48.0
Red Oak Smoke Area (%A*min): 157.5

Tested By: SF

Reviewed By:

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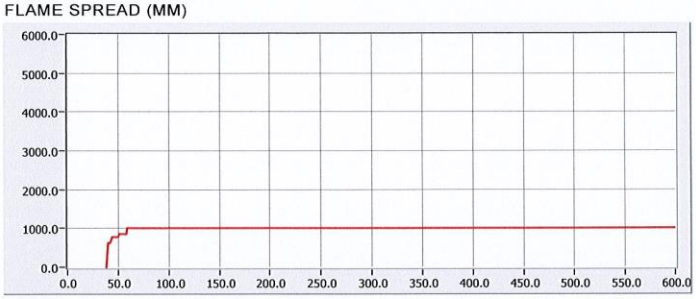
Report No.: 10370534COQ-001 R1
Date: 04/01/19

CAN/ULC S102-18 DATA SHEETS
Run 1

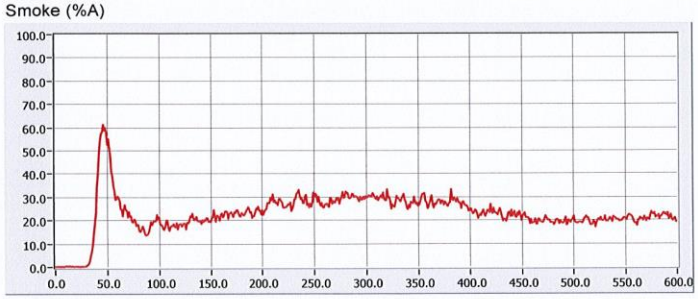
Client: Quantum Technical Services Specimen ID: Safe Coat Clear II on douglas fir

Test No.: 1 Standard: ULC S102

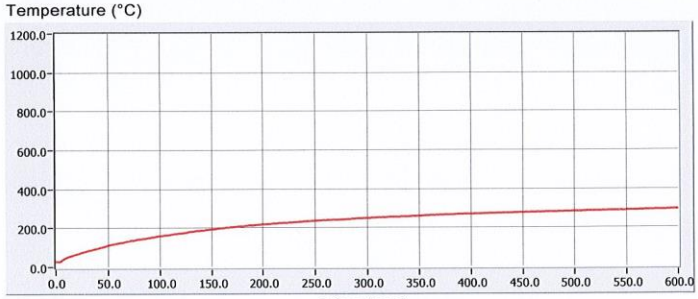
FLAME SPREAD (MM)



Smoke (%A)



Temperature (°C)



Time (sec)

600

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TEST REPORT FOR QUANTUM TECHNICAL SERVICES
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Date: 04/01/19

CAN/ULC S102-18 DATA SHEETS
Run 2

Standard: ULC S102 Page 1 of 2

Client: Quantum Technical Services
Date: 03 28 2019
Project Number: 103870534
Test Number: 2
Operator: Sean Fewer

Specimen ID: Safe Coat Clear II on douglas fir

TEST RESULTS

FLAMESPREAD INDEX: 15
SMOKE DEVELOPED INDEX: 120

SPECIMEN DATA . . .

Time to Ignition (sec): 23
Time to Max FS (sec): 37
Maximum FS (mm): 780.3
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (C): 300
Time to Max Temperature (sec): 600
Total Fuel Burned (cubic feet): 45.70

FS*Time Area (M*min): 7.4
Smoke Area (%A*min): 188.8
Unrounded FSI: 13.6
Unrounded SDI: 119.8

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 48.0
Red Oak Smoke Area (%A*min): 157.5

Tested By: SF Reviewed By:

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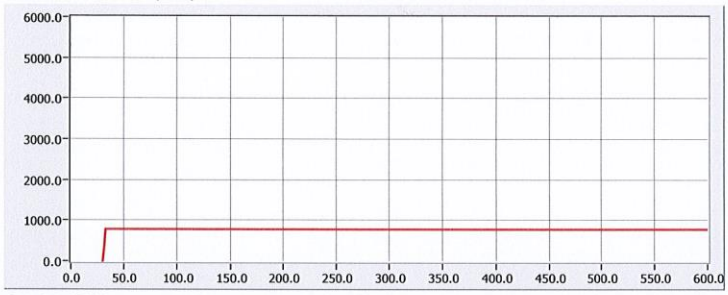
TEST REPORT FOR QUANTUM TECHNICAL SERVICES
Report No.: 10370534COQ-001 R1
Date: 04/01/19

CAN/ULC S102-18 DATA SHEETS
Run 2

Client: Quantum Technical Services Specimen ID: Safe Coat Clear II on douglas fir

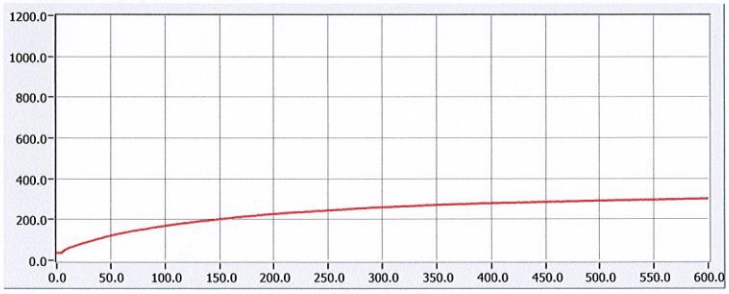
Test No.: 2 Standard: ULC S102

FLAME SPREAD (MM)



Smoke (%A)

Temperature (°C)



Time (sec)

600

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Report No.: 10370534COQ-001 R1
Date: 04/01/19

CAN/ULC S102-18 DATA SHEETS
Run 3

Standard: ULC S102

Client: Quantum Technical Services
Date: 03 28 2019
Project Number: 103870534
Test Number: 3
Operator: Sean Fewer

Specimen ID: Safe Coat Clear II on douglas fir

TEST RESULTS

FLAMESPREAD INDEX: 15
SMOKE DEVELOPED INDEX: 100

SPECIMEN DATA . . .

Time to Ignition (sec): 24
Time to Max FS (sec): 224
Maximum FS (mm): 1042.1
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (C): 293
Time to Max Temperature (sec): 592
Total Fuel Burned (cubic feet): 45.70

FS*Time Area (M*min): 8.9
Smoke Area (%A*min): 157.4
Unrounded FSI: 16.4
Unrounded SDI: 99.9

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 48.0
Red Oak Smoke Area (%A*min): 157.5

Tested By: SF

Reviewed By:

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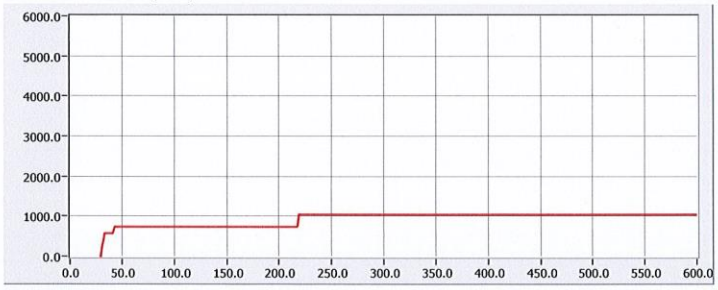
TEST REPORT FOR QUANTUM TECHNICAL SERVICES
Report No.: 10370534COQ-001 R1
Date: 04/01/19

CAN/ULC S102-18 DATA SHEETS
Run 3

Client: Quantum Technical Services Specimen ID: Safe Coat Clear II on douglas fir

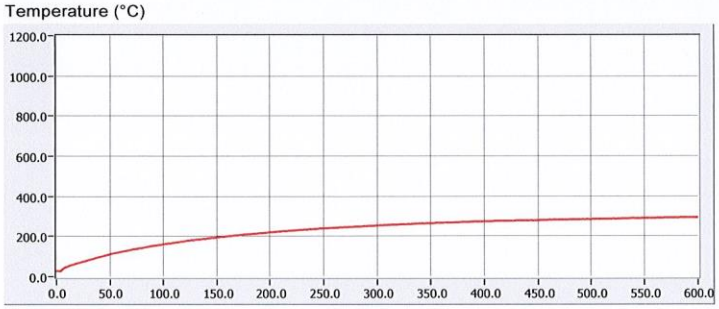
Test No.: 3 Standard: ULC S102

FLAME SPREAD (MM)



Smoke (%A)

Temperature (°C)



Time (sec)

600

Tested By: SF Reviewed By: _____

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TEST REPORT FOR QUANTUM TECHNICAL SERVICES
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SECTION 12
PHOTOGRAPHS

Photo No. 1
Pre Test

Photo No. 2
Post Test

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SECTION 13
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	04/01/19	N/A	Original Report Issue
1	04/10/19	C,2,4,5,6	Added Application Volume