

# QUANTUM TECHNICAL SERVICES

## TEST REPORT

### REPORT ISSUED TO

Quantum Technical Services  
15 Riel Drive  
St Albert, AB T8N 3Z2 CAN

### SCOPE OF WORK

Report of testing of SafeCoat® Steel applied to ½ in. thick Cement Board for compliance with the applicable requirements of the following criteria: CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

### REPORT NUMBER

103808740COQ-001b

### ISSUE DATE

14-February -2019

### REVISION DATE

31-July -2019

### PAGES

14

### DOCUMENT CONTROL NUMBER

GFT-OP-10b (13-March-2017)  
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## TEST REPORT FOR QUANTUM TECHNICAL SERVICES

Report No.:1038085740

Revision Date: July 31, 2019

### CONCLUSION

The samples of SafeCoat® Steel applied to ½ in. thick Cement Board 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.



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**TECHNICIAN**  
**BUILDING PRODUCTS**



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**Greg Philp**  
**REVIEWER**  
**BUILDING PRODUCTS CANADA**

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## SECTION 2

### OBJECTIVE

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for Quantum Technical Services, to evaluate the surface burning characteristics of SafeCoat® Steel applied to ½ in. thick Cement Board. Testing was conducted in accordance with the standard methods of CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

This evaluation began February 8, 2019 and was completed February 8, 2019.

## SECTION 3

### SAMPLE SELECTION

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 January 30, 2019.

## SECTION 4

### SAMPLE ASSEMBLY AND 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  $23 \pm 3^{\circ}\text{C}$  ( $73.4 \pm 5^{\circ}\text{F}$ ) and  $50 \pm 5\%$  relative humidity.

The sample material was identified by the client as SafeCoat® Steel applied to ½ in. thick Cement Board and was white in color.

For each trial run, three 8 ft. long by 24 in. wide sample panels were butted together and placed on the upper ledge of the flame spread tunnel to form the required 24 ft. sample length. 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.

## SECTION 5

### TESTING AND EVALUATION METHODS

#### TEST STANDARD

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.

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**SECTION 6****RESULTS AND OBSERVATIONS****(A) Flame Spread**

The resultant flame spread ratings are as follows:

(Rating rounded to nearest 5)

SafeCoat® Steel applied to ½ in. thick Cement Board	Flame Spread	Flame Spread Rating
Run 1	0	0
Run 2	0	
Run 3	0	

**(B) Smoke Developed**

The areas beneath the smoke developed curve and the related classifications are as follows:

(Classification rounded to nearest 5)

SafeCoat® Steel applied to ½ in. thick Cement Board	Smoke Developed	Smoke Developed Classification
Run 1	21	25
Run 2	27	
Run 3	31	

**(C) Observations**

During the test runs, there was no visible surface ignition.

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## SECTION 7 CONCLUSION

The samples of SafeCoat® Steel applied to ½ in. thick Cement Board 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® Steel applied to ½ in. thick Cement Board	0	25

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.

**SECTION 8**

**APPENDIX A: TEST DATA (6 PAGES)**



**CAN/ULC S102-18 DATA SHEETS**

**Run 1**

Standard: ULC S102

Page 1 of 2

Client: Quantum Technicakl Services  
Date: 02 11 2019  
Project Number: 103808740  
Test Number: 1  
Operator: Sean Fewer  
Specimen ID: Safe Coat TFI (White) on 1/2 in. thick Cement Board

TEST RESULTS

FLAMESPREAD INDEX: 0  
SMOKE DEVELOPED INDEX: 20

SPECIMEN DATA . . .

Time to Ignition (sec): 0  
Time to Max FS (sec): 317  
Maximum FS (mm): 29.6  
Time to 527 C (sec): Never Reached  
Time to End of Tunnel (sec): Never Reached  
Max Temperature (C): 279  
Time to Max Temperature (sec): 592  
Total Fuel Burned (cubic feet): 45.70  
  
FS\*Time Area (M\*min): 0.1  
Smoke Area (%A\*min): 33.3  
Unrounded FSI: 0.3  
Unrounded SDI: 21.1

CALIBRATION DATA . . .

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

Tested By: 5F

Reviewed By: [Signature]

Benchmark and Non-standard Test Report: Report must be reproduced in its entirety

### CAN/ULC S102-18 DATA SHEETS

#### Run 1

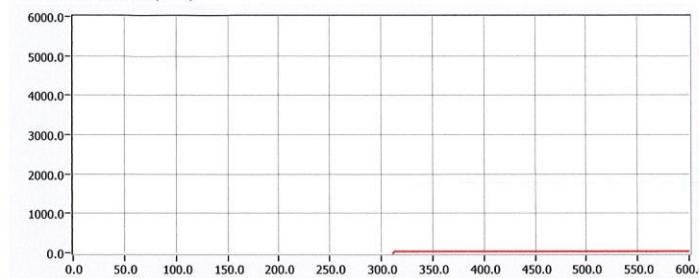
Client: Quantum Technical Services

Specimen ID: Safe Coat TFI (White) on 1/2 in. thick

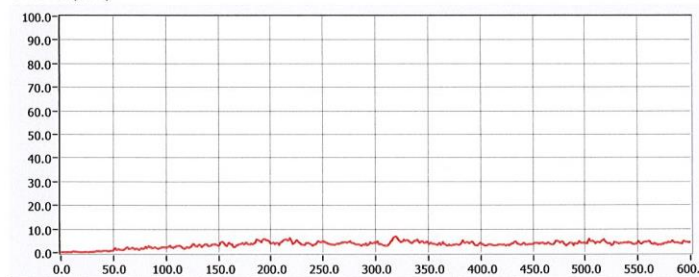
Test No.: 1

Standard: ULC S102

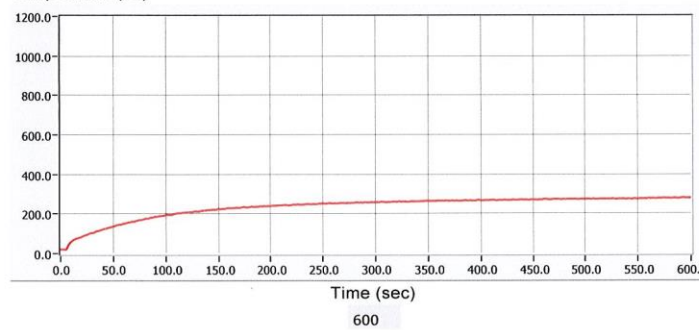
#### FLAME SPREAD (MM)



#### Smoke (%A)



#### Temperature (°C)



Tested By: SF

Reviewed By: [Signature]

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**CAN/ULC S102-18 DATA SHEETS**  
**Run 2**

Standard: ULC S102

Page 1 of 2

Client: Quantum Technical Services  
Date: 02 11 2019  
Project Number: 103808740  
Test Number: 2  
Operator: Sean Fewer  
Specimen ID: Safe Coat TFI (White) on 1/2 in. thick Cement Board

TEST RESULTS

**FLAMESPREAD INDEX: 0**  
**SMOKE DEVELOPED INDEX: 25**

SPECIMEN DATA . . .

Time to Ignition (sec): 0  
Time to Max FS (sec): 568  
Maximum FS (mm): 48.5  
Time to 527 C (sec): Never Reached  
Time to End of Tunnel (sec): Never Reached  
Max Temperature (C): 277  
Time to Max Temperature (sec): 596  
Total Fuel Burned (cubic feet): 45.70  
  
FS\*Time Area (M\*min): 0.0  
Smoke Area (%A\*min): 43.2  
Unrounded FSI: 0.1  
Unrounded SDI: 27.4

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: [Signature]

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### CAN/ULC S102-18 DATA SHEETS

#### Run 2

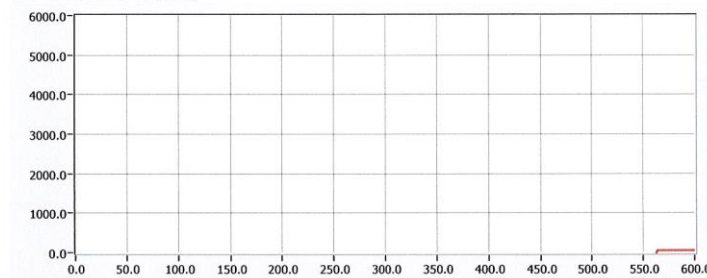
Client: Quantum Technical Services

Specimen ID: Safe Coat TFI (White) on 1/2 in. thick

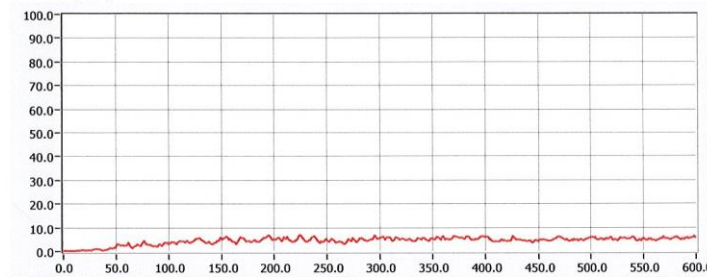
Test No.: 2

Standard: ULC S102

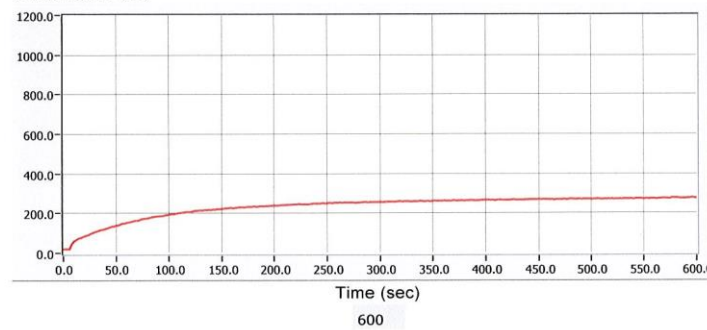
FLAME SPREAD (MM)



Smoke (%A)



Temperature (°C)



Tested By: SF

Reviewed By: [Signature]

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**CAN/ULC S102-18 DATA SHEETS**

**Run 3**

Standard: ULC S102

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Client: Quantum Technical Services  
Date: 02 11 2019  
Project Number: 103808740  
Test Number: 3  
Operator: Sean Fewer  
  
Specimen ID: Safe Coat TFI (White) on 1/2 in. thick Cement Board

TEST RESULTS

FLAMESPREAD INDEX: 0  
SMOKE DEVELOPED INDEX: 30

SPECIMEN DATA . . .

Time to Ignition (sec): 0  
Time to Max FS (sec): 562  
Maximum FS (mm): 114.5  
Time to 527 C (sec): Never Reached  
Time to End of Tunnel (sec): Never Reached  
Max Temperature (C): 277  
Time to Max Temperature (sec): 577  
Total Fuel Burned (cubic feet): 45.70  
  
FS\*Time Area (M\*min): 0.1  
Smoke Area (%A\*min): 49.0  
Unrounded FSI: 0.1  
Unrounded SDI: 31.1

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: [Signature]

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### CAN/ULC S102-18 DATA SHEETS

#### Run 3

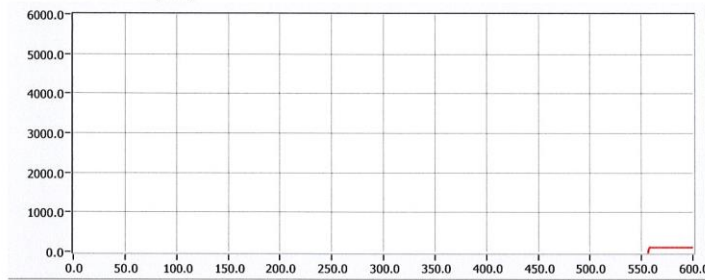
Client: Quantum Technical Services

Specimen ID: Safe Coat TFI (White) on 1/2 in. thick

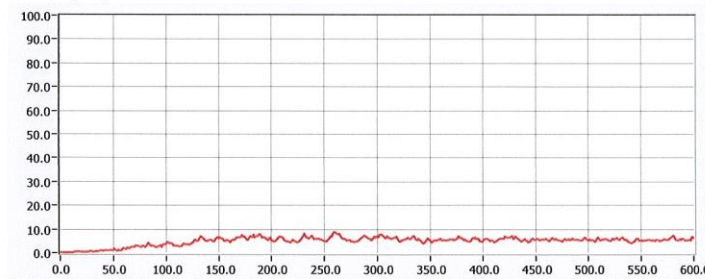
Test No.: 3

Standard: ULC S102

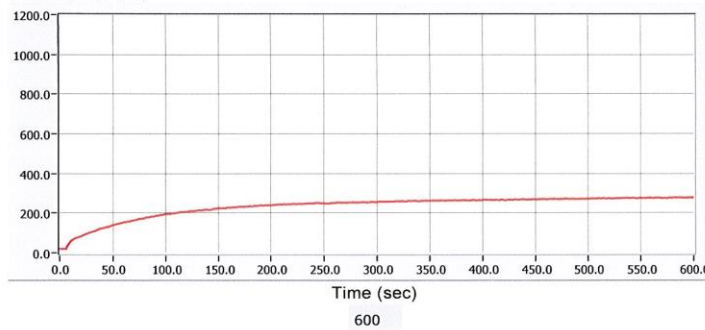
#### FLAME SPREAD (MM)



#### Smoke (%A)



#### Temperature (°C)



Tested By: SF

Reviewed By: [Signature]

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**REVISION SUMMARY**

<b>DATE</b>	<b>PAGE</b>	<b>SUMMARY</b>
February 14, 2019	All	Original Issue Date
July 31, 2019	Cover, 2,4,6,7	Changed Product Name From TFI To Steel

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