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RADIAL ENGINEERING LTD

TEST REPORT

SCOPE OF WORK
REPORT OF TESTING PRIMACOUSTIC PRIMABLOCK LOADED VINYL BARRIER MATERIAL FOR COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING CRITERIA: CAN/ULC S102.2-18 STANDARD METHOD OF TEST FOR SURFACE BURNING CHARACTERISTICS OF FLOORING, FLOOR COVERING, AND MISCELLANEOUS MATERIALS AND ASSEMBLIES.

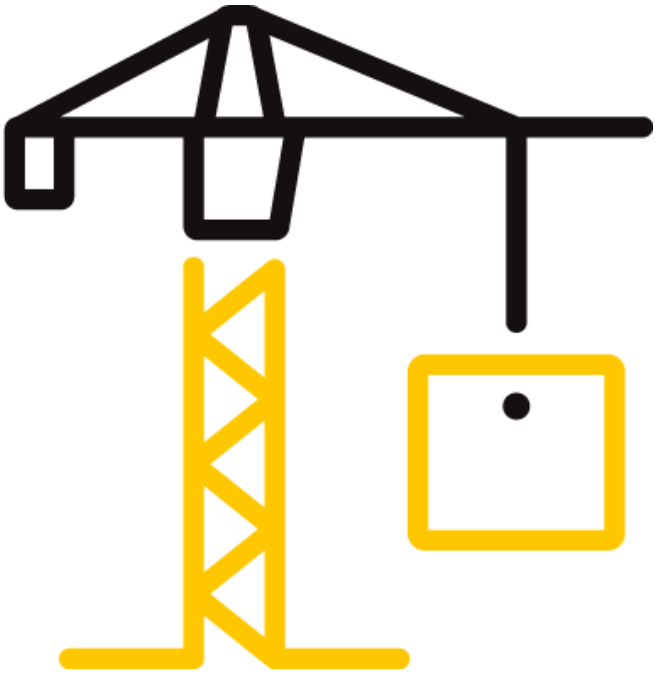
REPORT NUMBER
105315202COQ-002 R1

TEST DATE(S)
04/03/23 - 04/03/23

ISSUE DATE **REVISION DATE**
04/05/23 04/05/23

PAGES
16

DOCUMENT CONTROL NUMBER
GFT-OP-10c (09/29/20)



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TEST REPORT FOR RADIAL ENGINEERING LTD
Report No.: 105315202COQ-002 R1
Date: 04/05/23

REPORT ISSUED TO

RADIAL ENGINEERING LTD
1165-1845 KINGSWAY AVE
PORT COQUITLAM, BC V3C 1S9 CAN

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by Radial Engineering Ltd 1165-1845 Kingsway Ave Port Coquitlam, BC V3C 1S9 CAN. to perform testing in accordance with CAN/ULC S102.2-18 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies., on 3mm thick Primacoustic Primablock loaded Vinyl Barrier material. 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 at 1500 Brigantine Drive Coquitlam, BC Canada.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called “Shared Risk approach,” of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens (where required by Certification or Accreditation bodies), or other pertinent project documentation, will be retained for the entire test record retention period.

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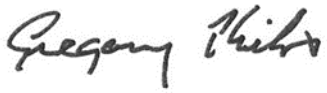
SECTION 2
SUMMARY OF TEST RESULTS

The samples of 3 mm thick Primacoustic Primablock loaded Vinyl Barrier material by Radial Engineering Ltd were tested in accordance with CAN/ULC S102.2-18 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies.

The product test results are presented in Section 10 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:**	
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SECTION 3
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

CAN/ULC S102.2-18 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous 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.

SECTION 5
EQUIPMENT

ASSET #	DESCRIPTION	MODEL	CAL DUE DATE
WH2189	Photocell	Huygen 856	11/04/23
WH 2190	Smoke Opacity Meter	Huygen	11/04/23
WH 1052	Data Logger	Phidgets DAQ 2020	11/04/23
WH 2190	FS Tunnel	N/A	03/20/24

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Sean Fewer	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 7620 mm 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 ± 3°C (73.4 ± 5°F) and 50 ± 5% relative humidity.

The sample material was identified as "3mm thick Primacoustic Primablock loaded Vinyl Barrier".

For each trial run, 444 mm wide by 7315 mm of sample material was placed on the floor of the tunnel. A layer of 6mm reinforced cement board was placed on the upper ledges of the tunnel, the tunnel lid was lowered into place, and the samples were then tested in accordance with CAN/ULC S102.2-18 at a room temperature of 21. °C and 52% humidity.

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SECTION 9
TEST RESULTS

(A) Flame Spread

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

Primacoustic Primablock loaded Vinyl Barrier	Flame Spread	Flame Spread Rating
Run 1	109	90
Run 2	76	
Run 3	87	

(B) Smoke Developed

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

Primacoustic Primablock loaded Vinyl Barrier	Smoke Developed	Smoked Developed Classification
Run 1	301	290
Run 2	260	
Run 4	316	

Observations

During the test runs, surface ignition occurred between 64 and 75 seconds. The flame then began to progress along the sample length until it reached the maximum flame spread. This was the case for all three test runs

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SECTION 10
CONCLUSION

The samples of 3mm thick Primacoustic Primablock loaded Vinyl Barrier material submitted by Radial Engineering Ltd exhibited the following flame spread characteristics when tested in accordance with CAN/ULC S102.2-18 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous 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
Primacoustic Primablock loaded Vinyl Barrier	90	290

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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CAN/ULC S102.2-18 DATA SHEETS
Run 1

Standard: ULC S102.2

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Radial engineering
Date: 03 Apr 2023
Project Number: 105315202
Test Number: 1
Operator: Sean Fewer

Specimen ID and Description:

Gasket material

TEST RESULTS

FLAMESPREAD INDEX: 109.000
SMOKE DEVELOPED INDEX: 301.000

SPECIMEN DATA

Time to Ignition (sec): 64.491
Time to Max Flame Spread (min): 3.258
Maximum Flame Spread (mm): 5.940
Time to 527 C / 980 F (sec): 0.000
Max Temperature (deg F or C as per test standard): 512.290
Time to Max Temperature (sec): 343.491
Total Fuel Burned (cubic feet): 51.672

Flame Spread*Time Area (M*min): 44.370
Smoke Area (%A*min): 450.420
Unrounded FSI: 109.114
Unrounded SDI: 301.172

CALIBRATION DATA

Time to Ignition of Last Red Oak (sec): 41

Calibrated Smoke Area (%A*min): 149.556

15 point Heptane average for E84-19b
5 point Red Oak average for S102

Tested by: S.F. Reviewed by:

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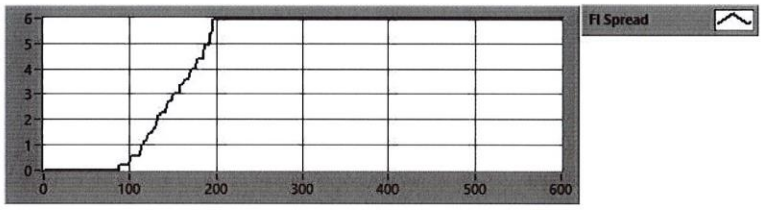
TEST REPORT FOR RADIAL ENGINEERING LTD
Report No.: 105315202COQ-002 R1
Date: 04/05/23

CAN/ULC S102.2-18 DATA SHEETS
Run 1

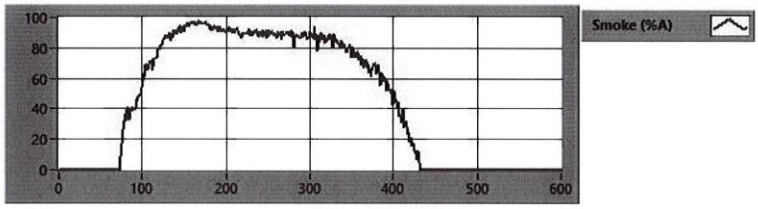
Client: Radial engineering | Project Number: 105315202

Test Number: 1 | Test Standard: ULC S102.2

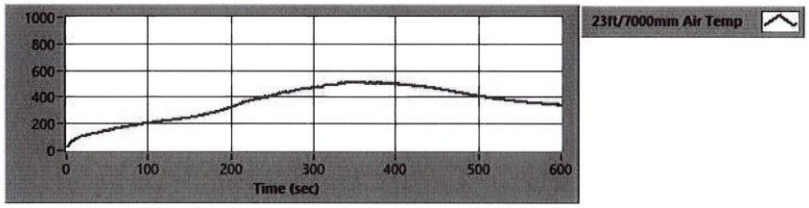
FLAME SPREAD



SMOKE (%A)



TEMPERATURE



Tested by: S.F. Reviewed by:

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TEST REPORT FOR RADIAL ENGINEERING LTD
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CAN/ULC S102.2-18 DATA SHEETS
Run 2

Standard: ULC S102.2

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Radial Engineering
Date: 03 Apr 2023
Project Number: 105315202
Test Number: 2
Operator: Sean Fewer

Specimen ID and Description:

Gasket material 1/4 inch thick

Room temp 21 C RH% 52

TEST RESULTS

FLAMESPREAD INDEX: 76.000
SMOKE DEVELOPED INDEX: 260.000

SPECIMEN DATA

Time to Ignition (sec): 74.741
Time to Max Flame Spread (min): 4.479
Maximum Flame Spread (mm): 5.940
Time to 527 C / 980 F (sec): 6.146
Max Temperature (deg F or C as per test standard): 543.160
Time to Max Temperature (sec): 415.740
Total Fuel Burned (cubic feet): 51.595

Flame Spread*Time Area (M*min): 37.757
Smoke Area (%A*min): 389.030
Unrounded FSI: 75.777
Unrounded SDI: 260.124

CALIBRATION DATA

Time to Ignition of Last Red Oak (sec): 41

Calibrated Smoke Area (%A*min): 149.556

15 point Heptane average for E84-19b
5 point Red Oak average for S102

Tested by: S.F. Reviewed by: gp

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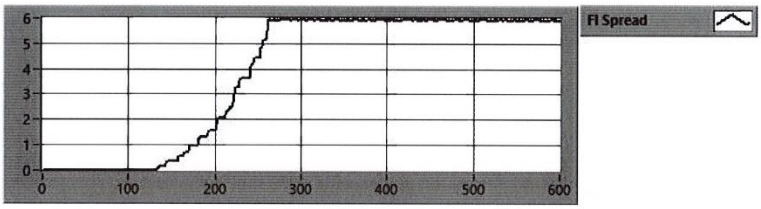
CAN/ULC S102.2-18 DATA SHEETS
Run 2

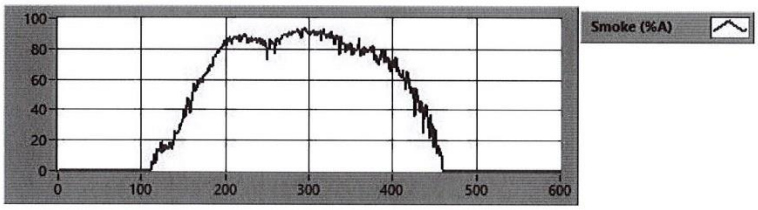
Client: Radial Engineering | Project Number: 105315202

Test Number: 2 | Test Standard: ULC S102.2

FLAME SPREAD



SMOKE (%A)



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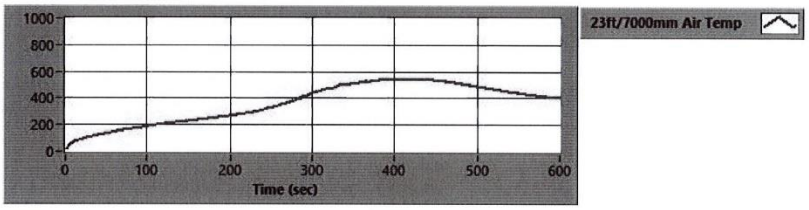

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CAN/ULC S102.2-18 DATA SHEETS
Run 3

Standard: ULC S102.2

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Radial Engineering
Date: 03 Apr 2023
Project Number: 105315202
Test Number: 3
Operator: Sean Fewer

Specimen ID and Description:

Gasket material

Room Temp 21C RH% 52

TEST RESULTS

FLAMESPREAD INDEX: 87.000
SMOKE DEVELOPED INDEX: 316.000

SPECIMEN DATA

Time to Ignition (sec): 70.095
Time to Max Flame Spread (min): 3.735
Maximum Flame Spread (mm): 5.940
Time to 527 C / 980 F (sec): 5.535
Max Temperature (deg F or C as per test standard): 544.450
Time to Max Temperature (sec): 389.095
Total Fuel Burned (cubic feet): 51.554

Flame Spread*Time Area (M*min): 40.512
Smoke Area (%A*min): 472.527
Unrounded FSI: 86.828
Unrounded SDI: 315.954

CALIBRATION DATA

Time to Ignition of Last Red Oak (sec): 41

Calibrated Smoke Area (%A*min): 149.556

15 point Heptane average for E84-19b
5 point Red Oak average for S102

Tested by: S.F. Reviewed by: gp

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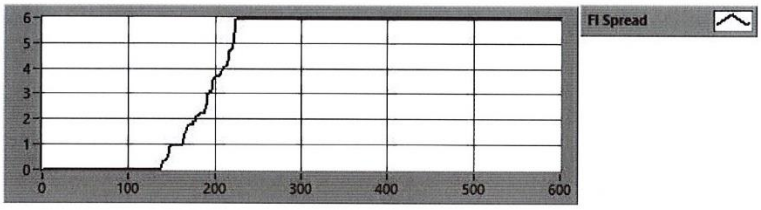
Date: 04/05/23

CAN/ULC S102-18 DATA SHEETS
Run 3

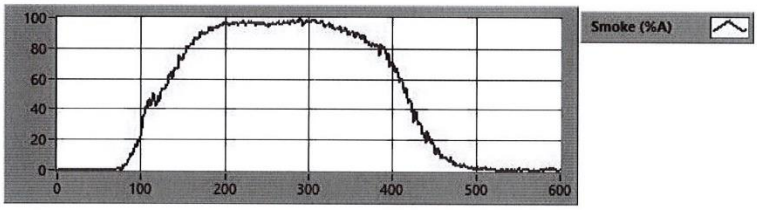
Client: Radial Engineering | Project Number: 105315202

Test Number: 3 | Test Standard: ULC S102.2

FLAME SPREAD



SMOKE (%A)



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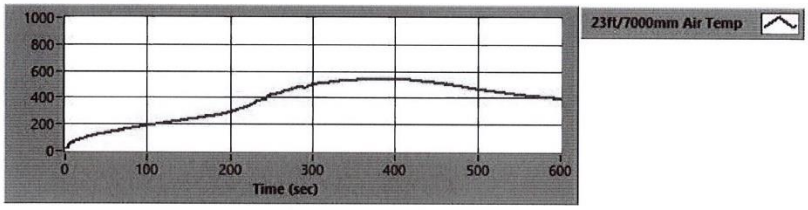

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SECTION 12
PHOTOGRAPHS

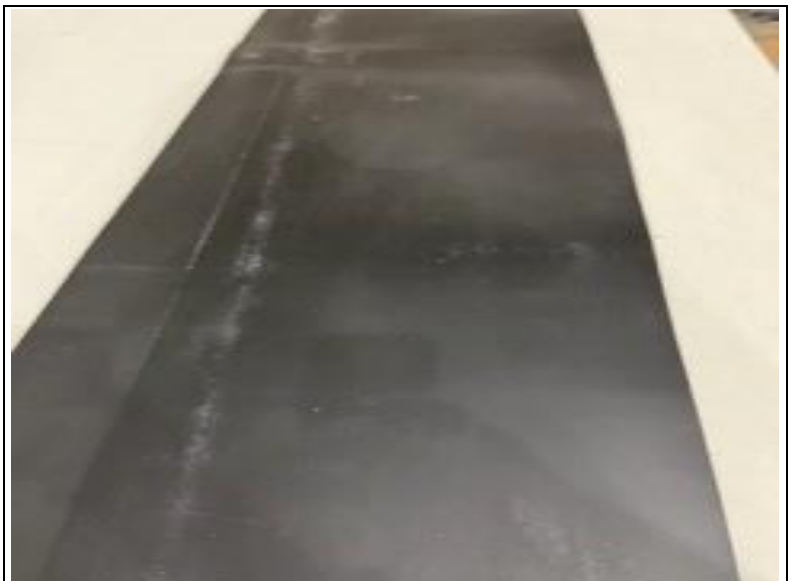

Photo No. 1
Pre-Test

Photo No. 2
Post Test

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SECTION 13

REVISION LOG

REVISION #	DATE	SECTION	REVISION
1	04/05/23	1-16	Product Name