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# RADIAL INGINEERING LTD

# TEST REPORT

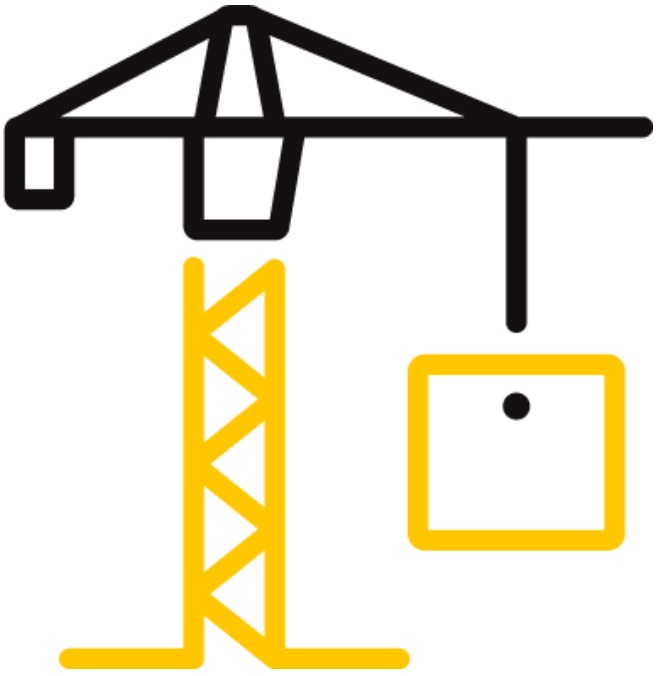
**SCOPE OF WORK**
REPORT OF TESTING PRIMACOUSTIC PRIMABLOCK LOADED VINYL BARRIER MATERIAL FOR COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING CRITERIA: ASTM E84-21a STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS.

**REPORT NUMBER**
105315202COQ-001 R1
**TEST DATE(S)**
04/05/23 - 04/05/23

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

**PAGES**
12

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

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**TEST REPORT FOR RADIAL INGINEERING LTD**
Report No.: 105315202COQ-001 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 ASTM E84-21a Standard Test Method for Surface Burning Characteristics of Building Materials on their 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 in 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 their 3mm thick Primacoustic Primoblock Gasket material submitted by Radial Engineering Ltd were tested in accordance with Primablock loaded Vinyl Barrier ASTM E84-21a Standard Test Method for Surface Burning Characteristics of Building Materials.

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:** | Senior Technician – B&C |
| **SIGNATURE:** |  | **SIGNATURE:** |  |
| **DATE:** | 04/05/23 | **DATE:** | 04/05/23 |

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## SECTION 3
**TEST METHOD(S)**

The specimens were evaluated in accordance with the following:

ASTM E84-21a Standard Test Method for Surface Burning Characteristics of Building Materials.

## 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 |
|---|---|---|---|
| WH 2189 | 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 |
| | FS Tunnel | N/A | 11/17/23 |

## 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 Index:**

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 heptane, 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 this trial run, 24 in. wide by 24 ft. length of sample material was placed on the upper ledge of the flame spread tunnel. The sample material was supported by ¼ in. steel rods spaced every 24 in. and 20 ga. 2 in x 2 in galvanized steel netting spanning the upper ledge of the flame spread tunnel A layer of 6 mm reinforced cement board was placed over top of the sample material, the tunnel lid was lowered into place, and the samples were then tested in accordance with ASTM E84-21a Standard Test Method for Surface Burning Characteristics of Building Materials at a room temperature of 70 °F and 52% humidity.

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## SECTION 9
## TEST RESULTS

### (A) Flame Spread

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

| Sample Material | Flame Spread | Flame Spread Index |
|---|---|---|
| 3mm thick Primacoustic Primablock loaded Vinyl Barrier | 100 | 100 |

### (B) Smoke Developed

The areas beneath the smoke developed curve and the related indexes are as follows:
(For smoke developed indexes 200 or more, index is rounded to the nearest 50. For smoke developed indexes less than 200, index is rounded to nearest 5)

| Sample Material | Smoke Developed | Smoked Developed Index |
|---|---|---|
| 3mm thick Primacoustic Primablock loaded Vinyl Barrier | 353 | 350 |

### (C) Observations

During the test, the sample surface ignited at approximately 41 seconds; the flame began to progress along the sample until it reached the maximum flame spread.

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**COMMENTARY ON CLASSIFICATION**

Neither ASTM E84 nor UL 723 include classification criteria for the results obtained from testing. The International Building Code® (IBC), NFPA 101: Life Safety Code® (NFPA 101), and NFPA 5000: Building Construction and Safety Code® (NFPA 5000) all describe a set of classification criteria required for interior wall and ceiling finish materials based on Flame Spread Index and Smoke Developed Index when tested in accordance with ASTM E84 or UL 723. The classification criteria for all three model codes is the same:

| Class | Flame Spread Index | Smoke Developed Index |
|---|---|---|
| A | 0-25 | 0-450 |
| B | 26-75 | 0-450 |
| C | 76-200 | 0-450 |

Note that classification under this scheme for interior wall and ceiling finishes does not strictly apply to all products or materials tested in accordance with ASTM E84 or UL 723 because not all products or materials are recommended or suitable for use as interior wall or ceiling finish materials in buildings, regardless of the surface burning characteristics. Consult with the product manufacturer and the local authority having jurisdiction (AHJ) regarding specific applications of a given product or material.

## SECTION 10
## CONCLUSION

The samples 3mm thick Primacoustic Primablock loaded Vinyl Barrier submitted by Radial Engineering Ltd exhibited the following flame spread characteristics when tested in accordance with ASTM E84-21a Standard Test Method for Surface Burning Characteristics of Building Materials

| Sample Material | Flame Spread Index | Smoked Developed Index |
|---|---|---|
| 3mm thick Primacoustic Primablock loaded Vinyl Barrier | 100 | 350 |

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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# TEST DATA (2 PAGES)

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# ASTM E84-21a DATA SHEETS



**Standard**: ASTM E84/UL723

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Radial Engineering
Date: 05 Apr 2023
Project Number: 105315202
Test Number: 1
Operator: Sean Fewer

Specimen ID and Description:

Primacoustic primablock gasket material

Room temp 21 C RH% 52

## TEST RESULTS

FLAMESPREAD INDEX: 100.000
SMOKE DEVELOPED INDEX: 350.000

## SPECIMEN DATA

Time to Ignition (sec): 40.506
Time to Max Flame Spread (min): 3.425
Maximum Flame Spread (ft): 19.500
Time to 527 C / 980 F (sec): 4.475
Max Temperature (deg F or C as per test standard): 1240.178
Time to Max Temperature (sec): 384.506
Total Fuel Burned (cubic feet): 51.420

Flame Spread*Time Area (M*min): 145.952
Smoke Area (%A*min): 234.535
Unrounded FSI: 99.903
Unrounded SDI: 353.007

## CALIBRATION DATA

Time to Ignition of Last Red Oak (sec): 47

Calibrated Smoke Area (%A*min): 66.439

15 point Heptane average for E84
5 point Red Oak average for S102

Tested by: S.F. Reviewed by:

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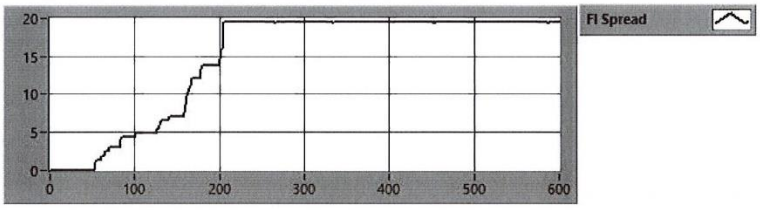
# ASTM E84-21a DATA SHEETS



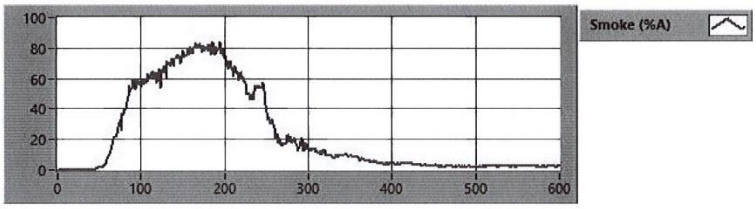
Client: Radial Engineering  Project Number: 105315202

Test Number: 1  Test Standard: ASTM E84/UL723

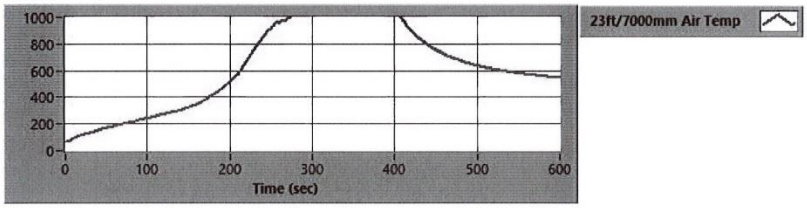
## FLAME SPREAD




## SMOKE (%A)




## TEMPERATURE




Tested by: SF.  Reviewed by: gp

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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 | 04/05/23 | N/A | Original Report Issue |
| 1 | 04/0523 | All | Corrected Product name |