REPORT NUMBER: 100593800COQ-001
ORIGINA L ISSUE DATE: December 29, 2011

EVALUATION CENTER
Intertek Testing Services NA Ltd.
1500 Brigantine Drive
Coquitlam, B.C. V3K 7C1

RENDERED TO
Radial Engineering Ltd
1588 Kebet Way
Port Coquitlam BC V3C 5M5

PRODUCT EVALUATED: Wall Panels
EVALUATION PROPERTY: Surface Burning Characteristics

Report of testing Paintable Acoustic Wall Panels for compliance with the applicable requirements of the following criteria:
CAN/ULC S102-10, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
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REVISION SUMMARY
2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for Radial Engineering Ltd. to evaluate the surface burning characteristics of 1 ¾ in. thick paintable series acoustic wall panels. Testing was conducted in accordance with the standard methods of CAN/ULC S102-10, *Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies*.

This evaluation began December 28, 2011 and was completed December 29, 2011.

3 Test Samples

3.1 SAMPLE SELECTION

Samples were submitted to Intertek directly from the client and were not independently selected for testing. The sample panels were received at the Evaluation Center on December 20, 2011.

SAMPLE AND ASSEMBLY 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 product was identified as P102 2448 09 Paintable Series Acoustic Wall Panels and measured 1 ¾ in thick by 24 in wide by 4 ft long.

For each trial run, six 4 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 S102-10.
4 Testing and Evaluation Methods

4.1. 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 asbestos-cement board.

(A) Flame Spread Classification:

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.
5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

(A) Flame Spread

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

<table>
<thead>
<tr>
<th>P102 2448 09 Paintable Acoustic Wall Panels</th>
<th>Flame Spread</th>
<th>Flame Spread Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run 1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Run 2</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Run 3</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

(B) Smoke Developed

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

<table>
<thead>
<tr>
<th>P102 2448 09 Paintable Acoustic Wall Panels</th>
<th>Smoke Developed</th>
<th>Smoked Developed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run 1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Run 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Run 3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

(C) Observations

During the tests, the sample surface ignited at approximately 19 to 28 seconds; the flame began to progress along the sample until it reached the maximum flame spread.
6  Conclusion

The P102 2448 09 Paintable Series Acoustic Wall Panels submitted by Radial Engineering Ltd. exhibited the following flame spread characteristics when tested in accordance CAN/ULC S102-10; *Method of Test for Surface Burning Characteristics of Building Materials and Assemblies*.

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

<table>
<thead>
<tr>
<th>Sample</th>
<th>Flame Spread Classification</th>
<th>Smoke Developed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>P102 2448 09 Paintable Acoustic Wall Panels</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

INTERTEK TESTING SERVICES NA LTD.

Tested and Reported by: Greg Philp  
Technician – Building Products

Reviewed by: Scott Leduc, EIT  
Reviewer, Fire Testing

GP
APPENDIX A

DATA SHEETS
CAN/ULC S102-10 DATA SHEETS
Run 1

Standard: ULC S102

Client: Radial Engineering
Date: 12 28 2011
Project Number: 100593800
Test Number: 1
Operator: Greg Philp
Specimen ID: P102 2448 00 Plasterboard Acoustic Wall Panel

TEST RESULTS

FLAMESPREAD INDEX: 10
SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA . . .

Time to Ignition (sec): 21
Time to Max FS (sec): 49
Maximum FS (mm): 623.8
Time to $57^\circ$ C (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (C): 312
Time to Max Temperature (sec): 593
Total Fuel Burned (cubic feet): 38.44

FSI*Time Area (M*min): 5.9
Smoke Area (%A*min): 2.9
Unrounded FSI: 10.9
Unrounded SFA: 2.1

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 46.0
Red Oak Smoke Area (%A*min): 136.6

Tested By: [Signature]
Reviewed By: [Signature]
CAN/ULC S102-10 DATA SHEETS

Run 1

---

Client: Radial Engineering

Specimen ID: P302 2448 09 Paintable Series Acoustic

Standard: ULC S102

---

FLAME SPREAD (MM)

---

Smoke (%A)

---

Temperature (°C)

---

Time (sec)

600
CAN/ULC S102-10 DATA SHEETS
Run 2

Standard: ULC S102

Client: Radial Engineering
Date: 12 28 2011
Project Number: 100593800
Test Number: 2
Operator: Greg Philip

Specimen ID: P102-2448 of Paintable Series Acoustic Wall Panels

TEST RESULTS

FLAMESPREAD INDEX: 10
SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA...

Time to Ignition (sec): 28
Time to Max FS (sec): 50.3
Maximum FS (mm): 508.3
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (C): 310
Time to Max Temperature (sec): 599
Total Fuel Burned (cubic feet): 38.44

FS*Time Area (M*min): 5.7
Smoke Area (%A*min): 2.6
Unrounded FSI: 10.5
Unrounded SDI: 1.9

CALIBRATION DATA...

Time to Ignition of Last Red Oak (Sec): 48.0
Red Oak Smoke Area (%A*min): 135.6

Tested By: [Signature]
Reviewed By: [Signature]
CAN/ULC S102-10 DATA SHEETS

Run 2

Client: Radial Engineering
Specimen ID: P112 244B 09 Paintable Series Acoustic
Test No.: 2
Standard: ULC S102

FLAME SPREAD (MM)

Smoke (%A)

Temperature (°C)

Tested By:  
Reviewed By:  

600 sec
CAN/ULC S102-10 DATA SHEETS
Run 3

Standard: ULC S102

Client: Radial Engineering
Date: 12/29/2011
Project Number: 100593800
Test Number: 3
Operator: Greg Philp

Specimen ID: P102 2449 09 Paintable Series Acoustic Wall Panels

TEST RESULTS

FLAMESPREAD INDEX: 15
SMOKE DEVELOPED INDEX: 5

SPECIMEN DATA . . .

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Time to Ignition (sec)</td>
<td>19</td>
</tr>
<tr>
<td>Time to Max FS (sec)</td>
<td>49</td>
</tr>
<tr>
<td>Maximum FS (mm)</td>
<td>834.4</td>
</tr>
<tr>
<td>Time to 527 C (sec)</td>
<td>Never Reached</td>
</tr>
<tr>
<td>Time to End of Tunnel (sec)</td>
<td>Never Reached</td>
</tr>
<tr>
<td>Max Temperature (C)</td>
<td>312</td>
</tr>
<tr>
<td>Time to Max Temperature (sec)</td>
<td>596</td>
</tr>
<tr>
<td>Total Fuel Burned (cubic feet)</td>
<td>38.44</td>
</tr>
</tbody>
</table>

FS* Time Area (M*min): 7.9
Smoke Area (%A*min): 2.8

CALIBRATION DATA . . .

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to Ignition of Last Red Oak (Sec)</td>
<td>48.0</td>
</tr>
<tr>
<td>Red Oak Smoke Area (%A*min)</td>
<td>135.5</td>
</tr>
</tbody>
</table>

Tested by: [Signature]
Reviewed by: [Signature]
CAN/ULC S102-10 DATA SHEETS
Run 3

FLAME SPREAD (MM)

Smoke (%A)

Temperature (°C)

Tested By: [Signature]
Reviewed By: [Signature]
### REVISION SUMMARY

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