REPORT NUMBER: 102850330COQ-003b
ORIGINAL ISSUE DATE: February 20, 2017

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

RENDERED TO
Mansonville Plastics (B.C.) Ltd.
19402 - 56th Avenue
SURREY, B.C. V3S 6K4

PRODUCT EVALUATED: Mansonville TYPE II EPS Foam
EVALUATION PROPERTY: Surface Burning Characteristics

Report of testing Mansonville TYPE II EPS Foam for compliance with the applicable requirements of the following criteria: CAN/ULC S102.2-10, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies.
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APPENDIX A – Data Sheets                                                                                           6 Pages

REVISION SUMMARY
2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for Mansonville Plastics (B.C.) Ltd., to evaluate the surface burning characteristics of Mansonville TYPE II EPS Foam. Testing was conducted in accordance with the standard methods of CAN/ULC S102.2-10, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies.

This evaluation began February 15, 2017 and was completed February 16, 2017.

3 Test Samples

3.1. SAMPLE SELECTION

Intertek representative, Luke Kong, selected test samples on December 20, 2016. The sampling was conducted at Mansonville Plastics (B.C.) Ltd., located at 19402 - 56th Avenue Surrey B.C..

3.2. 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 sample materials consisted of nine 17-3/8 in. wide by 8 ft. long by 2 ½ in. thick EPS foam panels, and were identified as Mansonville TYPE II EPS Foam.

For each trial run, three 8 ft. panels were butted together end to end to form the required 24 ft. sample length, and then 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 S102.2-10.
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 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.
5  Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

(A) Flame Spread

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

<table>
<thead>
<tr>
<th>Mansonville TYPE II EPS Foam</th>
<th>Flame Spread</th>
<th>Flame Spread Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run 1</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>Run 2</td>
<td>111</td>
<td>115</td>
</tr>
<tr>
<td>Run 3</td>
<td>120</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>Mansonville TYPE II EPS Foam</th>
<th>Smoke Developed</th>
<th>Smoked Developed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run 1</td>
<td>390</td>
<td></td>
</tr>
<tr>
<td>Run 2</td>
<td>392</td>
<td>395</td>
</tr>
<tr>
<td>Run 3</td>
<td>401</td>
<td></td>
</tr>
</tbody>
</table>

(C) Observations

Surface ignition occurred between 49 and 54 seconds; the flame began to progress along the sample until it reached the maximum flame spread.
6 Conclusion

The 2 ½ in. thick Mansonville TYPE II EPS Foam, submitted by Mansonville Plastics (B.C.) Ltd., exhibited the following flame spread characteristics when tested in accordance CAN/ULC S102.2-10, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies.

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

<table>
<thead>
<tr>
<th>Sample Material</th>
<th>Flame Spread Rating</th>
<th>Smoke Developed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mansonville TYPE II EPS Foam</td>
<td>115</td>
<td>395</td>
</tr>
</tbody>
</table>

The conclusions of this test report may be used as part of the requirements for Intertek product certification.

INTERTEK TESTING SERVICES NA LTD.

Tested and Reported by:  
Greg Philp  
Technician – Building Products

Reviewed by:  
Riccardo DeSantis  
Manager – Building Products
APPENDIX A

DATA SHEETS
Standard: Canadian ULC S102.2

Client: Mansonville Plastics (B.C.) Ltd
Date: 02 15 2017
Project Number: 102650330  
Test Number: 1
Operator: Greg Phip
Specimen ID: Type II EPS Foam  65 mm thick

TEST RESULTS

FLAMESPREAD INDEX: 120
SMOKE DEVELOPED INDEX: 390

SPECIMEN DATA . . .

Time to Ignition (sec): 54
Time to Max FS (sec): 154
Maximum FS (mm): 577.2
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): 184
Max Temperature (°C): 497
Time to Max Temperature (sec): 288
Total Fuel Burned (cubic feet): 46.10

FS*Time Area (M*min): 455.5
Smoke Area (%A*min): 707.1
Unrounded FBI: 118.0
Unrounded S01: 390.0

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 42.0
Red Oak Smoke Area (%A*min): 181.3

Tested By:  Reviewed By:
CAN/ULC S102.2 DATA SHEETS
Run 1

Client: Mansonville Plastics (B.C.) Ltd

Sample ID: Type II EPS Foam 85 mm thick

Test No.: 102850513

Standard: Canadian ULC S102.2

FLAME SPREAD (MM)

Smoke (%A)

Temperature (°C)

Time (sec) 600

Tested By:Reviewed By:
CAN/ULC S102.2 DATA SHEETS
Run 2

Standard: Canadian ULC S102.2

Client: Mansonville Plastics (B.C.) Ltd
Date: 02 16 2017
Project Number: 102850330
Test Number: 2
Operator: Greg Philp
Specimen ID: Type II EPS Foam 65 mm thick

TEST RESULTS
FLAMESPREAD INDEX: 110
SMOKE DEVELOPED INDEX: 390

SPECIMEN DATA...
Time to Ignition (sec): 49
Time to Max FS (sec): 187
Maximum FS (mm): 570.0
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): 187
Max Temperature (C): 491
Time to Max Temperature (sec): 285
Total Fuel Burned (cubic feet): 46.04
FS*Time Area (M*min): 44.6
Smoke Area (%A*min): 710.1
Unrounded FS: 110.1
Unrounded SD: 391.7

CALIBRATION DATA...
Time to Ignition of Last Red Oak (Sec): 42.0
Red Oak Smoke Area (%A*min): 101.3

Tested By:  Reviewed By:  

Intertek
CAN/ULC S102.2 DATA SHEETS
Run 2

Client: Mansonville Plastics (B.C.) Ltd
Specimen ID: Type II EPS Foam 65 mm thick
Test No.: 102850330
Standard: Canadian ULC S102.2

FLAME SPREAD (MM)

Smoke (%A)

Temperature (°C)

Time (sec)

600

Tested By: Reviewed By:
CAN/ULC S102.2 DATA SHEETS
Run 3

Standard: Canadian ULC S102.2

Client: Mansonville Plastics (B.C.) Ltd
Date: 02/16/2017
Project Number: 102850330
Test Number: 3
Operator: Greg Philip

Specimen ID: Type II EPS Foam 65 mm thick

TEST RESULTS

FLAMESPREAD INDEX: 120
SMOKE DEVELOPED INDEX: 400

SPECIMEN DATA...

Time to Ignition (sec): 51
Time to Max FS (sec): 176
Maximum FS (mm): 5779.3
Time to 527 C (sec): Never Reached
Time to End of Tunnel (sec): 175
Max Temperature (°C): 592
Time to Max Temperature (sec): 316
Total Fuel Burned (cubic feet): 45.07

FS*Time Area (M*min): 45.8
Smoke Area (%A*min): 786.8
Unrounded FS: 120.2
Unrounded SD: 490.9

CALIBRATION DATA...

Time to Ignition of Last Red Oak (Sec): 42.0
Red Oak Smoke Area (%A*min): 181.3

Tested By: [Signature]
Reviewed By: [Signature]
CAN/ULC S102.2 DATA SHEETS
Run 3

Client: Mansonville Plastics (B.C.) Ltd
Specimen ID: Type II EPS Form 65 mm thick
Test No.: 102850330
Standard: Canadian ULC S102.2

FLAME SPREAD (MM)

Smoke (%A)

Temperature (°C)

Tested By: 
Reviewed By: 

600.0 500.0 400.0 300.0 200.0 100.0 0.0
0.0 50.0 100.0 150.0 200.0 250.0 300.0 350.0 400.0 450.0 500.0 550.0 600.0

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Intertek
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