

AIRFOAM INDUSTRIES LTD. TEST REPORT

SCOPE OF WORK

REPORT OF TESTING 100 MM THICK KOROLITE INSULATED METAL PANELS WITH A CENTRE JOINT 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

104655432COQ-002 R1

TEST DATE(S)

05/02/21 - 05/02/21

ISSUE DATE

05/03/21

REVISION DATE

05/06/21

PAGES

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TEST REPORT FOR AIRFOAM INDUSTRIES LTD.

Report No.: 104655432COQ-002 R1

Date: 05/03/21

REPORT ISSUED TO

AIRFOAM INDUSTRIES LTD.

19402 - 56 Avenue

Surrey, BC V3S 6K4 CAN

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Airfoam Industries Ltd. 19402 - 56 Avenue Surrey, BC V3S 6K4 CAN to perform testing in accordance with CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies., on their 100 mm thick Korolite Insulated Metal panels with a centre joint 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.

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SECTION 2

SUMMARY OF TEST RESULTS

The samples of 100 mm thick Korolite Insulated Metal panels with a centre joint submitted by Airfoam Industries Ltd. 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 10 of this report.

For INTERTEK B&C:

COMPLETED BY:	Sean Fewer
TITLE:	Technician B&C
SIGNATURE:	
DATE:	05/03/21

REVIEWED BY:	Greg Philp
TITLE:	Reviewer- B&C
SIGNATURE:	
DATE:	05/03/21

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

SECTION 4

MATERIAL SOURCE/INSTALLATION

Virtual sampling was conducted by Intertek representative Kareem Abdelghany at the Airfoam Industries Ltd. manufacturing facility located at 19402 - 56 Avenue Surrey, BC CAN on April 19, 2021.

The product was selected in accordance with recognized independent sampling procedures and was received at the Evaluation Center on April 30, 2021.

SECTION 5

EQUIPMENT

ASSET #	DESCRIPTION	MODEL	CAL DUE DATE
WH2189	Photocell	Huygen 856	11/06/21
WH 2190	Smoke Opacity Meter	Huygen	11/06/21
WH 1052	Data Logger	Phidgets DAQ 2020	11/06/21
	Flame Spread Tunnel (S102)	N/A	02/17/22

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

The sample material was identified as 100 mm thick Korolite Insulated Metal panels with 26-gauge pre-painted sheet steel facings and a centre assembled joint typical of field installation. Each sample measured 100 mm thick by 610 mm wide by 2440 mm long and consisted of two 305 mm wide panels connected at the center of the panels and included one line of butyl caulk air barrier within the field assembled joint. Each assembled joint was also lightly caulked on the exterior face with a silicone sealant.

For each trial run, three 610 mm. wide by 2440 mm long pieces of sample material were placed on the upper ledge of the flame spread tunnel to form the required 7315 mm sample length. A layer of 6 mm. thick 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.

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SECTION 9**TEST RESULTS****(A) Flame Spread**

The resultant flame spread ratings are as follows:

(Rating rounded to nearest 5)

100 mm thick Korolite Insulated Metal panels with a centre joint	Flame Spread	Flame Spread Rating
Run 1	63	65
Run 2	60	
Run 3	66	

(B) Smoke Developed

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

(Classification rounded to nearest 5)

100 mm thick Korolite Insulated Metal panels with a centre joint	Smoke Developed	Smoke Developed Classification
Run 1	294	310
Run 2	366	
Run 3	272	

Observations

During the test runs, surface ignition occurred between 82 and 92 seconds; the flame then began to progress along the sample length until it reached the maximum flame spread.

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SECTION 10**CONCLUSION**

The samples of 100 mm thick Korolite Insulated Metal panels with an assembled joint typical of field installation submitted by Airfoam Industries Ltd. 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
100 mm thick Korolite Insulated Metal panels with a centre joint	65	310

The conclusions of this test report may 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 S102-18 DATA SHEETS

Run 1

Page 1 of 2

Standard: ULC S102

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Airfoam Industries
Date: 02 May 2021
Project Number: 104655432
Test Number: 1
Operator: Sean Fewer

Specimen ID and Description:

100mm thick Korolite Insulated Panels with centre Joint

TEST RESULTS

FLAMESPREAD INDEX: 63.000
SMOKE DEVELOPED INDEX: 294.000

SPECIMEN DATA

Time to Ignition (sec): 92.279
Time to Max Flame Spread (min): 5.171
Maximum Flame Spread (mm): 5.940
Time to 527 C / 980 F (sec): 6.388
Max Temperature (deg F or C as per test standard): 675.190
Time to Max Temperature (sec): 527.279
Total Fuel Burned (cubic feet): 44.751

Flame Spread*Time Area (M*min): 33.225
Smoke Area (%A*min): 457.683
Unrounded FSI: 62.655
Unrounded SDI: 294.475

CALIBRATION DATA

Time to Ignition of Last Red Oak (sec): 47
Calibrated Smoke Area (%A*min): 155.423

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

Tested by: SF

Reviewed by: 

TEST REPORT FOR AIRFOAM INDUSTRIES LTD.

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CAN/ULC S102-18 DATA SHEETS

Run 1

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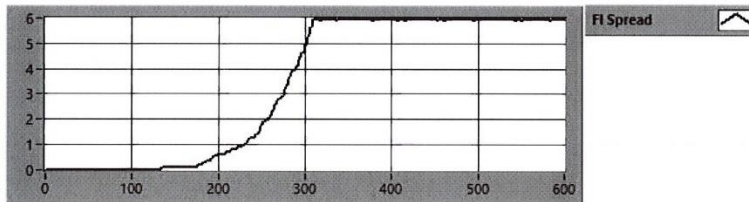
Client: Airfoam Industries

Project Number: 104655432

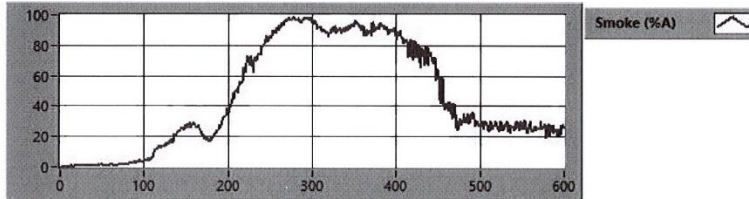
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Test Standard: ULC S102

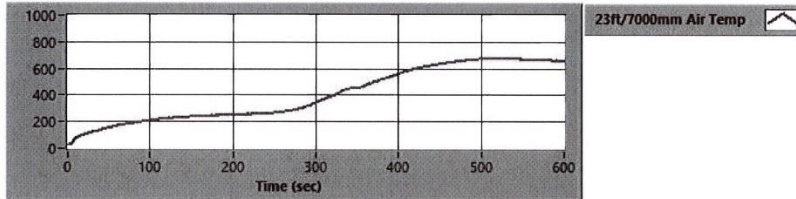
FLAME SPREAD



SMOKE (%A)



TEMPERATURE



Tested by: SI

Reviewed by: [Signature]

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CAN/ULC S102-18 DATA SHEETS

Run 2

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Standard: ULC S102

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Airfoam Industries
Date: 02 May 2021
Project Number: 104655432
Test Number: 2
Operator: Sean Fewer

Specimen ID and Description:

100mm thick Korolite Insulated Panels with Centre joint

TEST RESULTS

FLAMESPREAD INDEX: 60.000
SMOKE DEVELOPED INDEX: 366.000

SPECIMEN DATA

Time to Ignition (sec): 81.941
Time to Max Flame Spread (min): 5.666
Maximum Flame Spread (mm): 5.940
Time to 527 C / 980 F (sec): 6.516
Max Temperature (deg F or C as per test standard): 785.690
Time to Max Temperature (sec): 570.941
Total Fuel Burned (cubic feet): 44.587

Flame Spread*Time Area (M*min): 32.210
Smoke Area (%A*min): 569.279
Unrounded FSI: 60.317
Unrounded SDI: 366.276

CALIBRATION DATA

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

Calibrated Smoke Area (%A*min): 155.423

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

Tested by: SP

Reviewed by: [Signature]

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CAN/ULC S102-18 DATA SHEETS

Run 2

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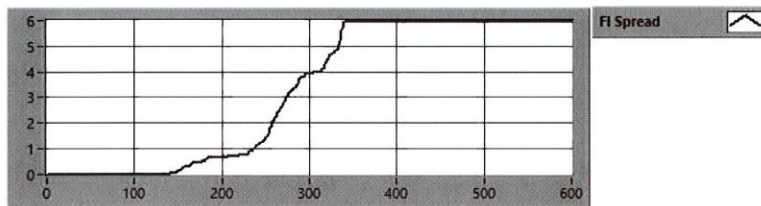
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Project Number: 104655432

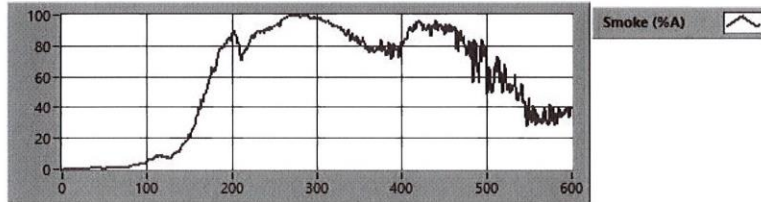
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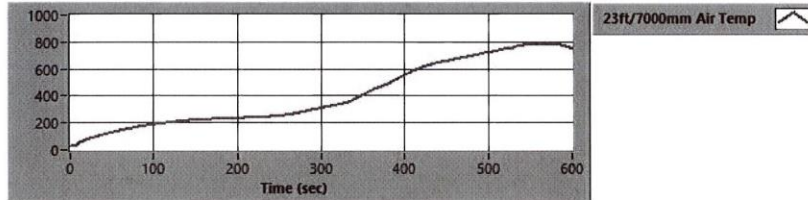
FLAME SPREAD



SMOKE (%A)



TEMPERATURE



Tested by: SF

Reviewed by: _____

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CAN/ULC S102-18 DATA SHEETS

Run 3

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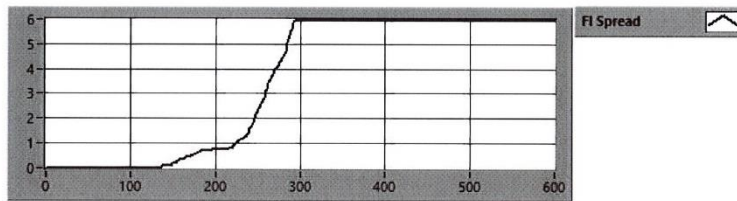
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Project Number: 104655432

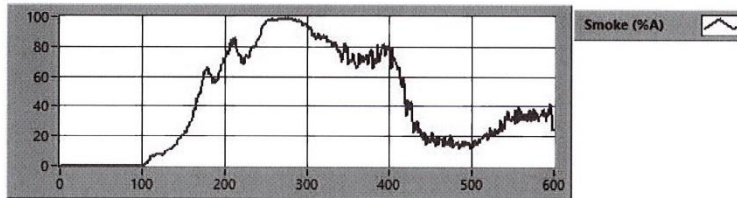
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Test Standard: ULC S102

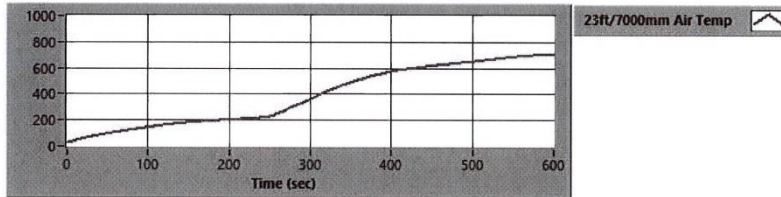
FLAME SPREAD



SMOKE (%A)



TEMPERATURE



Tested by: SF

Reviewed by: [Signature]

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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
0	05/03/21	N/A	Original Report Issue
1	05/06/21	2,3,5,6,7	Corrected Product Name Added Narrative on Panel Construction