TEST REPORT

REPORT NUMBER: 3185030COQ-008
ORIGINAL ISSUE DATE: November 3, 2009

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

RENDERED TO

Monoglass Inc.
922 – 1200 West 73rd Avenue
Vancouver, B.C. V6P 6G5

PRODUCT EVALUATED: Insulseal Panels
EVALUATION PROPERTY: Surface Burning Characteristics

Report of testing Insulseal panels for compliance with the applicable requirements of the following criteria: ASTM E84-09, *Standard Test Method for Surface Burning Characteristics of Materials.*

1 Table of Contents

2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for Monoglass Inc., to evaluate the surface burning characteristics of Insulseal panels. Testing was conducted in accordance with the standard methods of ASTM E84-09, *Standard Test Method for Surface Burning Characteristics of Materials*.

This evaluation began November 2, 2009 and was completed November 2, 2009. Testing was witnessed by Mr. Brad Bodnarchuk, representing Monoglass Inc.

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 November 2, 2009.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The sample product was described by the client as "Insulseal". It is a copolymer coating that was applied onto Durock substrate panels. Each panel measured 5 ft. long by 24 in. wide by nominal 1/2 in. thick, and was white in colour.

For this trial run, five 5 ft. panels were placed on the upper ledge of the flame spread tunnel, with the coated side oriented towards the flame, and butted together 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 ASTM E84-09.

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. This information is plotted on a graph (flame spread curve).

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).

Calculations: ASTM E84-09

According to the test standard, the flame spread classification is equal to $\frac{4900}{195 - A_T}$

when A_t is the total area beneath the flame spread curve, if this area exceeds 97.5 minute feet. If the area beneath the curve is less than or equal to 97.5 minute feet the classification becomes 0.515 x A_t.

(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.

Calculations:

Unrounded Smoke Developed Index = $\frac{10{,}000 - SmokeIntegration}{650} x100$

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)

Insulseal Panels	Flame Spread	Flame Spread Classification
Run 1	0	0

(B) Smoke Developed

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

Insulseal Panels	Smoke Developed	Smoked Developed Classification
Run 1	0	0

(C) Observations

After ignition there was no activity, the sample product did not catch fire. The first panel only was discoloured.

6 Conclusion

The samples of Insulseal panels, submitted by Monoglass Inc., exhibited the following flame spread characteristics when tested in accordance with ASTM E84-09, *Standard Test Method for Surface Burning Characteristics of Materials*.

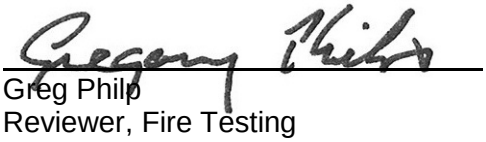
Sample Material	Flame Spread Classification	Smoke Developed Classification
Insulseal Panels	0	0

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: 

Gerry Loverro
Technician – Construction Products Testing

Reviewed by: 

Greg Philp
Reviewer, Fire Testing

GL

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APPENDIX A

DATA SHEETS

ASTM E84-09 DATA SHEETS

ASTM E84

Client: Monoglass Inc.
Date: 11/01/09
Project Number: 3185030
Test Number: 1
Operator: Gerry Loverro

Specimen ID: Protective top coat applied onto Durock 'Insulseal'.

TEST RESULTS

FLAMESPREAD INDEX: 0

SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA . . .

Time to Ignition (sec): 0
Time to Max FS (sec): 0
Maximum FS (feet): 0.0
Time to 980 F (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (F): 245
Time to Max Temperature (sec): 598
Total Fuel Burned (cubic feet): 0.00

FS*Time Area (ft*min): 0.0
Smoke Area (%A*min): 0.1
Unrounded FSI: 0.0

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 38.0
Red Oak Smoke Area (%A*min): 65.0

ASTM E84-09 DATA SHEETS

Project No: 3185030

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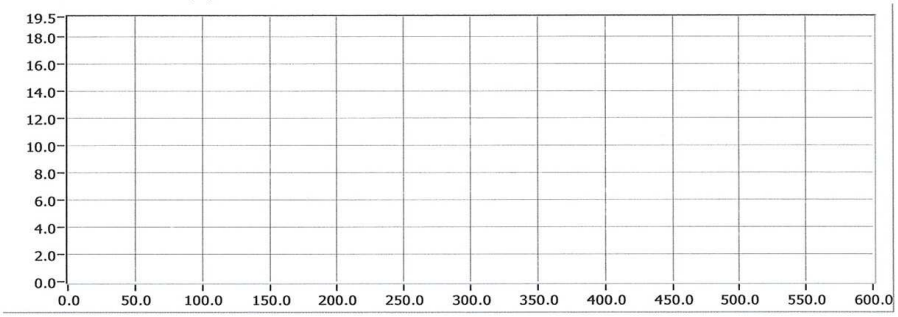
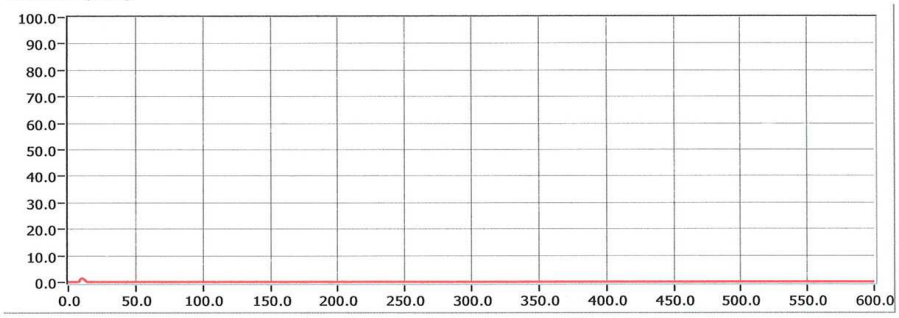
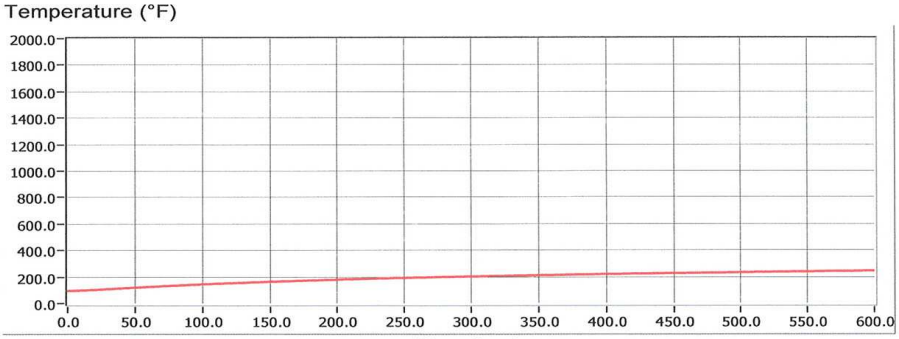
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600

REVISION SUMMARY

DATE	PAGE	SUMMARY
November 3, 2009	All	Original Issue Date