

**REPORT NUMBER: 100800830COQ-008a**  
ORIGINAL ISSUE DATE: July 11, 2012

# TEST REPORT

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

**RENDERED TO**

**MSW Canadian Plastics Inc.**  
**585 Maitland Avenue South**  
**Listowel ON M4W 2M7**

PRODUCT EVALUATED: PVC Planks  
EVALUATION PROPERTY: Surface Burning Characteristics

**Report of testing Norlock PVC Planks for compliance with the applicable requirements of the following criteria: ASTM E84-12, Standard Test Method for Surface Burning Characteristics of Materials**

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# 1 Table of Contents

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	PAGE
1 Table of Contents .....	2
2 Introduction .....	3
3 Test Samples .....	3
3.1 SAMPLE SELECTION.....	3
3.2 SAMPLE AND ASSEMBLY DESCRIPTION .....	3
4 Testing and Evaluation Methods.....	4
4.1 TEST STANDARD.....	4
4.2 DEVIATION FROM THE TEST STANDARD .....	4
5 Testing and Evaluation Results .....	5
5.1 RESULTS AND OBSERVATIONS.....	5
6 Conclusion .....	6
APPENDIX A – Data Sheets .....	2 Pages
REVISION SUMMARY	

## 2 Introduction

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Intertek Testing Services NA Ltd. (Intertek) has conducted testing for MSW Canadian Plastics Inc., to evaluate the surface burning characteristics of PVC planks. Testing was conducted in accordance with the standard methods of ASTM E84-12, *Standard Test Method for Surface Burning Characteristics of Materials*.

This evaluation began July 6, 2012 and was completed the same day.

## 3 Test Samples

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### 3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client and were not independently selected for testing. The sample materials were received at the Evaluation Center on July 4, 2012.

### 3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The sample product was identified by the client as Norlock PVC Planks measuring 1 3/8 in. thick by 9 in. by wide 8 ft long. The tongue and groove planks are of a hollow core design and are white in colour.

For this trial run, nine planks were fitted together to form the required 24 ft length of sample material. The samples were supported by 1/4 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 samples, the tunnel lid was lowered into place, and the samples were then tested in accordance with ASTM E84-12.

## **4 Testing and Evaluation Methods**

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### **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 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).

#### **(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.

### **4.2. DEVIATION FROM THE TEST STANDARD**

The test sample was positioned so that one length was placed over each burner. The material did not cover the entire width of the tunnel.

## 5 Testing and Evaluation Results

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### 5.1. RESULTS AND OBSERVATIONS

#### (A) Flame Spread

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

Sample Material	Flame Spread	Flame Spread Classification
Norlock PVC Planks	7	5

#### (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)

Sample Material	Smoke Developed	Smoke Developed Classification
Norlock PVC Planks	1034	1050

#### (C) Observations

The sample material ignited at approximately 69 seconds, the flame began to progress along the sample until it reached the maximum flame spread.

## 6 Conclusion

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The sample of Norlock PVC Planks, submitted by MSW Canadian Plastics., exhibited the following flame spread characteristics when tested in accordance with ASTM E84-12 *Standard Test Method for Surface Burning Characteristics of Materials*.

Sample Material	Flame Spread Classification	Smoke Developed Classification
Norlock PVC Planks	5	1050

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

# APPENDIX A

## DATA SHEETS

## ASTM E84-12 DATA SHEETS

### ASTM E84

Page 1 of 2

Client: MSW Canadian Plastics  
Date: 07 06 2012  
Project Number: 100800830  
Test Number: 1  
Operator: Greg Philp  
Specimen ID: 1 1/4 in thick Norlock PVC Planks

### TEST RESULTS

**FLAMESPREAD INDEX: 5**  
**SMOKE DEVELOPED INDEX: 1050**

### SPECIMEN DATA . . .

Time to Ignition (sec): 69  
Time to Max FS (sec): 507  
Maximum FS (feet): 3.1  
Time to 980 F (sec): Never Reached  
Time to End of Tunnel (sec): Never Reached  
Max Temperature (F): 500  
Time to Max Temperature (sec): 599  
Total Fuel Burned (cubic feet): 37.60  
  
FS\*Time Area (ft\*min): 13.2  
Smoke Area (%A\*min): 861.3  
Unrounded FSI: 6.8  
Unrounded SDI: 1034.0

### CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 45.0  
Red Oak Smoke Area (%A\*min): 83.3

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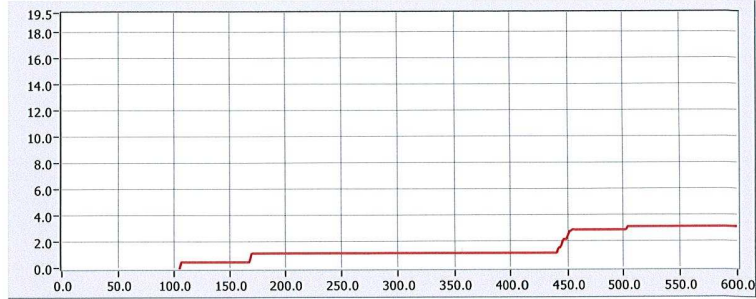


### ASTM E84-12 DATA SHEETS

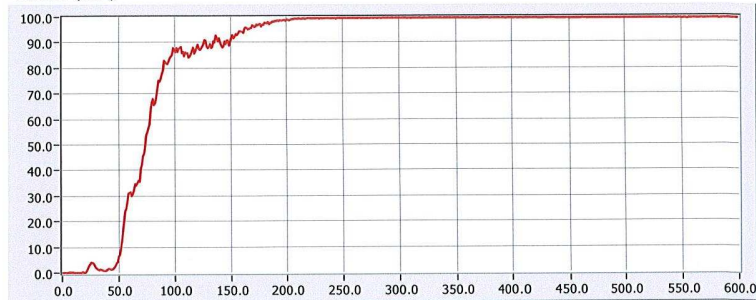
Project No: 100800830

Page 2 of 2

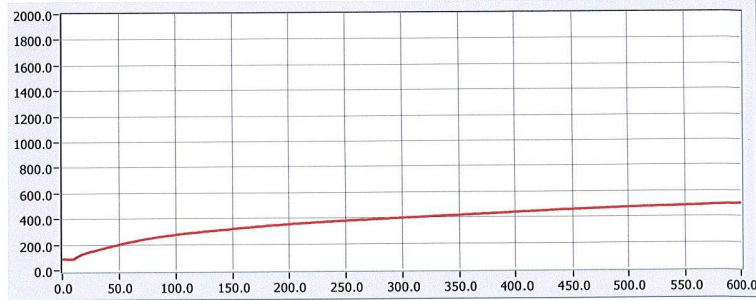
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600

20

1K

## REVISION SUMMARY

<b>DATE</b>	<b>PAGE</b>	<b>SUMMARY</b>
July 11, 2012	--	Original Issue Date