

# TEST REPORT



**REPORT NUMBER:3195900SAT-001**  
ORIGINAL ISSUE DATE: March 23, 2010  
REVISED DATE: NA

**EVALUATION CENTER**  
Intertek Testing Services NA Inc.  
16015 Shady Falls Road  
Elmendorf, TX 78112

## RENDERED TO

**Deceuninck**  
**351 N Garver Road**  
**Monroe, OH 45050**

PRODUCT EVALUATED: Kodiak Cellular PVC Decking (Gray)  
EVALUATION PROPERTIES: Heat Release Rate, Structural Stability Under  
Flame, And Falling Particles

**Report of testing Kodiak Cellular PVC Decking for compliance  
with the applicable requirements of the following criteria:  
California SFM Standard 12-7A-4 Part A, July 5, 2006.**

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## 2 Introduction

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Intertek Testing Services NA (Intertek) has conducted testing for Deceuninck NA, LLC, on Kodiak Cellular PVC Decking, to evaluate heat release rate, structural stability under flame, and falling particles. Testing was conducted in accordance with **California SFM Standard 12-7A, Materials and Construction Methods For Exterior Wildfire Exposure, -4 Part A, Under-Flame Test, July 5, 2006**. This evaluation was performed on March 11, 2010.

## 3 Test Samples

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### 3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were previously conditioned at Intertek's Vancouver laboratory per ASTM D2898 for 12 weeks. Samples were received at the Evaluation Center on April 27, 2010.

### 3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The test specimen consisted of composite lumber boards, gray in color and featuring a wood grain textured pattern on one surface. The edges were rounded.

The boards measured 5 3/8 inches wide and 1 inch thick. Final deck size was 24" wide and 28" long.

## 4 Testing and Evaluation Methods

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### 4.1. Sample Preparation

Samples were conditioned at 70°F and 50% relative humidity for two weeks prior to testing in addition to the weathering noted above.

The test samples were cut to form decks joined by a pair of 2x6 pine joists spaced 1.5 inches from the edges of the subject deck boards. Four 2-inch screws were used to fasten the sample boards to the joists.

The finished sample decks used four pieces of board each and had a gap between boards measuring just over 3/8 inches to accommodate the required specimen width.

### 4.2. Equipment

The specimen was placed on a frame with steel framing and gypsum drywall as described in the standard, Figure 12-7A-4-1. A sand filled diffusion burner with a top surface 12-inches by 12 inches was centered beneath the sample, burning propane at a rate determined to produce an 80 kW flame. The gas supply to the burner is HD5 grade propane (99 percent purity). The ignition source heat release rate was verified before testing was started.

The gross heat output was recorded by an oxygen depletion calorimeter. All instrumentation is zeroed, spanned and calibrated prior to testing. The collection hood exhaust duct blower is turned on and an initial flow is established. The gas sampling pump is turned on and the flow rate is adjusted. When all instruments are reading steady state conditions, the computer data acquisition system and video equipment is started. Ambient data is taken then the burner is ignited. During the burn period, all temperature, heat release and heat flux data is being recorded every 6 seconds.

A calibration test is run within 30 days of testing any material.

All damage is documented after the test is over, using descriptions and photographs as is appropriate.

## 5 Testing and Evaluation Results

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### 5.1. RESULTS AND OBSERVATIONS

#### Deck #1

The test was started at 10:03 am. on March 11, 2010. The ambient temperature was 69°F with a relative humidity of 31%. The data acquisition system was started and the burner was ignited. Events during the test are described below:

<b>Time (min:sec)</b>	<b>Observation</b>
0:00	Ignition of burner. Heat output set to 80 kW.
0:28	The specimen began to melt.
0:48	The specimen ignited.
3:00	Gas flow to the burner was shut off.
7:16	Flames ceased. The specimen continued to smolder.
12:09	All smoldering ceased. Test terminated.

#### Deck #2

The test was started at 12:30 p.m. on March 11, 2010. The ambient temperature was 75°F with a relative humidity of 37%. The data acquisition system was started and the burner was ignited. Events during the test are described below:

<b>Time (min:sec)</b>	<b>Observation</b>
0:00	Ignition of burner. Heat output set to 80 kW.
0:22	The specimen began to melt.
0:43	The specimen ignited.
3:00	Gas flow to the burner was shut off.
11:18	Flames ceased. The specimen continued to smolder.
14:44	All smoldering ceased. Test terminated.

Deck #3

The test was started at 12:55 p.m. on April 24, 2009. The ambient temperature was 75°F with a relative humidity of 33%. The data acquisition system was started and the burner was ignited. Events during the test are described below:

Time (min:sec)	Observation
0:00	Ignition of burner. Heat output set to 80 kW.
0:31	The specimen began to melt..
0:57	The specimen ignited.
3:00	Gas flow to the burner was shut off.
37:42	Flames ceased. The specimen continued to smolder.
43:00	All smoldering ceased. Test terminated.

Numerical Data

	Requirement	Sample A	Sample B	Sample C
Peak Net Heat Release Rate Per Square Foot	< 25 kW/ft <sup>2</sup>	13.6 kW/ft <sup>2</sup>	9.6 kW/ft <sup>2</sup>	11.9 kW/ft <sup>2</sup>

Post Test Observations:

All three samples were similarly damaged with substantial charring on the bottom surface and joists. Some char damage had extended to the top surface in areas located next to the gaps.

None of the samples showed flaming or glowing beyond the 40 minute observation period. All samples remained structurally sound.

For additional details, see the post-test photographs later in this report.


## 6 Conclusion

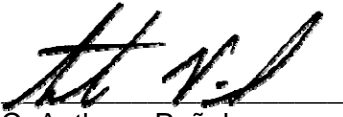
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Intertek has conducted testing for Deceuninck NA, LLC, on Kodiak Cellular PVC Decking to evaluate heat release rate, structural stability under flame, and falling particles. Testing was conducted in accordance with California SFM Standard 12-7A, Materials and Construction Methods For Exterior Wildfire Exposure, -4 Part A, Under-Flame Test, July 5, 2006. The sample material test **MET** the requirements of the standard.

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

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## APPENDIX A

Photographs



Pre-test, Sample A



Pre-test, Sample A





Pre-test, Sample A



Pre-test, Sample A



Test photo, sample A



Test photo, Sample A



Afterflame, Sample A



Post-test damage, top side



Post-test damage, underside



Sample B



Test photo, Sample B



Post-test, Sample B



Pre-Test, Sample C



Test photo, Sample C



Post-test, Sample C



Post-test, Sample C

## REVISION SUMMARY

<b>DATE</b>	<b>SUMMARY</b>
March 23, 2010	First Issue.