

TEST DATES: APRIL 13-19, 2006

REPORT DATE: JULY 18, 2006

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INTERTEK TEST REPORT NUMBER 3094086-001

SPREAD OF FLAME, INTERMITTENT FLAME, AND BURNING BRAND TESTS
CONDUCTED ON

INSPIRE SLATE
CLASS "C" APPLICATION

FOR:

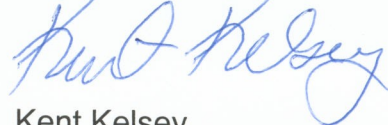
INSPIRE ROOFING PRODUCTS
1101 INDUSTRIAL BOULEVARD
ALBION, MI 49224
PHONE: 517-629-2170

Reported by:



Kevin Weber
Project Manager – BP Documentation
Building Products Group
Intertek

Report reviewed by:



Kent Kelsey
Project Manager – Fire
Building Products Group
Intertek

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Intertek Testing Services NA, Inc.

8431 Murphy Drive, Middleton, WI 53562

Telephone: 608-836-4400 Fax: 608-831-9279 Web: www.intertek-etlsemko.com

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INTRODUCTION

Intertek Testing Services NA (Intertek) Fire Testing Laboratory in Middleton, Wisconsin conducted an investigation of the external fire resistance characteristics of Inspire Slate composite roofing material for a class "C" application. The samples were received at the laboratory April 5, 2006 in good condition.

The tests were conducted in accordance with the criteria of ASTM E108 (2004) "*Standard Test Methods for Fire Tests of Roof Coverings*", UL 790 (1997), and UBC 15-2 (1997) for Spread of Flame, Intermittent Flame, and Burning Brand tests.

TEST ASSEMBLY CONSTRUCTION

The plywood decks were constructed by Intertek employees according to the specifications of test standard ASTM E108 (2004) "*Standard Test Methods for Fire Tests of Roof Coverings*".

1. The sample material was selected by a representative of Intertek.
2. The test material was submitted by the client.
3. The test materials were applied by the client at the laboratory per the installation instructions of the materials manufacturers.

Deck Construction

Deck	Nominal 1/2" thick AC grade exterior plywood deck.
Underlayment	Listed 30# saturated felt
Surface	Inspire Slate

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TEST OBSERVATIONS AND RESULTS

Test Deck #1 – Spread of Flame (Class C)

Test Conditions

Test Date	4/13/2006
Air Velocity	1056 +/-44 fpm
Slope of Test Deck	5:12
Surface Material	Inspire Slate
Underlayment	#30 Saturated Felt

Test Observations

Time (min:sec)	Distance (feet-inches)	Observations/Comments
00:00		Burner ignited.
1:25	1'	
1:52	2'	
2:24	3'	
3:09	4'	
4:00	5'	
4:00	5' 7-1/2"	Gas turned off, end of test.

Acceptance Level: Class "C" – Maximum flame spread 5' 7-1/2", less than 13' allowed by the test standards.

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Test Deck #2 – Spread of Flame (Class C)

Test Conditions

Test Date	4/13/2006
Air Velocity	1056 +/-44 fpm
Slope of Test Deck	5:12
Surface Material	Inspire Slate
Underlayment	#30 Saturated Felt

Test Observations

Time (min:sec)	Distance (feet-inches)	Observations/Comments
00:00		Burner ignited.
1:40	1'	
2:12	2'	
3:10	3'	
3:37	4'	
4:00	4' 7"	Gas turned off, end of test.

Acceptance Level: Class "C" – Maximum flame spread 4' 7", less than 13' allowed by the test standards.

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Test Deck #3 – Intermittent Flame (Class C)

Test Conditions

Test Date	4/14/2006
Air Velocity	1056 +/-44 fpm
Slope of Test Deck	5:12
Surface Material	Inspire Slate
Underlayment	30# Saturated Felt

Test Observations

Cycle		Time To:		Observations/Comments (Include Off Cycles)
No.	Min.	Ignition (min : sec)	Flame Out (min : sec)	
1	Start			
2	3	3:44		Ignition of the top surface of the deck.
3	6			7:00 – Burner turned off. 22:00 – Light smoke on the bottom of the deck. 37:00 – End of test.

Acceptance Level: Class "C" – No flaming of the underside of the deck.

Test Deck #4 – Intermittent Flame (Class C)

Test Conditions

Test Date	4/14/2006
Air Velocity	1056 +/-44 fpm
Slope of Test Deck	5:12
Surface Material	Inspire Slate
Underlayment	30# Saturated Felt

Test Observations

Cycle		Time To:		Observations/Comments (Include Off Cycles)
No.	Min.	Ignition (min : sec)	Flame Out (min : sec)	
1	Start			
2	3	3:20		Ignition of the top surface of the deck.
3	6			22:00 – Light smoke on the bottom of the deck. 37:00 – End of test.

Acceptance Level: Class "C" – No flaming of the underside of the deck.

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Test Deck #5 – Burning Brand (Class C)

Test Date	4/19/2006
Air Velocity	1056 +/-44 fpm
Ambient Air Temperature	69°F
Brand Type	Class C
Slope of Test Deck	5:12 Inches
Surface Material	Inspire Slate
Underlayment	30# Saturated Felt

Brand#	Time (min:sec)	Observations			
		Ignition	Flame Out	Glow Out	Smoke Out
1	00:00	02:20	03:50	07:00	07:00
2	01:00	02:00	04:20	07:00	07:00
3	02:00	02:00	04:00	07:00	07:00
4	03:00	04:00	06:00	12:00	12:00
5	04:00	04:20	11:34	12:00	12:00
6	05:00	07:20	11:00	12:00	12:00
7	06:00	07:20	11:00	20:00	20:00
8	07:00	07:20	11:00	20:00	20:00
9	08:00	10:00	11:34	20:00	20:00
10	09:00	09:40	13:00	2:00	20:00
11	10:00	13:00	15:01	17:00	17:00
12	11:00	15:00	18:00	20:00	20:00
13	12:00	12:00	18:20	20:00	20:00
14	13:00	16:20	18:00	20:00	20:00
15	14:00	14:00	18:00	22:00	22:00
16	15:00	15:00	17:00	20:00	20:00
17	16:00	18:20	20:00	22:00	22:00
18	17:00	23:40	24:40	26:00	26:00
19	18:00	19:00	23:10	26:20	26:20
20	19:00	21:00	23:44	27:20	27:20

All smoke out by 45:00, test stopped at 60:00.

Acceptance Level: Class "C" – No flaming of the underside of the deck.

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Test Deck #6 – Burning Brand (Class C)

Test Date	4/19/2006
Air Velocity	1056 +/-44 fpm
Ambient Air Temperature	74°F
Brand Type	Class C
Slope of Test Deck	5:12 Inches
Surface Material	Inspire Slate
Underlayment	30# Saturated Felt

Brand#	Time (min:sec)	Observations			
		Ignition	Flame Out	Glow Out	Smoke Out
1	00:00			07:56	
2	01:00	02:07	07:24	08:30	
3	02:00	05:20	07:24	09:00	
4	03:00	03:00	06:28	08:48	
5	04:00	05:00	07:29	09:20	
6	05:00	05:00	07:25	11:00	
7	06:00	06:55	09:23	13:00	
8	07:00	07:00		13:00	
9	08:00	08:00	10:00	13:00	
10	09:00	09:00	10:27	13:00	
11	10:00	10:00	14:20	15:40	
12	11:00	11:00	12:23	14:37	
13	12:00	12:00	14:20		
14	13:00	13:24	17:00	17:44	
15	14:00	14:50	15:58		
16	15:00	16:00	18:17	21:38	
17	16:00	16:00	21:11	23:13	
18	17:00	17:00	21:25	23:32	
19	18:00	18:00	20:07	21:54	
20	19:00	19:00	19:38	24:18	

All smoke out by 45:00, test stopped at 60:00.

Acceptance Level: Class "C" – No flaming of the underside of the deck.

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SUMMARY

Test Deck #	Test	Acceptance Level
1	Spread of Flame	Class "C"
2	Spread of Flame	Class "C"
3	Intermittent Flame	Class "C"
4	Intermittent Flame	Class "C"
5	Burning Brand	Class "C"
6	Burning Brand	Class "C"

CONCLUSION

The Inspire Slate composite roofing material, as described herein, complied with the acceptance criteria of ASTM E108 (2004) *Standard Test Methods for Fire Tests of Roof Coverings*, UL 790 (1997), and UBC 15-2 (1997) for a "Class C" rating.