

KNOTWOOD

FIRE TEST REPORT

SCOPE OF WORK

ASTM E84 TESTING ON EXDC150

REPORT NUMBER

H7649.03-121-24

TEST DATE

12/06/17

ISSUE DATE

12/08/17

RECORD RETENTION END DATE

12/06/21

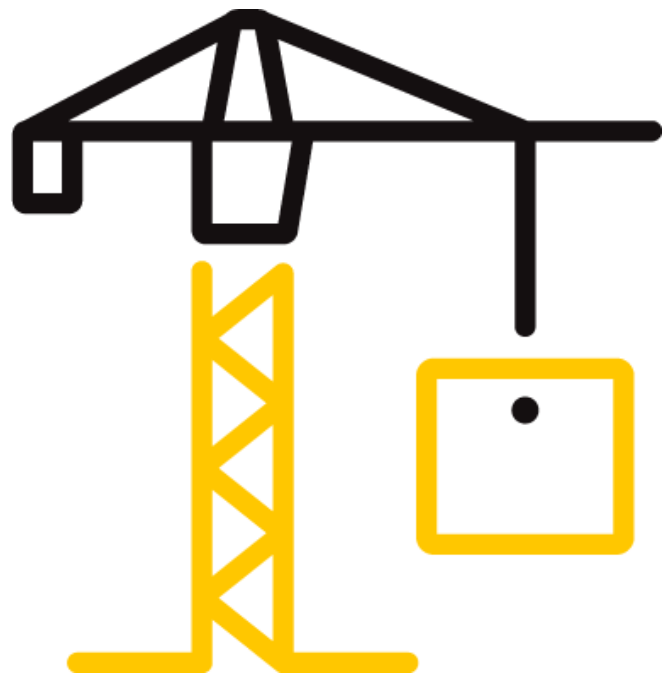
PAGES

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DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2780 (10/18/17)

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TEST REPORT FOR KNOTWOOD

Report No.: H7649.03-121-24

Date: 12/08/17

REPORT ISSUED TO KNOTWOOD

10914 NE 39th Street Suite B3
Vancouver, Washington 98682

SECTION 1 SCOPE

Intertek Building & Construction (B&C) was contracted by Knotwood, Vancouver, Washington to evaluate the flame spread and smoke developed properties of EXDC150. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania. Results obtained are tested values and were secured by using the designated test method(s). A summary of test results and the complete graphical test data is reported herein.

This report does not constitute performance certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2 SUMMARY OF TEST RESULTS

Specimen I.D.: EXDC150 by Knotwood

ASTM E84 Test Results

FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
15	25

For INTERTEK B&C:

COMPLETED BY:	Ben Samson	REVIEWED BY:	Ethan Grove
TITLE:	Technician – Fire Testing	TITLE:	Manager – Fire Testing
SIGNATURE:		SIGNATURE:	
DATE:	12/08/17	DATE:	12/08/17

BTS:ddr

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SECTION 3

TEST METHOD

The specimens were evaluated in accordance with the following:

ASTM E84-17, *Standard Test Method for Surface Burning Characteristics of Building Materials*

SECTION 4

MATERIAL SOURCE/INSTALLATION

The test specimen was submitted to Intertek directly from the client. Samples were not independently selected for testing. Intertek has not verified the composition, manufacturing techniques or quality assurance procedures. The specimens, identified as EXDC150 by Knotwood were received in good order.

SECTION 5

LIST OF OBSERVERS

NAME	COMPANY
Ben Samson	Intertek B&C
Scott Gingrich	Intertek B&C
Nate Brillhart	Intertek B&C

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TEST PROCEDURE

This report describes the results of testing conducted in accordance with ASTM E84-17; Standard Test Method for Surface Burning Characteristics of Building Materials. The test method is for comparative surface burning behavior of building materials by determining a flame spread index (FSI) and a smoke developed index (SDI). This test is generally applicable to exposed surfaces, such as finish materials for ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support. This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials. Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.” – ASTM E84-17 Section 1.3

The purpose of the method is to determine the relative burning behaviour of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

It is the expressed intent of the test method to provide only comparative measurements of surface flame spread and smoke density of the tested material against measurements for select grade red oak flooring and fiber-cement board when tested under specific fire exposure conditions. The test method exposes a nominal 24-ft (7.32-m) long by 20-in. (508-mm) wide test specimen to a controlled air flow and flaming fire exposure adjusted to produce a specific flame spread distance vs time calibration using select grade red oak flooring.

The test method does not provide information regarding heat transmission through the tested surface, the effect of aggravated flame spread behavior resulting from the proximity of combustible walls and ceilings, or the classification or definition of materials as non-combustible using flame spread index alone.

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

There were no deviations from the requirements prescribed in ASTM E84.

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TEST SPECIMEN DESCRIPTION

MANUFACTURER*	Knotwood
PRODUCT TYPE*	Decking and siding boards
SERIES/MODEL*	EXDC150
COMPOSITION*	Aluminum 6063 T6
CONDITIONING TIME	72+ hr.
SPECIMEN SIZE	7-1/2 in. wide x 96-1/2 in. long
THICKNESS	5/8 in.
SPECIMEN SECTIONS	9
TOTAL WEIGHT	7.2 lbs.
COLOR	Kwila (Gray)
SIDE TO FLAME*	Client specified finished face
SUPPORT USED*	1/4 in. diameter steel rods spaced every 24 in. on center
MOUNTING METHOD	ASTM E84 Annexes A4.2 and A4.2.1
SUBSTRATE USED*	No substrate was utilized
CEMENT BOARD	1/4 in. thick fiber cement board was placed on top of the sample.

*From the client's material description and/or instructions

Note: Specimens were conditioned as per the requirements of Section 6.4 of ASTM E84.

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TEST RESULTS

TEST RESULTS	
Test Date	12/06/17
Test Operator	Ben Samson
Flame Spread Index (FSI)	15
Smoke Developed Index (SDI)	25
Red Oak Calibration (% * Min)	91.14

TEST DATA	
FSI (unrounded)	13.1
SDI (unrounded)	23.6
FS * Time Area (Ft * Min)	25.5
Smoke Area (% * Min)	21.5
Fuel Area (°F * Min)	5395.9

TEST OBSERVATIONS	
Ignition Time	01:47 (Min:Sec)
Max Flame Front Advance	3.4 Feet
Time to Max Flame Front	03:14 (Min:Sec)
Max Temp At Exposed T/C	638.1°F
Time To Max Temp	09:49 (Min:Sec)
Dripping Observed	None
Flaming On Floor Observed	None
After Flame Top Observed	None
After Flame Floor Observed	None
Sagging Observed	None
Delamination Observed	None
Shrinkage Observed	None
Fallout Observed	None
Cracking Observed	None
Observations After the Test	None

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SECTION 9 PHOTOGRAPHS

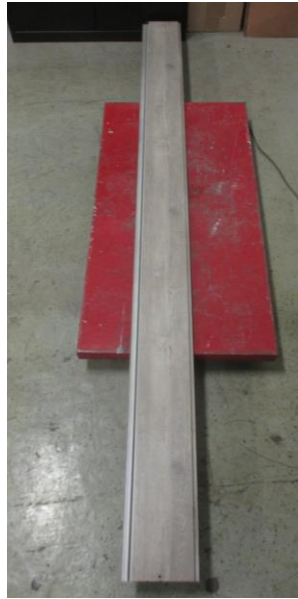


Photo No. 1
Exposed Surface of the Test Specimen (Pre-test)



Photo No. 2
Unexposed Surface of the Test Specimen (Pre-test)

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SECTION 9 (Continued) PHOTOGRAPHS

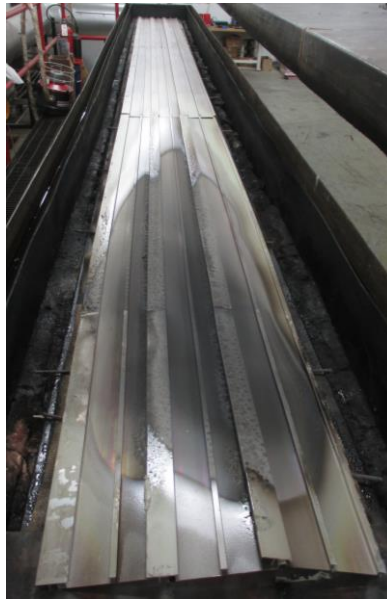


Photo No. 3
Unexposed Surface of the Test Specimen (Post-test)



Photo No. 4
Exposed Surface of the Test Specimen (Post-test)

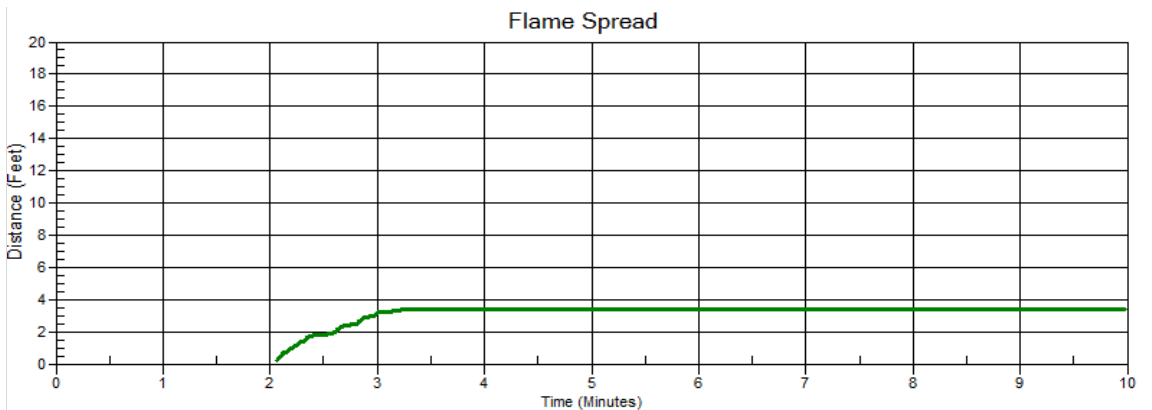
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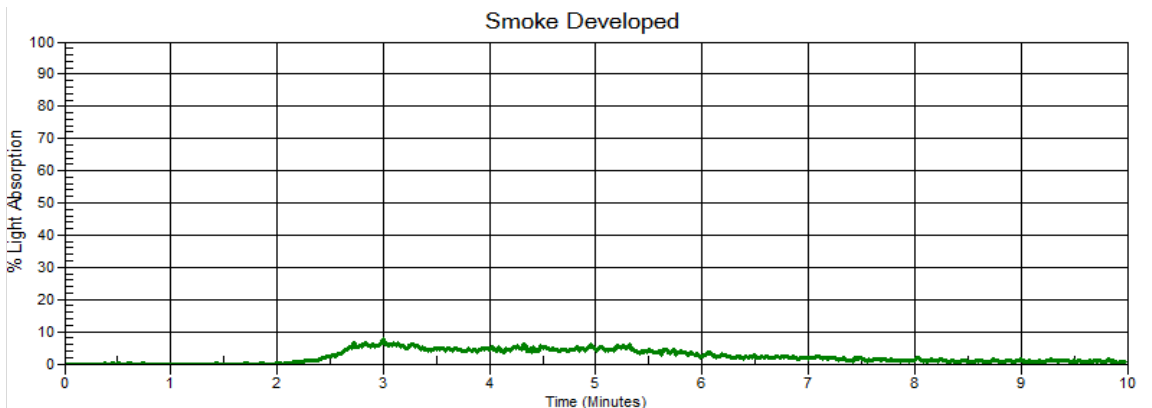
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SECTION 10

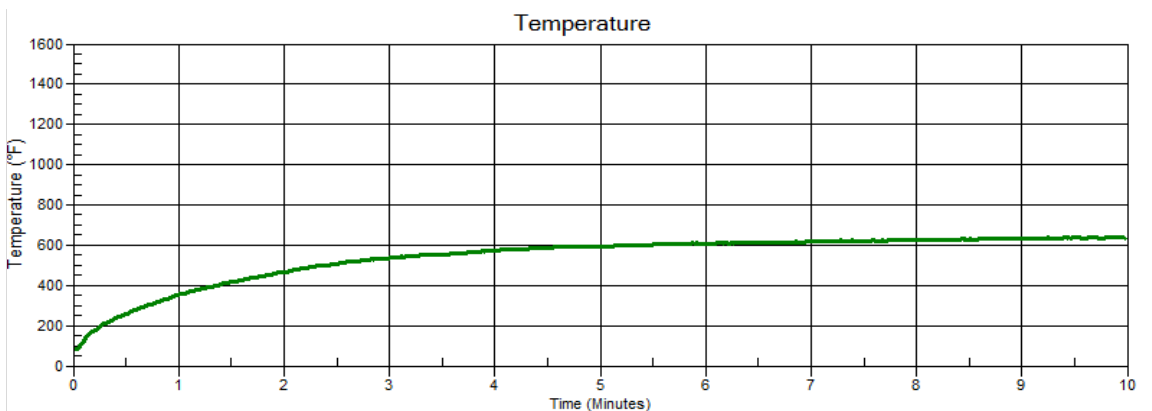
GRAPHS



Graph No. 1 - Flame Spread Distance Versus Time



Graph No. 2 - Light Obscuration Versus Time



Graph No. 3 - Tunnel Air Temperature Versus Time



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130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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REVISION LOG

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0	12/08/17	N/A	Original Report Issue