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FIRE RETARDANT COATINGS OF TEXAS, LLC

FIRE TEST REPORT

SCOPE OF WORK
ASTM E2768-11 TESTING ON FX LUMBER GUARD / FX LUMBER GUARD XT

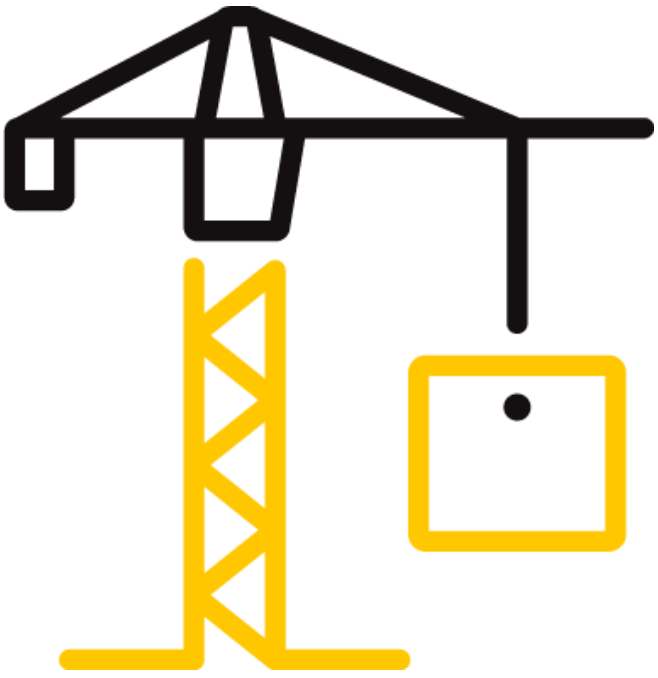
REPORT NUMBER
104055010SAT-003

TEST DATE
11/1/19

ISSUE DATE
11/5/19

PAGES
12

DOCUMENT CONTROL NUMBER
RT-R-AMER-Test-2780 (9/19/18)



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Elmendorf, Texas 78112

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Facsimile: 210-635-8101
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TEST REPORT FOR FIRE RETARDANT COATINGS OF TEXAS, LLC
Report No.: 104055010SAT-003
Date: 11/5/19

REPORT ISSUED TO

Fire Retardant Coatings of Texas, LLC
1150 Blue Mound Road, #403
Haslet, TX 76052

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Fire Retardant Coatings of Texas, LLC, 1150 Blue Mound Road, #403, Haslet, TX 76052, to evaluate the flame spread and smoke developed properties of FX Lumber Guard / FX Lumber Guard XT. Testing was conducted at the Intertek B&C test facility in Elmendorf, Texas. 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. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

SECTION 2

SUMMARY OF TEST RESULTS

Specimen I.D.: FX Lumber Guard / FX Lumber Guard XT

ASTM E2768-11 Test Results

FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX	MAXIMUM FLAME FRONT
15	125	8.7 ft.

*See Section 8 for additional information and commentary

For INTERTEK B&C:

COMPLETED BY:	Joseph Martinez	**REVIEWED BY:**	Servando Romo
TITLE:	Technician	**TITLE:**	Project Engineer
SIGNATURE:		**SIGNATURE:**	
DATE:	11/5/19	**DATE:**	11/12/19

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SECTION 3
TEST METHOD

The specimen was evaluated in accordance with the following:

> **ASTM E2768-11,** *Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)*

SECTION 4
MATERIAL SOURCE/INSTALLATION

The sample was selected from witnessed production on 9/20/19 by Intertek representative, Peter Vehslage, at the Fire Retardant Coatings of Texas, LLC manufacturing facility, located at 1150 Blue Mound Road, #403, Haslet, TX 76052. Details regarding the composition and traceability of the selected material are included in Intertek Inspection Report [G104055010]. The sample, identified as FX Lumber Guard / FX Lumber Guard XT, was received in good order at the Evaluation Center on 10/11/19 and given identification number SAT1910111420-001.

The subject test specimen is a traceable sample selected from the manufacturer's facility. Intertek selected the specimen and has verified the composition, manufacturing techniques and quality assurance procedures. Details regarding the composition and traceability of the selected material are included in Intertek Inspection Report [G104055010].

SECTION 5
LIST OF OBSERVERS

NAME	COMPANY
Joseph Martinez	Intertek B&C
Bernard Toscano	Intertek B&C

SECTION 6
TEST PROCEDURE

This report describes the results of testing conducted in accordance with ASTM E2768-11 Test for Extended Duration Surface Burning Characteristics of Building Materials; a test method for comparative surface burning behavior extended to a total of 30 minutes. This method uses the same equipment, apparatus, calibration of flame spread index and smoke develop index as test method ASTM E84. The flame spread index is calculated in accordance with ASTM E84 during the first 10 minutes and then extended by 20 minutes to a period of 30 minutes to determine the maximum flame travel from the burner centerline. This standard is based on a modification of Test Method E84 that has been used for many years in provisions in the building codes and related specifications pertaining to fire-retardant-treated wood. Such codes include the

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International Building Code (IBC) and International Residential Code (IRC) as well as other documents.

> *"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 E84-19a Section 1.4 – 1.5

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen for a period of 30 minutes. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

SECTION 6 (Continued)
TEST PROCEDURE

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 noncombustible using flame spread index alone.

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The test method has the following conditions of classification for a material or product to be classified as meeting the requirements of this standard:

a.) The flame spread index shall be 25 or less as determined for the initial 10 minute test period.

b.) The maximum flame front shall not progress more than 10.5-ft. (3.2-m) beyond the centerline of the burners at any time during the 30 minute test period. This is considered evidence of no significant progressive combustion in this test method.

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 E2768-11.

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SECTION 7
TEST SPECIMEN DESCRIPTION

MANUFACTURER*	Fire Retardant Coatings of Texas, LLC
SPECIMEN DESCRIPTION*	FX Lumber Guard / FX Lumber Guard XT was applied to the face and back of 12 - 12" x 96" x 7/16" panels of OSB (oriented strand board) sheathing. The panels were assembled into 6 - 24" x 96" x 7/16" panels with 2" x 4" braces using #6 x 1 1/4" coarse thread drywall screws and using 7/16" plywood spacer clips down the length between (5 clips were used per 24" x 96" x 7/16" panel) the 12" x 96" x 7/16" panels, which gave a 1/8 untreated joint between the 2 - 12" x 96" x 7/16" panels. The treatment of FX Lumber Guard / FX Lumber Guard XT was applied to the face and back sides of the OSB panels at 300 - 350 square feet per gallon and 1 coat application. After conditioning of the sampled panels based on the procedure of ASTM E84 Extended (ASTM E2768), there were 2 rows of fasteners driven through the panels from the unexposed face of the panel and penetrating the fire retardant with the nail point protruding through the panel and exposed in the tunnel. The corrosion-resistant roofing nails tips were protruding a minimum of 1/8 through the surface at 8" on center along the length of the tunnel and spaced 8" apart along the length of the tunnel. The roofing nails were installed using a pneumatic fastening tool after the preconditioning exposure.
CONDITIONING TIME	21 days
SPECIMEN LENGTH	24 ft. (Three 8 ft. long sections of FR treated OSB panels)
SPECIMEN WIDTH	24 in. (Two 12 in. OSB panels with a 1/8 in. longitudinal joint)
THICKNESS	0.56 in.
TOTAL WEIGHT	90 lbs.
COLOR	Brown
ADHESIVE/COVERAGE RATE	N/A
SIDE TO FLAME*	Finished Side
SUPPORT USED*	Self
MOUNTING METHOD	Standard
SUBSTRATE USED*	None
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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SECTION 8
TEST RESULTS

TEST RESULTS	
Test Date	11/1/19
Test Operator	Joseph Martinez
Flame Spread Index (FSI)	15
Smoke Developed Index (SDI)	125

TEST DATA	
FSI (unrounded)	15.1
SDI (unrounded)	126.37
FS * Time Area (Ft * Min)	29.4
Smoke Area (% * Min)	101.10
Total Fuel Burned (Cubic Ft.)	125.86
Max Flame Front Advance (Ft.)	4.2 (8.7 ft. beyond burners' centerline)
Time to Max Flame Front (sec)	727
Max Temp At Exposed T/C (°F)	554
Time To Max Temp (sec)	1355

TEST OBSERVATIONS	
Ignition Time	0:49
Fallout Observed	12:51
After Flame	0:60+
Observations After the Test:	
0 – 6 ft.	The specimen was consumed.
6 – 12 ft.	The specimen was heavily charred and cracked.
12 – 16 ft.	The specimen was charred.
16 – 24 ft.	The specimen was heavily discolored.

SECTION 9
CONCLUSION

The specimen met the specified performance requirements.

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SECTION 10
PHOTOGRAPHS

Photo No. 1
Inspector's Initials

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

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SECTION 9 (Continued)
PHOTOGRAPHS

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

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

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SECTION 9 (Continued)

PHOTOGRAPHS

Photo No. 5
Exposed Surface of the Test Specimen (Post-test)

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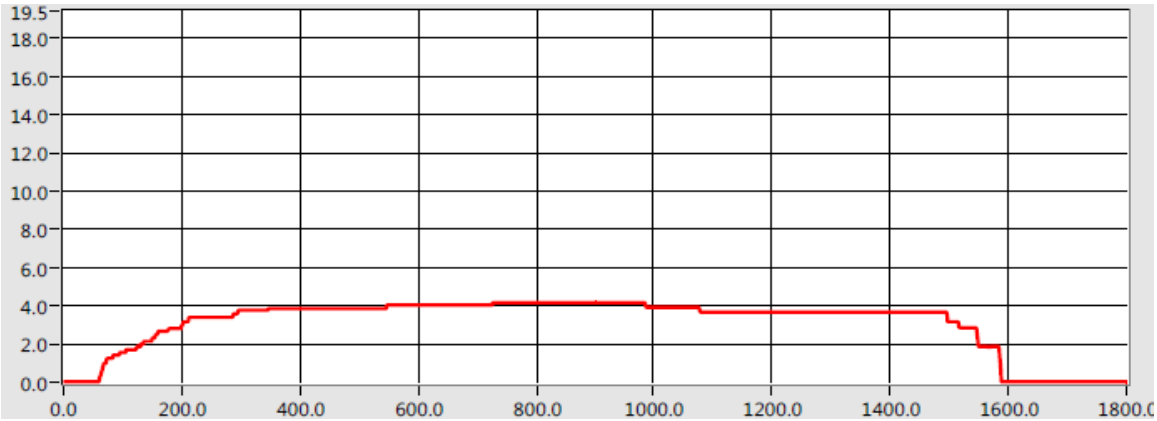
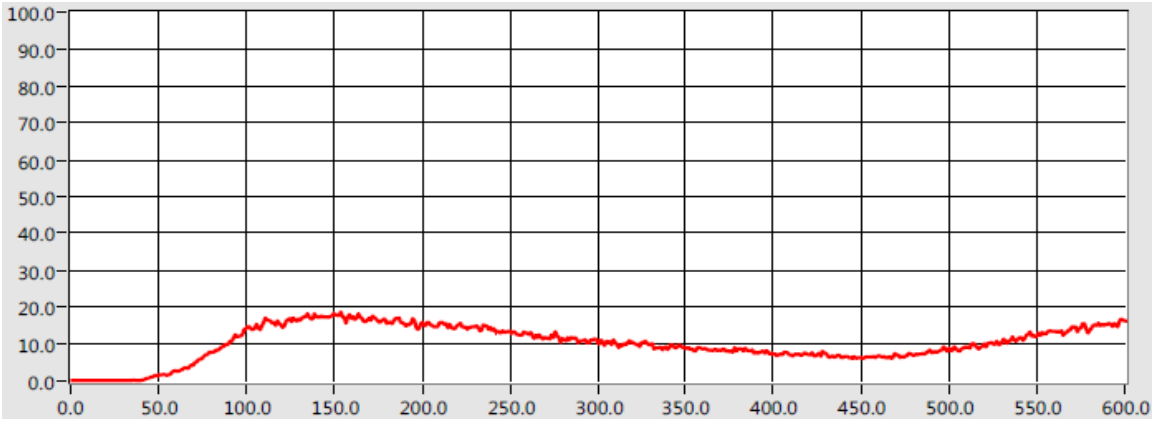
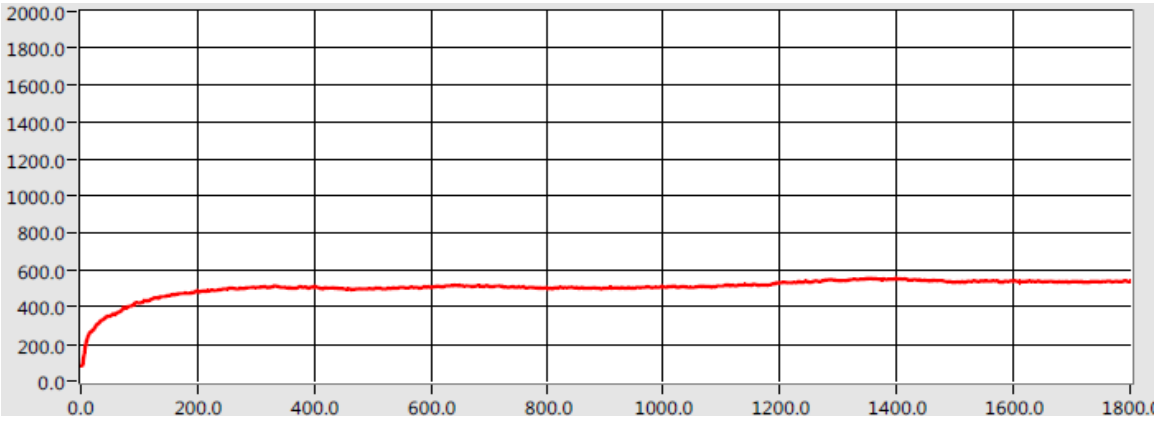
SECTION 11
GRAPHS



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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SECTION 12
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	11/5/19	N/A	Original Report Issue