

CLIENT: **Smith & Fong**
475 6th street
San Francisco, CA 94103

Test Report Number : RJ4879-1	Date: July 21, 2016
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SAMPLE ID: The client identified the following test material as:
Plyboo Carved Reveal Panels.

SAMPLING DETAIL: Test Samples were submitted to the Laboratory directly by the client. No sampling or sample preparation were observed by QAI staff.

DATE OF RECEIPT: Samples were received at QAI facilities on: July 12, 2016

TESTING PERIOD: July 19, 2016.

AUTHORIZATION: Testing was authorized by Stacy Willard for proposal MB-2016-031401R1 signed July 8, 2016

TEST REQUESTED: Perform standard flame spread and smoke density developed classification tests on the sample supplied by the Client in accordance with ASTM Designation E84-15b, "Standard Method of Test for Surface Burning Characteristics of Building Materials". The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1.

TEST RESULTS:	<u>Flame Spread</u>	<u>Smoke Developed</u>
	45	200

CONCLUSION: When tested in accordance to ASTM E84-15b the tested material resulted in a Class 'B'. Detailed test results are presented in the subsequent pages of this report

Prepared By



Brian Ortega

**Signed for and on behalf of
QAI Laboratories, Inc.**



Drew Mersereau



SCOPE: This fire-test-response standard (ASTM E84 -15b) used for the comparative surface burning behavior of building materials is applicable to exposed surfaces such as walls and ceilings. The test is conducted with the specimen in the ceiling position with the surface to be evaluated exposed face down to the ignition source. The material, product, or assembly shall be capable of being mounted in the test position during the test. Thus, the specimen shall either be self-supporting by its own structural quality, held in place by added supports along the test surface, or secured from the back side. The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

USE: The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.

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.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of the materials, products, or assemblies under actual fire conditions.

PROCEDURE: The test is conducted in accordance with ASTM E84-15b. A brief overview of the method is as follows: The test specimen, a material between 20 and 24 inches in width by 24 feet +/- 12 inches in length is loaded onto the water cooled ledge of the fire test chamber. The fire test chamber is a rectangular horizontal duct with a removable lid. The inside dimensions are 17 3/4 inches +/- 1/4" wide by 12 inches +/- 1/2" deep by 25 feet long. The sides and base of the chamber are lined with an insulated firebrick with pressure tight observation windows down one side for a technician to observe flame progression during the duration of the 10-minute test period. The chamber lid is lowered into test position with non combustible concrete board placed between the specimen and chamber lid. A draft of 240 feet per minute which is maintained inside the test chamber throughout the test period by the means of an electronic fan afterburner and an electronically controlled damper door system located downstream of the test chamber in the exhaust ducting. The test is started when the test flame is ignited at the front of the test chamber. An electronic photocell system located in the exhaust system downstream from the test chamber is used to plot the smoke developed for use in calculating the smoke developed index while a technician plots the flame spread distance used in determining the flame spread index. The test is run for the 10 minute duration or until the flame spread has reached the end of the test chamber. (See Diagrams in the Appendix of this report.)

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PREPARATION AND CONDITIONING:

The Sample Material was delivered to QAI in (3) 24" wide by 8 foot long specimens conforming to the chamber dimensions. (See Photos in Appendix of this report)

ASTM E84 TEST RESULTS:

MOUNTING METHOD:

Samples were Stacked end to end to meet the 24 foot requirement and were self-supported on the test ledge.

CLIENT: Smith & Fong **DATE:** 7/19/2016

SAMPLE ID: Plyboo Carved Reveal Panels.

SAMPLE IGNITION: 01:20 Minutes / Seconds

MAX FLAME FRONT: 16.0 Feet

TIME TO MAXIMUM SPREAD: 07:57 Minutes / Seconds

TEST DURATION: 10 minutes, 00 seconds

SUMMARY: FLAME SPREAD: 45 48 Unrounded
SMOKE DEVELOPED: 200 218 Unrounded

OBSERVATIONS:

Sample was resistant to ignition until 1:20 when the sample ignited and flame progressed down chamber.

CALIBRATION DATA:

Time to Ignition of Last Red Oak (sec): 54
Red Oak Smoke Area (%A*Min): 152
Total Fuel Burned (ft³): 50.2

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SUMMARY OF ASTM E84 RESULTS:

Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5. Smoke Density values over 200 are rounded to the nearest figure divisible by 50.

In order to obtain the Flame Spread Classification, the above results should be compared to the following table:

<u>NFPA CLASS</u>	<u>IBC CLASS</u>	<u>FLAME SPREAD</u>	<u>SMOKE DEVELOPED</u>
A	A	0 through 25	Less than or equal to 450
B	B	26 through 75	Less than or equal to 450
C	C	76 through 200	Less than or equal to 450

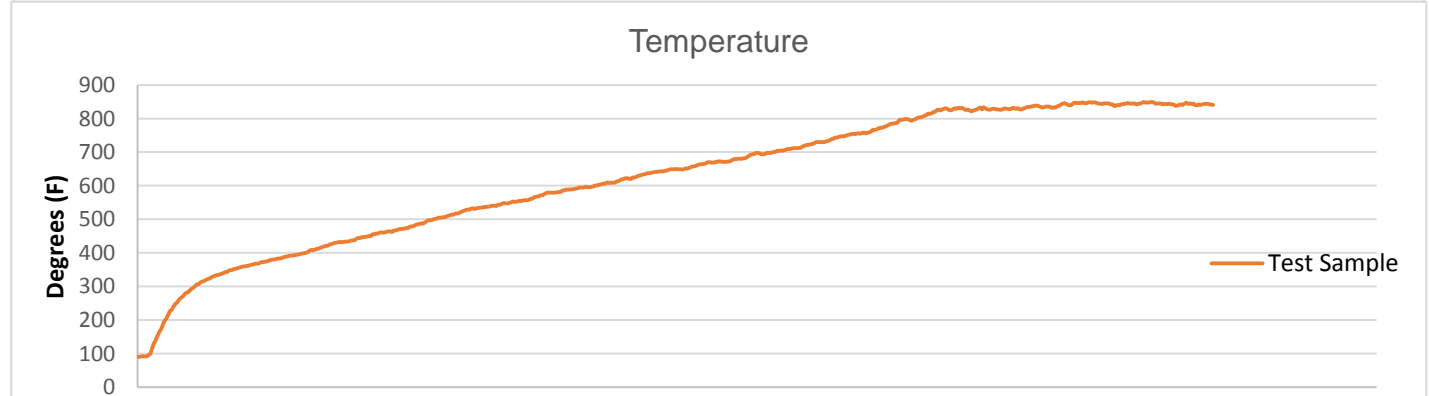
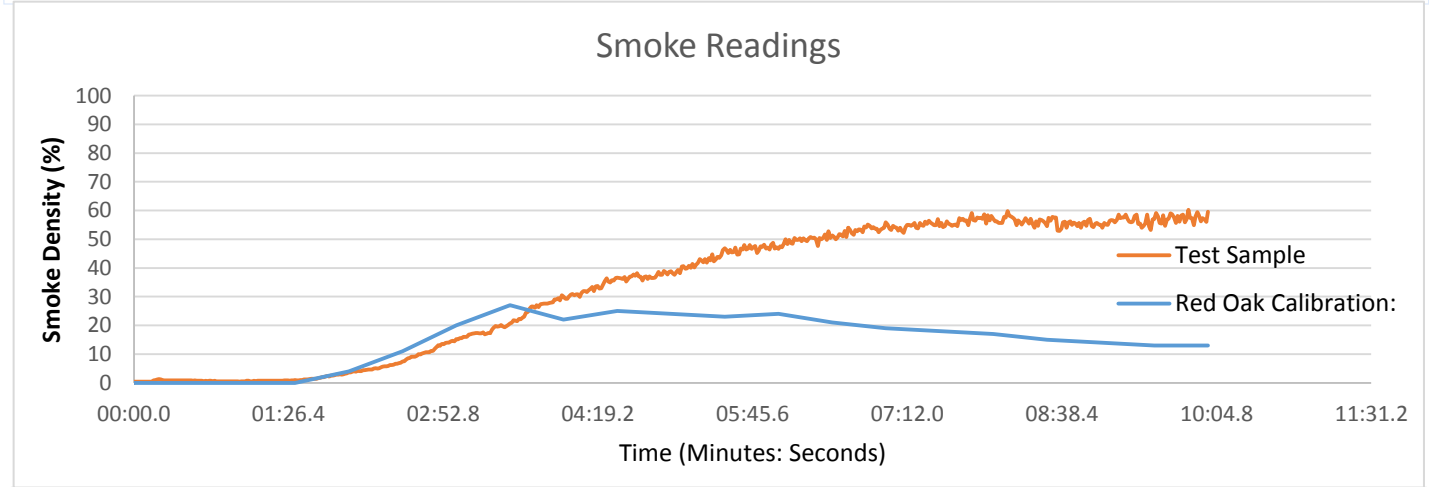
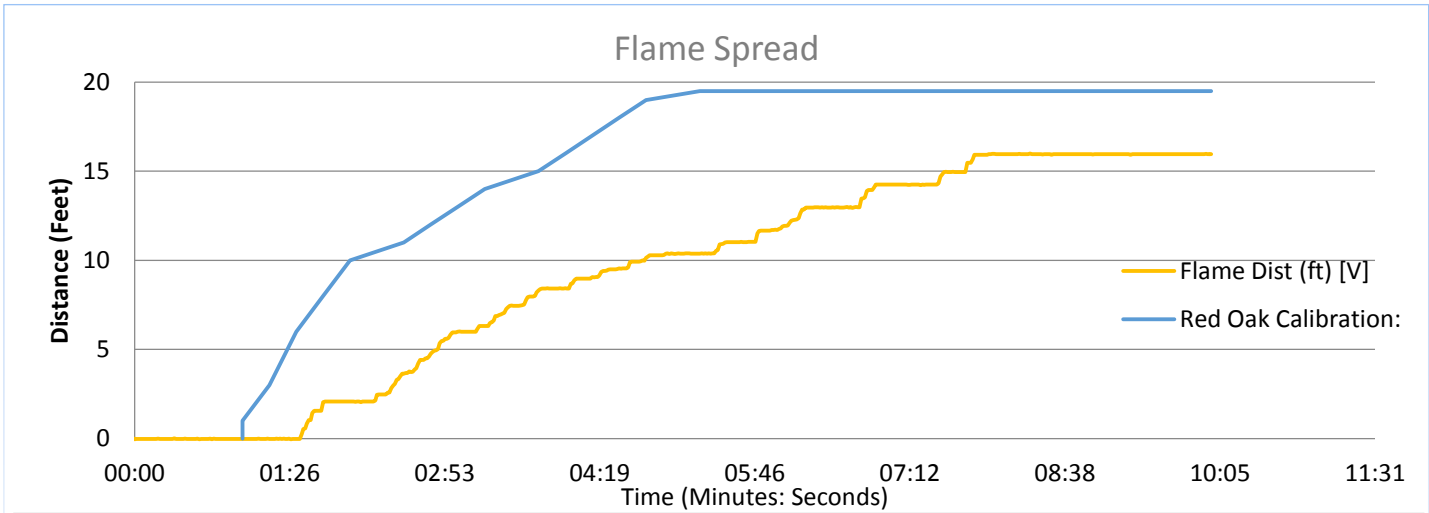
BUILDING CODES CITED:

1. National Fire Protection Association, ANSI/NFPA No. 101, "Life Safety Code"
2. International Building Code, Chapter 8, Interior Finishes, Section 803.

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APPENDIX

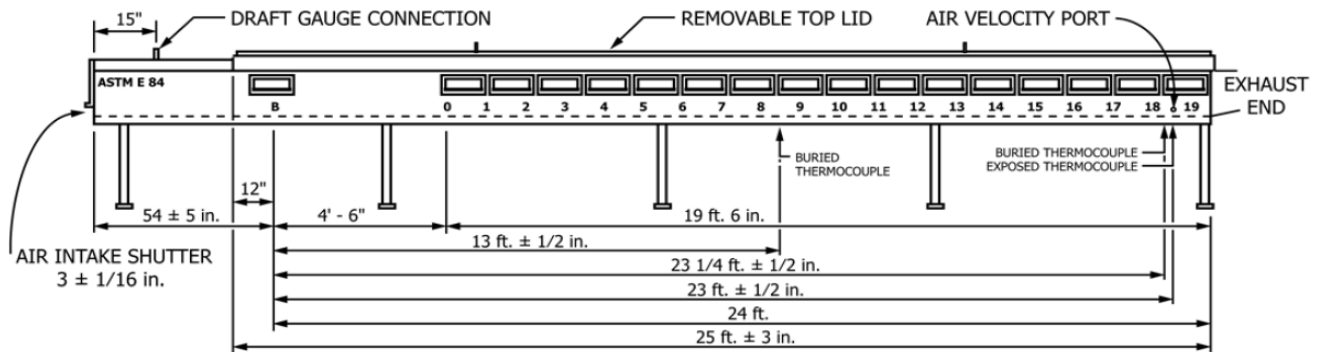


Diagram 1. Test Chamber side view showing critical dimensions.

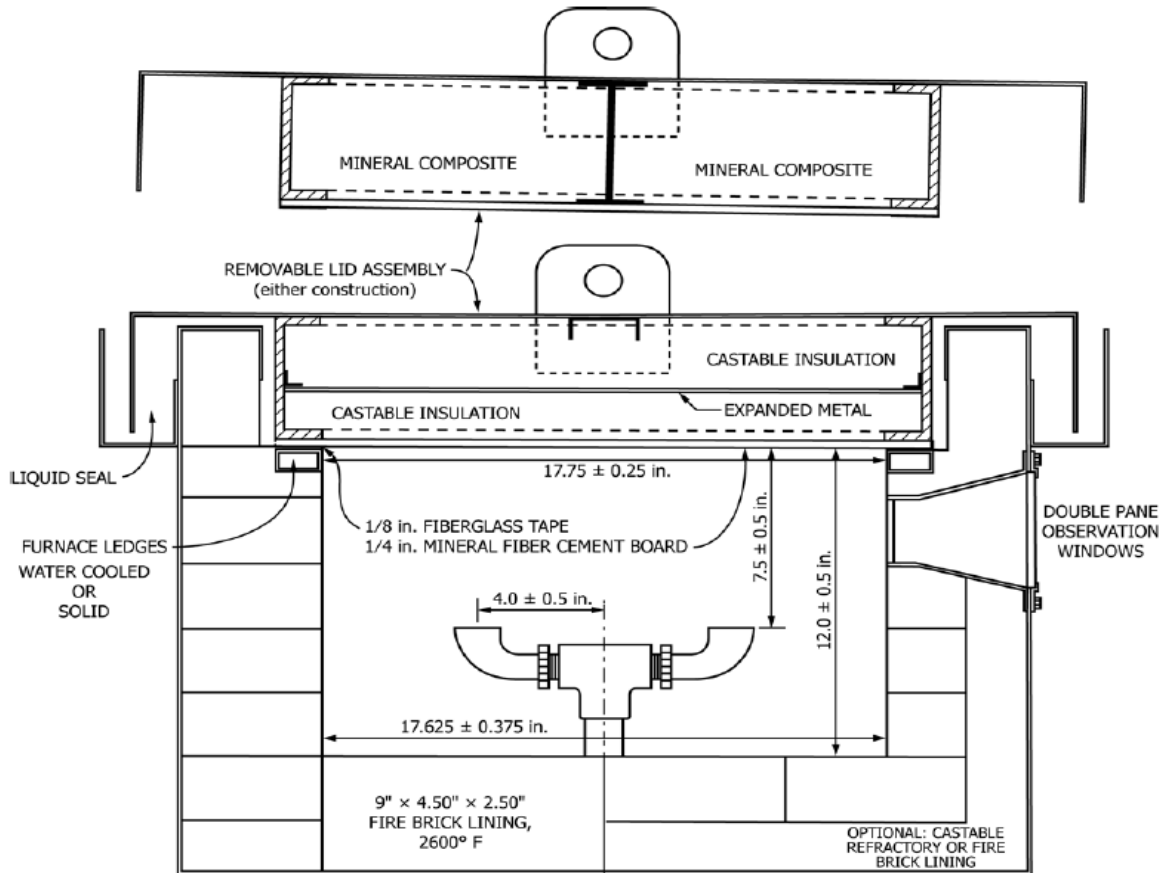


Diagram 2. Test Chamber looking down chamber showing critical dimensions.

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Photo 1. Surface of Specimen Tested.

*****<<<END OF TEST>>>*****

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- Instructions: 1) Run the test, and make si
 2) Press the import Data bi
 3) Update the inputs note i
 4)

* Company:	Smith & Fong
* Address:	475 6th street
	San Francisco, CA 94103
Phone:	415-896-0577
Cell Phone:	
Fax:	
Email:	stacy@plyboo.com
* Authorization for test	Stacy Willard

Enter Noted data in this table

Proposal Number *	MB-2016-031401R1
Acceptance Date: *	Friday, July 08, 2016

SAMPLE ID	Plyboo Carved Reveal Panels.
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SAMPLE DETAIL	directly by the client. No sampling or sample	
Date of Sampling:		
Sampled By:		QAI Employee
Sampling Detail *	tested	<i>Sampled or Tested</i>

* Date Samples received	7/12/2016
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Computer Date:	7/19/2016
Date of Test*	7/19/2016

Test Method: *	ASTM E84	
Tested Version *	15b	
Test Description *	"Standard Method of Test for Surface Burning	

Technician	Brian Ortega
Supervisor	Drew Mersereau
Technician Title:	Fire Technician
Supervisor Title:	Laboratory Supervisor

Test Stopped early?

Blank for No, Yes for yes

Preperation and Conditioning	The Sample Material was delivered to QAI in (3) 24" wide by 8 foot long specimens conforming to
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Mounting method	Samples were Stacked end to end to meet the 24 foot requirement and were self-supported on the test ledge.
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Ignition time	<input type="text" value="0:00"/> Enter in seconds
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Oberseervations	niton until 1:20 when the sample ignited and flame p
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Ensure the data file is saved to the default directory
Click on the Import button and select the correct test file to import
In RED below, review the report and make minor edits, then PRINT

Test Samples were submitted to the Laboratory directly by the client. No sampling or sample preparation were observed.

86400

Red Oak Calibration:

Flame Regress Enter "R"	Distance (ft)	Flame Spread Data				Smoke De			
		Time		Time	Area (ft-min.)	% Light	Tin	min	
		min	sec.	Seconds					MM:SS
IGNITION				0.00	00:00	0	0	0	0
	0	1	0	60.00	01:00	0.00	0.00	0	0
	1	1	0	60.00	01:00	0.00	0.00	0	1
	3	1	15	75.00	01:15	0.50	0.00	0	1
	6	1	30	90.00	01:30	1.13	0.00	4	2
	8	1	45	105.00	01:45	1.75	0.00	11	2
	10	2	0	120.00	02:00	2.25	0.00	20	3
	10.5	2	15	135.00	02:15	2.56	0.00	27	3
	11	2	30	150.00	02:30	2.69	0.00	22	4
	12	2	45	165.00	02:45	2.88	0.00	25	4
	13	3	0	180.00	03:00	3.13	0.00	24	5
	14	3	15	195.00	03:15	3.38	0.00	23	5
	14.5	3	30	210.00	03:30	3.56	0.00	24	6
	15	3	45	225.00	03:45	3.69	0.00	21	6
	16	4	0	240.00	04:00	3.88	0.00	19	7
	17	4	15	255.00	04:15	4.13	0.00	18	7
	18	4	30	270.00	04:30	4.38	0.00	17	8
	19	4	45	285.00	04:45	4.63	0.00	15	8
	19.25	5	0	300.00	05:00	4.78	0.00	14	9
	19.5	5	15	315.00	05:15	4.84	0.00	13	9
	19.5	10		600.00	10:00	92.63	0.00	13	10

Max Flame Front Progression Before Regression, (ft):

Total Area: 146.75

FSI: 101.55

Reported FSI: 100

Reviewed by QAI staff.

Developed Data (from Integrator)			
Time, sec.	Time, min.	MM:SS	Area (%LA-mi)
	0.00	00:00	0.00
30	30.00	00:30	0.00
	60.00	01:00	0.00
30	90.00	01:30	0.00
	120.00	02:00	1.00
30	150.00	02:30	3.75
	180.00	03:00	7.75
30	210.00	03:30	11.75
	240.00	04:00	12.25
30	270.00	04:30	11.75
	300.00	05:00	12.25
30	330.00	05:30	11.75
	360.00	06:00	11.75
30	390.00	06:30	11.25
	420.00	07:00	10.00
30	450.00	07:30	9.25
	480.00	08:00	8.75
30	510.00	08:30	8.00
	540.00	09:00	7.25
30	570.00	09:30	6.75
	600.00	10:00	6.50

Red Oak Area: 151.75

Burn Date: