



TEXTILE TESTING

Fire • Heat • Smoke • Acoustics

For the Account of:

Burch
4200 Brockton Dr SE
Grand Rapids, MI 49512

Report Number: 17-003681

Revision Number: 1

Date Order Received: 09/19/2017

Client's Identification:

Metric

CERTIFICATE OF TESTING

TEST PERFORMED: Standard Method of Test for Surface Burning Characteristics of Building Materials ASTM E 84-16
Unadhered

TEST RESULTS

	Flame Spread Index	Smoke Developed Index
52481	10	70
Reinforced Cement Board	0	0
Red Oak Flooring	100	100

Specimen Data

Time to Ignition	00.08 (min)
Maximum Flame Spread	02.22 (ft)
Time to Maximum Flame Spread	00.43 (min)

ACCEPTANCE CRITERIA

Class	Flame Spread Index	Smoke Development Rating
1 or A	0 - 25	0 - 450 maximum
2 or B	26 - 75	0 - 450 maximum
3 or C	76 - 200	0 - 450 maximum

CONCLUSION Based on the above Results and Acceptance Criteria, the item tested is:

- ☒ Class 1 or A
☐ Class 2 or B
☐ Class 3 or C
☐ Unrated

DISCUSSION

This test is certified for ASTM E84 by the Southern Building Code Congress International (SBCCI) as a testing laboratory for Fire and Materials testing, Evaluation Report Number TL-9606 (Commercial Testing), and by the United States Department of Commerce, National Institute of Standards and Technology (NIST), through the National Voluntary Laboratory Accreditation Program (NVLAP) for compliance with criteria set forth in NIST Handbook 150:2001, all requirements of ISO/IEC 17025:2005, and relevant requirements of ISO 9002:1994.

This report is provided for the exclusive use of the client to whom it is addressed. It may be used in its entirety to gain product acceptance from daily-constituted authorities. The test results presented in this report apply only to the samples tested and are not necessarily indicative of apparent identical or similar materials. The client provided sample selection and identification. A sampling plan, if described in the referenced test procedure, was not necessarily followed. This report shall not be used under any circumstance in advertising to the general public.

INTRODUCTION

This report is a presentation of results of a surface flammability test on a material submitted by the client identified above.

The test was conducted in accordance with the most recent version of the ASTM International fire-test-response standard E84 *Surface Burning Characteristics of Building Materials*, sometimes referred to as the Steiner tunnel test. ASTM E84 is an American National Standard (ANSI) and has been approved for use by agencies of the Department of Defense. The ASTM E84 test method is the technical equivalent of UL No. 723. The test is applicable to exposed interior surfaces such as walls and ceilings. The test is conducted with the specimen in the ceiling position with the surface to be evaluated face down toward the ignition source. Thus, specimens 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.

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.

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This laboratory test is not intended to reflect fabric performance under actual conditions. The certification procedure merely measures the performance of samples under the predetermined and specific test conditions prescribed by the standard specified. This certificate applies only to the standards or processing identified and to the random sample(s) tested. The test results are representative of the qualities of the piece or lot only to the extent the sample tested is representative of the piece or lot.

Our reports and letters are for the exclusive use of the customer to whom they are addressed and they and the corporation named on the reverse are not to be used under any circumstances without prior written approval. Samples will not be retained, unless specified by the customer. Retained samples will be kept a maximum time of one year unless a specific retention period is necessary.

Purpose

The purpose of the test is to provide only the comparative measurements of surface flame spread and smoke development of materials with that of select grade red oak and reinforced cement board under specific fire exposure conditions. The test exposes a nominal 24-foot long by 20-inch wide test specimen to a controlled airflow and flaming fire adjusted to spread the flame along the entire length of a red oak specimen in 5½ minutes. During the 10-minute test duration, flamespread over the specimen surface and density of the resulting smoke are measured and recorded. Test results are calculated relative to red oak, which has an arbitrary rating of 100, and reinforced cement board, Grade II, which has a rating of 0.

The test results are expressed as Flame Spread Index and Smoke Developed Index. The Flame Spread Index is defined in ASTM E 176 as a number or classification indicating a comparative measure derived from observations made during the progress of the boundary of a zone of flame under defined test conditions. The Smoke Developed Index, a term specific to ASTM E-84, is defined as a number or classification indicating a comparative measure derived from smoke obscuration data collected during the test for surface burning characteristics. There is not necessarily a relationship between the two measurements.

The method does not provide for measurement of heat transmission through the surface tested, the effect of aggravated flame spread behavior of an assembly resulting from the proximity of combustible walls and ceilings, or classifying a material as noncombustible solely by means of a Flame Spread Index.

The zero reference and other parameters critical to furnace operation are verified on the day of the test by conducting a 10-minute test using 1 ¼-inch reinforced cement board, Grade II. Periodic tests using NOFMA certified 23/32-inch select grade red oak flooring provide data for the 100 reference.

Test Sample

The test sample, selected by the client, is identified in the header section of this report. The material was conditioned to equilibrium in an atmosphere with the temperature maintained at 71 ±2°F and the relative humidity at 50 ±5 percent. For testing, two lengths of the material, each measuring 2 feet wide by 12 feet in length, were free laid over a 2-inch hexagonal wire mesh supported by ¼ inch diameter steel rods spanning the ledges of the tunnel furnace at 24-inch intervals. This method of auxiliary sample support is described in Appendix X1 of the E84 standard, Guide to Mounting Methods, Sections X1.1.2.2 (a) and X1.1.2.3.

Test Results

The test results, calculated on the basis of observed flame propagation and the integrated area under the recorded smoke density curve, are presented above. The Flame Spread Index obtained in E-84 is rounded to the nearest number divisible by five. Smoke Developed Indices are rounded to the nearest number divisible by five unless the Index is greater than 200. In that case, the Smoke Developed Index is rounded to the nearest 50 points. The flame spread and smoke development data are presented graphically in the computer printout at the end of this report.

Classification

The Flame Spread Index and Smoke Developed Index values obtained by ASTM E84 are frequently used by code officials and regulatory agencies in the acceptance of interior finish materials for various applications. The most widely accepted classification system is described in the National Fire Protection Association publication NFPA 101 *Life Safety Code*, where the Standard Classification System is as cited in the Acceptance Criteria section of this report.

Class A, B and C correspond to Type I, II, and III respectively in other codes such as SBCCI, BOCA, and ICBO. They do not preclude a material being otherwise classified by the authority of jurisdiction.

The description of the test procedure and specimen evaluated, as well as the observations and results obtained, contained herein are true and accurate within the limits of sound engineering practice. These test results were obtained from an outside source. A copy of the original document is kept on file at Applied Textiles.

CERTIFICATION I certify that the above results were obtained after testing specimen in accordance with the procedures and equipment specified by the standard stated above. These test results were obtained from an outside source



Authorized Signature

Date Order Completed: 10/20/2017

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This laboratory test is not intended to reflect fabric performance under actual conditions. The certification procedure merely measures the performance of samples under the predetermined and specific test conditions prescribed by the standard specified. This certificate applies only to the standards or processing identified and to the random sample(s) tested. The test results are representative of the qualities of the piece or lot only to the extent the sample tested is representative of the piece or lot.

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TESTING CERT. #3193.01

Report Number: 17-000663
Date Order Received: 05/05/2017

For the Account of: Burch
4200 Brockton Dr SE
Grand Rapids, MI 49512

Client's Identification: Metric
Acrylic Backing & Stain Repellent

CERTIFICATE OF TESTING

TEST PERFORMED: NFPA 260 Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture – 2013; Fabric Cover Test and UFAC Fabric Classification Test Method – 1990; Standard Test Methods for Cigarette Ignition Resistance of Components of Upholstered Furniture ASTM E 1353-08ae1 – Cover Fabric Test

TEST RESULTS

Specimen	Char Length (in)
1	0.6
2	0.6
3	0.6

NOTES

Test Conditions: 70 ±4°F, 65 ±5% Relative Humidity

ACCEPTANCE CRITERIA

1. If the test specimen has no ignition, or if no individual specimen yields a vertical char of 45 mm (1.75 in; ASTM states 1.8 in.) or less, the fabric is classified a Class I cover fabric.
2. If the vertical char of the test specimen greater than 45 mm (1.75 in.; ASTM states 1.8 in), the fabric is classified a Class II cover fabric.
3. If an obvious ignition of the polyurethane substrate occurs on the test assembly, the fabric is classified a Class II cover fabric.

CONCLUSION Based on the above Results and Acceptance Criteria, the item tested is:

- ☒ Class I
☐ Class II

CERTIFICATION I certify that the above results were obtained after testing specimen in accordance with the procedures and equipment specified by the standard stated above.

Authorized Signature

Date Order Completed: 05/15/2017

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TEXTILE TESTING



TESTING CERT. #3193.01

Report Number: 78345
Date: 3-3-2016

CERTIFICATE OF TESTING

For the Account Of: Burch
4200 Brockton Dr SE
Grand Rapids, MI 49512

Contact: Customer Service

Client's Identification: Metric

TEST PERFORMED California Technical Bulletin 117: June 2013 – Requirements, Test Procedure and Apparatus for Testing the Smolder Resistance of Materials Used in Upholstered Furniture – Cover Fabric Test

TEST RESULTS

Specimen	Char Length (in)	Extinguished in 45 minutes? (Y/N)
1	0.6	Y
2	0.6	Y
3	0.6	Y

NOTES

Test Conditions: 70 ±5°F, 50 ±5% Relative Humidity

ACCEPTANCE CRITERIA

A material is considered to pass or fail based on the following criteria:

1. A single mock-up test specimen fails to meet the requirements of this test procedure if any of the following criteria occurs:
 - a. The mock-up test specimen continues to smolder after the 45 minute test duration
 - b. A vertical char length of more than 1.8 inches (45mm) develops on the cover fabric
 - c. The mock-up test specimen transitions to open flaming
2. The cover fabric passes the test if three initial mock-up specimens pass the test, i.e. the cigarettes burn their full length and are no longer smoldering
3. If more than one initial specimen fails, the cover fabric fails the test
4. If any one of the three initial specimens fails, repeat the test on additional three specimens
5. If all three additional specimens pass the test, the cover fabric passes the test. If any one of the additional three specimens fails, the cover fabric fails the test

CONCLUSION Based on the above Results and Acceptance Criteria, the item tested is:

- ☒ Pass
☐ Fail

CERTIFICATION I certify that the above results were obtained after testing specimen in accordance with the procedures and equipment specified by the standard stated above.

Authorized Signature