ASTM E84-01 UNADHERED SURFACE BURNING CHARACTERISTICS

Ponte

REPORT NO. 99378

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Prepared For:
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APPENDIX

ASTM E84 DATA SHEET

FABRIC: "Ponte"

DATE: 1-20-03
PROJECT NUMBER: 99378

TEST RESULTS:	**FLAMESPREAD INDEX**	**10**
	SMOKE DEVELOPED INDEX	**125**

SPECIMEN DATA

TIME TO IGNITION	00.05 (MIN)
MAXIMUM FS	01.88 (FEET)
TIME TO MAX FS	00.35 (MIN)

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APPLIED TEXTILES
LAB SERVICES

I. INTRODUCTION

The test was conducted in accordance with the American Society for Test and Materials fire test response standard E84-00a, Surface Burning Characteristics of Building Materials, sometimes referred to as Steiner tunnel test. This test 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 method which is similar to NFPA No. 255 and UL No. 723, is an American National (ANSI) Standard and has been approved for use by agencies of the Department of Defense for listing in the DoD Index of Specifications and Standards 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."

This test method is also published under the following designations:

ANSI 2.5
NFPA 255
UBC 42-1
UL 723

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 materials, products, or assemblies under actual fire conditions.

(1) American Society for Testing and Materials (ASTM), Committee E-5 on Fire Standards

II. PURPOSE

The purpose of the test is to determine the comparative surface-burning behavior of a material by observing the flame spread along the surface of the specimen. It is intended to provide comparative measurements of surface flame spread and smoke development of materials with that of a select grade red oak 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 5.50 minutes. During the 10-minute test duration. flame spread 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 GRC board, 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 ¼-inch GRC board. Periodic tests using NOFMA certified 23/32-inch select grade red oak flooring provide data for the reference.

III. DESCRIPTION OF TEST SPECIMENS

Specimen Identification:	**Ponte**
Date Received:	1-07-03

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Mounting Method:
The test sample, selected by the client, was conditioned to equilibrium in an atmosphere with the temperature maintained at 71 + 2 F and the relative humidity at 50 + 5percent. For testing, one 24-foot length of the fabric was free laid over a 2-inch hexagonal wire mesh supported by 1/4-inch diameter steel rods spanning the ledges of the tunnel furnace at 24-inch intervals. This method of sample preparation is described in Appendix X1 of the E 84 standard, Guide to Mounting Methods, Sections X1.1.2.2 and X1.1.2.3.

IV. TEST RESULTS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table. In recognition of possible variations and limitations of the test method, the results are computed to the nearest number divisible by five, as outlined in the test method.

Test Specimen	Flame Spread Index	Smoke Developed
GRC BOARD	0	0
Red Oak Flooring	100	100
Ponte	**10**	**125**

The data sheets are included in the Appendix. These sheets are actual printouts of the computerized data system, which monitors the ASTM E84 apparatus, and contain all calibration and specimen data needed to calculate the test results.

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ASTM E 84 TEST DATA

Client: Applied Textiles
Test Number: 3400-3376
Material Tested: Ponte
Date: January 20, 2003

Test Results:

Time to Ignition = 00.05 minutes
Maximum Flamespread Distance = 01.88 feet
Time to Maximum Spread = 00.35 minutes

Flame Spread Index = 10
Smoke Developed Index = 125