



# United States Testing Company, Inc.

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## REPORT OF TEST

Engineering Services

**CLIENT:** BGF Industries Inc.  
 301 N. Elm Street  
 Greensboro, North Carolina 27401

**NUMBER:** 112425  
 September 9, 1994

Smoke & Fire Prevention Systems  
 Rt. 2, Box 552F  
 Clarksville, Virginia 23927

**SUBJECT:** Surface Burning Characteristics of Building Materials

**REFERENCE:**

BGF Industries Inc., Purchase Order Number 0733-0062 dated August 25, 1994.

Sample Recd.: 9-1-94 Test Date: 9-7-94

**TEST PERFORMED:**

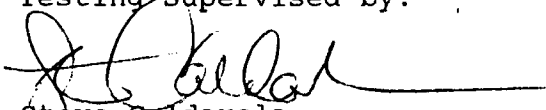
The submitted sample was tested for Flammability in accordance with the procedures outlined in ASTM E84-91a.

**SAMPLE IDENTIFICATION:**

One (1) sample of material was submitted and identified by the Client as:

Style 7782 972B Finish

Testing Supervised by:

  
 Steve Caldarola  
 Senior Supervisor  
 Fire Technology

SIGNED FOR THE COMPANY

BY   
 John Lomash  
 Vice President

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# United States Testing Company, Inc.

CLIENT: BGF Industries Inc.  
Smoke & Fire Prevention Systems

NUMBER: 112425

## INTRODUCTION:

This report presents test results of Flame Spread and Smoke Developed Values per ASTM E84-91a. The report also includes Material Identification, Method of Preparation, Mounting and Conditioning of the specimens.

The tests were performed in accordance with the specifications set forth in ASTM E84-91a, "Standard Test Method for Surface Burning Characteristics of Building Materials", both as to equipment and test procedure. This test procedure is similar to UL-723, ANSI No. 2.5, NFPA No. 255 and UBC 42-1.

The test results cover two parameters: Flame Spread and Smoke Developed Values during a 10-minute fire exposure. Inorganic cement board and red oak flooring are used as comparative standards and their responses are assigned arbitrary values of 0 and 100, respectively.

## PREPARATION AND CONDITIONING:

One (1) 24" x 24'0" sample was placed on a 2-inch hexagonal wire mesh supported by steel rods spanning the width of the tunnel. The sample thickness was 0.012 inches.

The sample was conditioned at  $73^{\circ} \pm 5^{\circ}$  Fahrenheit and  $50 \pm 5\%$  relative humidity.

## TEST PROCEDURE:

The tunnel was thoroughly pre-heated by burning natural gas. When the brick temperature, sensed by a floor thermocouple, had reached the prescribed  $105^{\circ}$  Fahrenheit  $\pm 5^{\circ}$  Fahrenheit level, the sample was inserted in the tunnel and test conducted in accordance with the standard ASTM E84-91a procedures.

The operation of the tunnel was checked by performing a 10-minute test with inorganic board on the day of the test.

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CLIENT: BGF Industries Inc.  
Smoke & Fire Prevention Systems

NUMBER: 112425

## TEST RESULTS:

The test results, calculated in accordance with ASTM E84-91a for Flame Spread and Smoke Developed Values are as follows:

Test Specimen:	Style 7782
Flame Spread Index*:	0
Smoke Developed Value*:	0

\*Graphs of the Flame Spread, Smoke Developed and Time-Temperature are shown in Figures 1, 2 and 3 at the end of this report.

## OBSERVATIONS:

No ignition was noted in the ten minute exposure to the flame. The specimen exhibited charring. There was no flamefront advancement. Neither afterflame nor afterglow were evident upon test completion.

## RATING:

The National Fire Protection Association Life Safety Code 101, Section 6-5.3, "Interior Wall and Ceiling Finish Classification", has a means of classifying materials with respect to Flame Spread and Smoke Developed when tested in accordance with NFPA 255, "Method of Test of Surface Burning Characteristics of Building Materials", (ASTM E84).

The classifications are as follows:

Class A Interior Wall & Ceiling Finish:	Flame Spread - 0-25; Smoke Developed - 0-450
Class B Interior Wall & Ceiling Finish:	Flame Spread - 26-75; Smoke Developed - 0-450
Class C Interior Wall & Ceiling Finish:	Flame Spread - 76-200; Smoke Developed - 0-450

Since the sample received a Flame Spread of 0 and a Smoke Developed Value of 0 it would fall into the Class A Interior Wall & Ceiling Finish category.



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FLAME SPREAD

Sample Style 7782 972B Finish

Red Oak 0 0

Test No. 112425

Test Date September 7, 1994

I.C. Board                     

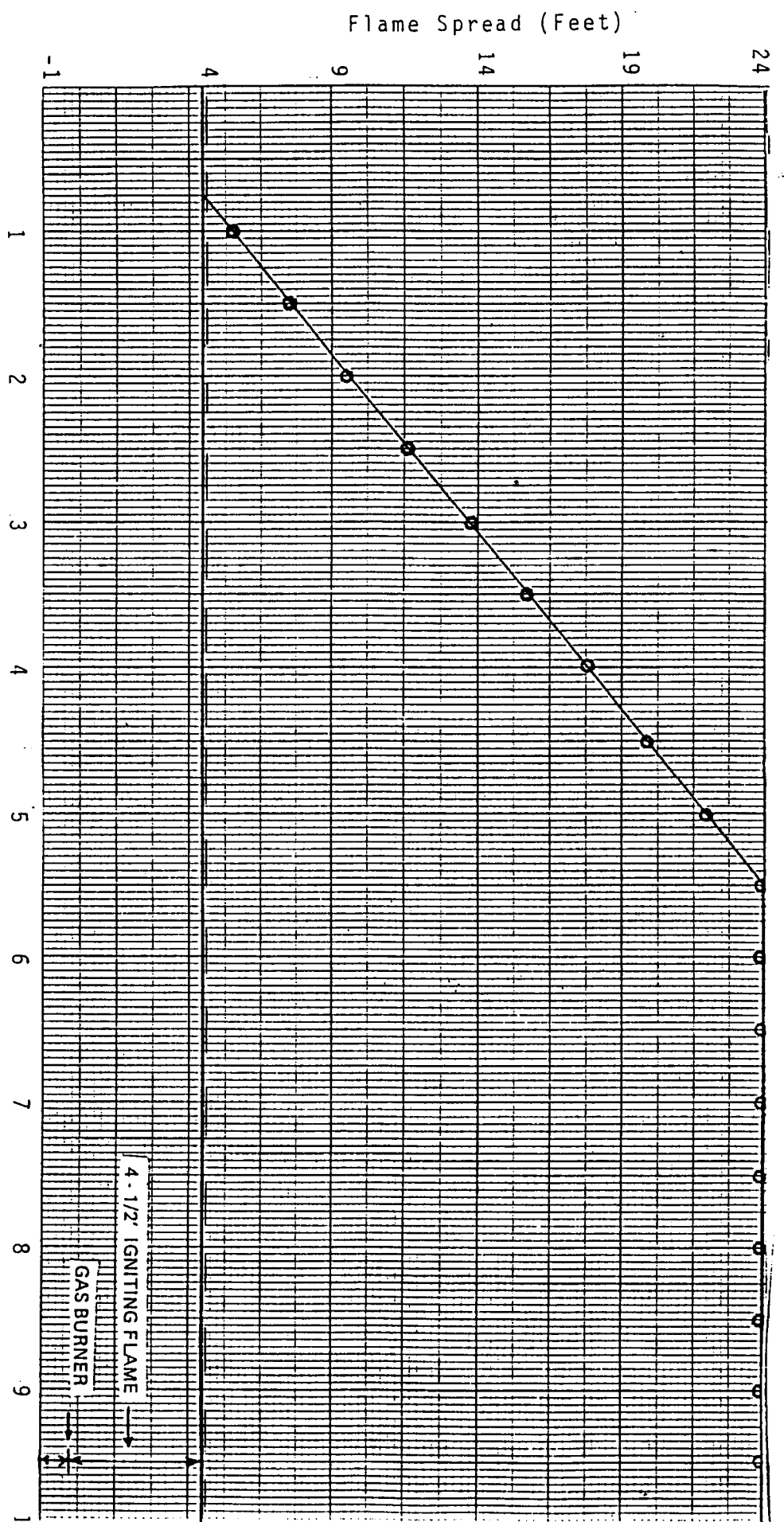


Figure 1

Time (Minutes)



UNITED STATES TESTING COMPANY, INC.

SMOKE DEVELOPED

SAMPLE Style 7782 972B Finish

RED OAK

+ +

TEST NO. 112425

TEST DATE September 7, 1994

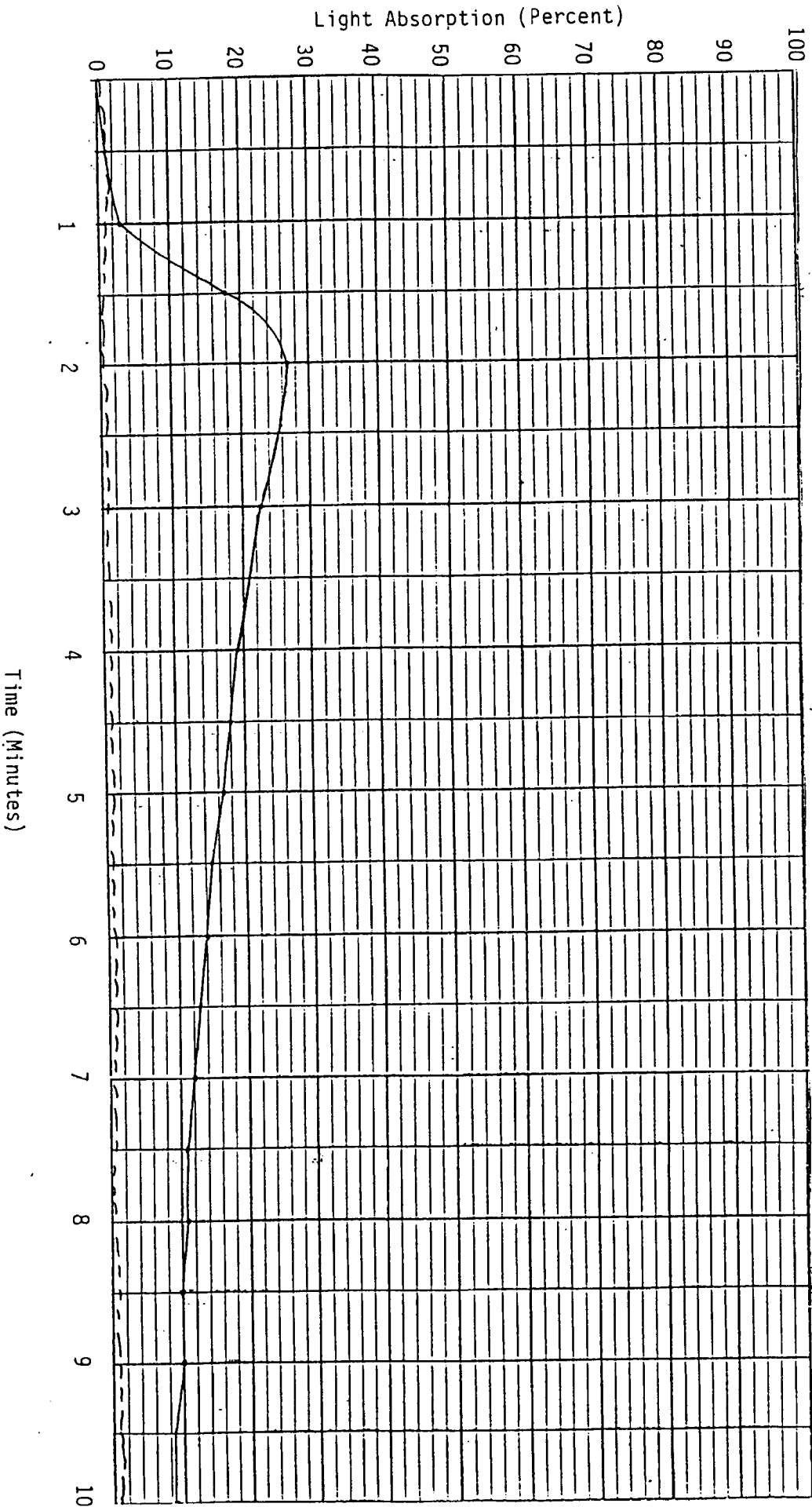


Figure 2

Time (Minutes)



UNITED STATES TESTING COMPANY, INC.

TIME TEMPERATURE CURVE OF EXPOSED THERMOCOUPLE

SAMPLE Style 7782 972B Finish

TEST NO. 112425

RED OAK

+

+

TEST DATE September 7, 1994

I.C. BOARD

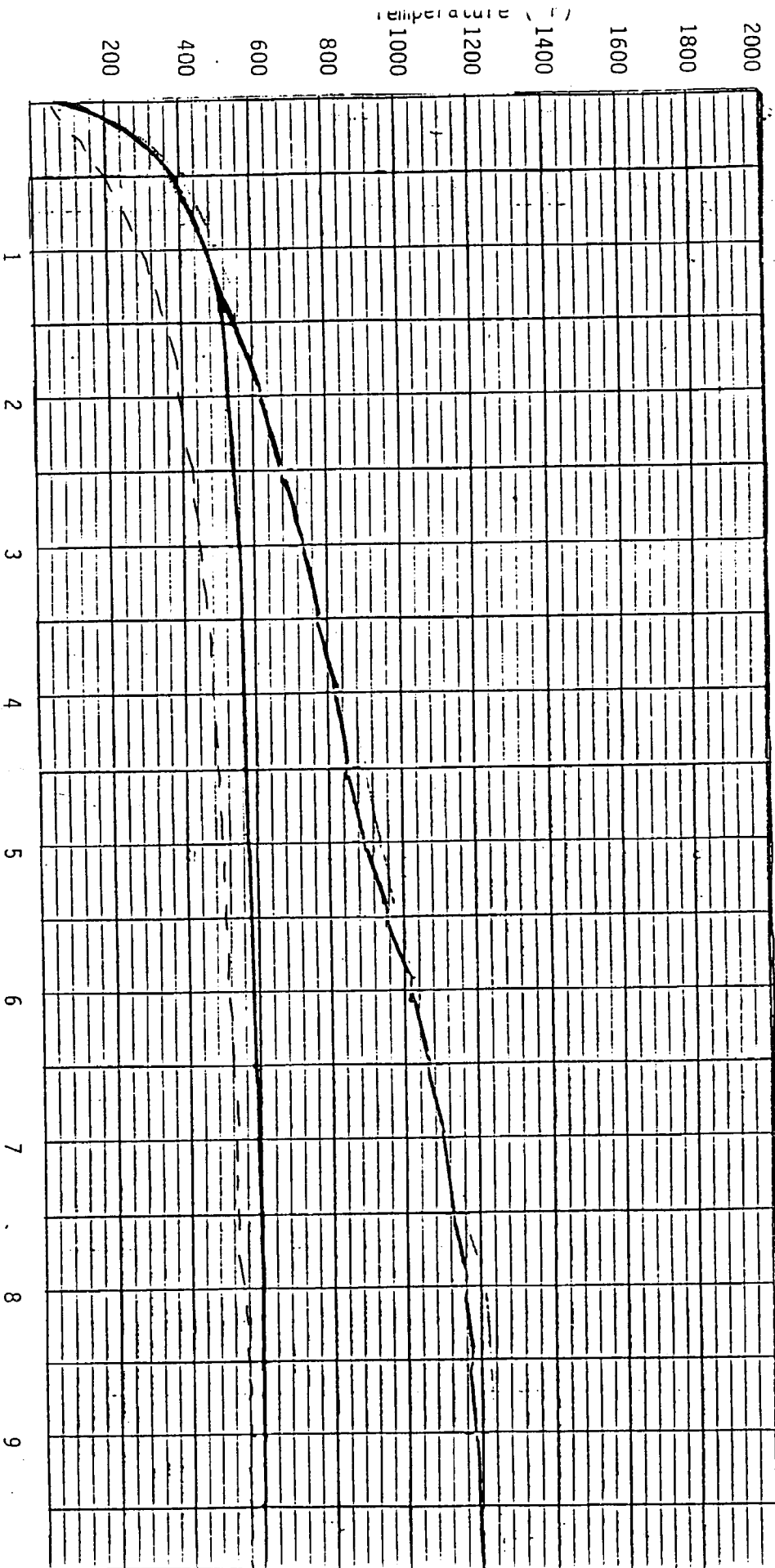


Figure 3

Time (Minutes)