



United States Testing Company, Inc.
Engineering Services Division

291 FAIRFIELD AVENUE • FAIRFIELD, NEW JERSEY 07006 • 201-575-5252

CLIENT: Astro-Packaging Inc.
11756 South Austin Avenue
Alsip, Illinois 60482

NUMBER: 091822

July 29, 1988

SUBJECT: Surface Burning Characteristics of Building Materials

REFERENCE:

Astro-Packaging Inc., Purchase Order Number 24491 dated July 15, 1988.

TEST PERFORMED:

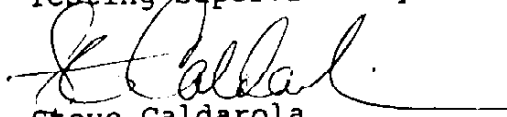
The submitted sample was tested for Flammability in accordance with the procedures outlined in ASTM E-84-86.

SAMPLE IDENTIFICATION:

One (1) sample of foil covered bubble packaging was submitted and identified by the Client as:

Foil/Bubble/Foil

Testing Supervised by:


Steve Caldarola
Supervisor
Fire Technology Section

SIGNED FOR THE COMPANY

BY 
John Tomash
Assistant Vice President

Page 1
of 6
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INTRODUCTION:

This report presents test results of Flame Spread and Smoke Developed Values per ASTM E-84-86. 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 E-84-86, "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.

The performance of each material is evaluated in relation to the performance of inorganic cement board and red oak flooring under similar fire exposure.

PREPARATION AND CONDITIONING:

One (1) 24" x 24'0" section of material was placed on a 2-inch hexagonal wire mesh supported by steel rods spanning the width of the tunnel. The material was tested at a total thickness of approximately 0.125 inches with bubble diameter of 0.375.

NOTE: The foil facing was not slit prior to test.

The sample was conditioned at 73 degrees +/- 5 degrees Fahrenheit and 50 +/- 5 percent 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 degrees Fahrenheit +/- 5 degrees Fahrenheit level, the sample was inserted in the tunnel and test conducted in accordance with the standard ASTM E-84-86 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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TEST RESULTS:

The test results, calculated in accordance with ASTM E-84-86 for Flame Spread and Smoke Developed Values are as follows:

Test Specimen:	Foil/Bubble/Foil
Flame Spread Index*:	15
Smoke Developed Value*:	30

*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:

Ignition was noted at 1 minute 35 seconds along with charring, melting, peeling, and flaking of the specimen directly exposed to the flame. The flamefront advanced a maximum distance of 4 feet at 2 minutes 11 seconds. Afterflame and afterglow were evident upon test completion.



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FLAME SPREAD

Sample Foil/Bubble/Foil Test No. 091822

Red Oak Test Date July 27, 1988

I.C. Board

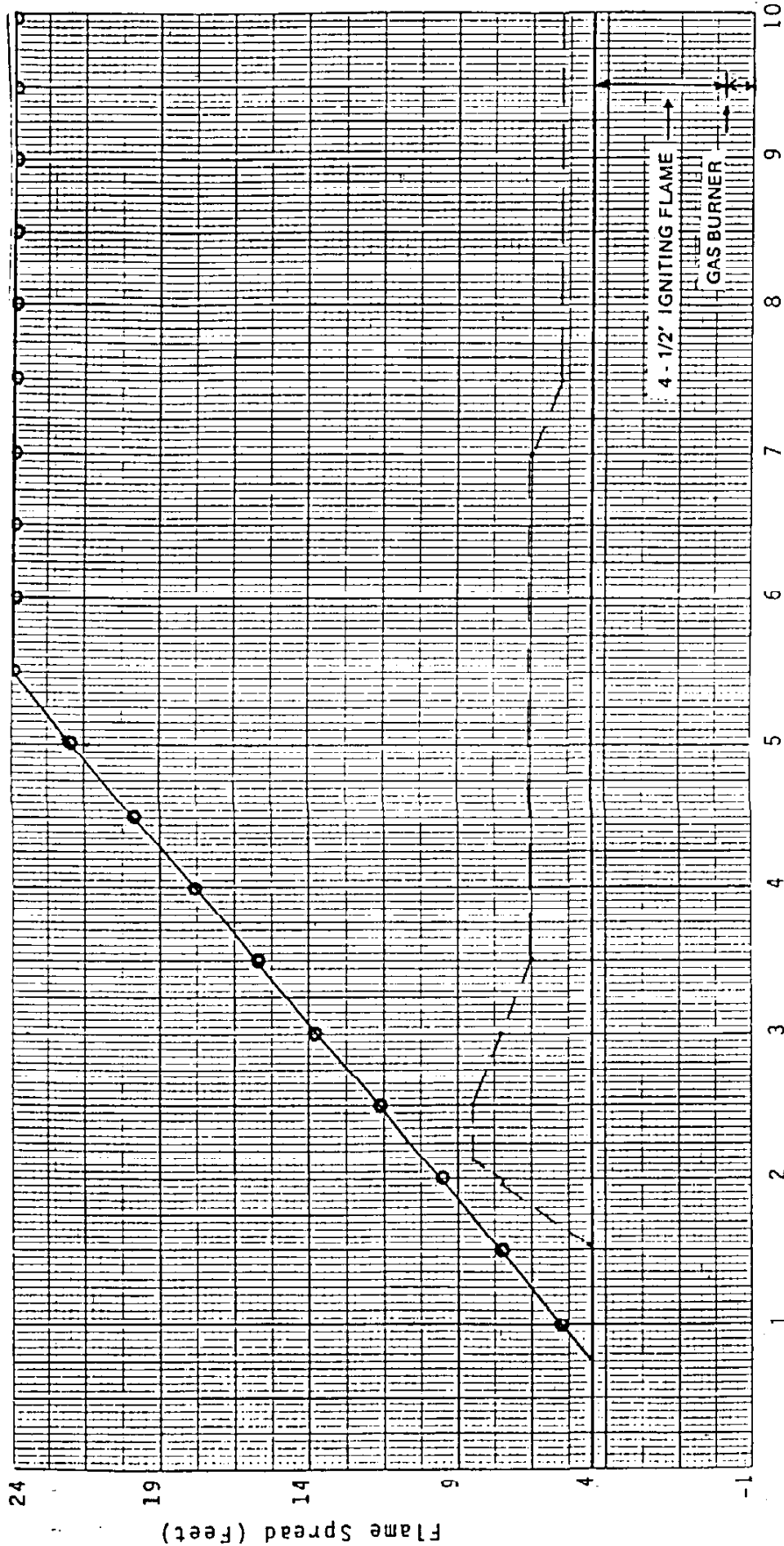


Figure 1



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SMOKE DEVELOPED

SAMPLE Foil/Bubble/Foil -----

TEST NO. 091822

RED OAK + + + -----

TEST DATE July 27, 1988

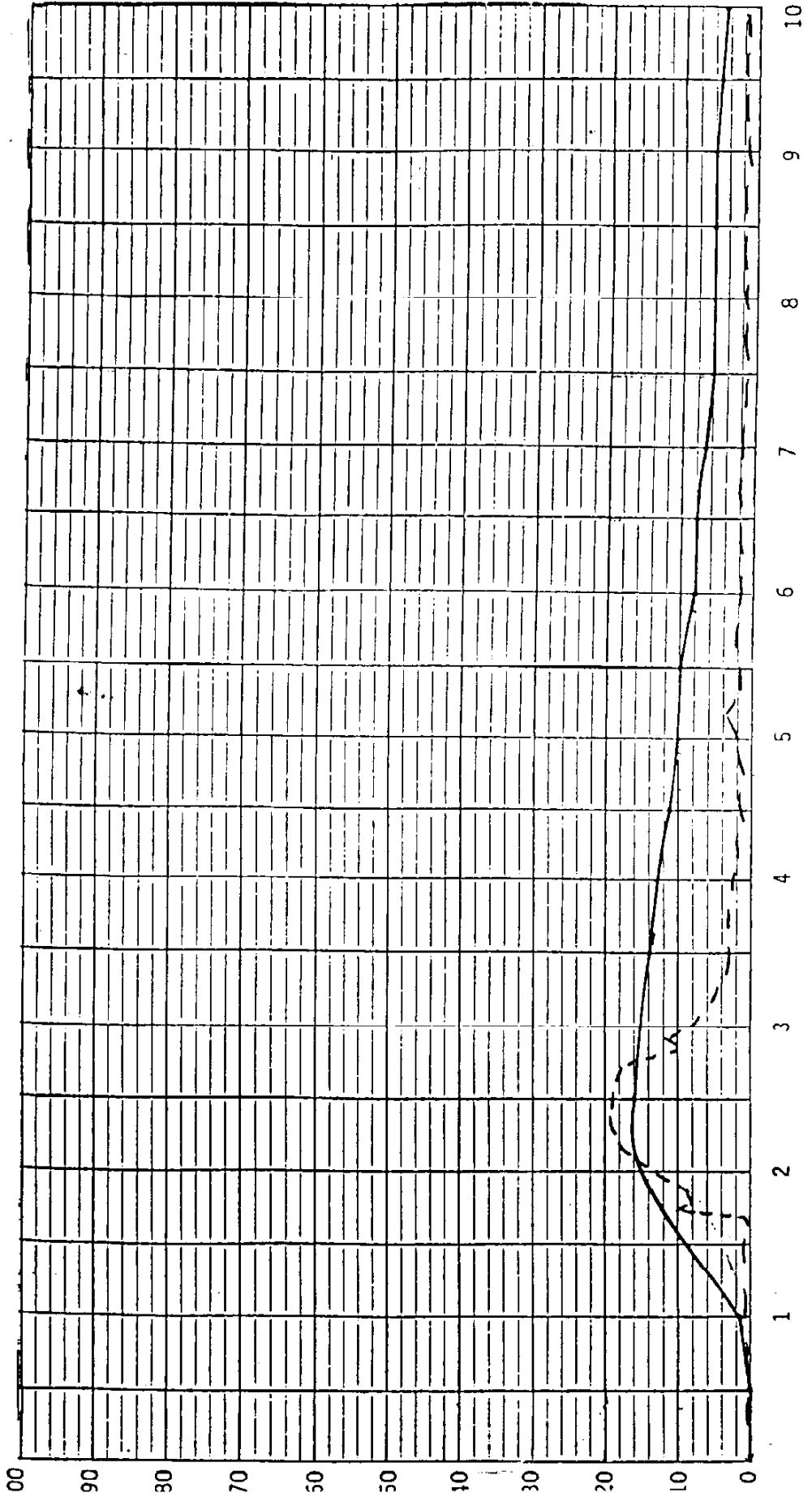


Figure 2



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TIME TEMPERATURE CURVE OF EXPOSED THERMOCOUPLE

SAMPLE Foil/Bubble/Foil TEST NO. 091822

RED OAK + + TEST DATE July 27, 1988

I.C. BOARD

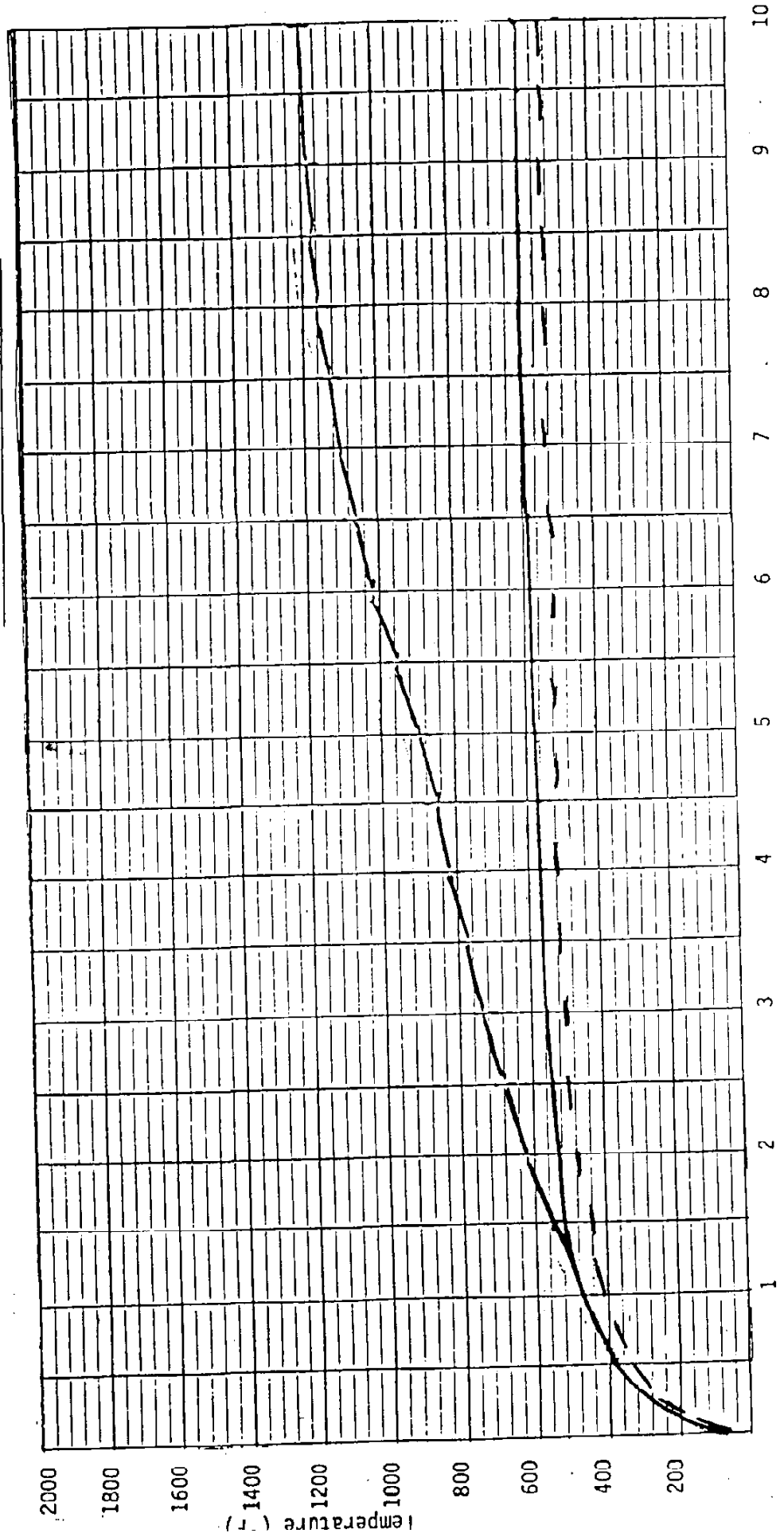


Figure 3