

This report is for the information of the Sponsor. It may be used in its entirety for the purpose of securing product acceptance from duly constituted approval authorities; however, this report or the name of the Institute shall not be used in publicity or advertising

SOUTHWEST RESEARCH INSTITUTE
Department of Fire Technology
POST OFFICE DRAWER 28510, 6220 CULEBRA RD. SAN ANTONIO, TEXAS 78284

INVESTIGATION OF SURFACE BURNING CHARACTERISTICS OF:

THREE ACRYLIC COATINGS: OX-LINE ASBESTOS
BINDING COMPOUNDS IN THREE COLORS, EX-64 SERIES
PLEASE NOTE: These Coatings also designated "Wilbur & Williams
Asbestos Binding Compound, EX 64 Series.
(See reference Page 2, Para II of this report)

PROJECT NO. 01-7282-223
FINAL REPORT

By C. A. HAFER, P.E.

MAY 9, 1983

Prepared for:
CALIFORNIA PRODUCTS CORPORATION
P.O. BOX 30
169 WAVERLY STREET
CAMBRIDGE, MASSACHUSETTS 02139-0569

Carl A. Hafer

Carl A. Hafer, P.E.
Manager
Standard Testing Services



S O U T H W E S T R E S E A R C H I N S T I T U T E

I. INTRODUCTION

This report presents the results of flame spread tunnel tests on three acrylic coatings, submitted for evaluation by California Products Corporation of Cambridge, Massachusetts. The report contains a description of the materials tested, the preparation and conditioning of the specimens, the test procedure, and finally, the test results. Note that the results only apply to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the materials' performance when used in combination with other materials. All test data are on file and are available for review by authorized persons.

The tests were conducted in accordance with the provisions of ASTM Designation E84-81a, "Standard Method of Test for Surface Burning Characteristics of Building Materials." This test method is similar to the test method specified in ANSI No. 2.5, NFPA No. 255, UL No. 723, UBC No. 42-1, and ASTM E84-75; however, two improvements were incorporated in the E84-80 procedure, i.e., the stack pressure control tap has been relocated to a position forward of the burners and the formulae used to calculate the flame spread have been modified--resulting in slightly lower values.

The purpose of the test was to evaluate performance of the test specimen in relation to that of mineral-fiber-cement board and red oak flooring under similar fire exposure. The results are expressed in terms of flame spread, fuel contribution, and smoke development during a 10-minute exposure and are recorded as a ratio with mineral-fiber-cement board 0 and red oak flooring 100.

II. DESCRIPTION OF MATERIALS

On April 1, 1983, test materials were received from the Sponsor. The materials consisted of three 1-gallon cans identified as:

1. ABC (abestos binding compound) 86023A #X-2571, off-white (pigmented), Batch No. 15274.
2. ABC (asbestos binding compound) 86023B #X-2556, clear, Batch No. 15274.

3. ABC (asbestos binding compound) 86023C EX64-2, transparent green, Batch No. 16064.

These products are also designated Wilbur and Williams Asbestos Binding Compound, EX 64 Series.

III. PREPARATION AND CONDITIONING OF TEST SPECIMENS

Each 21-in. x 25-ft (0.53 x 7.63-m) specimen was prepared using airless spray application in two coats. Coat No. 1 was applied thinned, 1 part water to 2 parts paint, at 75 ft²/gal (1.84 m²/ℓ) and allowed to dry 24 hours. Coat No. 2 was applied full body, no thinning, at a rate of 32 ft²/gal (0.79 m²/ℓ).

The specimens were conditioned for 25 days in an atmosphere maintained between 68 and 78°F (20 and 26°C) temperature and 45- to 55-percent relative humidity.

IV. TEST PROCEDURE

The tests were conducted on May 5, 1983. Reference data were obtained and furnace operation checked by conducting a 10-minute test with mineral-fiber-cement board on the day of the test and by periodic tests with red oak flooring. These tests provide the 0 and 100 references for flame spread, fuel contribution, and smoke density. Ignition over the burners was noted 46 seconds after the start of the test in the most recent calibration with red oak flooring. Each specimen to be evaluated was tested in accordance with the standard procedure.

V. TEST RESULTS

The test results were calculated on the basis of observed flame travel and the measurement of areas under the recorder curves of furnace temperature and smoke density (see Table 1). To allow for possible variations in results due to limitations of the test method, the numerical results were adjusted to the nearest figure divisible by 5.

Recorded data for flame spread, fuel contribution, and smoke density of the specimen are shown in the figures at the end of this report as a solid line on each graph.

TABLE 1. CLASSIFICATION

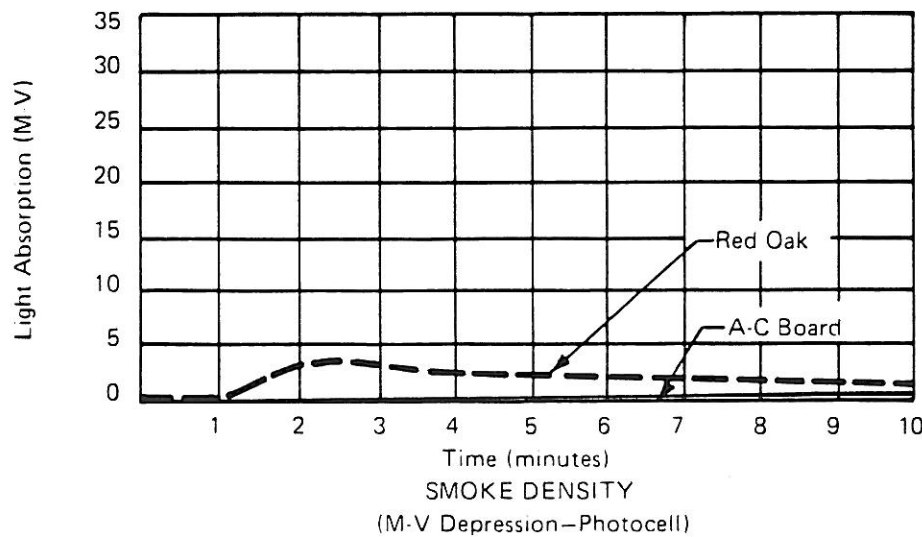
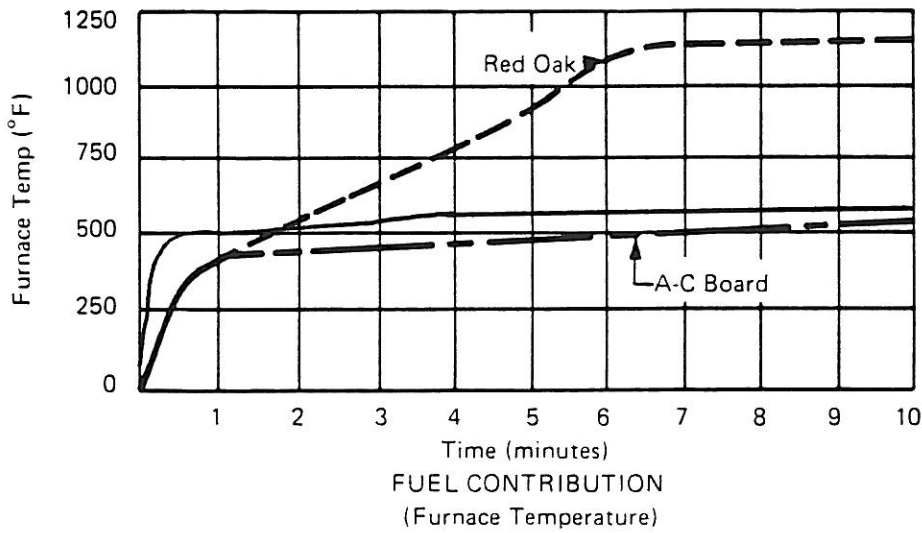
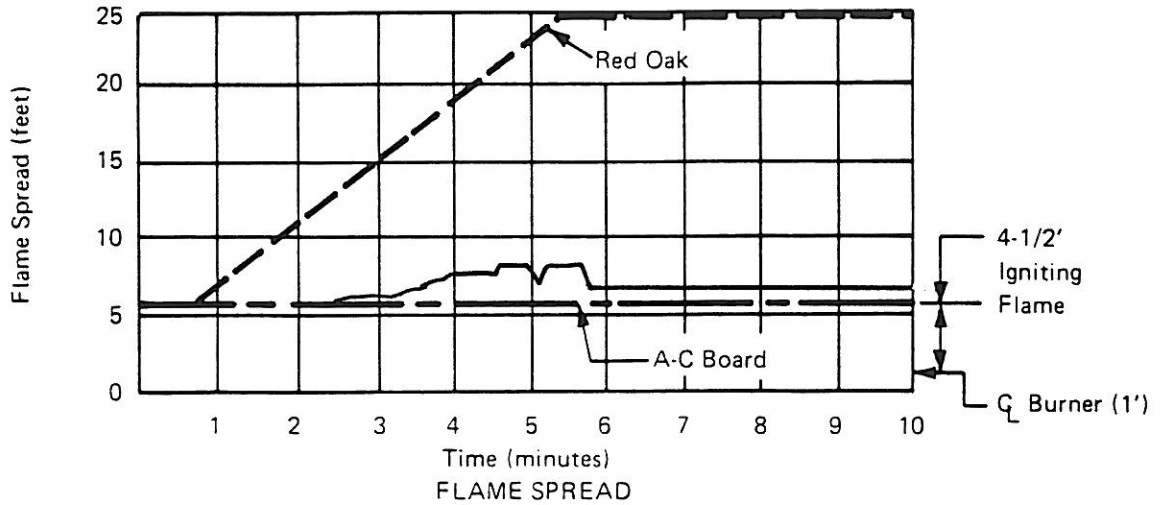
Test Specimen	Flame Spread		
	Index E84-80	Fuel Contribution	Smoke Density
Mineral-Fiber-Cement Board	0	0	0
Red Oak Flooring	100	100	100
Acrylic Coatings:			
ABC 86023A, #X-2571, Batch No. 15274	10	10	5
ABC 86023V, #X-2556, Batch No. 15797	10	10	5
ABC 96023C, EX64-2, Batch No. 16064	10	10	5

VI. OBSERVATIONS DURING AND AFTER TESTS

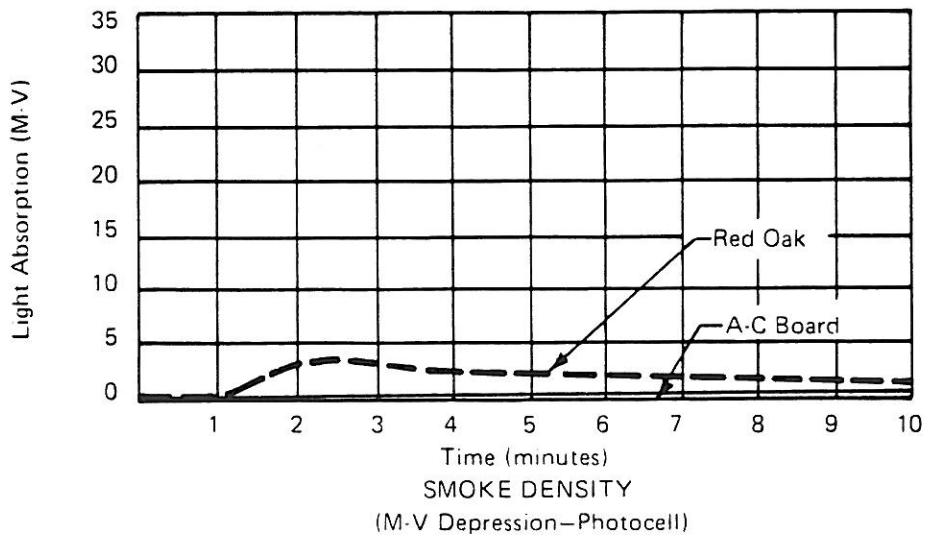
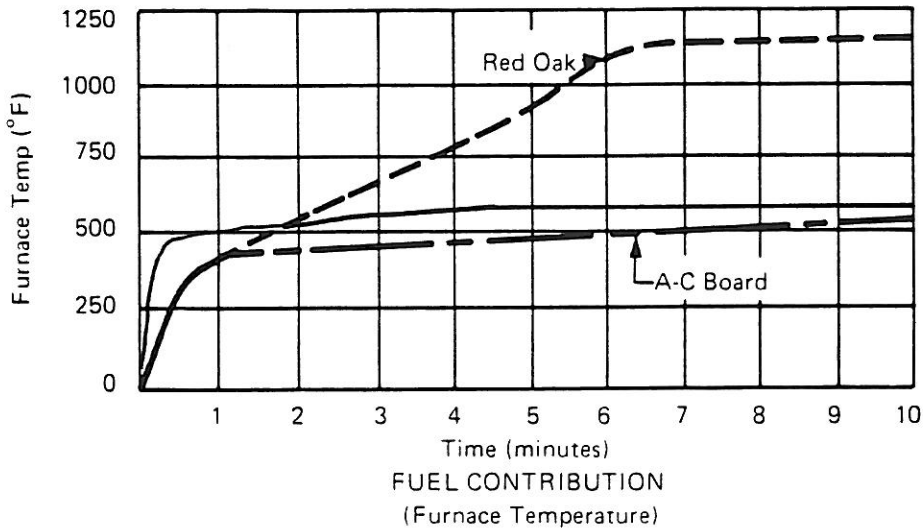
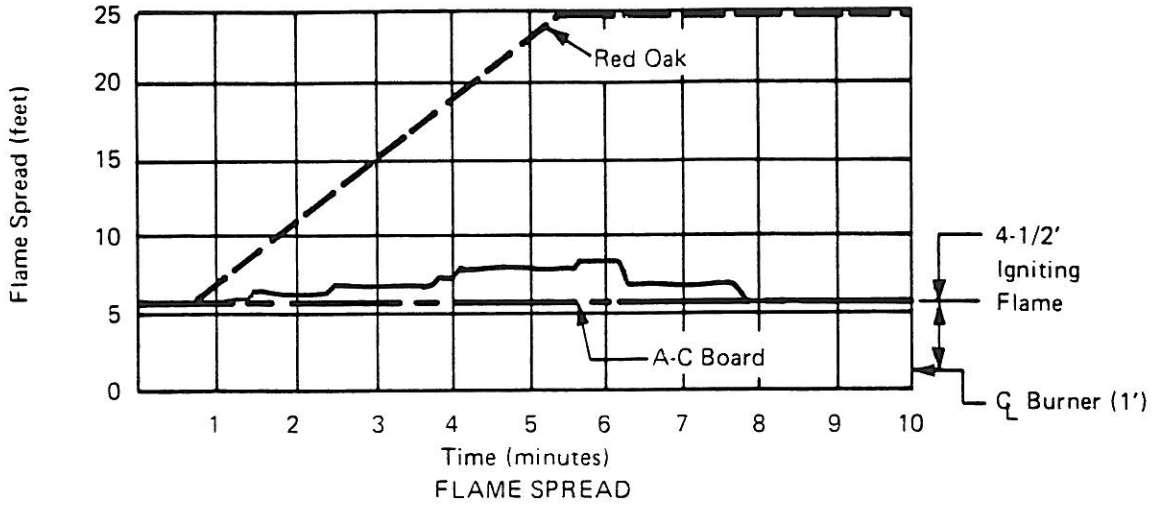
The observations made during and after the tests are summarized in Table 2 on the following page.

TABLE 3. OBSERVATIONS

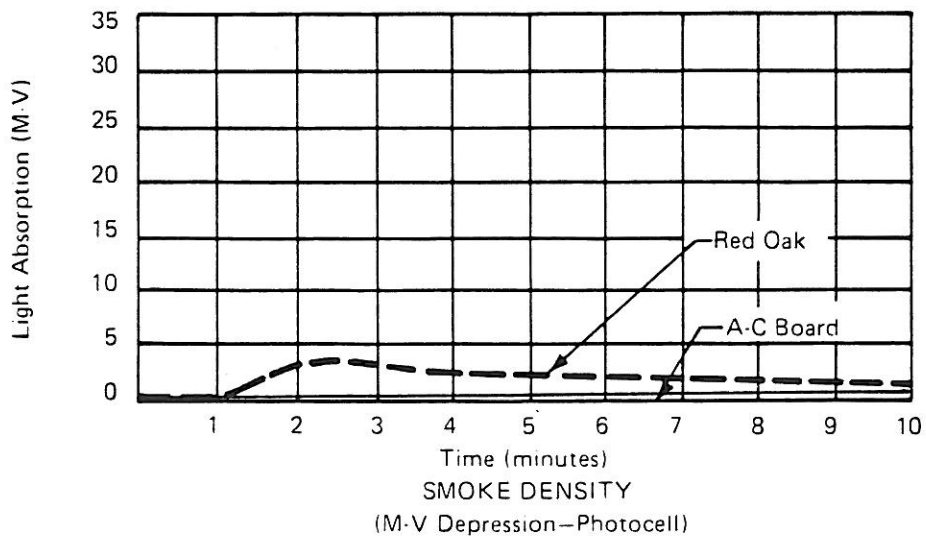
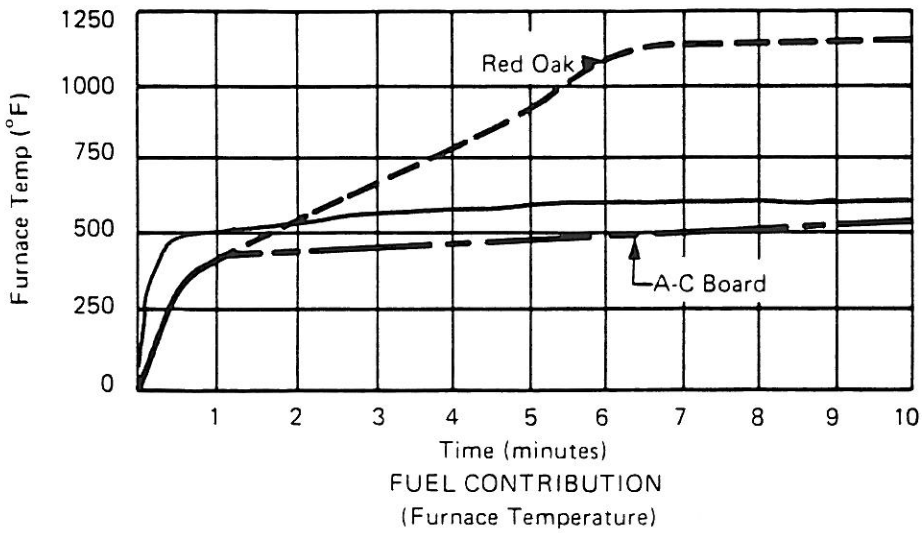
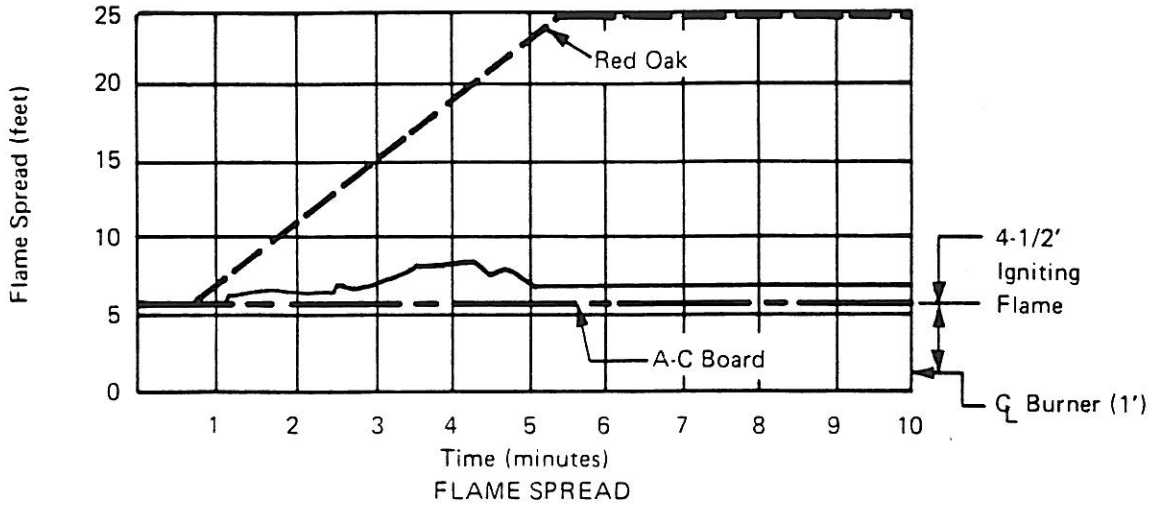
Event	ABC 86023A X-2571 Batch 15274	ABC 86023B X-2556 Batch 15797	ABC 86023C EX64-2 Batch 16064
Char, min:s	0:12	0:10	0:09
Ignition, min:s	3:18	2:05	2:07
Max. Flame Advance, min:s	4:45	6:00	3:45
ft	8.5	8.5	8.5
(m)	(2.59)	(2.59)	(2.59)
Afterflame, min:s	--	--	--
<u>Damage</u>			
Consumed, ft	4.5	5.0	5.0
(m)	(1.37)	(1.52)	(1.52)
Severe Char, ft	9.0	13.0	10.0
(m)	(2.74)	(3.96)	(3.05)
Blistering, ft	25.0	25.0	25.0
(m)	(7.63)	(7.63)	(7.63)



SURFACE BURNING CHARACTERISTICS OF AN
 ACRYLIC COATING, ASBESTOS BINDING COMPOUND 86023A
 #X-2571, BATCH NO. 15274



SURFACE BURNING CHARACTERISTICS OF AN
 ACRYLIC COATING, ASBESTOS BINDING COMPOUND 86023B
 #X-2556, BATCH NO. 15797



SURFACE BURNING CHARACTERISTICS OF AN
 ACRYLIC COATING, ASBESTOS BINDING COMPOUND 86023C
 EX64-2, BATCH NO. 16064