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DEPARTMENT OF FIRE TECHNOLOGY
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INVESTIGATION OF SURFACE BURNING CHARACTERISTICS OF:

*A LATEX INSULATING COATING:
CERAMA-SEAL*

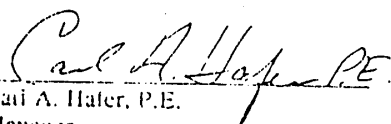
SwRI PROJECT NO. 01-2601-181

FINAL REPORT

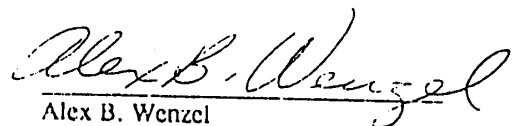
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INTRODUCTION

This report presents the results of a flame spread tunnel test on a latex insulating coating, submitted for evaluation by Materials Sciences and Engineering Corporation, of Jackson, Mississippi. The report contains a description of the material tested, the preparation and conditioning of the specimen, the test procedure, and finally, the test results. Note that the results only apply to the specimen tested, in the manner tested, and not to the entire production of this or similar materials, nor to this material's performance when used in combination with other materials. All test data are on file and are available for review by authorized persons.

The test was conducted in accordance with the provisions of ASTM Designation E84, "Standard Method of Test for Surface Burning Characteristics of Building Materials." This test method is similar to the test method specified in NFPA No. 255, UL No. 723 and UBC No. 42-1. ASTM E84 is a test procedure method only and does not set requirements for materials. Therefore, SwRI does not assign a classification to the material tested. Building codes, such as the Uniform Building Code, have requirements dependent on the building type, occupancy, etc. The building code having jurisdiction in the location a material is to be used will determine compliance of the test results.

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

DESCRIPTION OF MATERIALS

On February 17, 1989, the test material was received from the Client. It is described in Table 1 on the following page.

TABLE 1. DESCRIPTION

Type:	Latex insulating coating
Trade Name:	Cerama-Seal
Color:	White
Number Received:	2 one-gallon containers
Total Weight:	11.921 lb (5.412 kg)
Substrate Used:	0.25-in. (6.35-mm) glass-reinforced cement board

PREPARATION AND CONDITIONING OF TEST SPECIMEN

The 21-in. x 25-ft (0.53 x 7.63-m) specimen was prepared using four 21 x 75-in. (0.53 x 1.19-m) glass-reinforced cement boards as the substrate. The coating was applied by roller to the substrate at a coverage rate of 66.6 ft²/gal (1.64 m²/L).

The specimen was conditioned for 29 days in an atmosphere maintained between 68 and 78°F (20 and 26°C) temperature and 45- to 55-percent relative humidity.

TEST PROCEDURE

The test was conducted on March 23, 1989. Reference data were obtained and furnace operation checked by conducting a 10-minute test with glass-reinforced cement board on the day of the test and by periodic tests with red oak flooring. These tests provided the 0 and 100 references for flame spread and smoke developed. Ignition over the burners was noted at 44 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.

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 developed (see Table 2). 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, smoke developed and temperature for the specimen are shown in the figures at the end of this report as a solid line on each graph.

TABLE 2. CLASSIFICATION

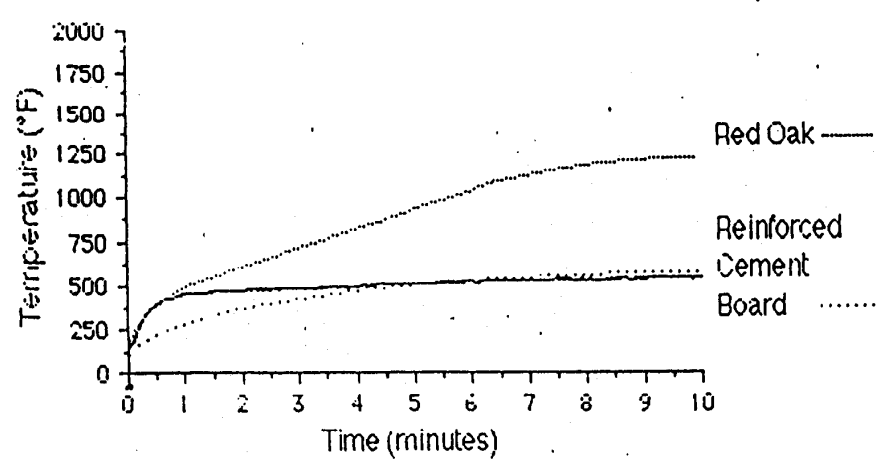
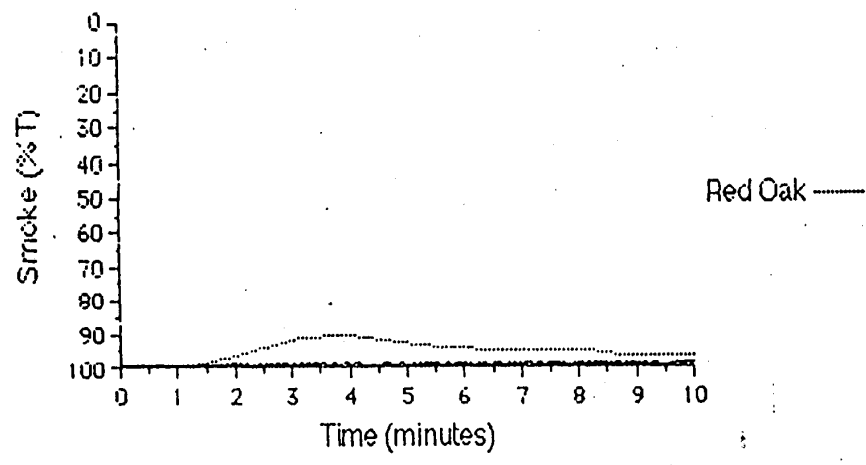
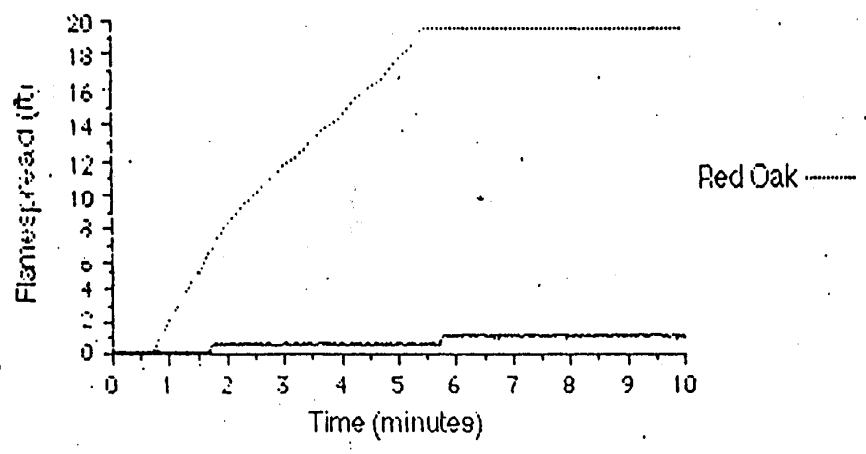
Test Specimen	Flame Spread Index ASTM E84-87	Smoke Developed
Glass-Reinforced Cement Board	0	0
Red Oak Flooring	100	100
A Latex Insulating Coating: Cerama-Seal	5	5

OBSERVATIONS DURING AND AFTER TESTS

Observations made during and after the test are presented in Table 3 below.

TABLE 3. OBSERVATIONS

EVENT	
Spotty Ignition, min:s	0:52
Color Change, min:s	1:00
Steady Ignition, min:s	1:28
Cracks, min:s	3:40
Maximum Flame Front Advance, min:s	5:45
ft	6.5
(m)	(1.98)
Afterflame, min:s	--
DAMAGE	
Consumed/Complete Char, ft	3.5
(m)	(1.07)
Heavy Char, ft	6.0
(m)	(1.83)
Surface Char, ft	6.5
(m)	(1.98)
Discoloration, ft	25.0
(m)	(7.63)



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CERAMA-SEAL**