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CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
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INVESTIGATION OF THE SURFACE BURNING CHARACTERISTICS OF A NOMINAL 5/8 IN. THICK, TONGUE AND GROOVE DOUGLAS FIR WOOD DECK COATED WITH TWO COATS OF BURN BARRIER™ NO. 133A MATERIAL ID: NO. 133A CLEAR, POLYURETHANE WATER-BASE COATING

FINAL REPORT
Consisting of 6 Pages
SwRI Project No.: 01.04913.01.235
Test Date: May 15, 2002

Report Date: May 30, 2002

Prepared for:

Rendered by Manufacturer and Released to:
Acoustical Surfaces, Inc.
123 Columbia Court North
Chaska, MN 55318

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INTRODUCTION

This report presents the results of an ASTM E 84 test on a specimen submitted by the Client, tested at Southwest Research Institute's (SwRI's) Department of Fire Technology, located in San Antonio, Texas. The test is conducted in accordance with the procedure outlined in ASTM E 84-01, "Standard Test Method for Surface Burning Characteristics of Building Materials" (NFPA 255, ANSI/UL 723 and UBC 8-1).

This test method for the comparative surface burning behavior of building materials is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period. These tests are conducted with the material in the ceiling position.

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame Spread and Smoke Developed index are reported. However, there is not necessarily a relationship between these two measurements.

For each test, a specimen measuring at least 21 in. wide x 24 ft long is required. The specimen may consist of a continuous, unbroken length, or of sections joined end-to-end. When requested by the Client, specimens are prepared at SwRI following the Client's instructions. Unless otherwise indicated by the Client, test specimens are conditioned as appropriate in an atmosphere maintained between 68 and 78°F and 45 to 55% relative humidity.

Immediately prior to the test, the specimen is mounted in the furnace with the side to be tested facing the test flame. Sometimes, because of the nature of the material undergoing testing, additional support (e.g. wire, wire and rods, rods, and/or bars) is used to ensure that the specimen will remain in position during the test. 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, and the test results do not necessarily relate to indices obtained by testing materials without such support.

The flame front position and light obscuration are recorded throughout the 10-minute test and used to calculate the Flame Spread and Smoke Developed indices. The temperature at 23 ft is also recorded.

The Flame Spread and Smoke Developed indices reported herein are relative to the results obtained for mineral fiber-reinforced cement board and select grade red oak (moisture content between 6 and 8%). The mineral fiber-reinforced cement board is the calibration material used to obtain 0 values for Flame Spread and Smoke; red oak decks are used to obtain 100 values for Flame Spread and Smoke.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

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This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of the test may be used as elements of a fire-hazard assessment or a fire-risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard or fire risk of a particular end use.

This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

TABLE 8-A---FLAME-SPREAD CLASSIFICATION

Class	Flame-spread Index
I	0-25
II	26-75
III	76-200

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ASTM E 84-01 REPORT

CLIENT: Rendered by Manufacturer and Released to: Acoustical Surfaces, Inc.
SWRI PROJECT NO.: 01.04913.01.235
TEST DATE: MAY 15, 2002
DAILY TEST NO.: 2

DESCRIPTION OF SPECIMEN

DATE RECEIVED:	17-Apr-2002 (received ready-to-test)
MATERIAL ID:*	No. 133A Clear, Polyurethane Water-Base Coating
TRADE NAME:*	**BURN BARRIER™**
DESCRIPTION:*	Tongue and groove Douglas Fir wood decks, coated with two coats of Flame Control No. 133 A at 450 Sq. ft/gal. (prepared by Client)
THICKNESS:	0.625 in. thick Douglas Fir (nominal)
COLOR:*	Natural (clear)
SPECIMEN SIZE:	Two sections, 22.0 in. wide x 144.0 in. long (nominal 1 x 4, tongue and groove)
CONDITIONING TIME:	28 days at 70°F and 50% relative humidity
SUPPORT USED:	None

* From Client's material description and/or instructions

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ASTM E 84-01 REPORT

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DAILY TEST NO.: 2

TEST RESULTS (ROUNDED TO NEAREST 5)

FLAME SPREAD INDEX (FSI):	55
SMOKE DEVELOPED INDEX (SDI):	170

TEST DATA

UNROUNDED FSI:	53.8
UNROUNDED SDI:	170.1
FS*TIME AREA (Ft*Min):	104.0
SMOKE AREA (%*Min):	173.8
FUEL AREA (°F*Min):	6115.6

OBSERVATIONS DURING TEST

IGNITION TIME (Min:Sec):	0:26
MAXIMUM FLAME FRONT ADVANCE (Ft.):	14.5
TIME TO MAXIMUM ADVANCE (Min:Sec):	9:54
MAXIMUM TEMP. AT EXPOSED TC (°F):	755
TIME TO MAXIMUM TEMP. (Min:Sec):	10:00
TOTAL FUEL BURNED (Cu. Ft.):	53.0
DRIPPING (Min:Sec):	None
FLAMING ON FLOOR (Min:Sec):	None
AFTERFLAME TOP (Min:Sec):	3:00+
AFTERFLAME FLOOR (Min:Sec):	None

CALIBRATION DATA (LAST RED OAK)

RED OAK SMOKE AREA (%*Min):	99.3
RED OAK FUEL AREA (°F*Min):	8534.4
GRC BOARD FUEL AREA (°F*Min):	5568.5

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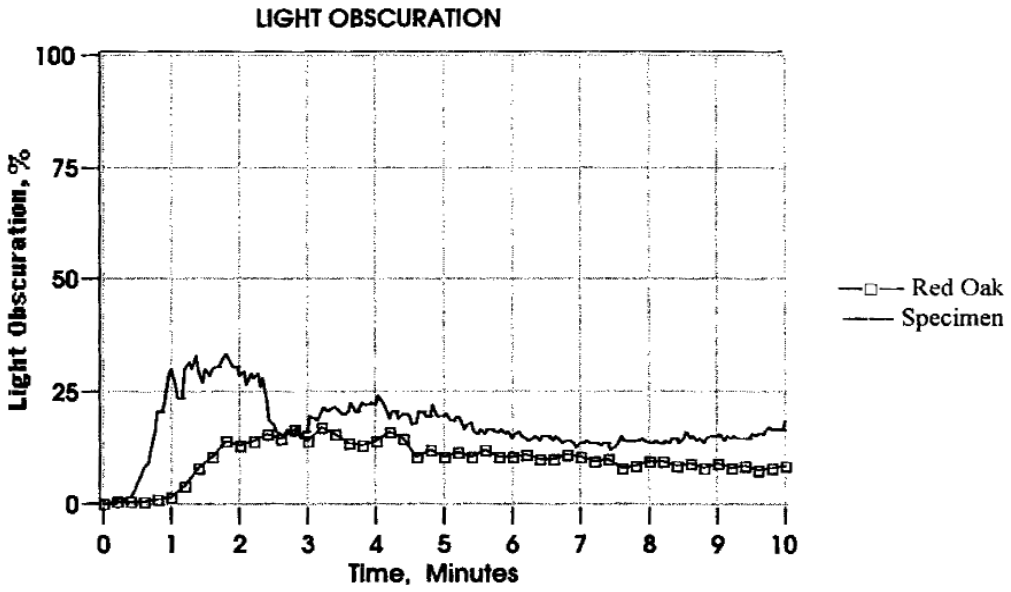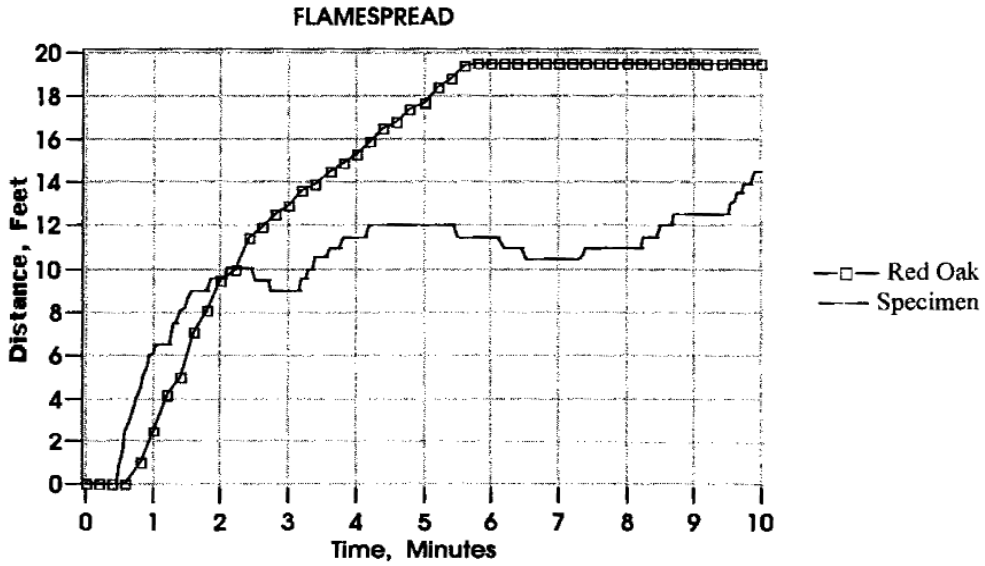
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