

SOUTHWEST RESEARCH INSTITUTE

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INVESTIGATION OF THE SURFACE BURNING
CHARACTERISTICS OF A PAPER-BACKED WOOD
VENEER ADHERED TO 0.25-IN. THICK GLASS-
REINFORCED CEMENT BOARD WITH CONTACT ADHESIVE
ID: F/C RED OAK; STOCK 855-CV717

SwRI PROJECT NO. 01-5215-497

FINAL REPORT

TEST DATE: 11-JUN-1993

Prepared for:

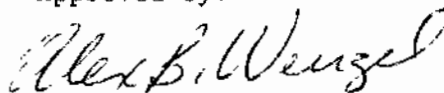
S.R. WOOD
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By



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INTRODUCTION

This report presents the results of an ASTM E84 test on a specimen submitted by the Client. The test is conducted in accordance with the procedure outlined in ASTM E84-91a, "Standard Test Method for Surface Burning Characteristics of Building Materials," which is similar to the test methods specified in NFPA 255, UL No. 723, ANSI 2.5 and UBC 42-1.

This test method 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. The test is conducted with the material in the ceiling position.

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

For each test, a specimen measuring at least 21-in. wide by 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 24 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. All test data are on file and are available for review by authorized persons.

The following summary pages are not to be used separately, in lieu of the complete final report.

ASTM E 84-91a REPORT

CLIENT: S. R. WOOD
SWRI PROJECT NO: 01-5215-497
DAILY TEST NO: 3

DESCRIPTION OF SPECIMEN

MATERIAL ID: F/C RED OAK; STOCK 855-CV717
DESCRIPTION: A paper-backed wood veneer
NOMINAL THICKNESS: 0.020-in.
NOMINAL UNIT WEIGHT: 0.08 lb/sq ft
COLOR: Tan, brown
SUBSTRATE: 0.25-in. thick glass-reinforced cement board
ADHESIVE: Solvent-based contact adhesive
SPECIMEN SIZE: Three sections 24.0-in. wide x 8-ft. long
CONDITIONING TIME: 16 days at 70°F and 50% relative humidity
SUPPORT USED: None

CLIENT: S. R. WOOD
SWRI PROJECT NO: 01-5215-497
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TEST RESULTS

FLAME SPREAD INDEX: 10
SMOKE DEVELOPED INDEX: 5

TEST DATA

FS*Time Area (Ft*Min): 14.9
Smoke Area (%*Min): 4.3
Fuel Area (°F*Min): 5265.0
Unrounded FSI: 7.7
Unrounded SDI: 5.8

OBSERVATIONS DURING TEST

IGNITION TIME (Min:Sec): 0:39
MAXIMUM FLAME FRONT ADVANCE (Ft): 1.7
TIME TO MAXIMUM (Min:Sec): 1:15
DRIPPING (Min:Sec): None
FLAMING ON FLOOR (Min:Sec): None
AFTERFLAME TOP (Min:Sec): 0:45
AFTERFLAME FLOOR (Min:Sec): None

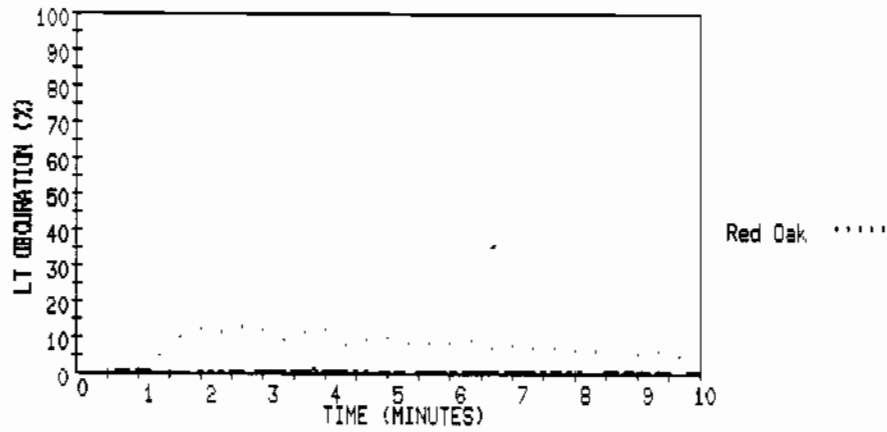
CALIBRATION DATA (LAST RED OAK)

RED OAK SMOKE AREA (%*Min): 75.8
RED OAK FUEL AREA (°F*Min): 8949.2
GRC BOARD FUEL AREA (°F*Min): 5257.2

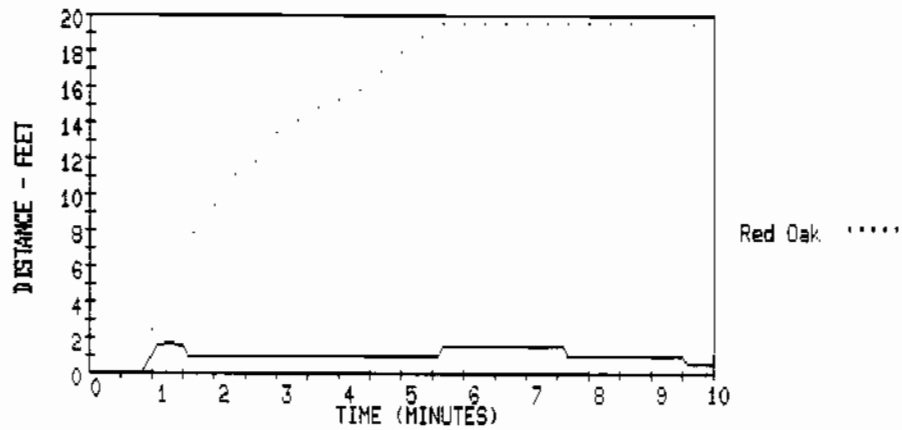
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SWRI PROJ.:01-5215-497

11-JUN-1993-3

LIGHT OBSCURATION



FLAMESPREAD



EXPOSED TC AT 24 FEET

