REPORT NO. 547457-R1

Rendered To:

CERTIFIED FIRE PREVENTION CORPORATION
4000 LABORE ROAD
ST. PAUL, MN 55110

SINCE 1896

ETL Testing Laboratories, Inc.

ETL is an independent testing and certification organization.

REPORT
ETL TESTING LABORATORIES, INC.

INDUSTRIAL PARK CORTLAND, NEW YORK 13045

ORDER NO. 95200-214 DATE: 2/1/95

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CERTIFIED FIRE PREVENTION CORPORATION
4000 LABORE ROAD
ST. PAUL, MN 55110

STANDARDS USED: ASTM E84-91a - Surface Burning Characteristics of Building Materials.

TEST: A test method for the comparative behavior of building materials.

AUTHORIZATION: The test was authorized by Certified Fire Prevention Corporation Purchase Order No. VERN, dated 12/28/94, by Mr. Vern Schumacher, representing the client Certified Fire Prevention Corporation.

DATE OF TEST: 01/11/95

SPECIMEN DESCRIPTION: The test was performed on a specimen identified by the client as 5/8" Western Red Cedar T&G - Spray treated with Polaseal EFM

INTRODUCTION

This report describes the results of the ASTM E84-91a Standard Method of Test for Surface Burning Characteristics of Building Materials performed on specimens, previously described, submitted by Certified Fire Testing Corporation. The specimens were prepared and test evaluations were conducted at ETL Testing Laboratories, Incorporated.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

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. This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials. Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

TEST OBJECTIVE

The ASTM E84-91a test method is intended to compare the surface flamespread and smoke developed measurements to those obtained from the tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface is exposed to a flaming fire exposure during the 10 minute test duration, while flamespread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials. The mineral fiber cement board forms the zero point, while the red oak flooring is set as 100 for smoke measurements. Thus, with a relative zero established by the non-combustible cement board, all test specimens are compared to select grade red oak flooring, and the results expressed as Flame Spread Index and Smoke Developed Index.

TEST PROCEDURE

The test specimens were placed in the tunnel and supported over the tunnel ledges.

MOUNTING METHOD: The specimen was supported directly on the tunnel ledges with furring strips nailed to the back.

TEST RESULTS

The test results, computed on the basis of observed flame front advance and smoke density measurements, are presented in the following table. In recognition of possible variations and limitations of the test method, the results are computed to the nearest number divisible by five, as outlined in the test method.

OBSERVATIONS

The specimen exhibited steady ignition at 00:10 (min:sec). The flame front reached a maximum distance of 9.9 feet, achieved at 05:34 (min:sec). At 01:34 (min:sec) a flaming piece of flooring dropped to the floor . After the ignition flame was extinguished, the specimen continued to burn for more than 05:00 (min:sec).

After the specimen was cooled and removed from the furnace, it was observed to have:

ASH LENGTH (FT):	9.5
CHAR LENGTH (FT):	13
MELT LENGTH (FT):	--
DISCOLORATION (FT):	24

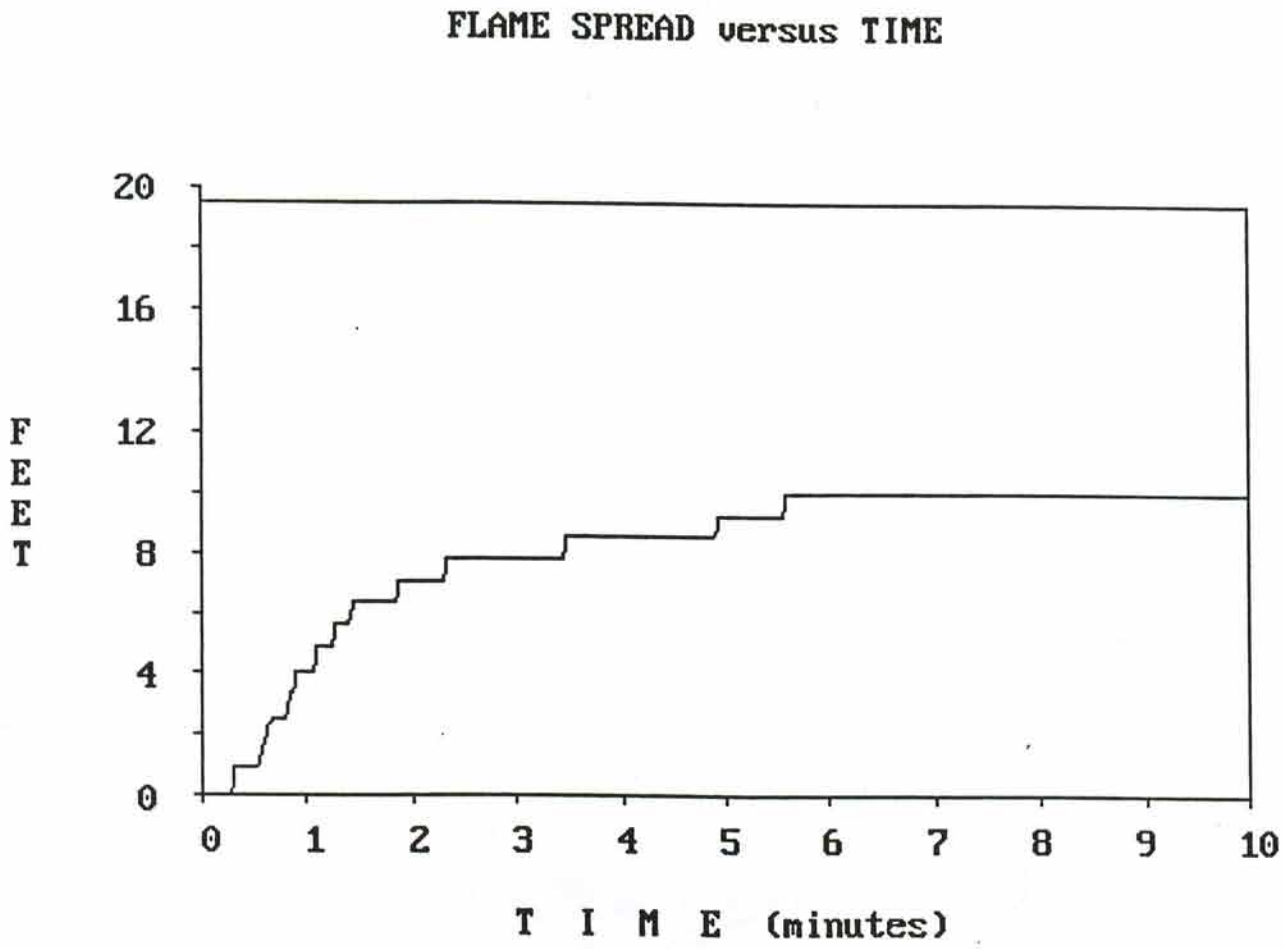
ASTM E84-91a DATA SHEET

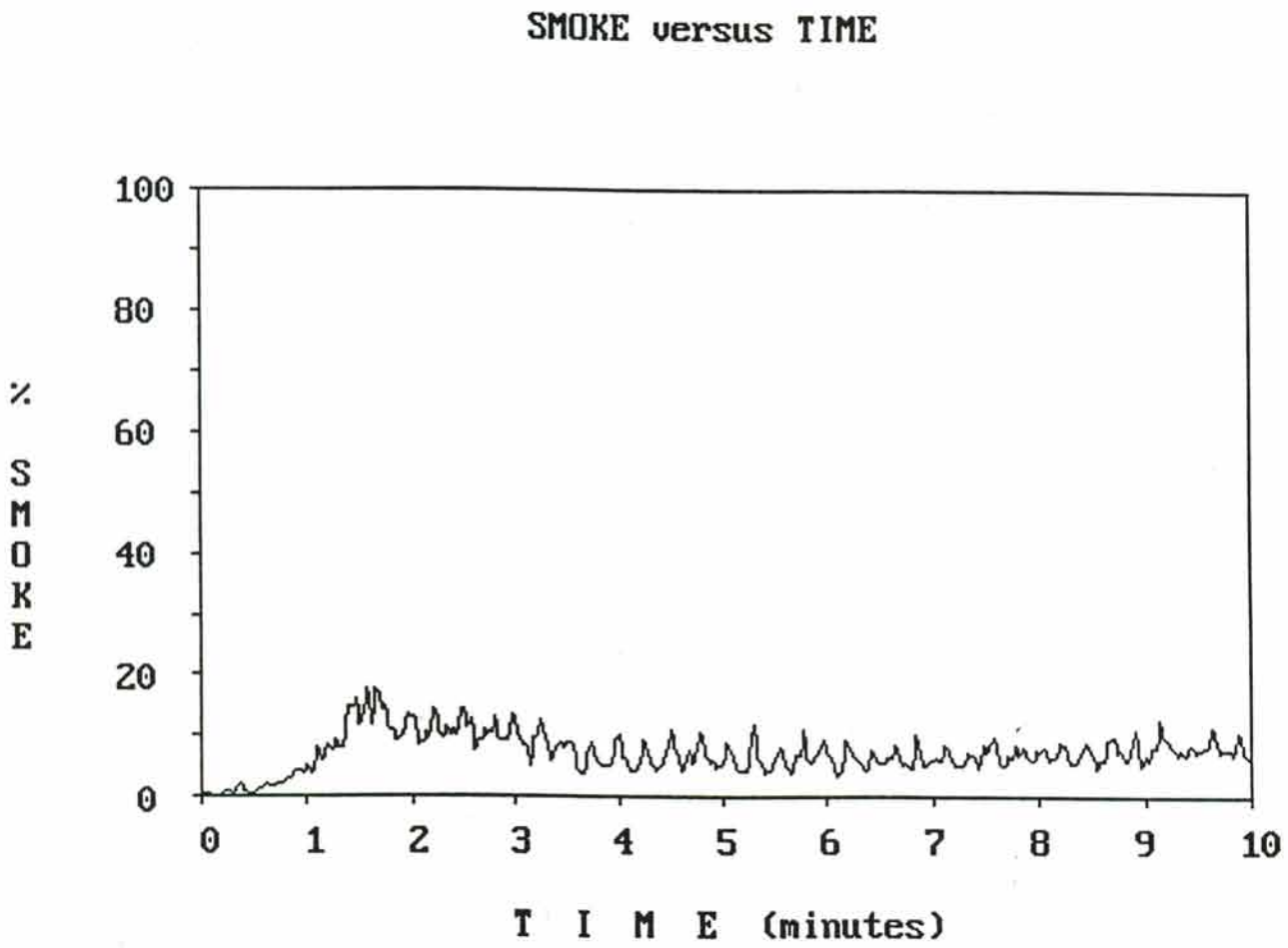
CLIENT: Certified Fire Prevention Corporation
DATE RECEIVED: 01/05/95
TEST DATE: 01/11/95
TEST NUMBER: 1
ORDER NUMBER: 95200-214
OPERATOR: Dale W. Soos
MATERIAL ID: 5/8" Western Red Cedar T&G - Spray treated with Polaseal EFM

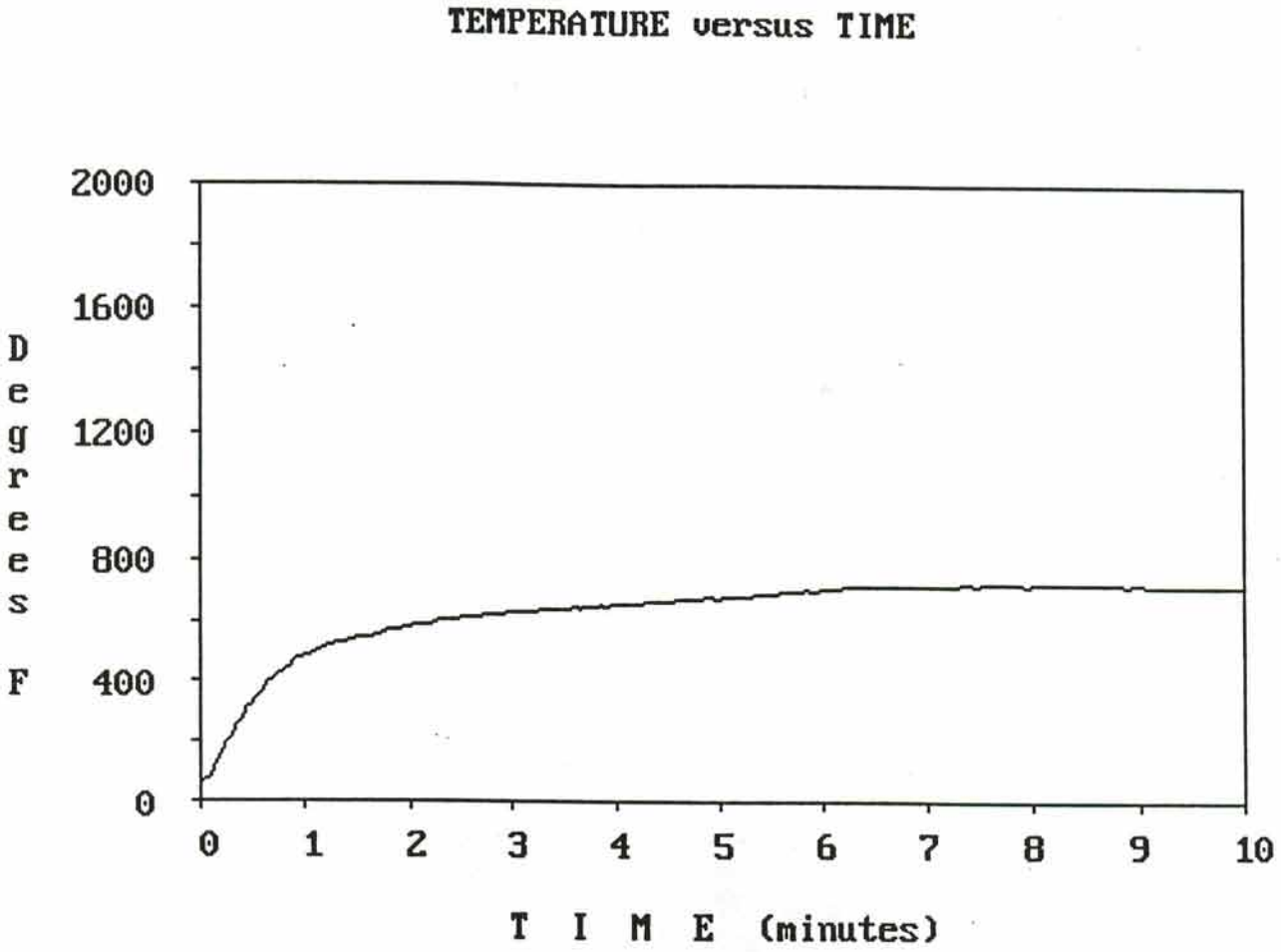
FLAME SPREAD INDEX = 40
SMOKE DEVELOPED INDEX = 75

SPECIMEN DATA...

	Test Specimen	Red Oak
Time To Ignition (min:sec):	00:10	00:52
Time To Max. Flame Spread (min:sec):	05:34	
Max. Flame Spread (ft):	9.9	
Max. Temperature (min:sec):	723	
Time to Max. Temperature (min:sec):	08:16	
Time to 980 Degrees F (min:sec):	n/a	
Flame Spread x Time Area (min*ft):	81	
Smoke x Time Area (min*%S):	73	97
Temperature x Time Area (min*Deg. F):	6313	8800
Unrounded Flame Spread Index:	41.89	
Unrounded Smoke Developed Index:	75.26	
Total Fuel Consumed (ft^3):	45.20	
Temperature x Time Area for GRC Board (min*Deg. F):	5196	


FLAME SPREAD versus TIME
FEET
20
16
12
8
4
0
0 1 2 3 4 5 6 7 8 9 10
T I M E (minutes)


SMOKE versus TIME
% SMOKE
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10
T I M E (minutes)


TEMPERATURE versus TIME
2000
1600
1200
800
400
0
Degrees F
0
1
2
3
4
5
6
7
8
9
10
T I M E (minutes)

CONCLUSION

The 5/8" Western Red Cedar T&G - Spray treated with Polaseal EFM submitted by Certified Fire Prevention Corporation, and previously described, when tested in accordance with ASTM E84-91a Standard Test Method for Surface Burning Characteristics of Building Materials, on 01/11/95 achieved the following results:

FLAME SPREAD INDEX:	**40**	**SMOKE DEVELOPED INDEX:**	**75**

Signed by:

Dale W. Soos
Engineer
Performance Group

Reviewed and Approved by:

John G. Kent
Manager
Performance Group

jms