



INTERTEK ETL SEMKO
3933 US ROUTE 11, CORTLAND, NY 13045

RENDERED TO:

Ward Manufacturing
PO Box 9
Blossburg, PA 16912

ORDER NO. 3094185

TESTED ON March 29, 2006

STANDARDS USED

ASTM E84-05 - Surface Burning Characteristics of Building Materials

TEST

A test method for the comparative behavior of building materials

AUTHORIZATION

Mr. Rick Powell, representing the client, Ward Manufacturing, authorized the test with Purchase Order No. 115669.

SPECIMEN DESCRIPTION

The test was performed on a specimen submitted and identified by the client as 2-0613-2RB 20A/25 (3/4") 5 PSI ICC ESR-1879 Wardflex USA Flexible Fuel Gas Tubing (GAZ Combustible) P/N: GTP08290-GT6, Yellow.

An independent organization testing for safety, performance, and certification.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. The report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

INTRODUCTION

This report describes the results of the ASTM E84-05 Standard Method of Test for Surface Burning Characteristics of Building Materials performed on specimens, submitted by Ward Manufacturing and previously described.

The specimens were received in good condition, prepared, and test evaluations were conducted at Intertek ETL SEMKO, Cortland, New York.

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 E84-05 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 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 specimen, previously described, as tested in accordance with the procedures as outlined in ASTM E84-05. The specimens were supported in the Steiner Tunnel being adhered to GRC boards.

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.

Client: Ward Manufacturing**Date Received:** March 28, 2006**Order No.:** 3094185**Date Tested:** March 29, 2006**Test No.:** 1**Technician:** Brian Connor

SPECIMEN DESCRIPTION: 2-0613-2RB 20A/25 (3/4") 5 PSI ICC ESR-1879 Wardflex USA Flexible Fuel Gas Tubing (GAZ Combustible) P/N: GTP08290-GT6, Yellow

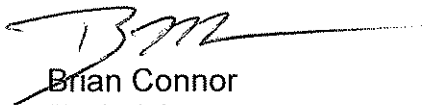
PLEASE SEE APPENDIX A FOR RESULTS.

CONCLUSION

The specimen, submitted by Ward Manufacturing, and previously described as 2-0613-2RB 20A/25 (3/4") 5 PSI ICC ESR-1879 Wardflex USA Flexible Fuel Gas Tubing (GAZ Combustible) P/N: GTP08290-GT6, Yellow, when tested in accordance with ASTM E84-05 Standard Test Method for Surface Burning Characteristics of Building Materials, on March 29, 2006, achieved the following results:

Flame Spread Index:	10
Smoke Index:	25

Test Conducted by:


Brian Connor
Technician
Cabling Products Testing Group

Reviewed and Approved by:


James Tanner
Operations Manager
Cabling Products Testing Group

Attachment: Appendix A

APPENDIX A

INTERTEK / ETL SEMKO

DATA SHEET STANDARD ASTM E84-05

Standard Method for Surface Burning Characteristics of Building Materials

CLIENT: Ward MFG DATE: 2006/03/29

Project No. 3094185 File No. 3094185 1

TEST NO.: 1

DESCRIPTION: 2-0613-2RB 20A/25 (3/4") 5 PSI ICC ESR-1879 Wardflex USA Flexible Fuel Gas Tubing
(GAZ Combustible) P/N : GTP08290-GT6, Yellow

OD (in):	<u>1.000</u>	Length of individual sections (ft):	<u>24</u>
No. of sections:	<u>21</u>	Total length of sample (ft):	<u>24</u>
Total weight (lbs):	<u>85.0</u>		

Time to Ignition (min:sec):	<u>0:21</u>	<u>From end of flame exposure</u>
Afterflame (min:sec):	<u>0</u>	Ash Length (ft): <u>0.5</u>
Dripping on to the floor (min:sec):	<u>N/A</u>	Char Length (ft): <u>3</u>
Falling glowing embers (min:sec):	<u>0:41</u>	Melt Length (ft): <u>19.5</u>
Flaming drips (min:sec):	<u>N/A</u>	Discoloration (ft): <u>19.5</u>
Flaming on the floor (min:sec):	<u>N/A</u>	

MOUNTING (mark box with "X"):

Self Supporting	Wire & Rods	Cementboard	Sheetrock
	X		

NOTES:

STARTING TEMPS.:

85 °F TC. EXPOSED (23 ft)
107 °F TC. BURIED (13 ft)

LABORATORY CONDITIONS:

74 °F (DRY BULB)
51 % RH
0.010 IN. WC PRESS.

DRAFT CONTROLLER:

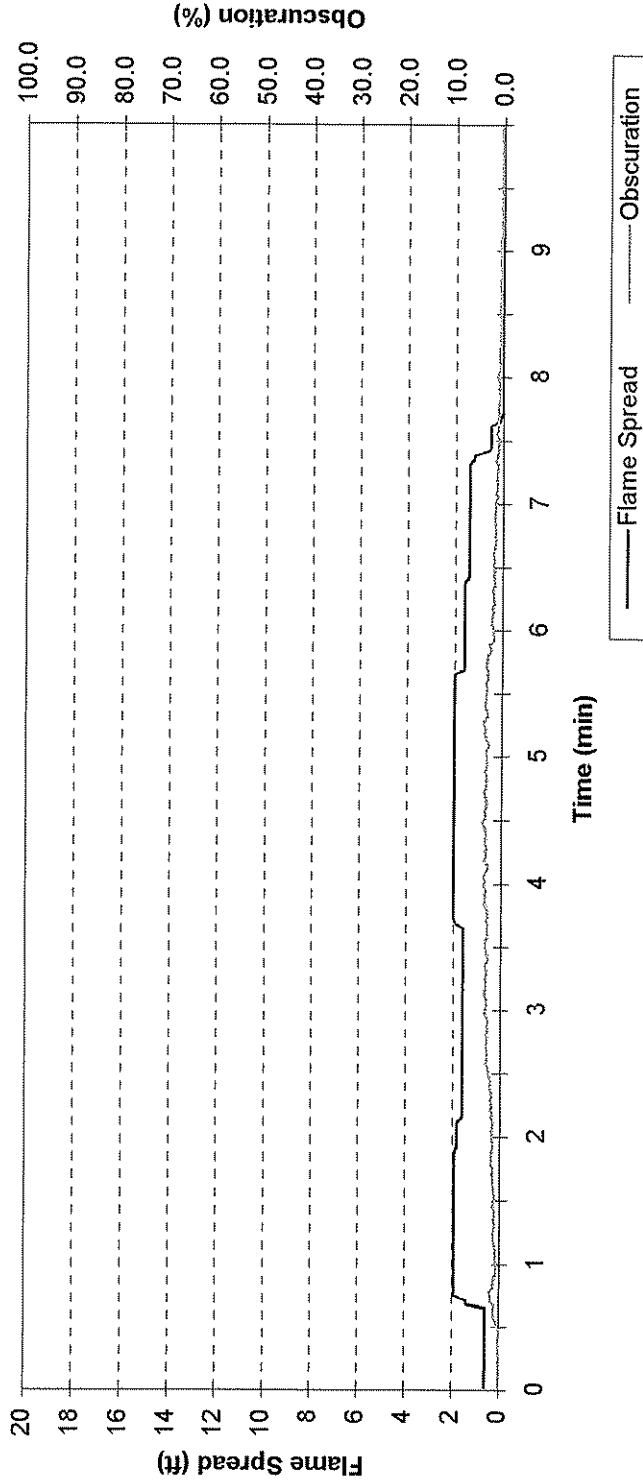
0.115 IN. WC DRAFT IND.
235 Fuel Flow Rate

BURNOUT : []

TECH : Brian Connor READER : Don Pendell

INTERTEK / ETL SEMKO ASTM E84

Flame Spread & Obscuration vs. Time



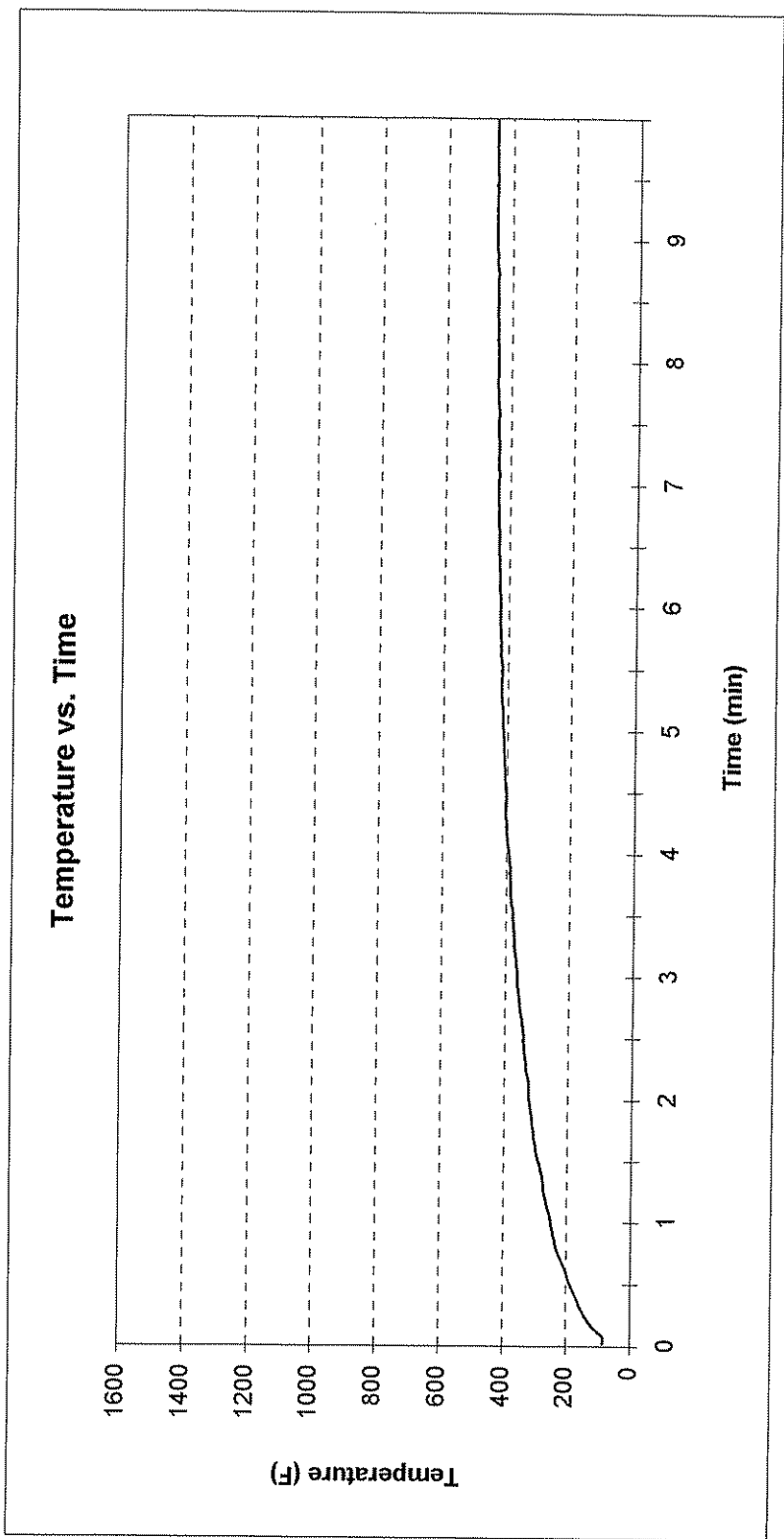
Date: 2006/03/29
 Time: 08:24:39.0
 File: 3094185_1
 Test #: 1

Parameter	Rounded (Index)	Unrounded
Max. Flame Spread (ft):	2.0	N/A
Flame Spread Index:	10	9.64
Smoke Index:	25	25.01

Flame Spread Area (min*ft): Smoke Area - Red Oak (min*%): 71
 Smoke Area (min*%): Time to Max. Flame Spread (min:sec): 3:42

Job No.: 3094185 Description: 2-0613-2RB 20A25 (3/4") 5 PSI ICC ESR-1879 Wardflex USA Flexible Fuel Gas Tubing Client: Ward MFG
 TECH.: Brian Connor READER: Don Pendell

INTERTEK / ETL SEMKO ASTM E84



Maximum Temperature (Deg. F): 448.88
 Time to Maximum Temp. (min:sec): 9:10
 Time to 980 F (min:sec): 0:00
 Temperature Area (min*deg F): 3759.91
 Temp. Area - Cement Board (min*deg F): 5311
 Temp. Area - Red Oak (min*deg F): 9094

Total Methane Consumption (ft³): 51.11
 Consumption Rate (ft³/min): 5.11

Date: 2006/03/29
 Time: 08:24:39.0
 File: 3094185
 Test #: 1

Job No.: 3094185 Description: 3094185.DAT Client: Ward MFG

TECH: Brian Connor READER: Don Pendell