Bodycote MATERIALS TESTING ORTECH LABORATORY

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CAN/ULC-S102 Surface Burning Characteristics of Fire-X Glasbord FX-.09"

A Report To:	**Kemlite Company, Inc.** 23525 W. Eames St. Channahon, Illinois USA 60434
Attention:	Mike Buhr Product Development Chemist
Submitted by:	Fire Testing Services
Report No.	99-J52-98-74-379(A) 5 Pages
Date:	September 26, 1999

ACCREDITATION Standards Council of Canada, Registration #1.

REGISTRATION ISO 9002-1994, registered by QMI, Registration #001109.

SPECIFICATIONS OF ORDER

Determine the Flame Spread and Smoke Developed Classifications based upon triplicate testing conducted in conformance with CAN/ULC-S102, as per your letter of June 22, 1999 and P.O. 33524.

SAMPLE IDENTIFICATION

FRP panel identified as: Fire-X Glasbord FX-.09".

(Bodycote Ortech Inc. sample identification number 99-J52-S379-3)

TEST PROCEDURE

The method, designated as CAN/ULC-S102-M88, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flame spread classification (FSC) and smoke developed (SD).

Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, the test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions.

SAMPLE PREPARATION

The three test samples, each consisting of six sections 1219 mm long and 530 mm wide, were conditioned to constant mass at a temperature of 23°C and a relative humidity of 50% prior to testing. During testing, the sample was supported with 6 mm diameter steel rods spaced at 610 mm intervals.

SUMMARY OF TEST PROCEDURE

The tunnel is preheated to 85°C, as measured by the backwall-embedded thermocouple located 7090 mm downstream of the burner ports, and allowed to cool to 40°C, as measured by the backwall-embedded thermocouple located 4000 mm from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7315 mm long, 305 mm above the floor. The lid is then lowered into place.

SUMMARY OF TEST PROCEDURE (continued)

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 15 seconds. Flame spread distance versus time is plotted ignoring any flame front recessions. If the area under the curve (A) is less than or equal to 29.7 m·min, FSC1 = 1.85·A; if greater, FSC1 = 1640/(59.4-A). Smoke developed is determined by comparing the area under the obscuration curve for the test sample to that of inorganic reinforced cement board and red oak, arbitrarily established as 0 and 100, respectively.

TEST RESULTS

SAMPLE		FSC1	SD
Fire-X Glasbord FX-.09"	Test #1	25	265
	#2	20	198
	#3	23	213
	Average:	23	225

Observations of Burning Characteristics

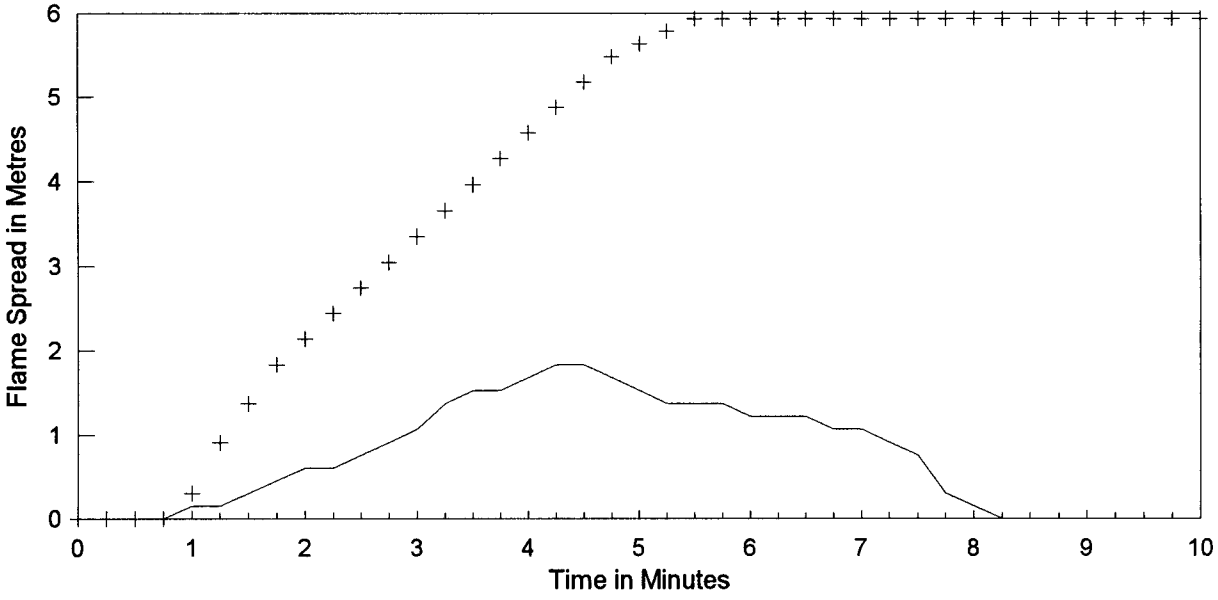
- In all three tests, the sample began to ignite and propagate flame after approximately 45 seconds exposure to the test flame.
- The flame fronts propagated to distances of 1.8 metres at 4.25 minutes in test #1, 1.5 metres at 4.75 minutes in test #2 and 1.7 metres at 4.5 minutes in test #3.
- The flame advances were accompanied by rapid increases in smoke developed. Maximum amounts of smoke were recorded at approximately the 3 minute mark of the tests. Smoke production then began to decrease as burning activity subsided (see accompanying graphs).

Richard J. Lederle
Fire Testing Services.

E.W. Simmons
Fire Testing Services.

FLAME SPREAD CLASSIFICATION

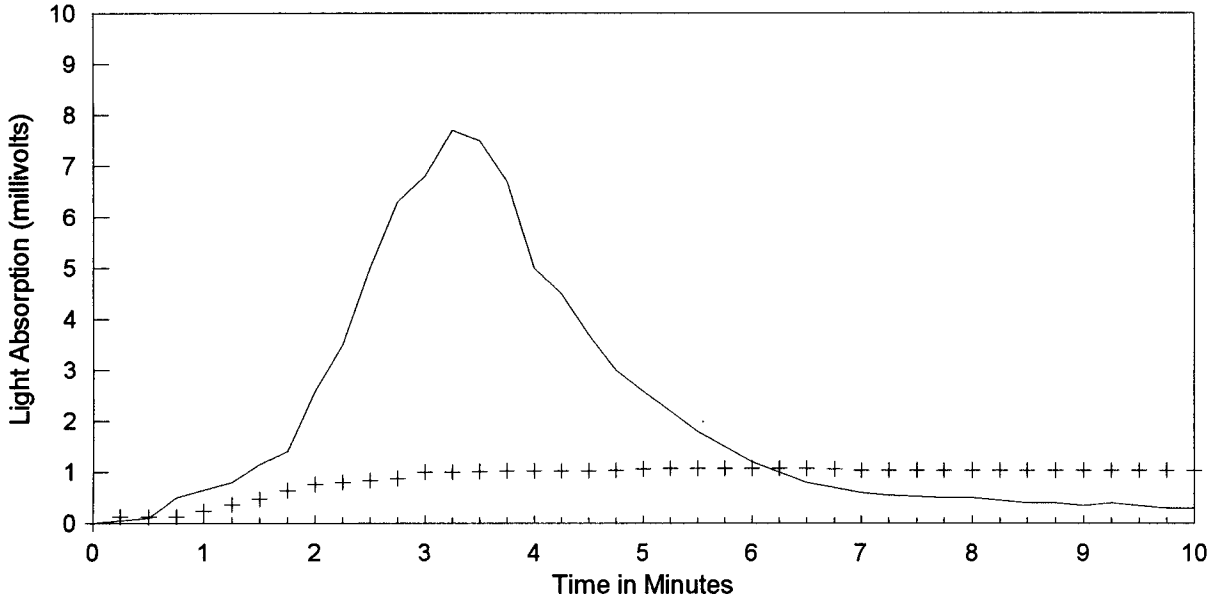
Fire-X Glasbord FX-.09" Test #1



_____ SAMPLE +++ RED OAK (FSC = 100)

SMOKE DEVELOPED

Fire-X Glasbord FX-.09" Test #1

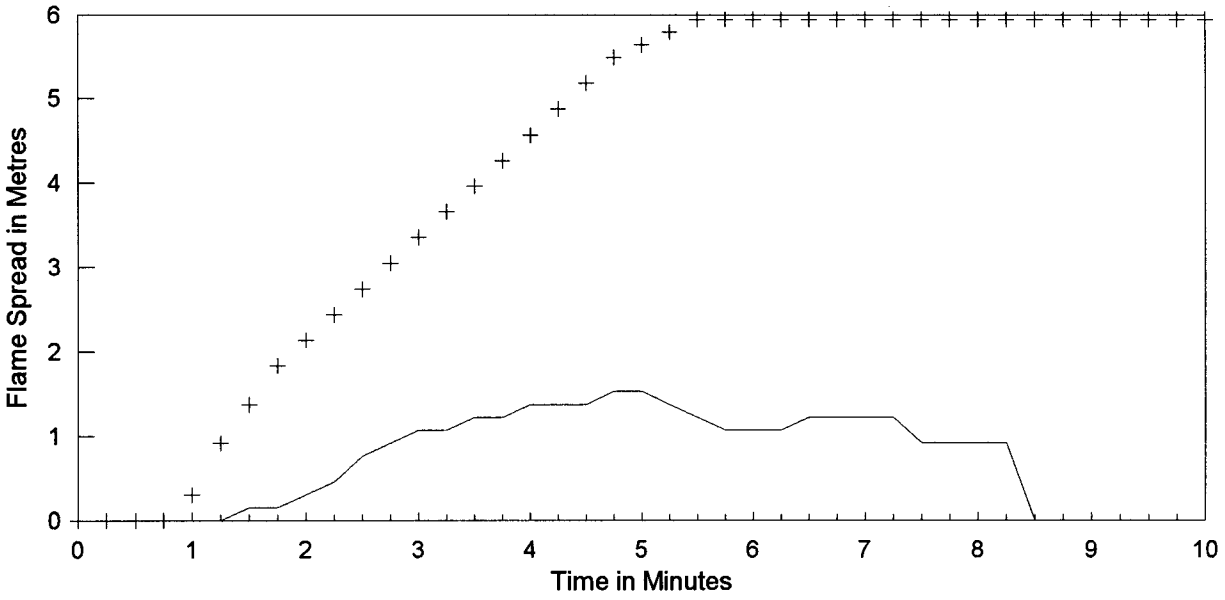


_____ SAMPLE +++ RED OAK (SD = 100)

FSC1	SD
25	265

FLAME SPREAD CLASSIFICATION

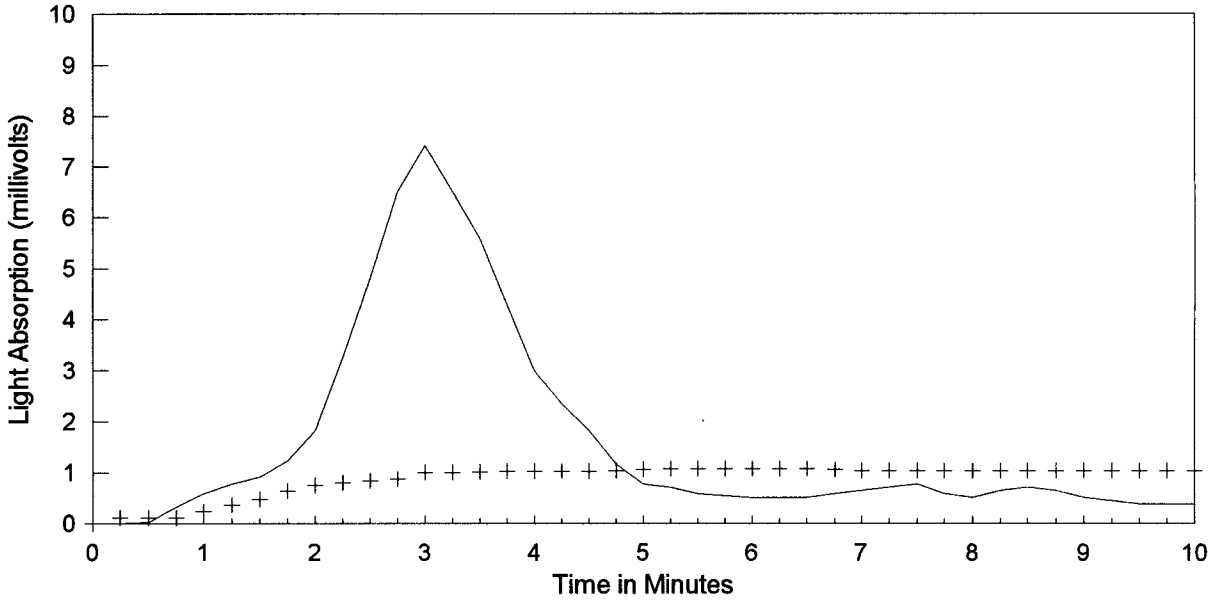
Fire-X Glasbord FX-.09" Test #2



_____ SAMPLE +++ RED OAK (FSC = 100)

SMOKE DEVELOPED

Fire-X Glasbord FX-.09" Test #2

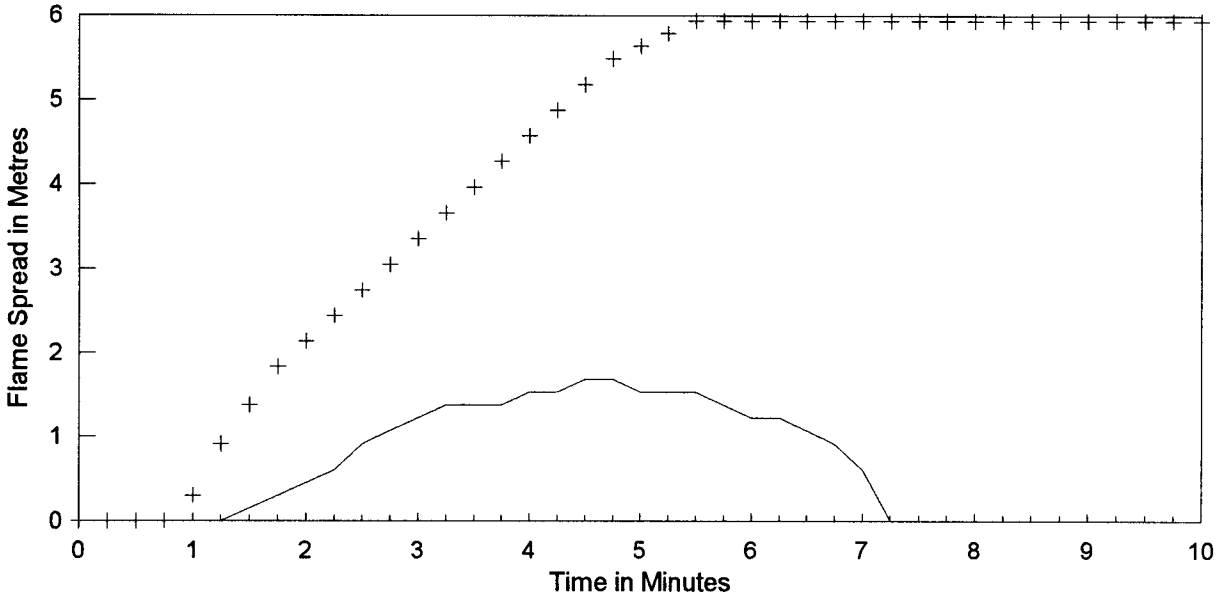


_____ SAMPLE +++ RED OAK (SD = 100)

FSC1	SD
20	198

FLAME SPREAD CLASSIFICATION

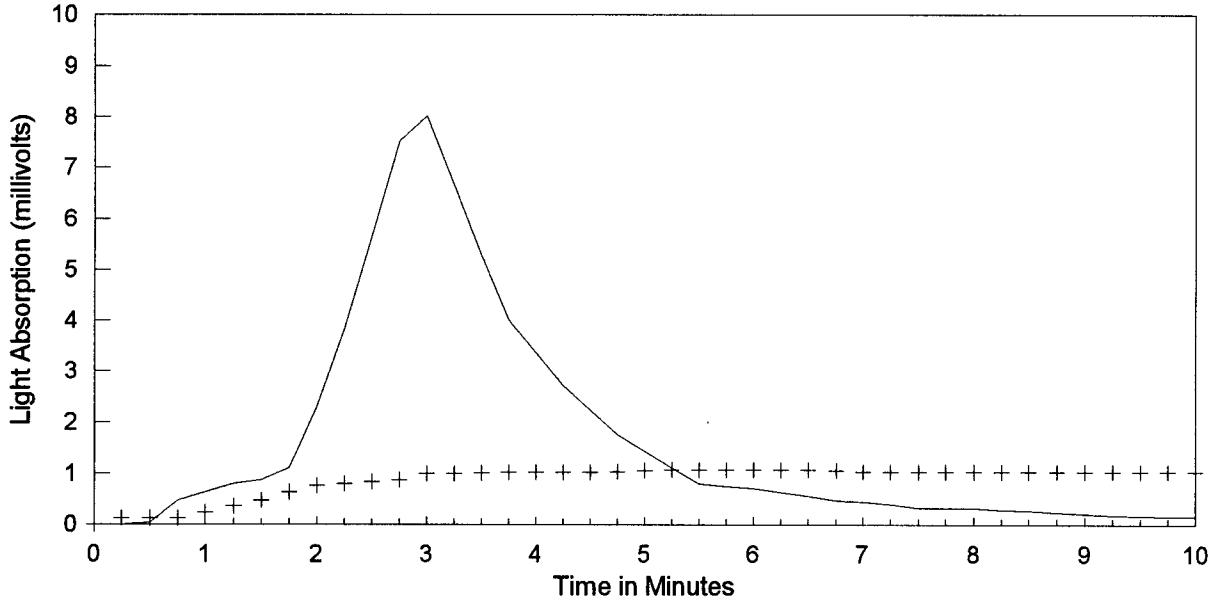
Fire-X Glasbord FX-.09" Test #3



_____ SAMPLE +++ RED OAK (FSC = 100)

SMOKE DEVELOPED

Fire-X Glasbord FX-.09" Test #3



_____ SAMPLE +++ RED OAK (SD = 100)

FSC1	SD
23	213