Bodycote MATERIALS TESTING CANADA INC. www.na.bodycote-mt.com

2395 SPEAKMAN DRIVE, MISSISSAUGA, ONTARIO CANADA L5K 1B3 • TEL: (905) 822-4111 • FAX: (905) 823-1446

CAN/ULC-S102 Surface Burning Characteristics of 0.09" 77145 FRP Trial Panel

A Report To:	**Kemlite Company, Inc.** 450 N Highway 368 Grand Junction, TN USA 38039
Phone:	901-764-2153
Fax:	901-764-6397
Attention:	Michael Ridge Technical Manager
Submitted by:	Fire Testing Services
Report No.	02-02-246 5 Pages
Date:	June 5, 2002

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 P.O.# g3084.

SAMPLE IDENTIFICATION

FRP panel identified as: 0.09" 77145 FRP Trial Panel.

(Bodycote Ortech sample identification number 02-02-S0246)

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 specimens, 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
0.09" 77145 FRP Trial Panel	Test #1	160	270
	Test #2	145	265
	Test #3	145	225
	Average:	150	255

Note: Indices are rounded off to the nearest 5

Observations of Burning Characteristics

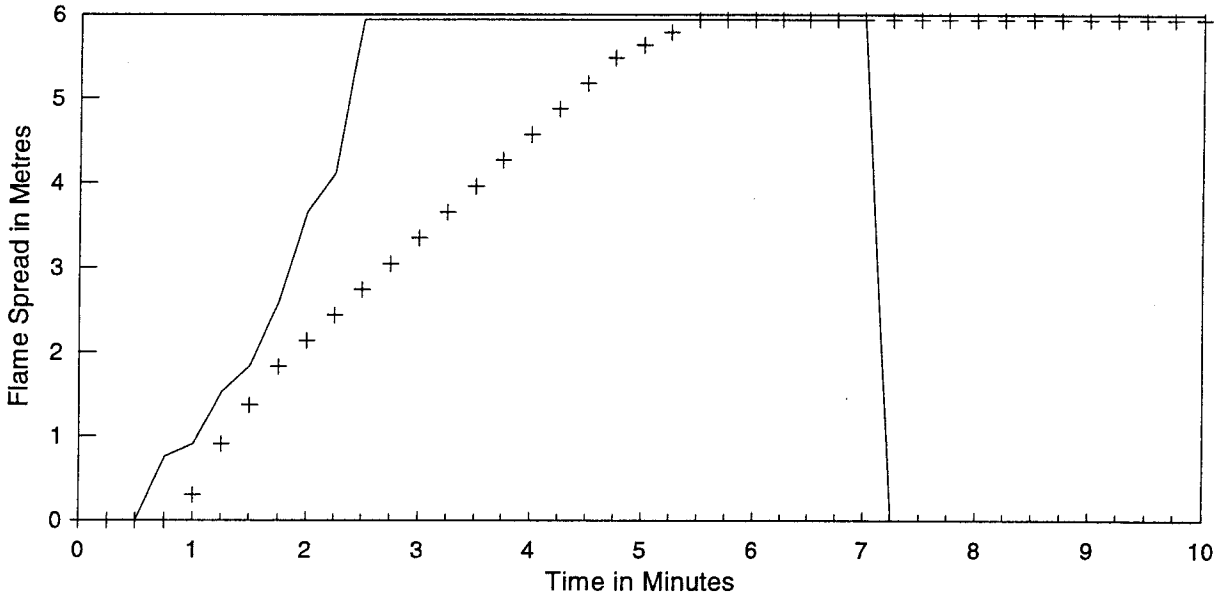
- In all three tests, the sample began to ignite and propagate flame after approximately 30 seconds exposure to the test flame.
- The flame fronts all propagated to a maximum distance of 6.0 metres (end point) at times of 2.5 minutes in test #1 and 2.75 minutes in tests #2 and #3.
- Peak amounts of smoke developed were recorded during the initial minutes of the test, coinciding with maximum flaming involvement of the sample. Smoke production then began to decrease as the sample was consumed and burning activity subsided (see accompanying graphs).

Robert A. Carleton
Fire Testing Services.

Richard J. Lederle
Fire Testing Services.

FLAME SPREAD CLASSIFICATION

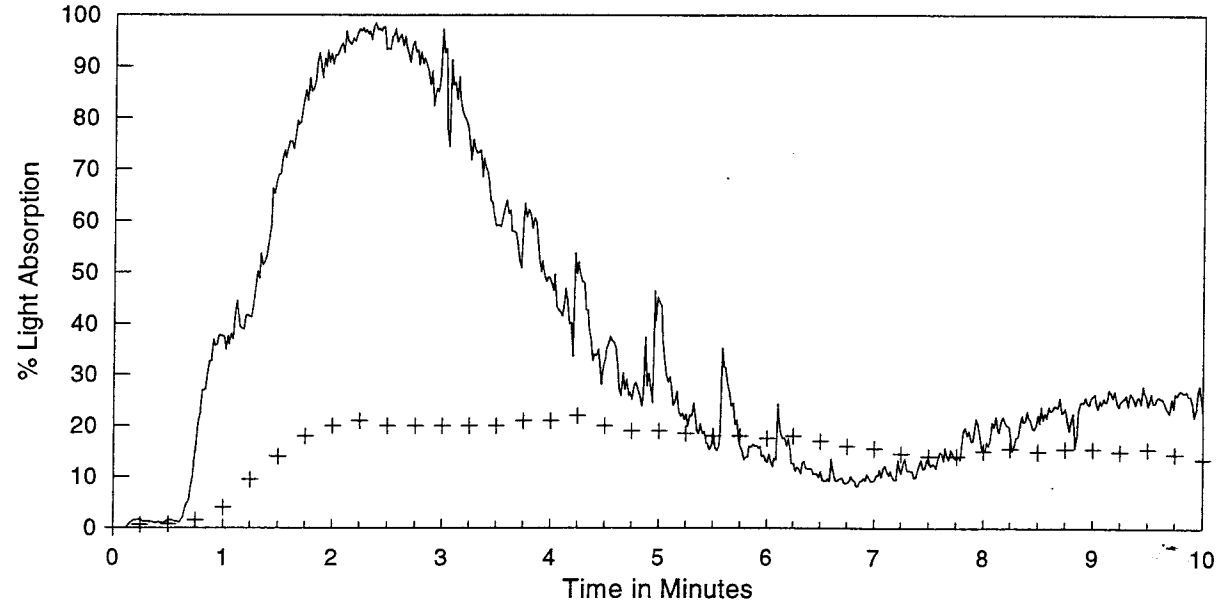
0.09" 77145 FRP Trial Panel Test #1



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

SMOKE DEVELOPED

0.09" 77145 FRP Trial Panel Test #1

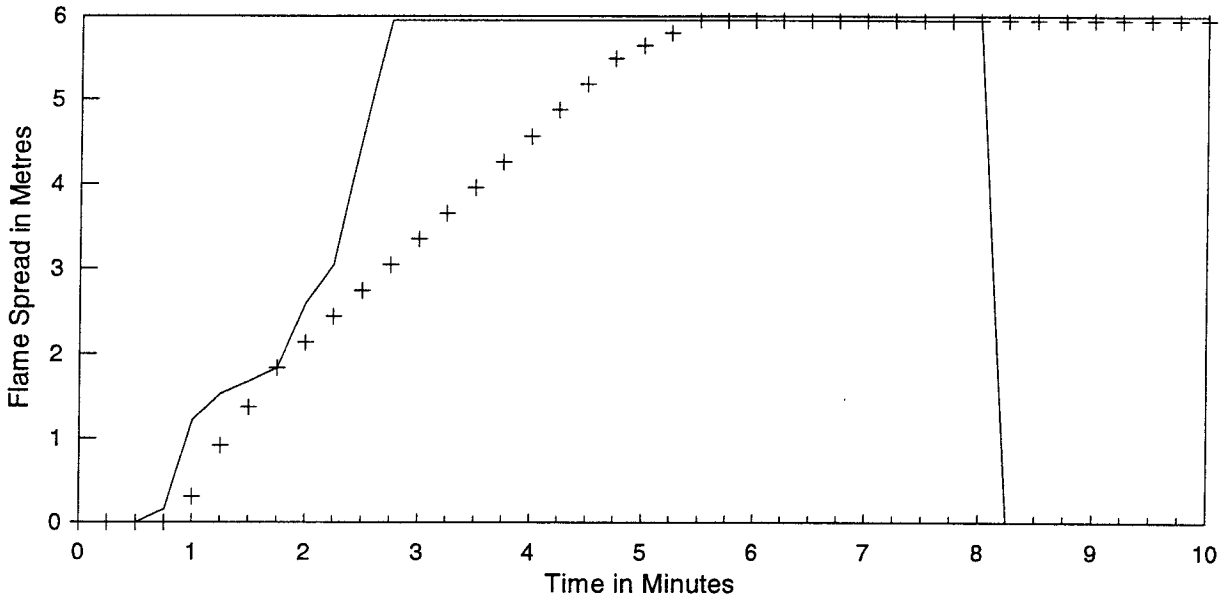


_____ SAMPLE +++ RED OAK (SD = 100)

FSC1	SD
160	270

FLAME SPREAD CLASSIFICATION

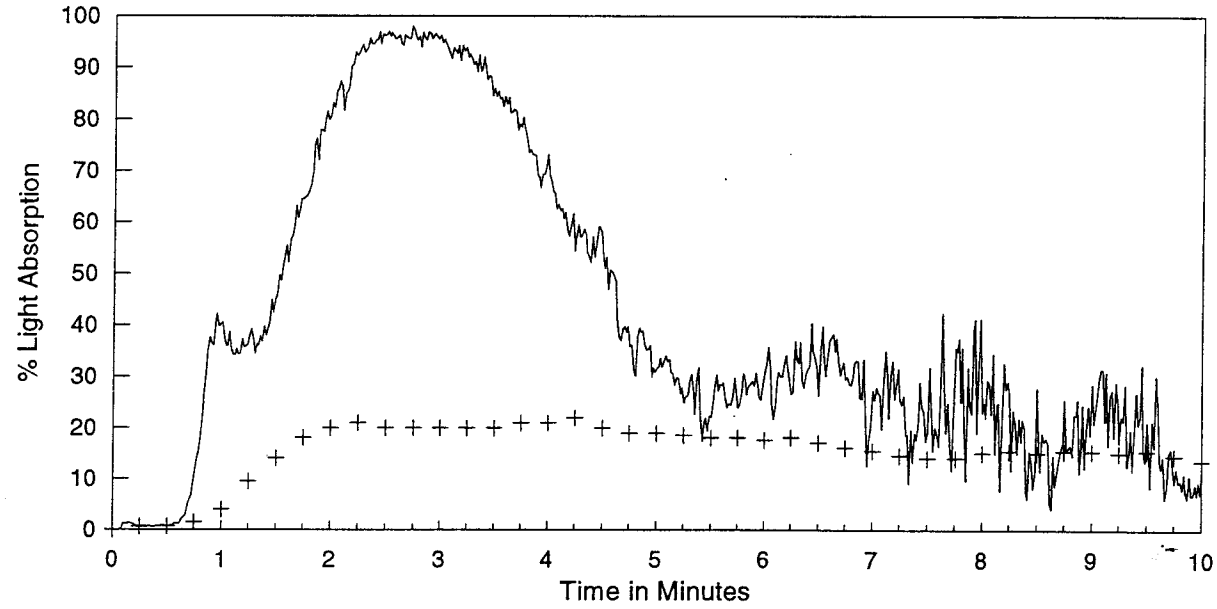
0.09" 77145 FRP Trial Panel Test #2



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

SMOKE DEVELOPED

0.09" 77145 FRP Trial Panel Test #2

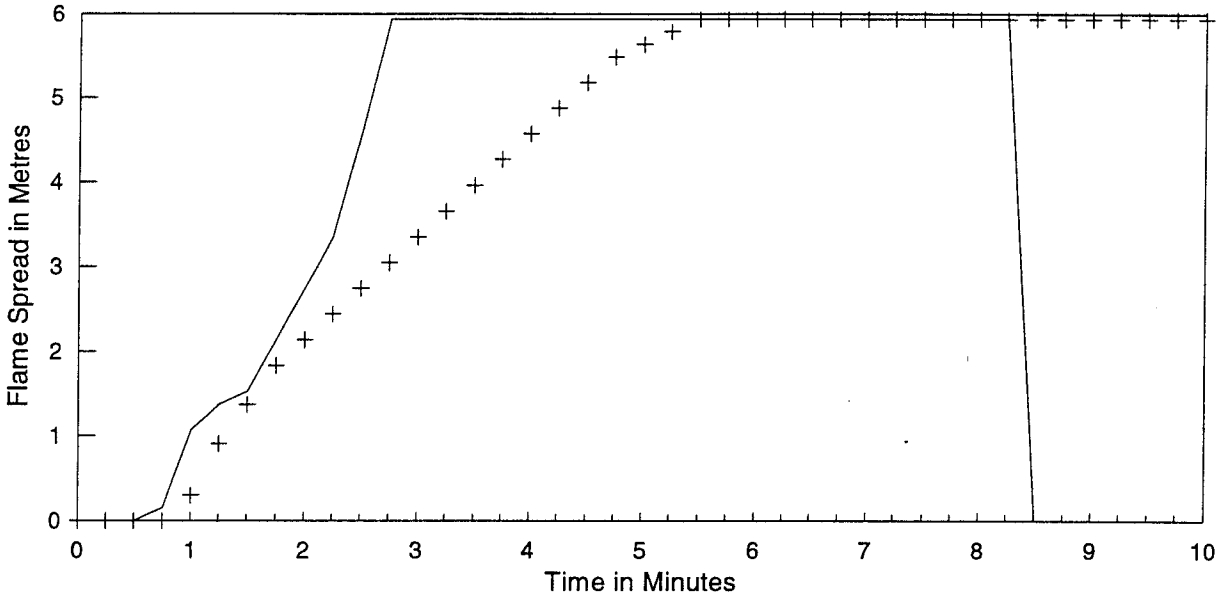


_____ SAMPLE +++ RED OAK (SD = 100)

FSC1	SD
145	265

FLAME SPREAD CLASSIFICATION

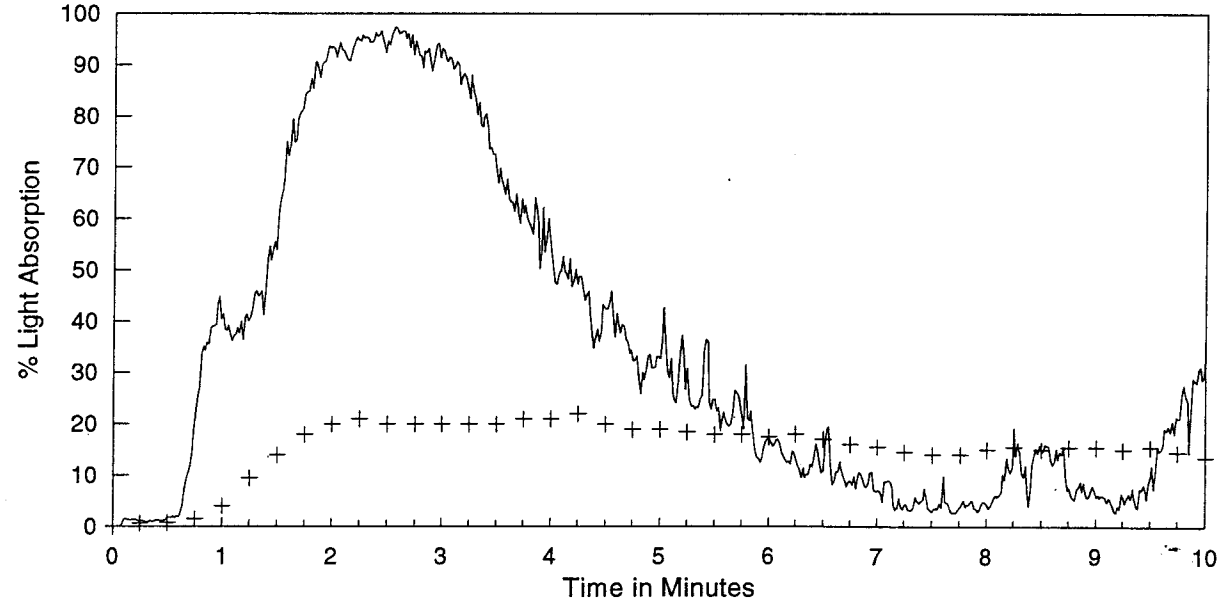
0.09" 77145 FRP Trial Panel Test #3



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

SMOKE DEVELOPED

0.09" 77145 FRP Trial Panel Test #3



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

FSC1	SD
145	225