

**CAN/ULC-S102 Surface Burning Characteristics  
of "Kemlite CNSI 075 Smooth"**

A Report To: **Kemlite Company Inc.**  
P.O. Box 2429  
Joliet, Illinois 60434  
USA

Phone: 815-467-8600  
Fax: 815-467-8666

Attention: Mike Buhr

Submitted by: Fire, Flammability & Explosivity

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4 Pages

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**ACCREDITATION** Standards Council of Canada, Registration #1.

**REGISTRATION** ISO 9001:2000, registered by QMI, Registration #001109.

### **SPECIFICATIONS OF ORDER**

Determine the Flame Spread and Smoke Developed Classifications based upon a single test conducted in conformance with CAN/ULC-S102-03, as per your signed letter dated July 16, 2004.

### **SAMPLE IDENTIFICATION**

FRP panels identified as: "Kemlite CNSI 075 Smooth".

(BMTc sample identification number 04-02-S0625)

### **TEST PROCEDURE**

The method, designated as CAN/ULC-S102-03, "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 sample was conditioned to constant mass at a temperature of 23°C and a relative humidity of 50% prior to testing.

### **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,  $FSC1 = 1.85 \cdot A$ ; 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**

<u>SAMPLE</u>	<u>FSC1</u>	<u>SD</u>
"Kemlite CNSI 075 Smooth"	110	265

**Observations of Burning Characteristics**

- The sample began to ignite and propagate flame after 45 seconds exposure to the test flame.
- The flame front propagated to a to a maximum distance of 6 metres (end point) at 4.25 minutes, where it remained for the 10 minute test duration.
- Maximum amounts of smoke developed were recorded coinciding with the initial flame advance and the increased burning activity of the material during the early stages of the test (see accompanying graphs).



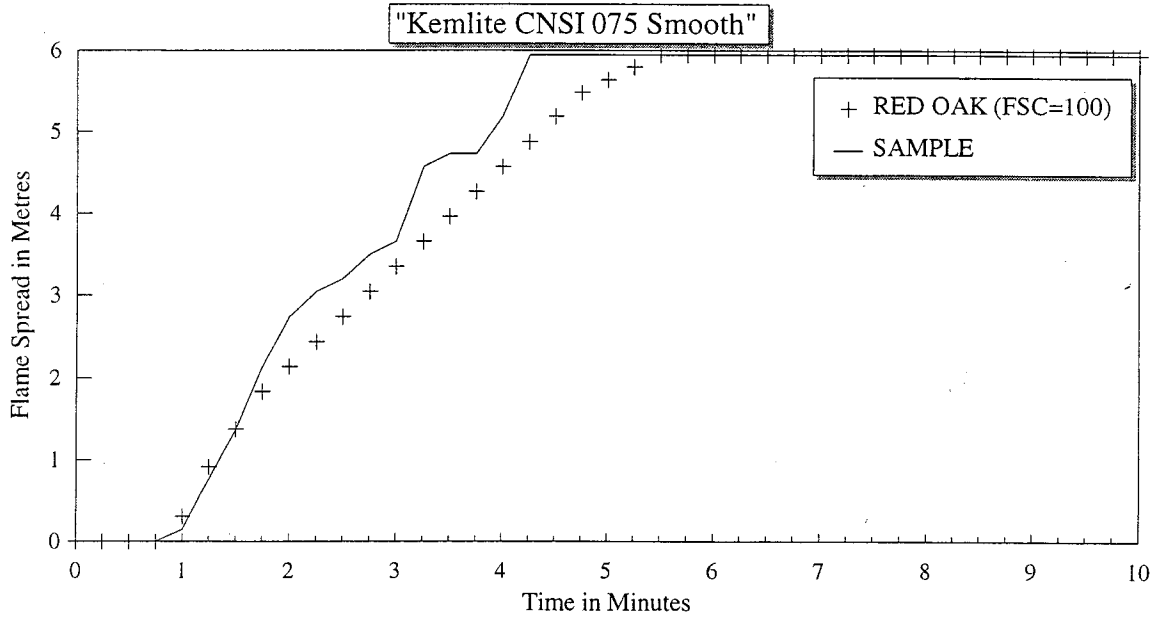
Robert A. Carleton,  
Fire, Flammability & Explosivity.



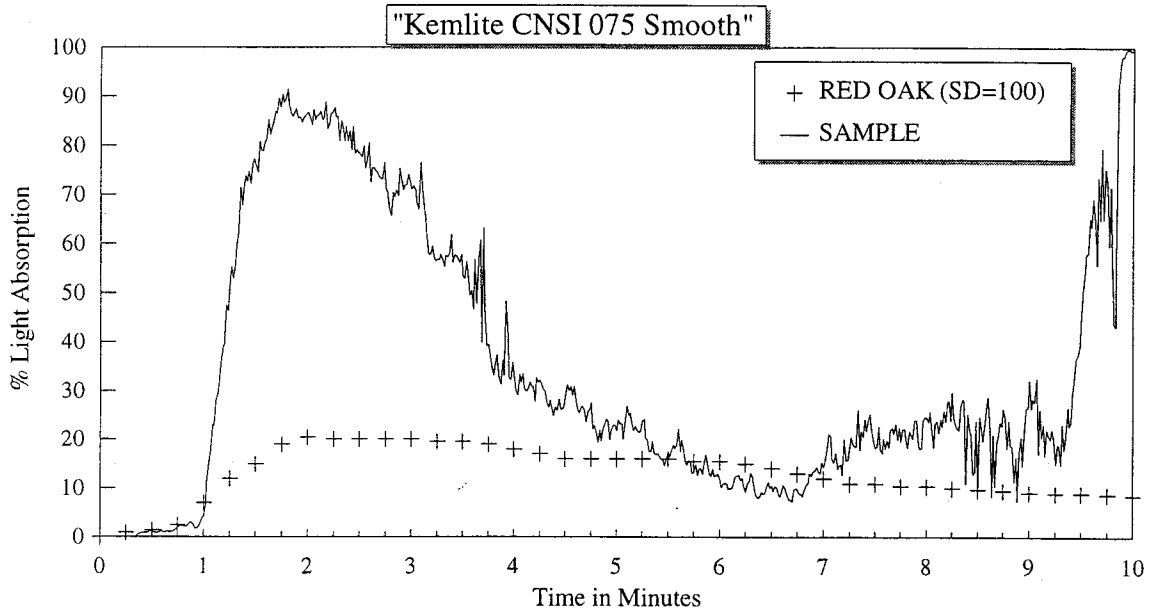
Richard J. Lederle,  
Fire, Flammability & Explosivity.

Note: This report consists of 4 pages, including the cover page, that comprise the report "body". It should be considered incomplete if all pages are not present.

### FLAME SPREAD CLASSIFICATION



### SMOKE DEVELOPED



**ESC1**

110

**SD**

265