

**ELECTRONIC DRAFT COPY**

**CAN/ULC-S102 Surface Burning Characteristics  
of "NuGreen Particleboard"**

A Report To: **Uniboard Canada Inc./Pfleiderer AG Co.**  
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Attention: Richard Lépine, F.Eng. M.Sc. MBA

Submitted by: Fire Testing

Report No. 09-002-432  
6 Pages

Date: June 18, 2009

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

**SPECIFICATIONS OF ORDER**

Determine the Flame Spread and Smoke Developed Classifications based upon triplicate testing conducted in accordance with CAN/ULC-S102-07, as per your Purchase Order #DA283938 and our Quotation No. 09-002-4376 accepted May 27, 2009.

**SAMPLE IDENTIFICATION** (Bodycote sample identification number 09-002-S0432)

Panel material identified as: "Uniboard NuGreen Particleboard".

**TEST PROCEDURE**

The method, designated as CAN/ULC-S102-07, "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 of less than three identical specimens are expressed in terms of Flame Spread Value (FSV) and Smoke Developed Value (SDV). Results of three or more replicate tests on identical samples produce average values expressed as Flame Spread Rating (FSR) and Smoke Developed Classification (SDC).

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**

Each test specimen consisted of 3 sections of material, each approximately 2438 mm in length by 533 mm in width by 19 mm in thickness butted together to form the requisite specimen length. Prior to testing, the samples were conditioned at a temperature of  $23 \pm 3^{\circ}\text{C}$  and a relative humidity of  $50 \pm 5\%$ . During testing the samples were self-supporting.

The testing was performed on: Test #1: 2009-06-11 Test #2: 2009-06-17 Test #3: 2009-03-17

**SUMMARY OF TEST PROCEDURE**

The tunnel is preheated to  $85^{\circ}\text{C}$ , as measured by the backwall-embedded thermocouple located 7090 mm downstream of the burner ports, and allowed to cool to  $40^{\circ}\text{C}$ , 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. Calculations are based on comparison with flame spread characteristics of select red oak, determined in calibration trials and arbitrarily established as 100. If the area under the curve (A) is less than or equal to 29.7 m·min,  $FSV = 1.85 \cdot A$ ; if greater,  $FSV = 1640 / (59.4 - A)$ . The Smoke Developed Value is determined by comparing the area under the obscuration curve for the test sample to that of inorganic reinforced cement board and red oak, established as 0 and 100, respectively.

**TEST RESULTS**

<u>SAMPLE</u>		<u>FSV</u>	<u>SDV</u>
"Uniboard NuGreen Particleboard"	Test #1	200	153
	Test #2	136	61
	Test #3	<u>161</u>	<u>279</u>
	Average:	166	164

Rounded Average Flame Spread Rating (FSR): **165**

Rounded Average Smoke Developed Classification (SDC): **165**

**Observations of Burning Characteristics**

- In all three tests, the samples ignited approximately 0.5 to 0.75 minutes after exposure to the test flame.
- The flame fronts advanced to maximum distances of 6 metres (end point) at approximately 2, 3, and 2.75 minutes into each respective test.
- Smoke Developed and temperature were also recorded during the tests (see accompanying charts).

**Note: This is an electronic copy of the report. Signatures are on file with the original report.**

Robert A. Carleton,  
Fire Testing.

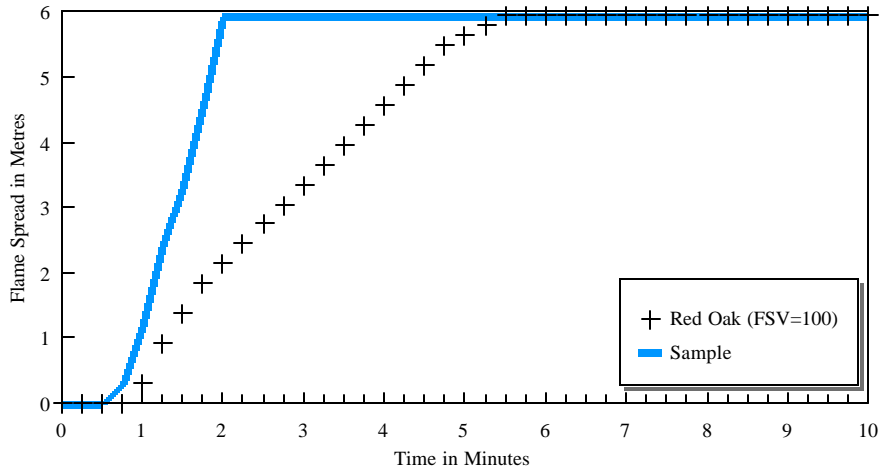
Ian Smith,  
Fire Testing.

*Note: This report consists of 6 pages, including the cover page, that comprises the report "body". It should be considered incomplete if all pages are not present.*

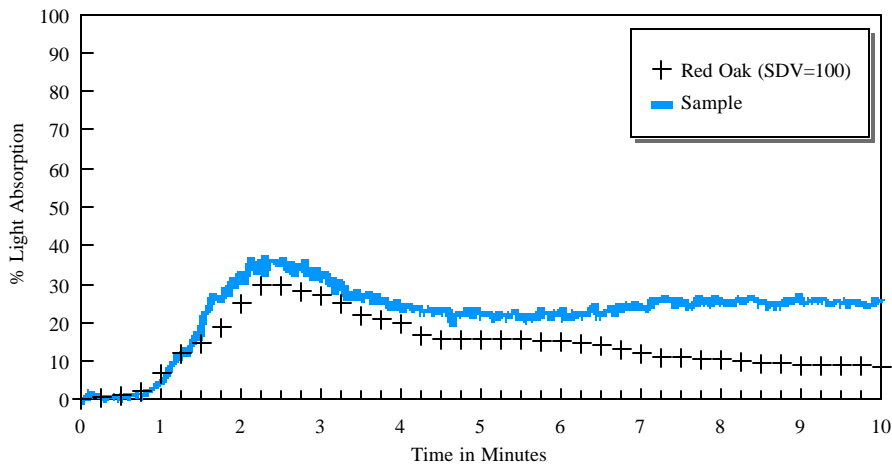
Sample: "Uniboard NuGreen Particleboard"

**Test #1**

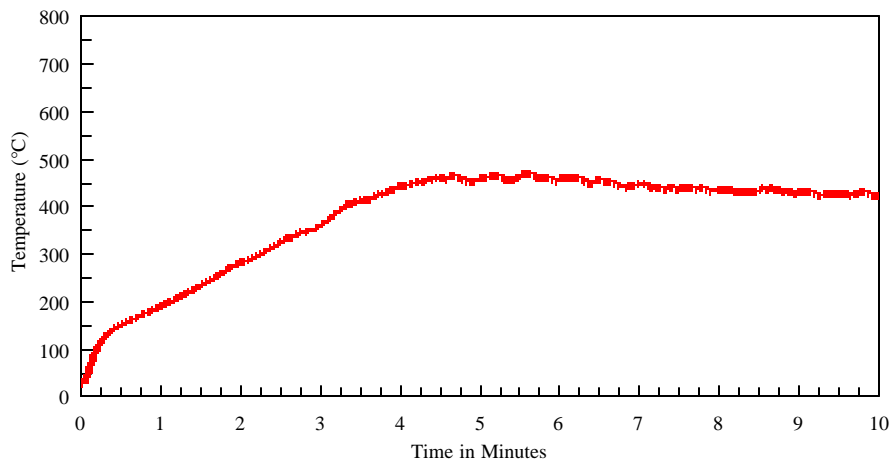
**FLAME SPREAD**



**SMOKE DEVELOPED**



**TEMPERATURE**

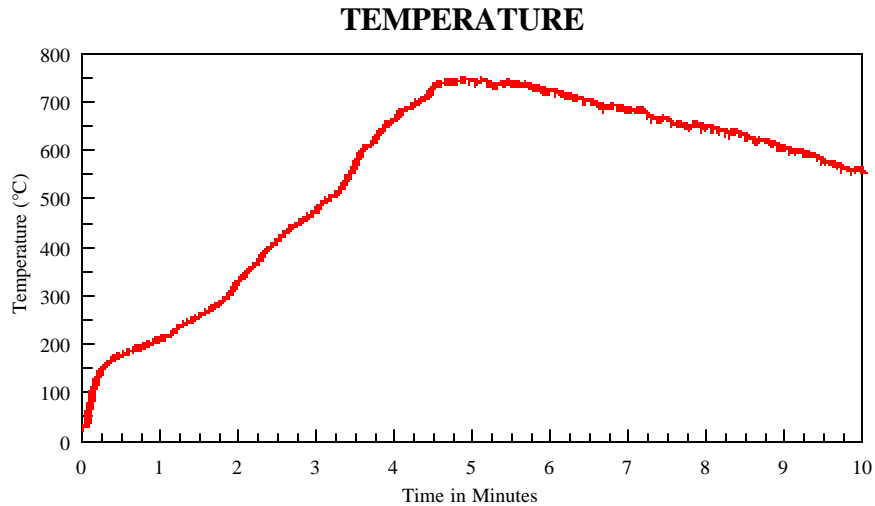
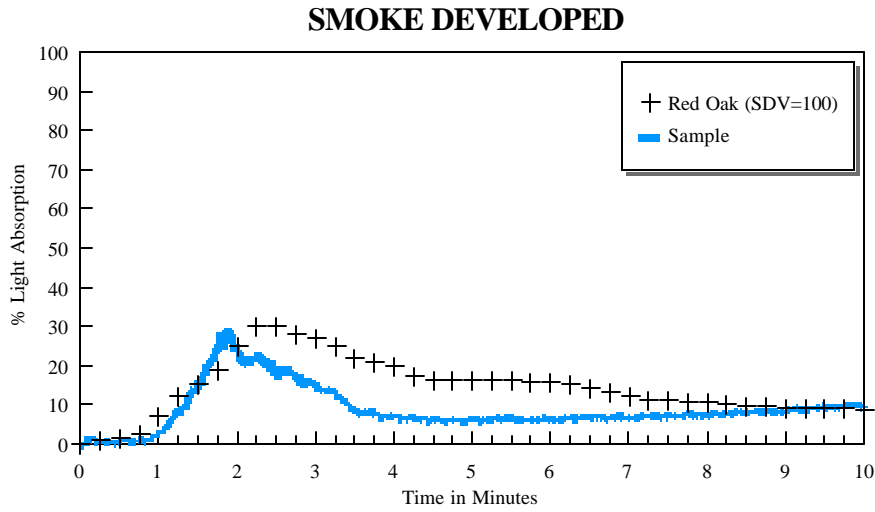
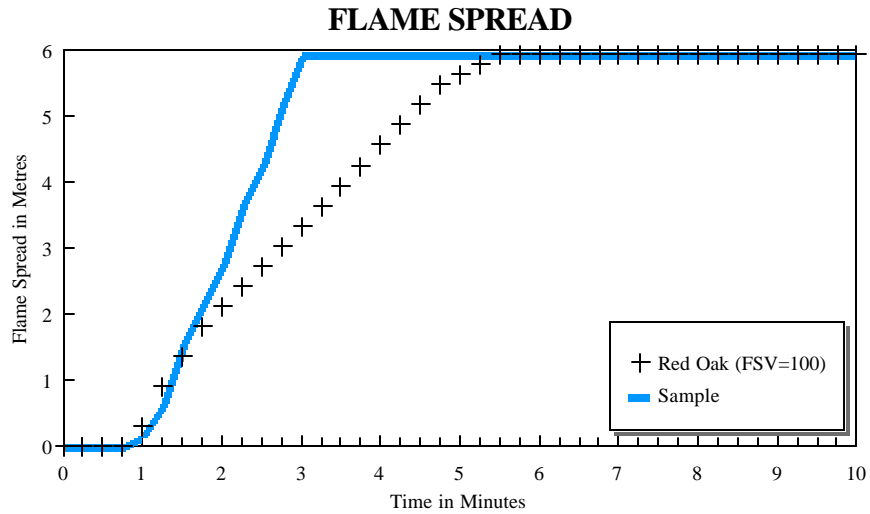


**FSV**  
200

**SDV**  
153

Sample: "Uniboard NuGreen Particleboard"

**Test #2**



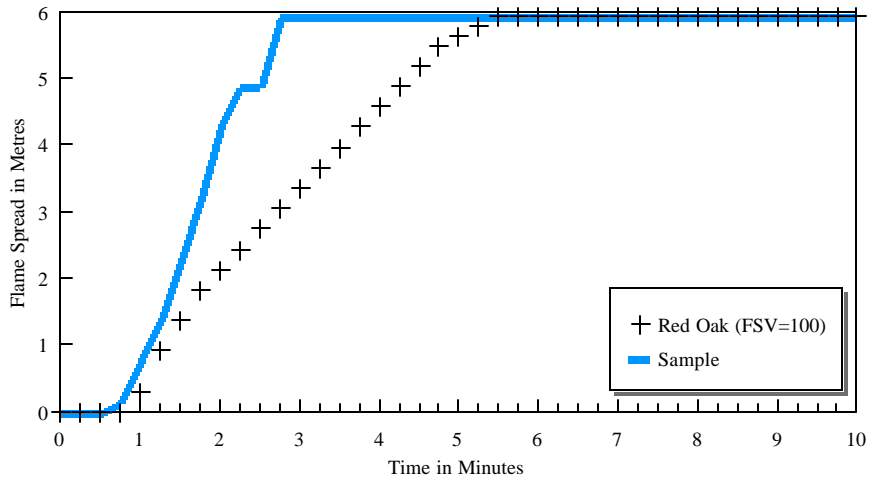
**FSV**  
136

**SDV**  
61

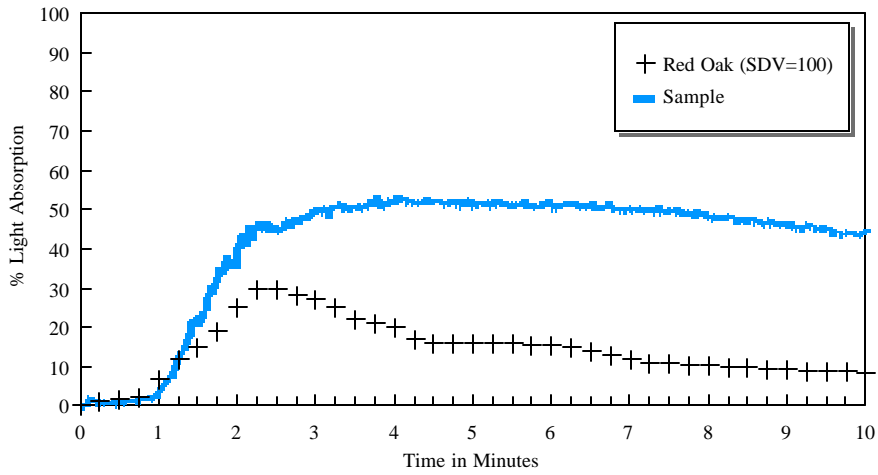
Sample: "Uniboard NuGreen Particleboard"

**Test #3**

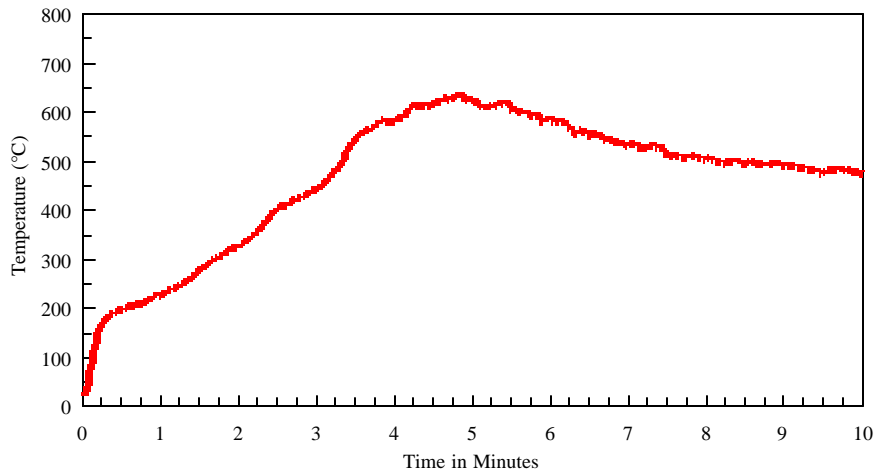
**FLAME SPREAD**



**SMOKE DEVELOPED**



**TEMPERATURE**



**FSV**  
161

**SDV**  
279