

December 10, 2004

Us Architectural Products Inc  
Mr. Robert Cauley  
Po Box 1914  
Fairview NC 28730

Our Reference: SV2551 / 04CA48205

Subject: Report On Surface Burning Characteristics Tests On Mineral And Fiber  
Boards

Dear Mr. Cauley:

This is a Report summarizing the results of tests conducted under the Commercial Inspection and Testing Services (CITS) program identified as Assignment No. 04CA48205.

**METHOD:**

The tests were conducted in accordance with Standard ANSI/UL 723, Ninth Edition, dated August 29, 2003, "Test for Surface Burning Characteristics of Building Materials," (ASTM E84-04).

The test determines the Surface Burning Characteristics of the test material, specifically the flame spread and smoke developed indices when exposed to fire.

The maximum distance the flame spreads along the length of the sample from the end of the igniting flame is determined by observation. The Flame Spread Index (FSI) of the material is determined by rounding the Calculated Flame Spread (CFS) as described in UL 723. The CFS is derived by plotting the progression of the flame front on a time-distance scale, ignoring any flame front recession, and using one of the calculation methods as described below:

- A.  $CFS = 0.515 A_t$  when  $A_t$  is less than or equal to 97.5 minute-foot.
- B.  $CFS = 4900/(195-A_t)$  when  $A_t$  is greater than 97.5 minute-foot.

Where  $A_t$  = total area under the time distance curve expressed in minute-foot.



The Smoke Developed Index (SDI) is determined by rounding the Calculated Smoke Developed (CSD) as described in UL 723. The CSD is determined by the output of a photoelectric circuit operating across the furnace flue pipe. A curve is developed by plotting values of light absorption (decrease in cell output) against time. The CSD is derived by expressing the net area under the curve for this material as the percentage of the area under the curve for untreated red oak.

The CSD is expressed as:

$$\text{CSD} = (A_m / A_{RO}) \times 100$$

Where:

CSD = Calculated Smoke Developed.

$A_m$  = The area under the curve for the test material.

$A_{RO}$  = The area under the curve for untreated red oak.

#### GENERAL:

Test results relate only to items tested.

#### SAMPLES:

The samples utilized in this investigation were neither prepared nor selected by a Laboratories' representative such that no verification of composition can be provided.

The samples consisted of cement bonded particle boards designated "Versaroc" (Euroform Products, Ltd. "Versapanel").

#### RESULTS:

The results as tabulated below are considered applicable only to the specific samples tested.

Data sheets and graphical plots of flame travel versus time and smoke developed versus time are also enclosed.

Test No.	Sample	CFS Calculated Flame Spread	FS Flame Spread Index	CSD Calculated Smoke Developed	SDI Smoke Developed Index
1	Versaroc	0.0	0	2.0	0

Since the anticipated work has been completed, we have instructed our Accounting Department to terminate the investigation and invoice you for the charges incurred to date.

December 10, 2004

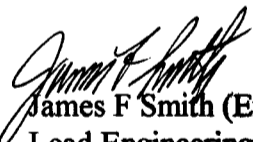
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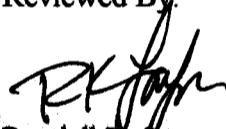
Should you have any questions, please contact the undersigned.

Very truly yours,

Reviewed By:



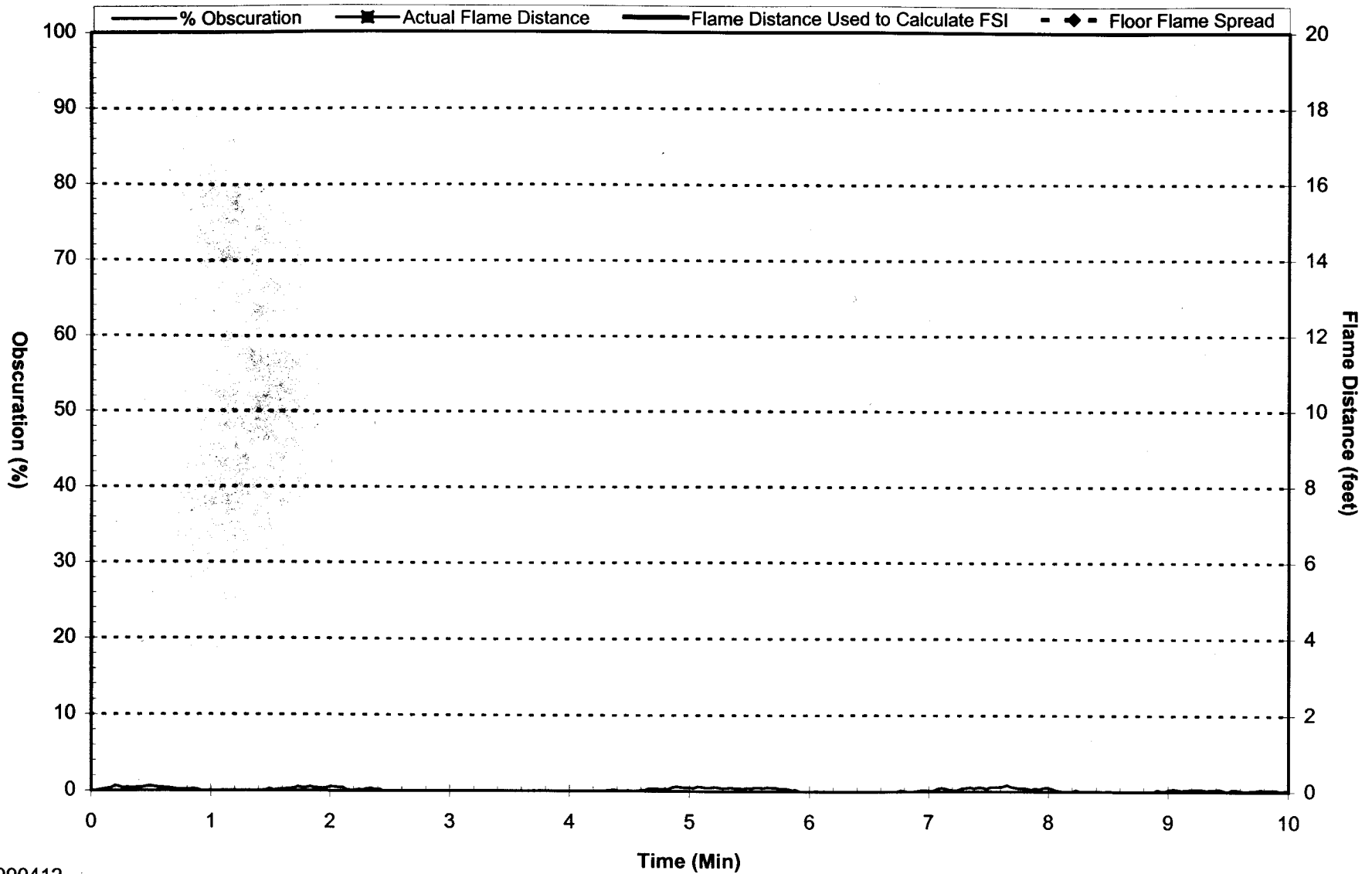
**James F. Smith (Ext. 42666)**  
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**Sr. Staff Engineer**  
**Fire Protection Division**

# Flame Spread / Smoke Results

U. S. Architectural Products  
Versaroc



12090412  
SV2551 / 04CA48205  
Test No. 1  
Test Location:

Flame Spread Index = 0  
Smoke Developed Index = 0  
Max Flame Spread = ft.