



**Title: Fire Test Results**

**Product: 1" CFAB - 10lb pcf**

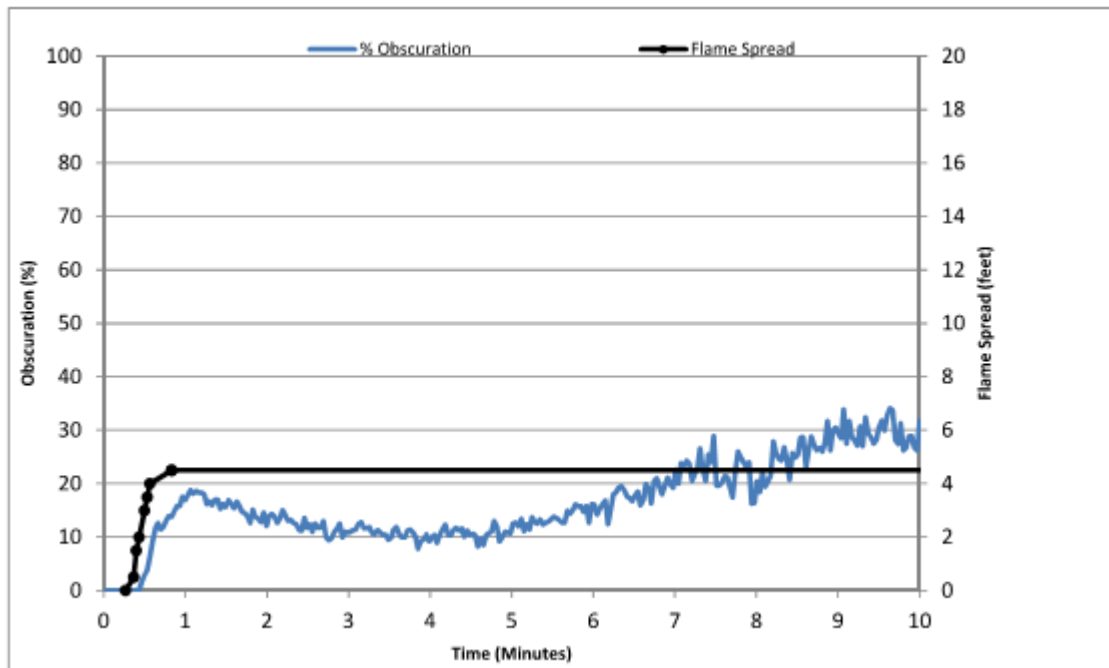
Application: Wall or Ceiling

Testing Standard: ASTM E84

Test Date: 03/28/2014

Why this test: *This test evaluates products surface burning characteristics. Products are rated on the distance a flame travels across the product as well as the amount of smoke that is created during the exposure to fire.*

Test Result Summary: Class A, Flame Spread: 20; Smoke Developed: 200



Test ID: 03281409

**ASI TEST RESULT DISCLAIMER**

ASI makes every effort to ensure the accuracy and reliability of the information provided. Laboratory testing is conducted by independent testing organizations. ASI does not guarantee that field tests or independent tests will not vary.

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March 31, 2014

Our Reference: R8078 / 4786322820

Subject: Report Of Surface Burning Characteristics Tests On Blanket Material.

Dear Mr. De Vries:

This is a Report summarizing the results of tests conducted under the Commercial Inspection and Testing Services (CITS) program of UL LLC (UL) identified as Assignment No. 4786322820.

**GENERAL:**

The results relate only to items tested.

**METHOD:**

Each test was conducted in accordance with Standard ANSI/UL723, Tenth Edition, dated September 10, 2008, "Test for Surface Burning Characteristics of Building Materials", (ASTM E84-13A).

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

The maximum distance the flame travels along the length of the sample from the end of the igniting flame is determined by observation. The Flame Spread Index of the material is derived by plotting the progression of the flame front on a time-distance basis, ignoring any flame front recession, and using the equations 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 photoelectric equipment operating across the furnace flue pipe. A curve is developed by plotting the values of light absorption (decrease in cell output) against time. The CSD is derived by expressing the net area under the curve for the material tested as a percentage of the area under the curve for untreated red oak.

The CSD is expressed as:

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

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.

**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.

**Sample Description**

Test No.	System
1	CFAB 1 in 10lb/ft3

Each test sample consisted of three 8 by 2 ft. wide boards butted end-to-end to form the required 24 ft. long surface.

Each test sample was supported by 2 in. hexagonal poultry netting supported by 1/4 in. diameter steel rods spaced 2 ft. apart.

RESULTS:

The results are 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.

Table 1: Test Summary

Test No.	Test Code	Sample Description	CFS Calculated Flame Spread	FSI Flame Spread Index	CSD Calculated Smoke Developed	SDI Smoke Developed Index
1	03281409	CFAB 1in 10lb/ft3	22.09	20	224.0	200

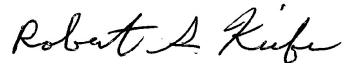
The Classification Marking of UL on the product is the only method provided by UL to identify products which have been produced under its Classification and Follow-Up Service. No use of a Classification Marking has been authorized as a result of this investigation.

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.

Should you have any questions, please contact the undersigned.

Very truly yours

Reviewed by:



Robert S. Kiefer (ext. 42014)  
Senior Engineering Associate  
Fire Protection Division

James F. Smith (ext. 42666)  
Staff Engineering Associate  
Fire Protection Division

Project: 4786322820  
Tested by: TIMOTHY WAGNER

File: R8078  
Engineer: ROBERT KIEFER

TestCode: 03281409  
Date: 2014-03-28

TEST METHOD: The test was conducted in accordance with UL 723, Tenth Edition.

Test Duration: 10 minutes	Test No.: 3	Hot Test: No
Mounting: Rods & Wire	Test Type: CITS	Burn-Out Required: No

**Test Sample:** CFAB 1in 10lb/ft3

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FLAME SPREAD RESULTS

**Flame Spread Data**

Distance (Feet)		Time (Sec)
Ignition		16
0.5		22
1.5		24
2		26
3		30
3.5		32
4		34
4.5		50

**Calculated Flame Spread (CFS):** 22.09  
**Flame Spread Index (FSI):** 20  
**Time to Ignition (sec):** 16  
**Maximum Flame Spread (ft.):** 4.5  
**Area Under the Flame Spread Curve (ft.-min.):** 42.9

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SMOKE RESULTS

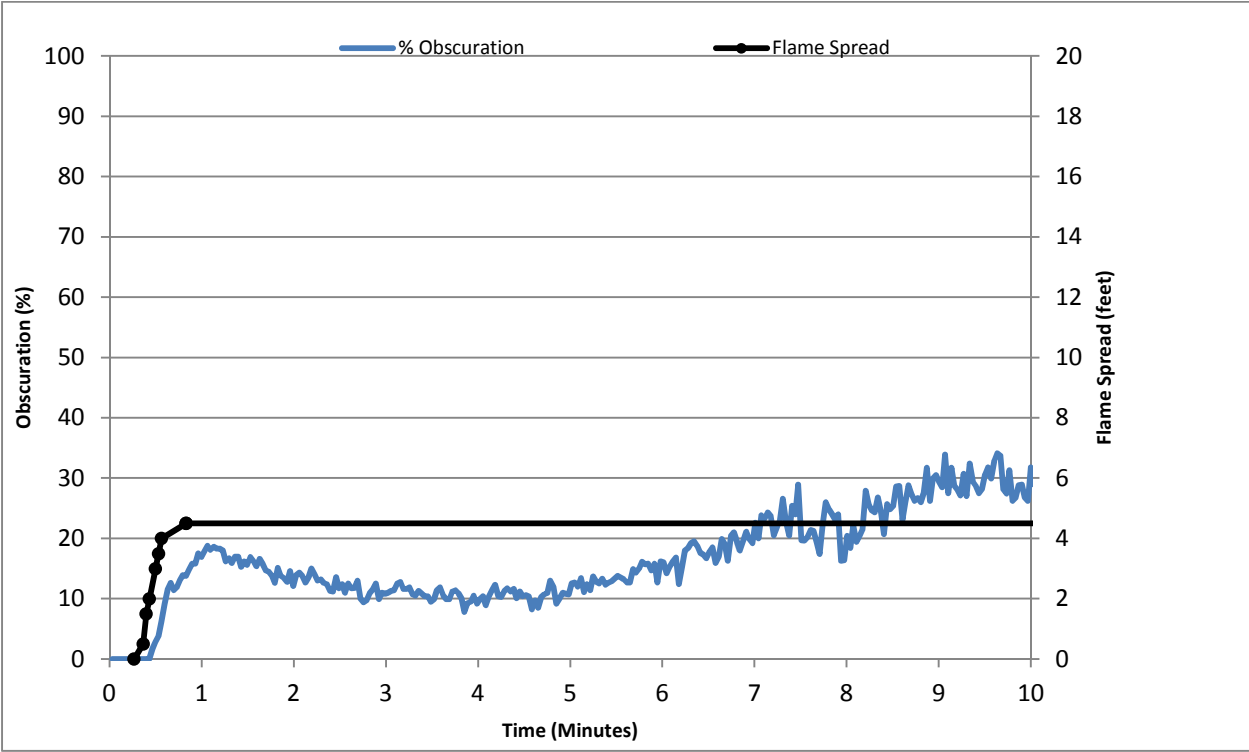
**Calculated Smoke Developed (CSD):** 224.0  
**Smoke Developed Index (SDI):** 200  
**Area Under the Smoke Curve (Obs-min.):** 164.60  
**Area Under Red Oak Curve (Obs-min.):** 73.48

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Post-Test Observations

**Discoloration (Feet From Burner):** 24  
**Char (Feet From Burner):** 16

# Flame Spread / Smoke Results CFAB 1in 10lb/ft3



Test Num.: 3  
R8078 / 4786322820  
03281409

Flame Spread Index: 20  
Smoke Developed Index: 200  
Max. Flame Spread (ft.): 4.5