

ASTM E 84

Standard test method for surface burning characteristics of building materials.

The flame spread Index and Smoke Developed Index values obtained by the ASTM E 84 test are used by code officials and regulatory agencies in the acceptance of interior finish materials for various applications. The most widely accepted classification system is described in the National Fire Protection Association publication NFPA 101 *Life Safety Code*

1. 2006 International Building Code

a. Section 803 Wall and Ceiling Finishes, Paragraph 803.1 General states, "Interior wall and ceiling finishes shall be classified in accordance with ASTM E- 84. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

i. Class A: Flame Spread 0-25; smoke-developed 0-450

ii. Class B: Flame Spread 26-75; smoke-developed 0-450

iii. Class C: Flame Spread 76-200; smoke-developed 0-450

Class A, B, and C correspond to type I, II, and III respectively in other codes such as SBCCI, BOCA, ICBO. They do not preclude a material being otherwise classified by the authority of jurisdiction.

2. NFPA 101®, Life Safety Code®

a. Chapter 10 Interior Finish, Contents, and Furnishings, Paragraph 10.2.3 Interior Wall or Ceiling Finish Testing and Classification states, "Interior wall or ceiling finish that is required elsewhere in this Code to be Class A, Class B, or Class C shall be classified based on test results from NFPA 255, ASTM E-84, or UL 723."



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April 13, 2006

Rocksolid Granit USA, Inc.
Mr. Ruggero Meneghetti
2700 Biscayne Blvd.
Miami, FL 33137

Our Reference: SV16300/06CA16914

Subject: Report Of Surface Burning Characteristics Tests On Samples As
Submitted By Rocksolid Granit Usa

Dear Mr. Meneghetti:

This is a Report summarizing the results of tests conducted under the Commercial Inspection and Testing Services (CITS) program identified as Assignment No. 06CA16914.

GENERAL:

The results relate only to items tested.

METHOD:

Each test was conducted in accordance with Standard ANSI/UL723, ninth edition; dated August 29, 2003, "Test for Surface Burning Characteristics of Building Materials" (ASTM E84).

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:

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

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.

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	Cristallino engineered stone panels

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	04110608	Cristallino engineered stone panels	20.55	20	470.4	450

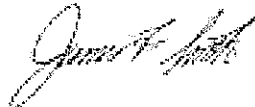
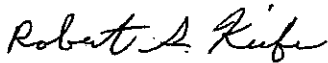
The Classification Marking of Underwriters Laboratories Inc. on the product is the only method provided by Underwriters Laboratories Inc. to identify products, which have been produced under its Classification and Follow-Up Service. No use of a Classification Marking has been authorized as a result of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

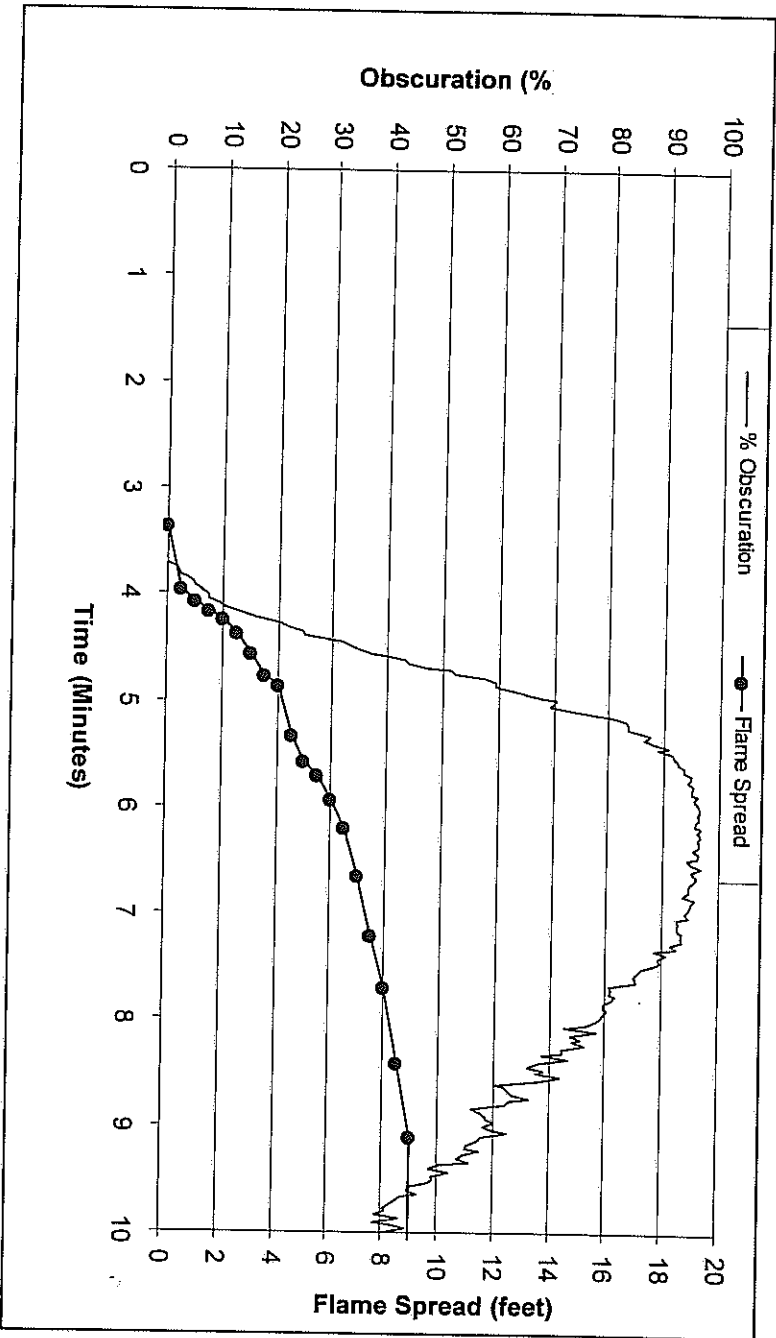


Robert S Kiefer
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Flame Spread / Smoke Results

Rocksolid Granit USA, Inc.
Cristallino



Test No. 1
06CA16914 / SV16300
04110608

Flame Spread Index: 20
Smoke Developed Index: 450
Max. Flame Spread: 9.0