

TEST REPORT

No. : SC121121519

Date : Nov. 09, 2012

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ARISTA, S.A.

2A. CALLE 23-80 ZONA 15 VH2, EDIFICIO AVANTE, NIVEL 11, OF. 1102, GUATEMALA 01015

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name : TECNOFLOOR ACCESS FLOOR
Sample Number : SC121121519
Test Required : 1. To determine the flame spread index (FSI) and smoke-developed index (SDI) of the sample's surface burning characteristics when it is subjected to the conditions of specified in ASTM E84-12 "Standard Test Method for Surface Burning Characteristics of Building Materials"
2. To determination the combustion characteristics when it is subjected to ASTM E136-11 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 °C
Test Method : Please see the next page(s)
Product specification : FS700/FS800/FS1000/FS1250/FS1500
Buyer : ARISTA, S.A.
Manufacturer : Dowseng Limited
Material and Mark : Steel/Concrete
Date of Receipt : Nov. 01, 2012
Test Period : Nov. 01, 2012 to Nov. 07, 2012
Test result(s) : For further details, please refer to the following page(s)

***** To be continued*****

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd.

Vivien Zhang

Vivien Zhang
Authorized signatory

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1. ASTM E84-12

I. TEST CONDUCTED

This test was conducted in accordance with ASTM E84-12 Standard Test Method for Surface Burning Characteristics of Building Materials.

II. INTRODUCTION

The method, designated as ASTM E84-12, "Standard Method of Test for Surface Burning Characteristics of Building Materials", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flame spread index (FSI) and smoke developed index (SDI).

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

III. TEST PROCEDURE

The tunnel is preheated to 150°F, as measured by the floor-embedded thermocouple located 23.25 feet downstream of the burner ports, and allowed to cool to 105°F, as measured by the floor-embedded thermocouple located 13 feet 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 24 feet long, 12 inches above the floor. The lid is then lowered into place.

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 97.5 min·ft, $FSI = 0.515 \cdot A$; if greater, $FSI = 4900 / (195 - A)$. 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.

IV. CONDITIONING

Prior to testing, the sample was conditioned, To a constant weight at a temperature of $73.4 \pm 5^\circ\text{F}$ ($23 \pm 2.8^\circ\text{C}$) and at a relative humidity of $50 \pm 5\%$

***** To be continued*****

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V. SAMPLE DETAILS

The details of the tested specimen given below have been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

Name	TECNOFLOOR ACCESS FLOOR
Color / Density	Dark grey / About 40.2kg/m ²
Thickness*	32mm

*Measured by Laboratory

Exposed face: The front face

MOUNTING METHODS:

The specimen was self-supporting and was placed directly on the inner ledges of the tunnel.

The specimen consisted of 12 pieces of 600mm wide×600mm long×32mm thick and all sections jointed end-to-end.

TEST RESULTS

FSI	SDI
0	15

RATING:

The National Fire Protection Association Life Safety Code 101, Chapter 10, Section 10.2.3 “Interior Wall and Ceiling Finish Classification”, has a means of classifying materials with respect to Flame Spread and Smoke Developed when tested in accordance with NFPA 255, ASTM E84, UL 723 “Method of Test of Surface Burning Characteristics of Building Materials”.

International Building Code, Chapter 8, Interior Finishes, Section 803 “Wall and Ceiling Finishes”, was classified in accordance with ASTM E84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

***** To be continued*****

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The classifications are as follows:

	Class A	Class B	Class C
Flame Spread Index	0-25	26-75	76-200
Smoke-developed Index	0-450	0-450	0-450

Since the tested sample received a Flame Spread Index 0 and a Smoke Developed 15, it would meet the requirement of Class A interior Wall & Ceiling Finish Category.

OBSERVATIONS

Time to ignition (sec)	--
Time to Max. FS (sec)	--
Maximum FS (feet)	--

GRAPHICAL RESULTS:

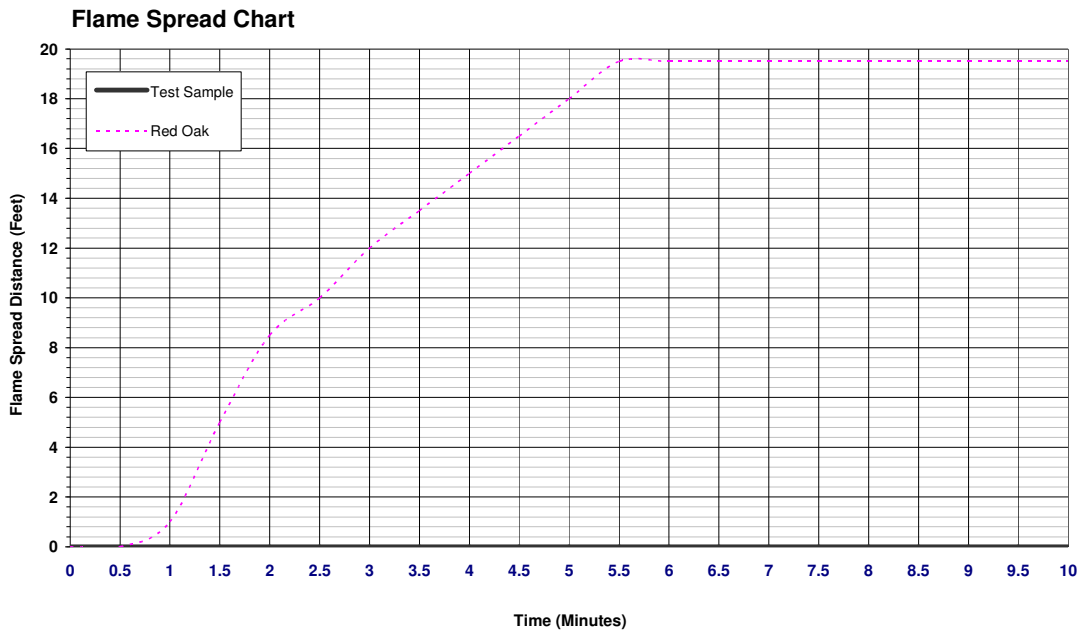


Figure 1 Flame Spread Chart
 ***** To be continued *****

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Smoke Developed Chart

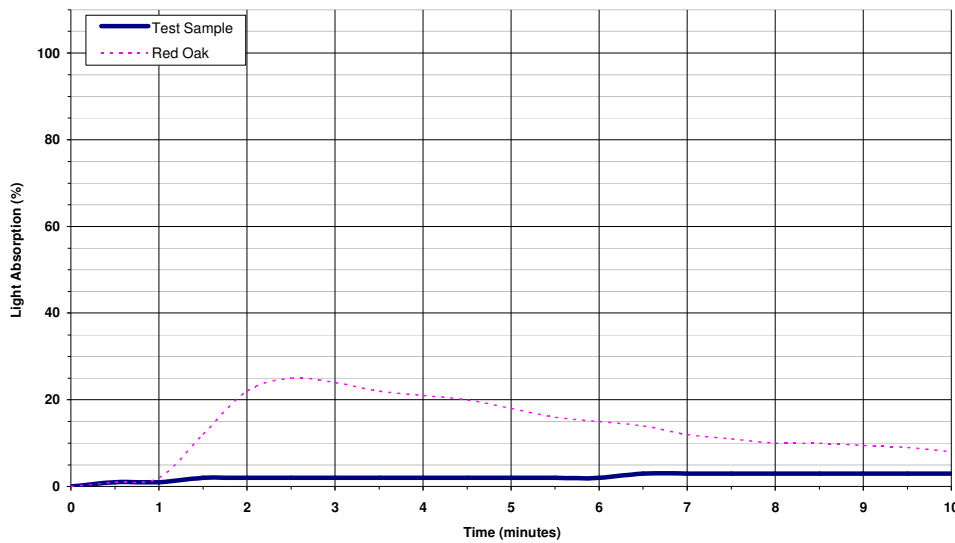


Figure 2 Smoke Developed Chart

WARNING:

The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support. Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

The test results relate only to the specimens of the product in the form in which were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

***** To be continued*****

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2. ASTM E136-11

I. Test conducted

This test was performed in accordance with ASTM E136-11 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 °C

II. Sample details

Materials	TECNOFLOOR ACCESS FLOOR
Color	Dark grey
Density	About 40.2kg/m ²
Size of sample	38×38×51mm

Conditioning:

Prior to testing, the submitted sample was dried at 60±3°C for not less than 24h but no more than 48h, then placed in a desiccator to cool at least 1h before testing.

III. Test Results

Specimen No.	1	2	3	4	5
Weight of specimen before the test, (g)	143.06	146.26	145.21	146.32	145.4
Weight of specimen after the test, (g)	140.19	141.55	140.33	141.44	141.33
Weight loss of the specimen, (%)	2.01	3.22	3.36	3.34	2.67
Initial temperature of the furnace, (°C)	751	752	751	753	751
Maximum specimen center temperature, (°C)	753	754	753	754	755
Maximum specimen surface temperature, (°C)	754	754	753	755	754
Flaming after first 30 s (Yes/No)	No	No	No	No	No

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Requirements:

Report as passing if at least three of the four specimens tested meet the individual specimen criteria detailed as a) or b):

- a) When the weight loss of the specimen is 50% or less;
 - 1. The recorded temperatures of the surface and interior thermocouples do not at anytime during the test rise more than 30°C above the stabilized temperature measured at T₂ prior to the test (Initial temperature of the furnace).
 - 2. There is no flaming from the specimen after the first 30s
- b) When the weight loss of the specimen exceeds 50%;
 - 1. The record temperature of the surface and interior thermocouples do not at anytime during the test rise above the stabilized temperature measured at T₂ prior to the test.
 - 2. There is no flaming from the specimen at any time during the test.

Conclusion: Based on the test results, the tested specimen meets the requirements of ASTM E136-11.

Statement:

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test. They are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

The specimen was supplied by the sponsor and SGS-CSTC ANJI Branch was not involved in any selection or sampling procedure.

Note: The test was performed by SGS internal laboratory.

***** To be continued*****

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Photo Appendix:



***** End of report *****

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