TEST REPORT

No. : TJIN1911018334CM
Date : Dec 20, 2019

TJIN1911018334CM

CUSTOMER NAME: PANELWAY (CHINA) LIMITED
ADDRESS: DONGNANCUN, LAIZHOU, SHANDONG 261418, CHINA.

Sample Name	:	PANELWAY STEEL RAISED ACCESS FLOORS
Product or Lot No.	:	ST660/ST800/ST1000/ST1250/ST1500
Manufacturer	:	PANELWAY (CHINA) LIMITED
Material and Mark	:	STEEL /LIGHTWEIGHT CEMENT

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

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SGS Ref. No.	:	AJFS1911012426FF
Date of Receipt	:	Nov 26, 2019
Testing Start Date	:	Nov 26, 2019
Testing End Date	:	Dec 20, 2019
Test result(s)	:	For further details, please refer to the following page(s) (Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

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

Mike Wang

Mike Wang
Authorized signatory

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Test Requested:

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 E84-2018 "Standard
   Test Method for Surface Burning Characteristics of Building Materials"
2. ASTM E136-2016a Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 ℃, calculations for option B.

Test Results:

1. ASTM E84-2018

I. TEST CONDUCTED

This test was conducted in accordance with ASTM E84-2018 Standard Test Method for Surface Burning Characteristics of Building Materials.

II. INTRODUCTION

The method, designated as ASTM E84-2018, "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 65.6℃(150°F), as measured by the floor-embedded thermocouple located 7.09m (23.25 ft) downstream of the burner ports, and allowed to cool to 40.6℃(105°F), as measured by the floor-embedded thermocouple located 3.96m (13 ft) 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 7.32m (24 ft) long, 304.8mm (12 in) 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·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 23±2.8°C (73.4±5°F) and at a relative humidity of 50±5%

V. SAMPLE DETAILS

Sample description	Plate metal + paint
Color / Density	Dark grey / 37.58 kg/m^2

Exposed face:

The smooth surface

MOUNTING METHODS:

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

The specimen consisted of 12 pieces of 600mm wide×600mm long×33mm thickness and all sections jointed end-to-end.

TEST RESULTS

FSI	SDI
0	0

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 E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

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 Index 0, 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)	/

/: the sample did not ignite.

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GRAPHICAL RESULTS:

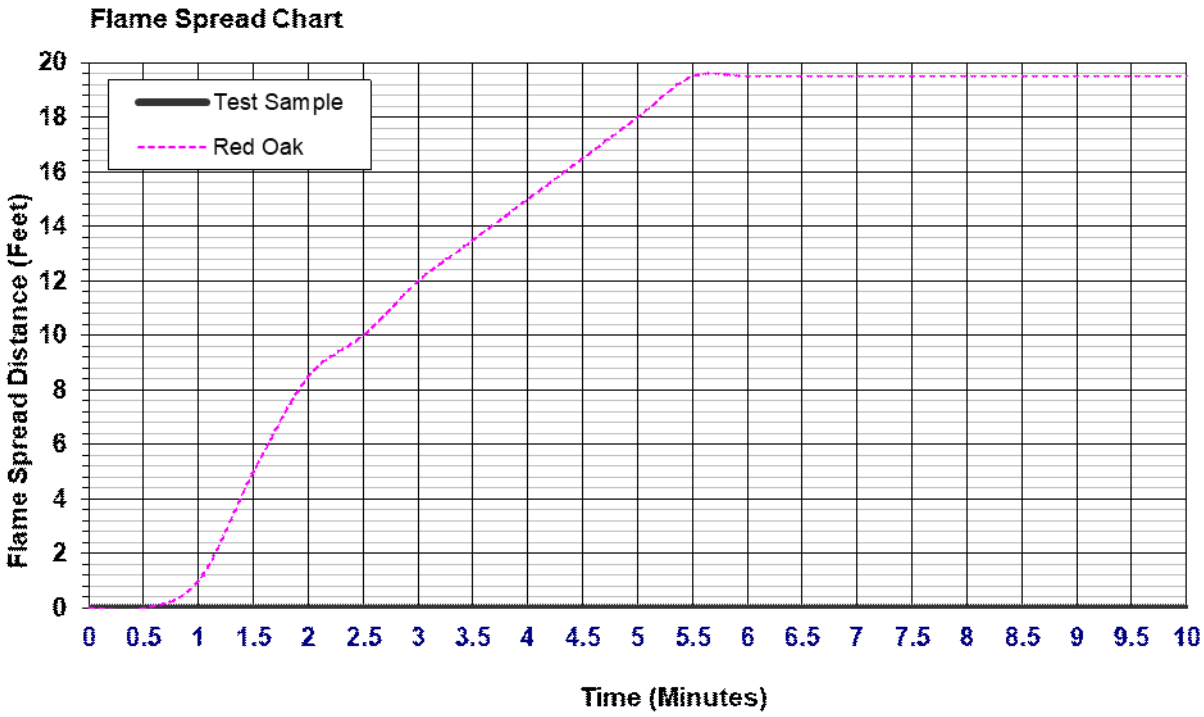

Figure 1 Flame Spread Chart

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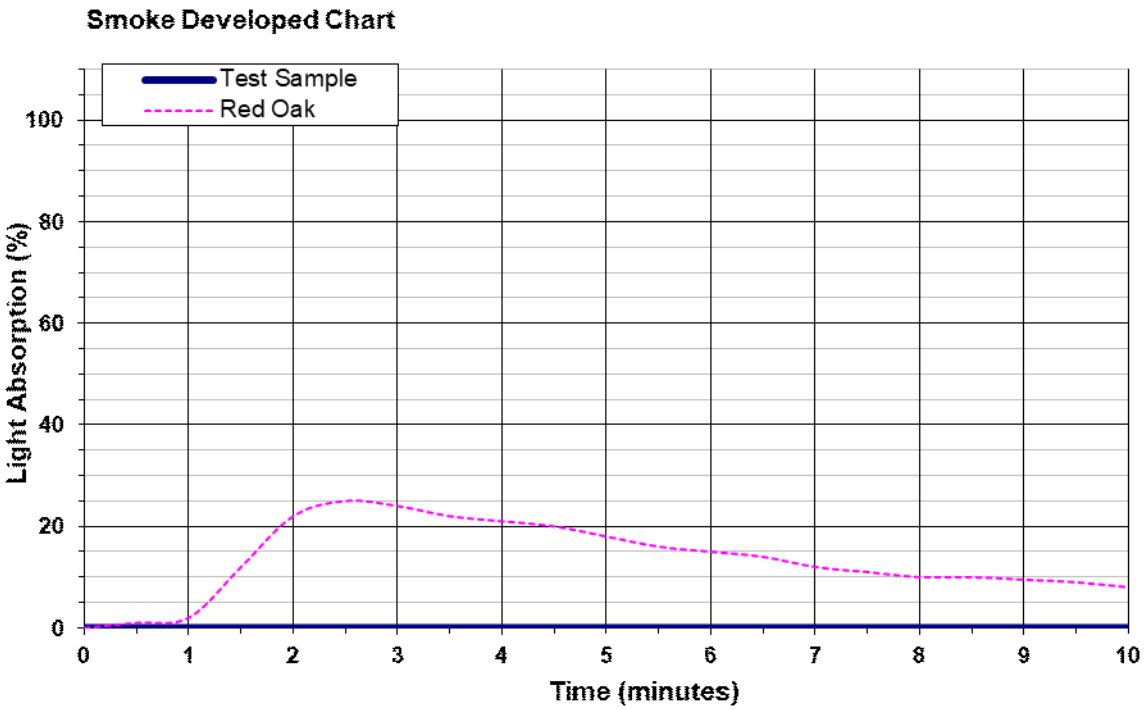

Figure 2 Smoke Developed Chart

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

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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.

2. ASTM E136-2016a

I. Test conducted

This test was performed in accordance with ASTM E136-2016a Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 ℃, calculations for option B.

II. Sample details

Description	Plate metal + paint + cement
Color	Dark grey
Size of sample	Φ45×50mm

Conditioning:

Precondition: The test specimens shall be dried in a ventilated oven maintained at 60 ±5°C, for between 20 and 24 h, and cooled to ambient temperature in desiccators prior to testing.

III. Test Results

Specimen No,	1	2	3	4	Average
Weight of specimen before the test, (g)	151.38	152.01	150.57	152.84	
Weight of specimen after the test, (g)	129.72	131.43	129.38	130.75	
Weight loss of the specimen, (%)	14.3	13.5	14.1	14.5	14.1
Initial temperature of the furnace, (℃)	749.6	751.3	750.8	751.4	750.8
Maximum specimen center temperature, (℃)	731.6	732.7	728.1	729.5	
Temperature rise in specimen center, (℃)	-18.0	-18.6	-22.7	-21.9	-20.3
Maximum specimen surface temperature, (℃)	765.6	767.3	764.2	766.1	
Temperature rise in specimen surface, (℃)	16.0	16.0	13.4	14.7	15.0
Flaming after first 30s (Yes/No)	No	No	No	No	No

TEST REPORT

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℃ above the stabilized temperature measured at T_2 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 T_2 prior to the test.
   2. There is no flaming from the specimen at any time during the test.

Sub-Conclusion: According to the test results, the submitted sample **meets** the requirements.

STATEMENT:

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

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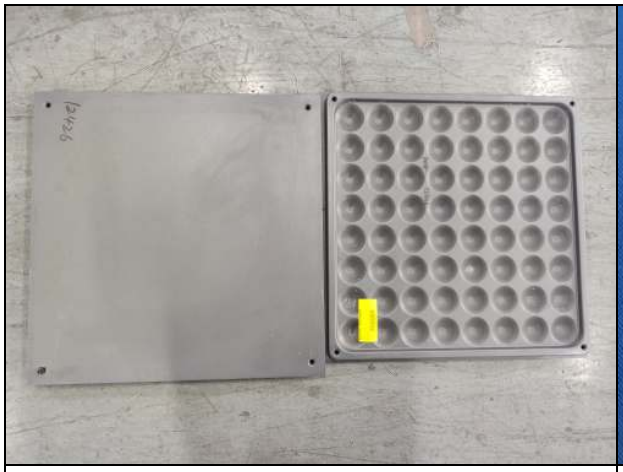
Photo Appendix:

	
ASTM E84-2018	ASTM E136-2016a

Note:The above test was subcontracted.

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

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