



TEST REPORT

No. : XMIN180100064CCM

Date : Mar.12, 2018

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CUSTOMER NAME: QINGDAO BAREFOOT CONSTRUCTION MATERIAL CO., LTD
ADDRESS: NO.5 JINYUAN ROAD, CHENGYANG DISTRICT, QINGDAO, SHANDONG, CHINA

Sample Name : WPC PLANK
Material : WPC
Manufacturer : COOWIN

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.

Test Required : Selected test(s) as requested by applicant
SGS Ref. No. : GZIN1801002824CM, GZIN1801001783MR, CANMLC1800961201, SDHL1801000789FB
Date of Receipt : Jan.09, 2018
Testing Start Date : Jan.09, 2018
Testing End Date : Mar.12, 2018
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)

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

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. XM Branch

Civi Huang Authorized Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Xiamen Branch Testing Center Commercial Construction Material Laboratory

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Summary of Results:

Lab Environmental Condition: (23±2) °C, (50±5)%RH

No.	Test Item(s)	Test Method(s)	Test condition	Test Result(s)
1	Flexural Strength	ASTM D7031-11 Section 5.5 & ASTM D6109-13 method A	Specimen: 600mm×150mm×26mm, 5pcs Precondition: 23±2 °C, 50±5%RH, 48h Testing speed: 12.3mm/min Load span: 139mm Support span: 416mm	26.3 MPa
	Modulus of Elasticity			3833 Mpa
2	Screw withdrawal test	ASTM D7032-17 Section 5.5 & ASTM D1761-12	Specimen: 152mm×152mm×26mm, 5pcs Precondition: 20±2 °C, 50±5%RH, 48h Testing speed: 2.54mm/min Diameter of screw: 3.8mm Lead hole diameter: 2.5mm Depth of screw penetration: 17mm Depth of lead hole penetration: 13mm	3353 N
3	Nail withdrawal test			Specimen: 152mm×152mm×26mm, 5pcs Precondition: 20±2 °C, 50±5%RH, 48h Testing speed: 2.54mm/min Diameter of nail: 3.0mm Depth of screw penetration: 20mm
4	Compression Parallel to Grain	ASTM D198-17 Section 13~Section 20	Specimen: 150mm×150mm×26mm, 5pcs Precondition: 23±2 °C, 50±5%RH, 48h Testing speed: 300N/s Loading direction: parallel to grain	28.3 MPa
5	Compression Perpendicular to Grain	Refer to ASTM D198-17 Section 13~Section 20	Specimen: 150mm×150mm×26mm, 5pcs Precondition: 23±2 °C, 50±5%RH, 48h Testing speed: 300N/s Loading direction: perpendicular to grain	21.6 MPa
6	Impact Resistance	ASTM D4495-16	Specimen: 150mm×150mm×26mm Mass of Falling Weight: 10lb Diameter of Falling Weight: 63.5mm	>133 J note 2
7	Deflection Temperature under Load	ASTM D648-16 Method B	Specimen: 127mm×6.20mm×13.03mm Heat-transfer media: Silicone oil Rate of temperature: 120 °C /h Load: 1.82MPa Span: 100mm	65.4 °C
8	Specific Gravity	ASTM D7031-11 Section 5.14 & ASTM D792-13 Method A	Deionized water, (23±2) °C	1.31

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



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No.	Test Item(s)	Test Method(s)	Test condition	Test Result(s)
9	Moisture Content	ASTM D7031-11 Section 5.15 & ASTM D4442-16 Method B	Specimen: 51mm×50mm×9.3mm Precondition: (103±2) °C to constant mass	0.20%
10	Shear Strength	ASTM D732-17	Specimen thickness: 9.84mm Punch diameter: 25mm Testing speed: 1.3mm/min	14.0MPa
11	Shore Hardness	ASTM D2240-15	Specimen thickness:9.35mm The smooth surface was tested	D/70/1 ^{note 5}
12	Tensile Strength	ASTM D638-14	Specimen: Type IV Specimen thickness: 3.25 mm Testing speed: 5 mm/min Distance between grips: 65 mm	9.91MPa
13	Water Absorption(24h)	Refer to GB/T 17657-0213 Section 4.6	Specimen: 150mm×150mm×26mm Precondition: (20±2) °C, (65±5)%RH, 24h Immersion condition: (20±1) °C, 24h	0.37% ^{note 6}
14	Formaldehyde Emission	With reference to ASTM D6007 -14	Analysis was performed by UV Vis. Conditioning for 7 days at 24 °C and 50% relative humidity.	See the annex a
15	Soluble heavy metal	With reference to ASTM F963-16(Clause 8.3)	Analysis was performed by ICP-OES.	See the annex b
16	Flame Spread Index	ASTM E84-17	See the annex c	FSI: 40

Note: 1. Test items 6~12, 14, 15 were carried out by SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch and test item 16 was carried out by SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch.

2. The test result exceeded the upper limit of the tester.
3. The test specimens of items 7~9, 11 were cut from the original samples.
4. The test specimens of items 10, 12 were cut from the sample which the skin was removed from.
5. D/X/1 Indicated that D is the type of durometer; 1 s is the reading time; X is the hardness value.
6. Water absorption, %=(Mass after immersion-Mass before immersion)/Mass before immersion×100

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Annex A

Formaldehyde Emission

Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Test Method:

With reference to ASTM D6007-14, analysis was performed by UV-Vis. Conditioning for 7 days at 24°C and 50% relative humidity.

Test Result:

Test Item(s)	Unit	MDL	Result
Formaldehyde Emission	ppm	0.01	0.02

Notes:

- 1. ppm = parts of formaldehyde per million parts air
- 2. Maximum Permissible Limit according to Section 93120.2, Title 17, California Code of Regulation:

Table 1: Phase 1 and Phase 2 Formaldehyde Emission Standards for Hardwood Plywood(HWPW), Particleboard(PB), and Medium Density Fiberboard(MDF)

Effective Date	Phase 1(P1) and Phase 2(P2) Emission Standards(ppm)				
	HWPW-VC	HWPW-CC	PB	MDF	Thin MDF
1-1-2009	P1:0.08	-----	P1:0.18	P1:0.21	P1:0.21
7-1-2009	-----	P1:0.08	-----	-----	-----
1-1-2010	P2:0.05	-----	-----	-----	-----
1-1-2011	-----	-----	P2:0.09	P2:0.11	-----
1-1-2012	-----	-----	-----	-----	P2:0.13
7-1-2012	-----	P2:0.05	-----	-----	-----

HWPW-VC = Veneer Core; HWPW-CC = Composite Core.

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Annex B

American Society for Testing and Materials -ASTM F 963-16(Clause 4.3.5) - total Lead in Substrate

Materials

Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Test Method:

With reference to CPSC-CH-E1002-08.3. Analysis was performed by ICP-OES.

Test Result:

Test Item(s)	Limit	Unit	MDL	Result
Total Lead (Pb)	100	mg/kg	20	ND

American Society for Testing and Materials-ASTM F 963-16(Clause 4.3.5)-soluble heavy metal in Substrate Materials/paint and similar surface-coating materials

Test Method:

With reference to ASTM F 963-16(Clause 8.3), analysis was performed by ICP-OES.

Test Result:

Test Item(s)	Limit	Unit	MDL	Result
Soluble Lead (Pb)	90	mg/kg	5	ND
Soluble Antimony (Sb)	60	mg/kg	5	ND
Soluble Arsenic (As)	25	mg/kg	2.5	ND
Soluble Barium (Ba)	1,000	mg/kg	10	11
Soluble Cadmium (Cd)	75	mg/kg	5	ND
Soluble Chromium (Cr)	60	mg/kg	5	ND
Soluble Mercury (Hg)	60	mg/kg	5	ND
Soluble Selenium (Se)	500	mg/kg	10	ND

Notes: Results shown are of the adjusted analytical results

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



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Annex C

Flame Spread Index

Test Conducted:

Flame Spread Index (FSI) test according to ASTM E84-17 Standard Test Method for Surface Burning Characteristics of Building Materials

Introduction:

The method, designated as ASTM E84-17, "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.

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.

Sample Description:

Thickness: Approximately 9mm

Exposed face: One face

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Sample Preparation:

Prior to testing, the specimen was conditioned to constant weight at a temperature of $73 \pm 5^\circ\text{F}$ ($23 \pm 3^\circ\text{C}$) and a relative humidity of $50 \pm 5\%$.

The test specimen consisted of a total of 53 sections of material. The sections were butted together during testing to form the requisite specimen length. The specimen was self-supporting on the ledges of the test chamber.

Test Results:

Test data and observations:

Ignition time: 27 seconds.
Maximum flame spread (ft): 12
Time To Maximum Spread: 581 seconds.
Fallout: Yes
Test Duration: 10 minutes.
FS*Time area (ft*min): 75.7

Summary of results:

Flame-spread Index

(FSI)

40

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



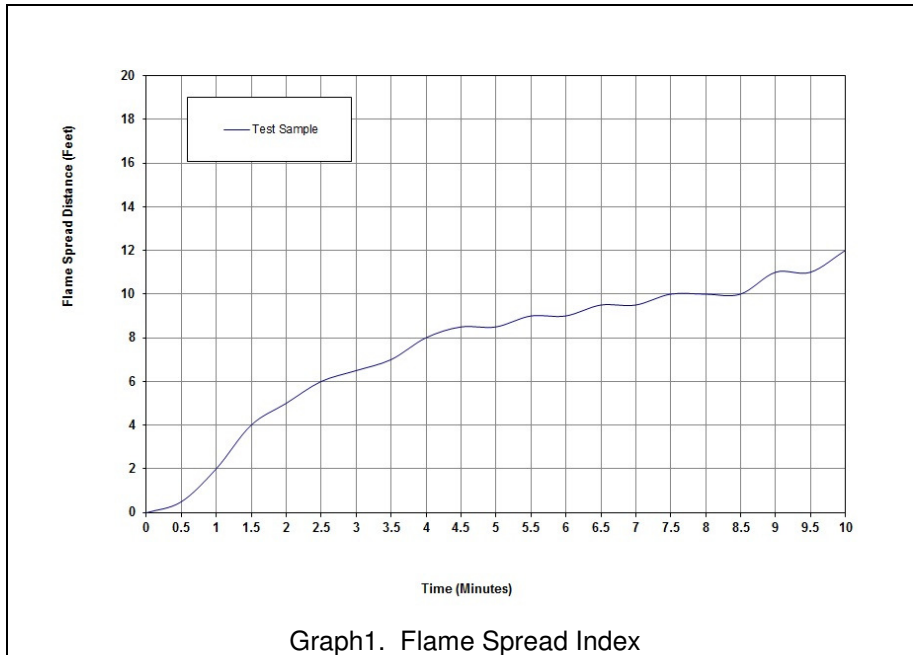
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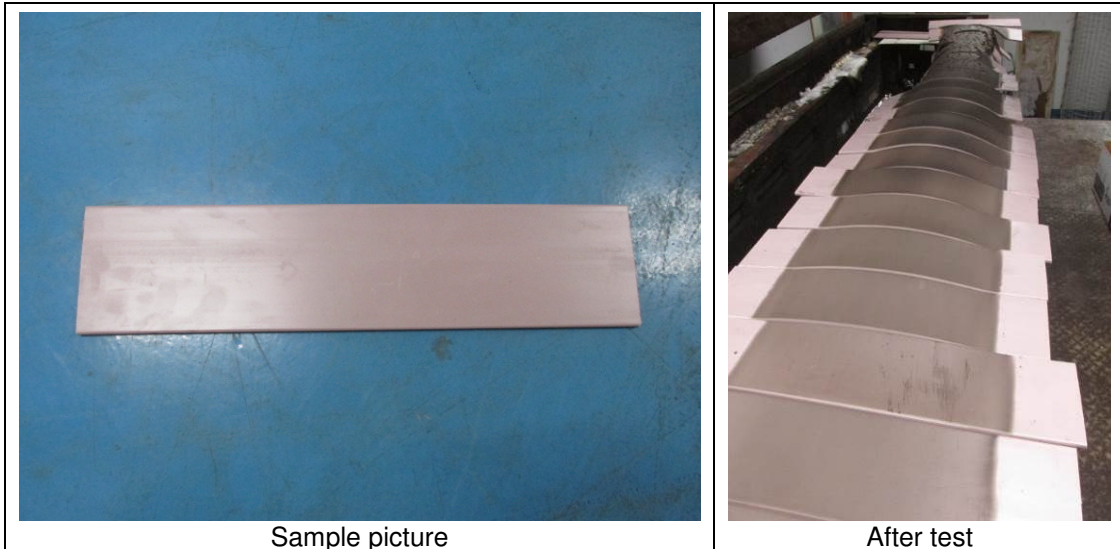
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Appendix 1-Graphs:



Appendix 2-Pictures:



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



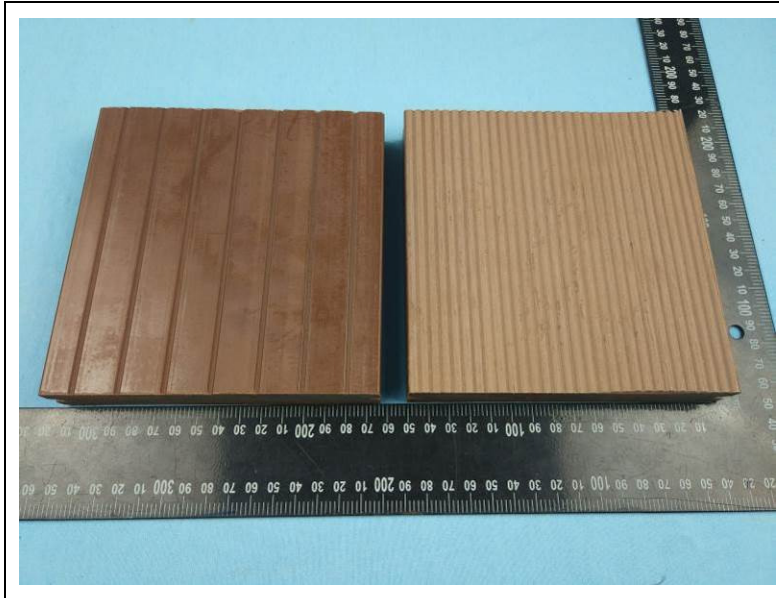
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Specimen photographs:



SGS authenticate the photo on original report only
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