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EVALUATION CENTER

Intertek Testing Services Ltd., Shanghai Jinqiao Branch
Building T52-8, No. 1201 Gui Qiao Road,
Jinqiao Development Area, Pudong District
Shanghai 201206

RENDERED TO

Nanjing Xuhua Sundi Building Materials Co., Ltd
No.24 Yinchun Road, Maigaoqiao Pioneer Park, Nanjing

PRODUCT EVALUATED
Wood Plastic Composite Floor

EVALUATION PROPERTY
Physical Properties

Report of Testing wood plastic composite floor for compliance with the applicable requirements of the following criteria:

ASTM D7032-2010, ASTM D 7031-2011, ASTM D6109-2010, ASTM D1761-2006, ASTM D2395-2007

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2 Introduction

Intertek has conducted testing for Nanjing Xuhua Sundi New Building Materials Co., Ltd, on wood plastic composite floor in accordance with recognized ASTM standards. This evaluation began on August 10, 2011 and was completed on September 27, 2011.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. The first samples were received at the Evaluation Center on August 10, 2011. The second samples were received on September 15, 2011

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The samples were identified as wood plastic composite floor. Photographs of samples were presented in Appendix A. The nominal sizes were summarized in Table below.

Table Nominal Dimensions		
Sample ID	Size(Length × Width × Thickness) (mm)	Quantity (pieces)
S1106155.001-010	500×140×25	10
S1109133.001-020	500×140×25	20

4 Testing and Evaluation Methods

The test specimens were conditioned for at least 48 hours at a temperature of $23 \pm 2^{\circ}\text{C}$ and relative humidity of $50 \pm 5\%$ unless otherwise specified.

4.1. FLEXURAL TEST

The flexural test requirement was determined by the ASTM D 7032-2010, clause 4.4. The test method was conducted in accordance with ASTM D6109-2010 Method A. The specimen rectangular cross section was tested in flexure as a beam in a flat mode. The beam rested on two supports and was loaded at two points, each an equal distance from the adjacent support point. The distance between the loading noses is one-third of the support span. The specimen was deflected until rupture occurred in the outer fibers.

4.2. FREEZE- THAW RESISTANCE TEST

The test was conducted in accordance with ASTM D7032-2010 clause 4.7. The specimens were submerged underwater for a period of 24 hours. The specimens were then placed in a freezer at $-29 \pm 2^{\circ}\text{C}$ for 24 hours. After being subjected to freezing, the specimens were returned to room temperature for a period of 24 hours. This process comprised one hygrothermal cycle. The above procedure was repeated two more times, for a total of three cycles of water submersion, freezing, and thawing.

The specimens then were conducted the flexural test in accordance with clause 4.1.

4.3. TEMPERATURE AND MOISTURE EFFECTS

4.3.1. Temperature Effect

The testing was conducted in accordance with ASTM D 7032 clause 4.5.1. The specimens were conditioned at lower temperature ($-29 \pm 2^{\circ}\text{C}$) and upper temperature ($52 \pm 2^{\circ}\text{C}$) for 24 hours. The specimens then were conducted the flexural test in accordance with clause 4.1.

4.3.2. Moisture Effect

The testing was conducted in accordance with ASTM D 7032 clause 4.5.2. The specimens were submerged underwater for a period of 24 hours. The specimens then were conducted the flexural test in accordance with clause 4.1.

4.4. MECHANICAL FASTENER HOLDING TEST

The test requirement was determined by the ASTM D 7032-2010, clause 5.5. The test method was conducted in accordance with ASTM D1761-2006. The specimen was inserted with screw. The model of screw was standard 1-in No. 10-gage flathead low-carbon-steel wood screws. The specimens and screws were conditioned for at least 48 hours at a temperature of $20 \pm 3^{\circ}\text{C}$ and relative humidity of $65 \pm 3\%$. The screws were withdrawn at a uniform rate of speed by means of a testing machine and maximum load was recorded. Five specimens were tested.

4.5. SPECIFIC GRAVITY

The test requirement was determined by the ASTM D 7031-2011, clause 5.14. The test method was conducted in accordance with ASTM D2395-2007 method B. The weight of a specimen of

the plastic lumber in air was determined. The specimen was then immersed in water, its weight upon immersion was determined, and its bulk specific gravity and bulk density calculated.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The test results are summarized in Table below.

Test Method	Character	Result
ASTM D7032 ASTM D6109	Flexural Strength(MOR) ¹	Controlled: 30.7 MPa After freeze-thaw cycles: 31.4 MPa After 52°C 24 hours: 27.3 MPa After -29°C 24 hours: 39.4 MPa After immerge water 24 hours: 28.0 MPa
	Flexural Stiffness (MOE)	Controlled: 3109 MPa After freeze-thaw cycles: 3130 MPa After 52°C 24 hours: 2222 MPa After -29°C 24 hours: 4186 MPa After immerge water 24 hours: 2827 MPa
ASTM D7032 ASTM D1761	Fastener Holding Test ²	4016 N
ASTM D7031 ASTM D6111	Density (23°C)	1.23 g/cm ³

Note:

1. The specimens of flexural strength test were full size products submitted by the client.
2. The model of screw was standard 1-in No. 10-gage wood screws. The penetrate depth of scrow was 25 mm.

5.1.1. Statement of Measurement Uncertainty

When determining the test result, measurement uncertainty has been considered.

6 Conclusion

The wood plastic composite floor samples identified and evaluated in this report have been tested in accordance with ASTM D7032-2010, ASTM D7031-2011, ASTM D6109-2010, ASTM D1761-2006, ASTM D2395-2007. The results were presented in Section 5 of this test report.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK



Reported by:

Daniel Zhang
Engineer, Building Products



Reviewed by:

Jodie Zhou
Team Leader, Building Products

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7 Appendix A: Sample Photographs

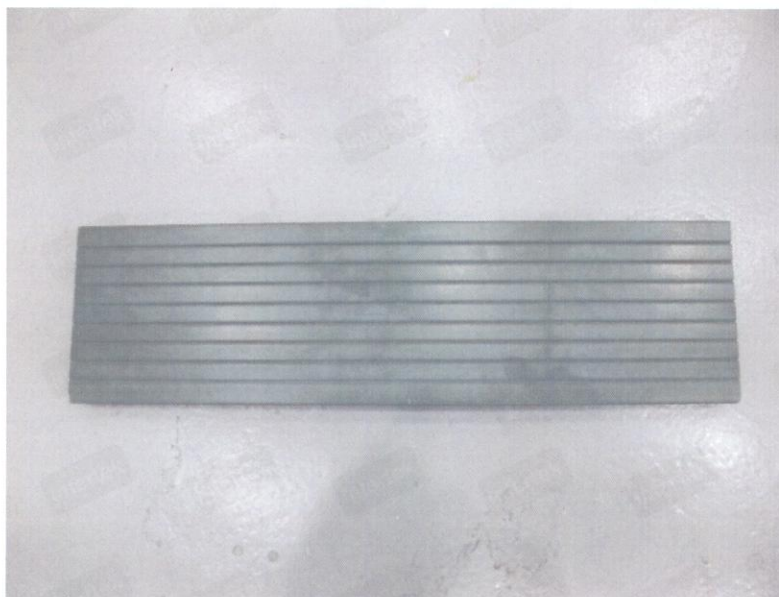


Fig.1 Front View



Fig.2 Back View



Fig.3 Cross Section

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8 Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	2011-09-27	First issue	Daniel Zhang	Jodie Zhou

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