

Nanjing Jufeng Advanced Materials

TEST Report

REPORT NUMBER

170718007SHF-BP-1R3

ISSUE DATE

2017/8/10

REVISED DATE

2017/11/21

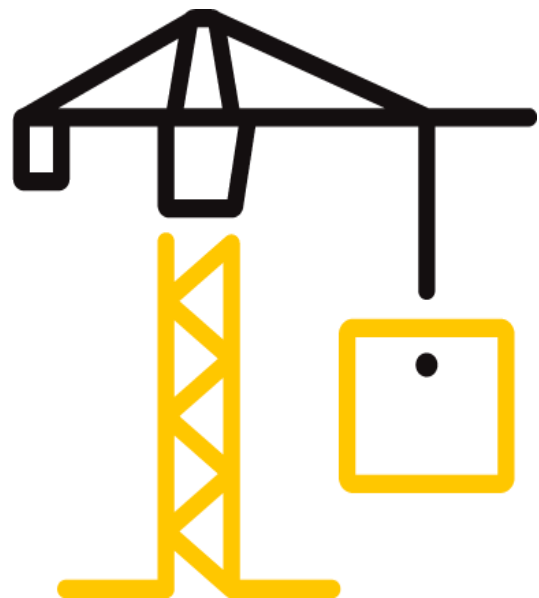
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DOCUMENT CONTROL NUMBER

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Test Report

Issue Date: 2017/11/21 Intertek Report No. 170718007SHF-BP-1R3

Applicant: Nanjing Jufeng Advanced Materials Co., Ltd

Applicant Address: No. 6, Chuangye Road, Nanjing New & High Tech. Industry Development Zone,
Nanjing, China

Attn: Lingjuan Zhou

SUBJECT: Performance testing
Co-extruding Wood-Plastic composite

Dear Sir,

This test report for represents the results of our evaluation of the above referenced product(s) to the requirements contained in the following standards:

TEST METHODS AND STANDARDS
Refer to the next following Pages.

SAMPLE ID	MODEL	SPECIFICATION
S170718007SHF.001~005	C.X.138H23	/

SAMPLE RECEIVED: 2017/7/17 and 2017/7/21
TESTED FROM: 2017/7/18 TO 2017/10/16

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Test Report

Issue Date: 2017/11/21

Intertek Report No. 170718007SHF-BP-1R3

Test Items, Method and Results:

EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Test Items	Test Method	Test Results	Test requirements	Verdict
Flexural properties	EN 15534-1:2014 Annex A 5.3 EN 15534-4: 2014 Section 4.5.2	Bending Strength: 31.9 MPa Modulus of elasticity: 2.7 GPa Maximum load: Mean: 5023 N Min.: 4770 N Deflection at 500N: Mean: 0.79 mm Max.: 0.90 mm	Flexural properties -F'max: Mean \geq 3300 N Min. \geq 3000 N -Deflection under a load of 500 N Mean \leq 2,0 mm Max. \leq 2,5 mm	Pass

Note:

1. The test span was 300 mm offered by applicant

Test Report

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Test Items, Method and Results:

EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Test Items	Test Method	Test Results
Flexural properties	EN 15534-1:2014 Annex A 5.2	Bending Strength: 32.1 MPa Modulus of elasticity: 3.4 GPa Maximum load: Mean: 3238 N Min.: 3216 N

Note:

1. The test span was 460 mm (20 times thickness), the nominal thickness was 23 mm

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EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Test Items	Test Method	Test Results	Test requirements	Verdict
Moisture resistance under cyclic test conditions	EN 15534-1:2014 Section 8.3.2 EN 15534-4: 2014 Section 4.5.5	Original MOR: 31.9 MPa	Decrease of bending strength, Mean \leq 20 % Max. \leq 30 %	Pass
		After exposure,		
		Mean MOR: 30.2 MPa		
		Decrease: 5 %		
		Min MOR: 29.8 MPa		
Decrease: 6 %				

Note:

1. The test span was 300 mm offered by applicant

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EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Test Items	Test Method	Test Results	Test requirements	Verdict
Swelling and water absorption (28 days immersion)	EN 15534-1:2014 Section 8.3.1 EN 15534-4: 2014 Section 4.5.5	Mean Swelling: 0.89 % in thickness 0.07 % in width 0.07 % in length Max. Swelling: 0.97 % in thickness 0.11 % in width 0.09 % in length Water absorption: Mean: 1.05 % Max.: 1.09 %	Means swelling: ≤ 4 % in thickness $\leq 0,8$ % in width $\leq 0,4$ % in length Max. swelling: ≤ 5 % in thickness $\leq 1,2$ % in width $\leq 0,6$ % in length Water absorption: Mean ≤ 7 % Max. ≤ 9 %	Pass

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Test Items, Method and Results:

EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Test Items	Test Method	Test Results	Test requirements	Verdict
Boiling Test	EN 15534-1:2014 Section 8.3.3 EN 15534-4: 2014 Section 4.5.5	Water absorption in weight: Mean: 0.95 % Max.: 1.00 %	Water absorption in weight: Mean ≤ 7% Max. ≤ 9%	Pass

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Test Items, Method and Results:

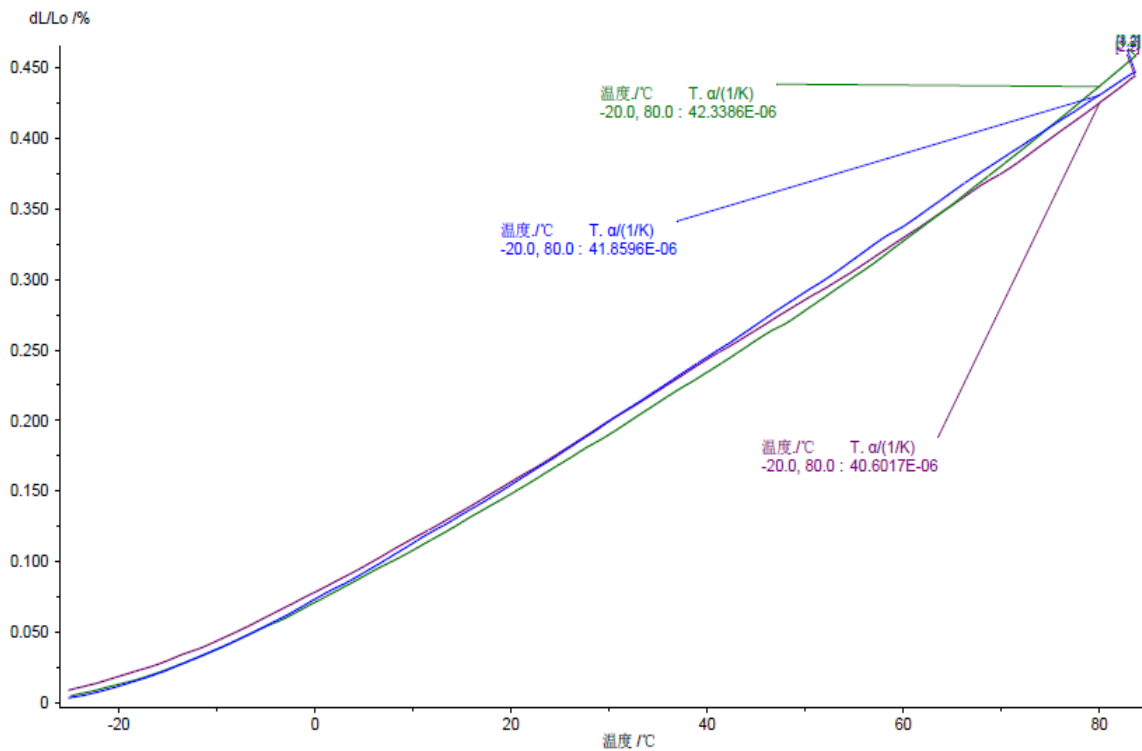
EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Test Items	Test Method	Test Results	Test requirements	Verdict
Linear thermal expansion coefficient	EN 15534-1:2014 Section 9.2 EN 15534-4: 2014 Section 4.5.6	Mean: $41.6 \cdot 10^{-6} \text{ K}^{-1}$	$\leq 50 \cdot 10^{-6} \text{ K}^{-1}$	Pass

Note:

1. This test was conducted at the external approved facility, located at Shanghai

Test graph



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EN 15534-4: 2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

Indenter: a hardened steel spherical body with diameter of 10 mm

Test load: Additional load of 2000N with preload of 20N

Indentation time: (25 ± 5) s

Recovery time: at least 24h

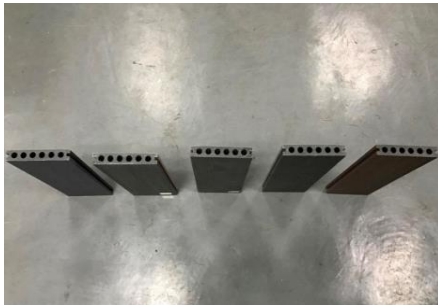
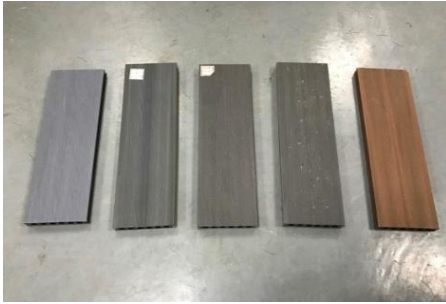
Test Items	Test Method	Test Results
Resistance to indentation	EN 15534-1:2014	Brinell hardness: 83 MPa
	Section 7.5 EN 15534-4 4.5.7	Rate of elastic recovery: 73 %

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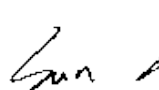
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APPENDIX: SAMPLE RECEIVED PHOTO





REPORT AUTHORIZED


When signed with physical or electronic signature, the contents of this report have been prepared and approved per Intertek's quality process in accordance with ISO 17025.



Name: Sun Sun
Title: Approver

Name: Daniel Zhang
Title: Reviewer



Name: Torres Qi
Title: Project Engineer

Revision:

NO.	DATE	CHANGES	AUTHOR	REVIEWER
170718007SHF-BP-1	2017/8/10	First issue	Torres Qi	Daniel Zhang
170718007SHF-BP-1R1	2017/8/14	Removed slipperiness test result and creep behaviour test result	Torres Qi	Daniel Zhang
170718007SHF-BP-1R2	2017/10/30	Added UV, Moisture and swelling test results	Torres Qi	Daniel Zhang
170718007SHF-BP-1R3	2017/11/21	Removed UV test result	Torres Qi	Daniel Zhang