

FLOORCO TRADING LTD.

TEST REPORT

SCOPE OF WORK

SPC HYBIRD FLOORING

REPORT NUMBER

230803012SHF-004

TEST DATE(S)

2023-08-03 - 2023-08-28

ISSUE DATE

2023-09-04

PAGES

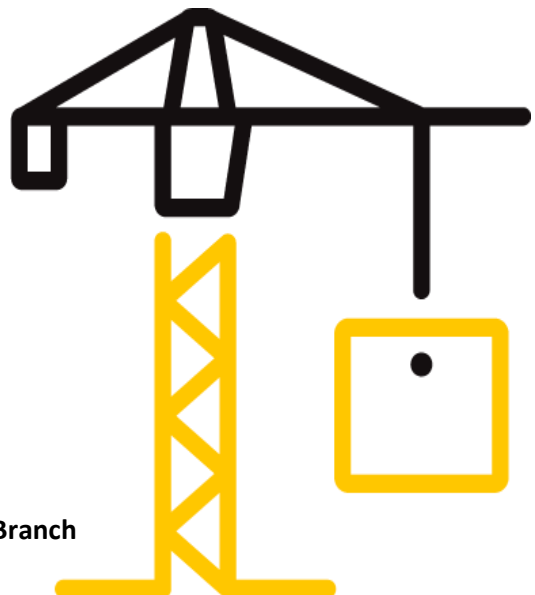
17

DOCUMENT CONTROL NUMBER

LFT-APAC-SHF-OP-10k(September 1, 2022)

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Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch



Test Report

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Test Report

Issue Date: 2023-09-04 Intertek Report No. 230803012SHF-004
 Applicant: FLOORCO TRADING LTD.
 Address: 118 CARBINE ROAD, MT WELLINGTON
 Attn: Terry SHI
 Test Type: Performance test, samples provided by the applicant.

Product Information

Product Name	SPC HYBIRD FLOORING		Brand	/
Sample Description	Good Condition		Sample Amount	20pcs
			Received Date	2023-08-17
Sample ID	Model	Specification		
S230803012SHF.048~052, 054~061	ATWOOD SPC 6.5mm	6.5mm		

Test Methods And Standards

Test Standard	ISO 24342:2018, ISO 24346:2006, ISO 24340:2006, ISO 23997:2007, EN ISO 10582:2018 (ISO 10582:2017) Annex B, Annex C, Annex D, ISO 4918:2016/Amd.1:2018, ISO 105-B02:2014 Method 3, ASTM D4226-19 ^{e1} Procedure A, EN 310:1993, EN 660-2:1999+A1:2003
Specification Standard	EN ISO 10582:2018 (ISO 10582:2017)
Test Conclusion	The samples were tested according to the above standards, and the results are shown in the following page.

Note:

1.This report does not involve sampling. The report only reflects conformity of the tested items of the samples provided by the testing applicant. Representativeness and authenticity of the submitted samples are responsibilities of the testing applicant.

Report Authorized

Sally Xie  *Daniel Zhang*
 Name: Sally Xie Name: Daniel Zhang
 Title: Reviewer Title: Project Engineer

Test Report

Issue Date: 2023-09-04

Intertek Report No. 230803012SHF-004

Test Items, Method and Results:

EN ISO 10582:2018 (ISO 10582:2017) Resilient floor coverings - Heterogeneous poly(vinyl chloride) floor coverings - Specifications

General requirements:

Characteristics	Test requirements	Test Method	Verdict
Side length	Deviation $\leq 0.15\%$ of nominal length up to 0.5mm maximum	ISO 24342:2018	Pass
Width	Deviation $\leq 0.10\%$ of nominal length up to 0.5mm maximum		Pass
Squareness	$\leq 0.25\text{mm}$ (Side length $\leq 400\text{mm}$)		Pass
Straightness	$\leq 0.35\text{mm}$ (Side length $> 400\text{mm}$)		Pass
Overall thickness	Average value: Nominal value (-0.10, +0.13)mm Individual value: Average value $\pm 0.15\text{mm}$	ISO 24346:2006	Pass
Thickness of wear layer	Average value: Nominal value (-10%, +13%) and shall not exceed $\pm 0.1 \text{ mm}$. Individual results shall not differ as follows with regard to the mean value: no more than 0.05 mm or 15 % below the mean value, whichever is greater.	ISO 24340:2006	Pass
Total mass per unit area	Average value: Nominal value (-10%, +13%) g/m^2	ISO 23997:2007	Pass
Effect of castor chair	After 25000 cycles, no delamination shall occur. No disturbance to the surface other than a slight change in appearance.	ISO 4918:2016 /Amd.1:2018	Pass
Colour fastness to artificial light	\geq Grade 6	ISO 105-B02:2014 Method 3	Pass
Flatness of tiles/planks with a locking system on the edges and self-supporting	Length Concave/convex[% of the length]: $\leq 0.50/\leq 1.0$ Width Concave/convex[% of the width]: $\leq 0.10/\leq 0.15$	ISO 10582:2017 Annex B	Pass
Openings between tiles/planks with a locking system on the edges	Average: $\leq 0.15 \text{ mm}$ Individual value: $\leq 0.20 \text{ mm}$	ISO 10582:2017 Annex C	Pass

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EN ISO 10582:2018 (ISO 10582:2017) Resilient floor coverings - Heterogeneous poly(vinyl chloride) floor coverings - Specifications

General requirements: (continued)

Characteristics	Test requirements	Test Method	Verdict
Height difference between tiles/planks with a locking system on the edges	Average: ≤ 0.10 mm Individual value: ≤ 0.15 mm	ISO 10582:2017 Annex C	Pass
Locking strength	Class 31, 32, 33: ≥ 1.5 kN/m Class 34: ≥ 2.0 kN/m	ISO 10582:2017 Annex D	Pass

Note:

1. Test items were selected by applicant.
2. Detailed test results see page 6-13



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Test Items, Method and Results:

Test Item: Side length, straightness and squareness

Test Method: ISO 24342:2018

Conditioning: Condition the test specimens at $(23 \pm 2)^\circ\text{C}$ and $(50 \pm 5)\%$ relative humidity for at least 24h

Test Result:

Test item	Nominal value (mm)	Tested value (mm)	Tolerance (mm)	Tolerance (%)
Length	1219	1218.80	-0.20	-0.02
Width	177	176.98	-0.02	-0.01

Test item	Short edge max. value (mm)	Long edge max. value (mm)
Squareness	0.04	0.06
Straightness	0.05	0.08

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Test Items, Method and Results:

Test Item: Overall thickness

Test Method: ISO 24346:2006

Conditioning: Condition the test specimens at $(23 \pm 2)^{\circ}\text{C}$ and $(50 \pm 5)\%$ relative humidity for at least 24h

Test Condition:

Foot diameter of thickness gage: 25.3 mm

Mass applied: 200 g

Test Result:

Nominal value: 6.5 mm

Average value: 6.55 mm

Tolerance: 0.05 mm

Max. value: 6.59 mm

Min. value: 6.51 mm

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Test Items, Method and Results:

Test Item: Thickness of wear layer

Test Method: ISO 24340:2006

Conditioning: Condition the test specimens at $(23 \pm 2)^{\circ}\text{C}$ and $(50 \pm 5)\%$ relative humidity for at least 24h

Test Result:

Nominal value:	0.5 mm
Average value:	0.49 mm
Tolerance:	2.0 %
Max. value:	0.50 mm
Min. value:	0.48 mm

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Test Items, Method and Results:

Test Item: Total mass per unit area

Test Method: ISO 23997:2007

Conditioning: Condition the test specimens at $(23 \pm 2)^{\circ}\text{C}$ and $(50 \pm 5)\%$ relative humidity for at least 24h

Test Result:

Nominal value: 10000 g/m²

Average value: 10180 g/m²

Tolerance: 1.8 %

Note:

For average result up to and equal to 1000 g/m², express to the nearest 5 g/m².

For average result over 1000 g/m², express to the nearest 10 g/m².

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Test Items, Method and Results:

Test Item: Castor chair test

Test Method: ISO 4918:2016/Amd.1:2018

Conditioning: Condition the test specimens at $(23 \pm 2)^\circ\text{C}$ and $(50 \pm 5)\%$ relative humidity for at least 24h

Test Condition: At a temperature range of 18°C to 25°C

Load mass: 90 kg

Test castors: Type W

Speed of rotating platform: 20 r/min

Speed of castor assembly: 50 r/min

Total test revolutions: 25000 r

Mounting of the specimen: Installation with adhesive to the support

Test Result:

Type of damage	Observation (Yes/No)	Verdict
Delamination	No	Pass
Opening of joints	No	
Surface damage	No	
Crazing	No	
Maximum opening	0.03	No requirement Report the result
Maximum height differences	0.24	

Note:

1. Test specimens were not taken apart for assessment after test as per client's requirement.

Test Photo:



After test

Test Report

Issue Date: 2023-09-04

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Test Items, Method and Results:

Test Item: Colour fastness to artificial light

Test Method: ISO 105-B02:2014, Xenon-arc lamp
Exposure Cycle A1, Method 3

Test Result: Above Grade 6

Note:

1. Test item was subcontracted on accreditation by CNAS L0139.

Test location: Intertek Testing Services Ltd., Shanghai.

Address: 2/F, Building No.4, Shanghai Comalong Technology Service Park, 889 Yishan Road, Shanghai 200233, China.

Test Report

Issue Date: 2023-09-04

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Test Items, Method and Results:

Test Item: Flatness, Openings and Height difference

Test Method: EN ISO 10582:2018 (ISO 10582:2017) Annex B, Annex C

Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h

Test Result:

Flatness	Maximum single values:		
	$f_{w, concave}$ =	0.05	%
	$f_{w, convex}$ =	N/A	%
	Maximum single values:		
Openings	$f_{l, concave}$ =	0.01	%
	$f_{l, convex}$ =	N/A	%
Height difference	Average Value =	0.03	mm
	Maximum value =	0.05	mm
Height difference	Average Value =	0.05	mm
	Maximum value =	0.07	mm

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Issue Date: 2023-09-04

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Test Items, Method and Results:

Test Item: Locking Strength

Test Method: EN ISO 10582:2018 (ISO 10582:2017) Annex D

Conditioning: Condition the test specimens at $(23 \pm 2)^{\circ}\text{C}$ and $(50 \pm 5)\%$ relative humidity for at least 24h

Test Condition: Test speed 100 mm/min

Test Result:

Test item		Average Result
Locking strength F (kN/m)	Long side:	10.6
	Short side:	11.5



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Test Items, Method and Results:

Test Item: Impact Resistance

Test Method: ASTM D4226-19^{e1} Procedure A

Conditioning: Conditioned at (23±2)°C and (50±10)% relative humidity for not less than 40 hours

Test Parameters:

Impactor-head: H.25

Average thickness: 5.7mm

Results:

Test Item	Results
Mean Failure Energy	1.76 J

Test Report

Issue Date: 2023-09-04

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Test Items, Method and Results:

Test Item: Bending strength

Test Method: EN 310:1993

Conditioning: Conditioned to constant mass at (65±5)%RH and (20±2)°C

Specimen Size: 50mm(Width) x 5.7mm(Thickness)

Test Span: 114mm (20 times the nominal thickness)

Test Results:

Test Item	Test Method	Test Results	
Bending strength	EN 310:1993	Length direction:	Bending strength: 11.9 N/mm ²
			Modulus of elasticity: 1595 N/mm ²

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Test Items, Method and Results:

Test Item: Abrasion/Wear resistance

Test Method: EN 660-2:1999+A1:2003

Conditioning: Condition the test specimens at (23±2)°C and (50±5)% relative humidity to constant mass

Test Condition:

- Rotation frequency: 60 r/min
- Abrasive material: Taber S-39 abrasive wheels; S-41 #240 Aluminum Oxide grit
- Load on each wheel: 1000 g
- Rate of grit flow: 21±3 g/min
- Test revolutions: 5000 r
- Density of flooring: 1.308 g/cm³

Test Result:

Parameter	Specimen 1	Specimen 2	Specimen 3
Volume loss, (mm ³ /100r)	2.9	2.8	2.8
Average value, (mm ³ /100r)	2.8		
Rating	P		

Note:

1. Abbreviation "r" = revolutions/cycles
3. Classification requirements for wear groups in EN 649:2011 was cited for reference.

Classification requirements for wear groups in EN 649:2011

Characteristic	Requirements for wear group			
	T	P	M	F
Volume loss Fv mm ³ /100r	Fv ≤ 2.0	2.0 < Fv ≤ 4.0	4.0 < Fv ≤ 7.5	7.5 < Fv ≤ 15.0

Test Report

Issue Date: 2023-09-04

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Appendix A: Sample Received Photo



Revision:

NO.	Date	Changes
230803012SHF-004	2023-09-04	First issue