

# Lions Floor

## TEST REPORT

### SCOPE OF WORK

SPC floors

### REPORT NUMBER

240725011SHF-001

### TEST DATE(S)

2024-07-25 - 2024-08-13

### ORIGINAL ISSUE DATE

2024-08-22

### PAGES

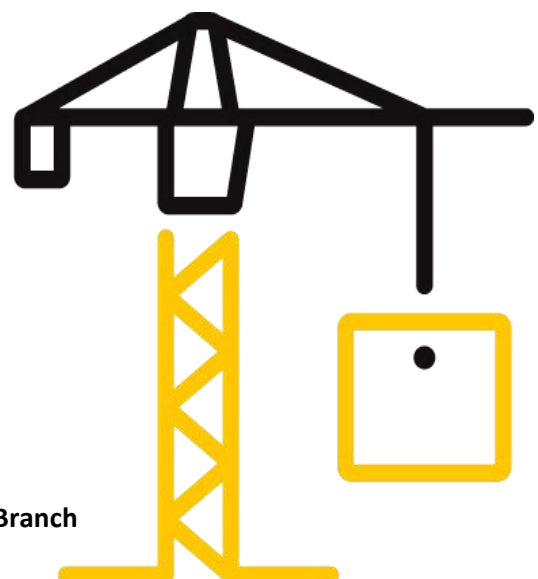
17

### DOCUMENT CONTROL NUMBER

LFT-APAC-SHF-OP-10k(February 1, 2024)

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Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch



## Test Report

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- 9.The report was digital signed by Shang Hai, Intertek Group plc, please using Adobe Acrobat Reader to verify the authenticity.

## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

Applicant: Lions Floor

Address: 7300 somerset blvd, paramount, CA 90723

Attn: Jerry Guo

Test Type: Performance test, samples provided by the applicant.

### Product Information

Product Name	Model	Specification
SPC floors	Lone Star Spirit	1830*180*4.5+1.5mm
Sample ID	Sample Amount	Sample Received Date
S240725011SHF.001~015	72 pieces	2024-05-21
Sample Description		
1830*180*4.5+1.5mm		

### Test Methods And Standards

Test Standard	With reference to ASTM D2047-17 and client's requirement, ASTM F3261-20 section 8.1, 8.3, 8.5, 8.6, 8.7, ASTM F1514-19, ASTM F1515-21, ASTM F1914-18(2023), ISO 23999:2021, ASTM F387-17(2022), ASTM F410-08(2022), ANSI A326.3-2021, ASTM D4060-19, ASTM D903-98(2017), ASTM F970-22, ISO 24334:2019, ISO 4918:2016/Amd.1:2018
Specification Standard	/
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*  
Name: Sally Xie  
Title: Reviewer



*Daniel Zhang*  
Name: Daniel Zhang  
Title: Project Engineer

Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

Test Items, Method and Results:

Test Item	Test Method	Test Result
Static Coefficient of Friction (Standard Leather)	With reference to ASTM D2047-17 and client's requirement	Dry: 0.70 Wet <sup>2</sup> : 0.96

Note:

1. ASTM D2047 does not require test under wet condition, test result is only for reference as per the client's requirement.

## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### Test Items, Method and Results:

Test Item: Resistance to heat

Test Method: ASTM F3261-20 section 8.5 and ASTM F1514-19

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

Test Condition:

Temperature: 70  $^{\circ}\text{C}$

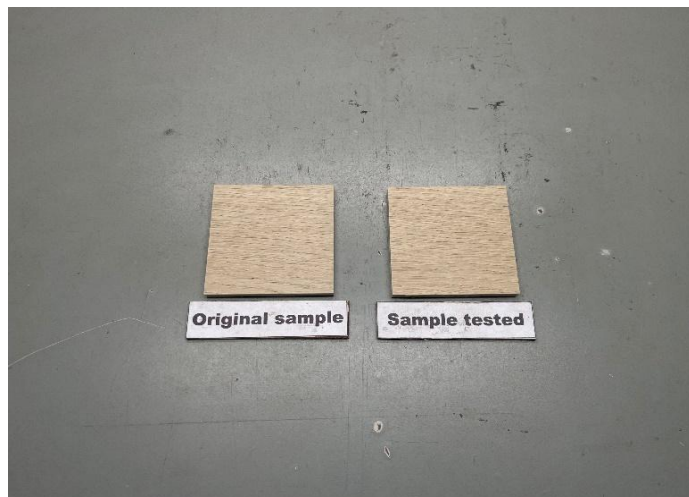
Exposure time: 7 days

Spectrophotometer: Under D65 standard light source, 10° observer

Test Result:

Specimen	$\Delta E^*$	Average $\Delta E^*$
1	0.81	0.80
2	0.73	
3	0.87	

Test Photo:



After exposure

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725011SHF-001

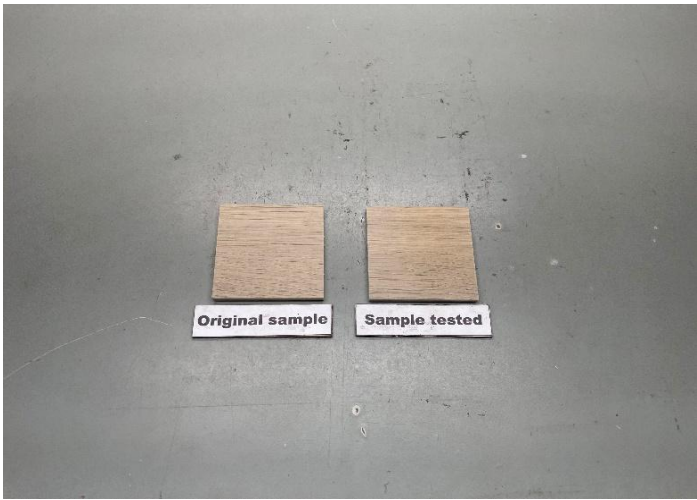
Test Items, Method and Results:

Test Item: Resistance to light  
Test Method: ASTM F3261-20 section 8.6 and ASTM F1515-21  
Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h  
Test Condition:  
Light source: Xenon-arc lamps  
Irradiance: 0.30 W/(m<sup>2</sup>·nm) at 340nm  
Black-panel temperature: 63 ± 2 °C  
Relative humidity: 50 ± 10 %  
Exposure time: 300 h  
Spectrophotometer: Under D65 standard light source, 10° observer

Test Result:

Specimen	ΔE*	Average ΔE*
1	3.85	3.75
2	4.25	
3	3.14	

Test Photo:



After exposure

Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

Test Items, Method and Results:

Test Item: Residual indentation  
Test Method: ASTM F3261-20 section 8.1 and ASTM F1914-18(2023)  
Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h  
Test Condition:  
    Indenter: Steel cylindrical foot  
    Indenter diameter: 6.35 mm  
    Total load applied: 34 kg  
    Indentation time: 15 min  
    Recovery time: 60 min

Test Result:

Residual Indentation	Result (mm)
Specimen 1	0.06
Specimen 2	0.06
Specimen 3	0.04
Average value	0.05
Max. value	0.06

## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### Test Items, Method and Results:

Test Item: Dimensional stability and curling

Test Method: ASTM F3261-20 section 8.3 and ISO 23999:2021

#### Conditioning:

Temperature: 23 °C

Relative humidity: 50 %

Duration: 24 h

Measure the initial length and curling

#### Test Condition:

Temperature: 70 °C

Duration: 6 h

#### Reconditioning:

Temperature: 23 °C

Relative humidity: 50 %

Duration: 24 h

Measure the final length and curling

#### Test Result:

Specimen	Dimensional stability (%)		Curling (in.)
	Length direction/Machine direction	Width direction/Across machine direction	
1	0.01	0.01	0.006
2	0.02	0.02	0.013
3	0.00	0.02	0.004
Average	0.01	0.02	0.008
Max.	0.02	0.02	0.013

#### Note:

1. Dimensional stability = (final length - initial length)×100/initial length

Express the average value to the nearest 0.05%

A negative value indicates shrinkage and a positive value indicates growth.

2. Curling = final curling - initial curling

Express the average value to the nearest 0.5mm

Upward curling is expressed as a positive value and downward curling (sometimes referred to as doming) is expressed as a negative value.



## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### Test Items, Method and Results:

Test Item: Thickness

Test Method: ASTM F387-17(2022)

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: 6.35 mm

Mass applied: 28 g

Product with foam back layer: Yes

Test Result:

Nominal value: 6.0 mm

Average value: 6.14 mm

Tolerance: 0.14 mm

Max. value: 6.15 mm

Min. value: 6.13 mm

## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### Test Items, Method and Results:

Test Item: Wear layer thickness

Test Method: ASTM F410-08(2022)

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:	0.50 mm
Average value:	0.60 mm
Max. value:	0.61 mm
Min. value:	0.60 mm

# Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

Test Items, Method and Results:

Test Item: Dynamic Coefficient of Friction

Test Method: ANSI A326.3-2021

Test Results:

Test Items	Test Method	Test Results	
Dynamic Coefficient of Friction	ANSI A326.3-2021	Dry condition:	0.51
		Wet condition:	0.45

Note:

1. Test item is subcontracted on accreditation by CNAS L1978.

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725011SHF-001

Test Items, Method and Results:

Test Item: Abrasion/Wear resistance  
Test Method: ASTM D4060-19  
Conditioning: Condition the test specimens at (23±2)°C and (50±5)% relative humidity for at least 24h  
Test Condition:  
Rotation frequency: 60 r/min  
Abrasive wheels: CS-17  
Load on each wheel: 1000 g  
Test revolutions: 2500 r

Test Result:

Parameter	Specimen 1	Specimen 2	Specimen 3
Mass/Weight loss, (mg)	87.1	91.2	101.3
Average value, (mg)	93.2		

- Note:
1. Abbreviation "r" = revolutions/cycles
  2. Test conditions were specified by client.

# Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### Test Items, Method and Results:

Test Item: Peel Strength

Test Method: ASTM D903-98(2017)

Conditioning: Condition the test specimens at  $(23 \pm 1)^{\circ}\text{C}$  and  $(50 \pm 2)\%$  relative humidity for at least 7 days

Test Condition:

Test Speed: 152.4 mm/min

Test Result:

Test Items	Test Results
Peel Strength	Length direction/Machine direction
	mean value: 0.28kg/mm
	Width direction/Across machine direction
	mean value: 0.32kg/mm

Note:

1. Finish product was provided by client, peel strength of wear layer and substrate was tested.

Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

Test Items, Method and Results:

Test Item: Static load resistance  
Test Method: ASTM F3261-20 section 8.7 and ASTM F970-22  
Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h  
Test Condition:  
    Indenter diameter: 28.6 mm  
    Total load applied: 250 lb / 250 psi  
    Indentation time: 24 h  
    Recovery time: 24 h

Test Result:

Residual Indentation	Result (mm)
Specimen 1	0.26
Specimen 2	0.35
Specimen 3	0.23
Average value	0.28
Max. value	0.35

## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### Test Items, Method and Results:

Test Item: Locking Strength

Test Method: ISO 24334:2019

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

Test Condition: Test speed 0.5 mm/min

### Test Result:

#### Longitudinal joint

Parameter	Average Result
Maximum locking strength $F_{max}$ (N)	1512
Specific locking strength (kN/m)	7.2
Locking strength at 0.2 mm joint opening $F_{0.2}$ (N)	967
Specific locking strength at 0.2 mm joint opening (kN/m)	4.6

#### Transverse joint

Parameter	Average Result
Maximum locking strength $F_{max}$ (N)	960
Specific locking strength (kN/m)	5.3
Locking strength at 0.2 mm joint opening $F_{0.2}$ (N)	810
Specific locking strength at 0.2 mm joint opening (kN/m)	4.5

## Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

### 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  $18^{\circ}\text{C}$  to  $25^{\circ}\text{C}$

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: Floating installation with click joints

### Test Result:

Type of damage	Observation (Yes/No)	Verdict
Delamination	No	Pass
Opening of joints	No	
Surface damage	No	
Crazing	No	
Maximum opening	0.03mm	No requirement Report the result
Maximum height differences	0.15mm	

### Note:

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

### Test Photo:



After test

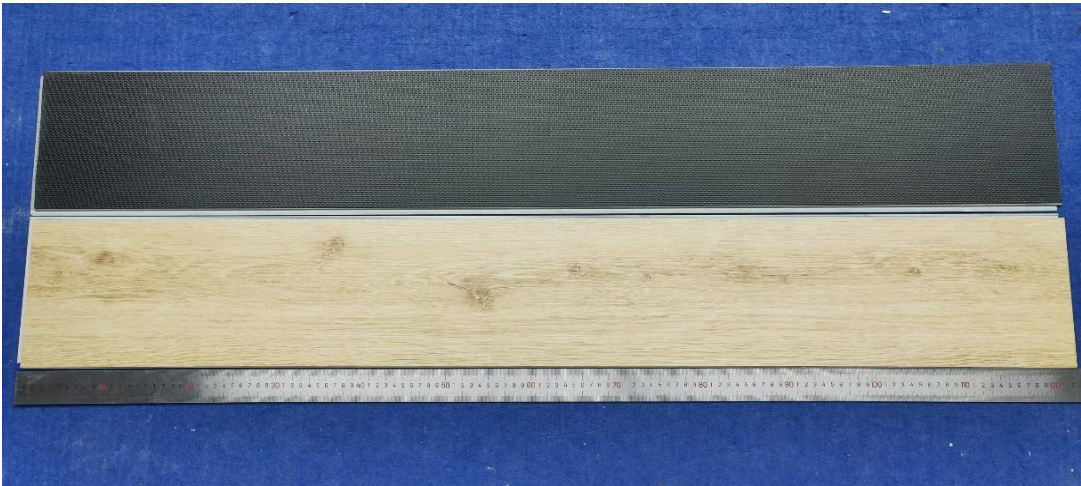


Test Report

Original Issue Date: 2024-08-22

Intertek Report No. 240725011SHF-001

Appendix A: Sample Received Photo



Revision:

NO.	Date	Changes
240725011SHF-001	2024-08-22	First issue