Lions Floor

TEST REPORT

SCOPE OF WORK
LVT floors

REPORT NUMBER
240725010SHF-001

TEST DATE(S)
2024-07-25 - 2024-08-13

ORIGINAL ISSUE DATE
2024-08-22

PAGES
16

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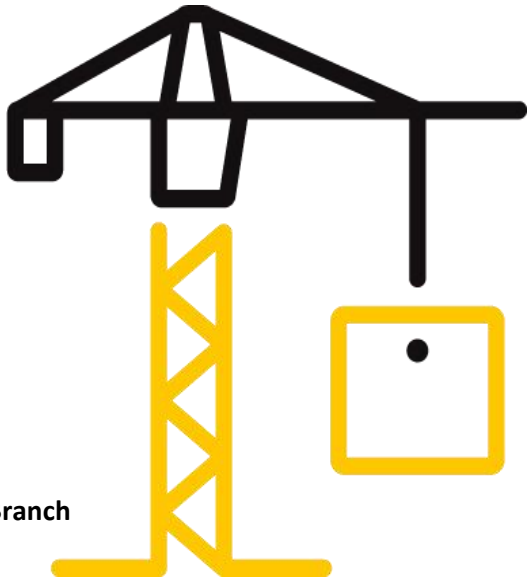

Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch

Test Report

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Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-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
LVT floors	District MAX	1220*184*2.5mm wearlayer: 0.5mm without Pad
Sample ID	**Sample Amount**	**Sample Received Date**
S240725010SHF.001~011	90 pieces	2024-04-16
Sample Description		
1220*184*2.5mm		

Test Methods And Standards

Test Standard	ASTM E303-22, ASTM D1308-20, ASTM F1514-19, ASTM F1515-21, ASTM F1914-18(2023), ASTM F2199-20, ASTM F2055-17(2021), ASTM F410-08(2022), ASTM D4060-19, ASTM D903-98(2017), 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

Name: Sally Xie Name: Daniel Zhang

Title: Reviewer Title: Project Engineer

Test Report

Original Issue Date 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Chemical Resistance
Test Method: ASTM D1308-20 7.2 spot test, covered
Conditioning: Condition at the temperature(23±2)°C and relative humidity (50±5)% for at least 1 week
Test Time: 24h

Results:

Reagents	Test Results
Distilled Water(cold)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Distilled Water(hot)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
50% Ethyl Alcohol	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Vinegar (3 % acetic acid)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Alkali Solution(5% NaOH)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Acid Solution(10% HCl)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Soap Solution	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Detergent solution	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Fruit (Lemon)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Vegetable oils	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Mustard	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Coffee (Nestle)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Tea (Lipton Green Tea)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.
Lubricating oils (Mobil)	No discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or other visible change on the surface.

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Surface Frictional Properties Using the British Pendulum Tester
Test Method: ASTM E303-22
Test Condition: 23 ± 2°C and 50 ± 5 % relative humidity
Slider: Slider 55

Test Item	Test condition	Test Result
Surface Frictional Properties Using the British Pendulum Tester	Wet condition	British Pendulum Number(BPN): Longitudinal direction: Mean: 37 Min.: 34 Horizontal direction: Mean: 35 Min.: 33
	Dry condition	British Pendulum Number(BPN): Longitudinal direction: Mean: 60 Min.: 59 Horizontal direction: Mean: 60 Min.: 60

Note:
1. Test surface and direction please refer to Appendix A: Sample Received Photo.
2. Slider 55 and dry condition were specificed by applicant.

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Resistance to heat

Test Method: ASTM F1514-19

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

Test Condition:

Temperature: 70 °C

Exposure time: 7 days

Spectrophotometer: Under D65 standard light source, 10° observer

Test Result:

Specimen	ΔE*	Average ΔE*
1	0.26	0.27
2	0.25	
3	0.29	

Test Photo:

After exposure

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Resistance to light

Test Method: 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	$W/(m^2 \cdot nm)$	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	0.58	0.52
2	0.56	
3	0.42	

Test Photo:

After exposure

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Residual indentation

Test Method: 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:	4.52	mm
Total load applied:	63.5	kg
Indentation time:	10	min
Recovery time:	60	min

Test Result:

Residual Indentation	Result (mm)	Result (%)
Specimen 1	0.15	6.0
Specimen 2	0.12	4.9
Specimen 3	0.13	5.3
Average value	0.13	5.4
Max. value	0.15	6.0

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Dimensional stability

Test Method: ASTM F2199-20

Conditioning:

Temperature:	23	°C
Relative humidity:	50	%
Duration:	24	h

Measure the initial length

Test Condition:

Temperature:	82	°C
Duration:	6	h

Reconditioning:

Temperature:	23	°C
Relative humidity:	50	%
Duration:	24	h

Measure the final length

Test Result:

Specimen	Dimensional stability (%)	
	Length direction/Machine direction	Width direction/Across machine direction
1	-0.15	0.02
2	-0.15	0.01
3	-0.17	0.02
Average	-0.16	0.02
Max.	-0.17	0.02

Note:

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

A negative value indicates shrinkage, and a positive value indicates expansion

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Size
Test Method: ASTM F2055-17(2021)
Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h

Test Result:

Test item	Nominal value (mm)	Tested value (mm)	Tolerance (mm)
Length	1220	1219.86	-0.14
Width	184	184.02	0.02

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Wear layer thickness
Test Method: ASTM F410-08(2022)
Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h

Test Result:

Nominal value:	0.50	mm
Average value:	0.50	mm
Max. value:	0.50	mm
Min. value:	0.49	mm

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Squareness
Test Method: ASTM F2055-17(2021)
Conditioning: Condition the test specimens at (23 ± 2)°C and (50 ± 5)% relative humidity for at least 24h

Test Result:

Short edge max. value:	0.03	mm
Long edge max. value:	0.03	mm

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-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)	80.7	78.7	91.7
Average value, (mg)	83.7		

Note:

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

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Test Items, Method and Results:

Test Item: Peel Strength
Test Method: ASTM D903-98(2017)
Conditioning: Condition the test specimens at (23±1)°C and (50±2)% relative humidity for at least 7days
Test Condition:
Test Speed: 152.4 mm/min

Test Result:

Test Items	Test Results
Peel Strength	Length direction/Machine direction mean value: 0.11kg/mm
	Width direction/Across machine direction mean value: 0.12kg/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. 240725010SHF-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 ± 2)°C and (50 ± 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	N/A	
Surface damage	No	
Crazing	No	
Maximum opening	N/A	N/A
Maximum height differences	N/A	

Test Photo:

After test

Test Report

Original Issue Date: 2024-08-22 Intertek Report No. 240725010SHF-001

Appendix A: Sample Received Photo

Revision:

NO.	Date	Changes
240725010SHF-001	2024-08-22	First issue