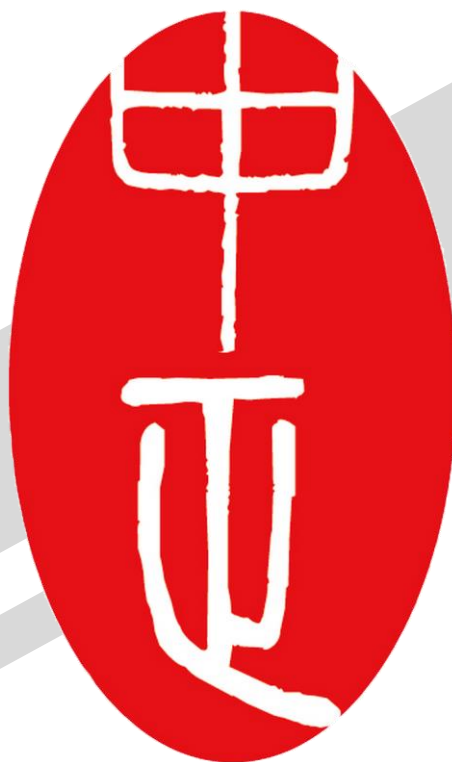




Laboratory Test Report

FIBA Approval Programme for Basketball Equipment

Handbook of Test Methods and Requirements – April 2020 Edition V1.4

Manufacturer Name: **Shijiazhuang Enlio Sports Goods Co., Ltd.**

Model Name: **Wood Grains 7.0mm**

Test Institute	Synthetic Flooring	01/06/2020	PASS
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This is not a Certificate of Approval



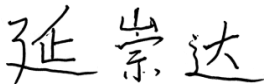
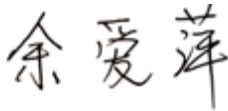


Introduction

Test results, in accordance with the FIBA Equipment & Venue Centre Approval Programme for Basketball Equipment, are presented in full within this report. This report does not imply FIBA approval or certification regardless of its contents or compliance to the FIBA requirements. FIBA approval or certification will always be awarded to the applicant directly from FIBA. Neither FIBA, nor the Test laboratory accept responsibility to third parties to whom this report, or any part thereof, is made known.

Declaration of Conformity

We certify that the tests described in this report have been carried out in accordance with the latest publication of the FIBA Handbook of Test Methods and Requirements and this report accurately reflects the outcome of the tests conducted. We also confirm that, to the best of our knowledge, all samples submitted for certification were done so in accordance with the requirements of the handbook.

Report Written By:	Yan Chongda	Report Checked By:	Yu Aiping
Date:	27/05/2019	Date:	29/05/2020
Signed:		Signed:	

Test Laboratory

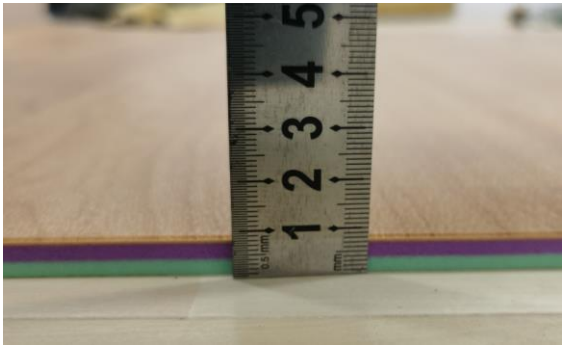
Test Laboratory Name:	Jiangsu Zhongzheng Testing Co., Ltd.
Address:	Room 825, No. 108 Hefeng Road, Huaqiao Town
City & Postal (ZIP) Code:	Kunshan City & 215332
State or Province:	Jiangsu Province
Country:	China
Telephone:	86-512-36857685
Email:	china.service@global-otc.com

Product Manufacturer

Manufacturer's Name:	Shijiazhuang Enlio Sports Goods Co., LTD.
Address:	Room 10-409, No.266 Tianshan St.
City & Postal (ZIP) Code:	Shijiazhuang City & 050000
State or Province:	Hebei Province
Country:	China
Telephone:	86-18832131031
Email:	773400416@qq.com





Product Description		
Surface Name:	PVC Sports Flooring	Surface Profile Image [Plan View]: 
Surface Level:	Level 2	
Surface Type:	Point-elastic	
Installation Type:	Fixed	
Upper Surface Thickness [mm]:	1.7	
Sample Size:	1m x 1m	
Sample Size Note: the total thickness: 7.0mm		Surface Profile Image [End Elevation]: 
FIBA Licence Number:	SF63-01	
Surface Colour:	Maple Wood, available in other colours	
FIBA Approved Equipment Logo:	No FIBA logo present	
Description of the Construction: From top to bottom: the first layer—imitation wood grain PVC transparent layer; the second layer—maple print layer; the third layer—PVC reinforced stable layer; the fourth layer—closed stable foam layer; the fifth layer—high density elastic foam layer; the sixth layer—base layer. The details refer to the additional image.		
Note: The surface image must show the below details, where this isn't possible in a single image, additional images can be submitted in the 'Additional Notes' Section of this document. - FIBA Logo, where present - Surface Laminations - Steel Rule placed to provide reference of sample thickness		
Sample Description		
Number of samples submitted for testing:		2
Laboratory Sample Reference No(s).	Global Reference No.	191217001-04
	Surface Sample 1	N/A
	Surface Sample 2, if applicable	N/A
	Surface Sample 3, if applicable	N/A
Test Laboratories are required to store a reference sample of the tested product for a period of 5-years. By checking the box opposite, we confirm a 200x200mm sample has been placed in storage and will be retained for the minimum term of 5-years.		☒ A sample of the tested product has been placed in storage and shall be retained for at least a 5-year period.



Results Summary			
Performance Property	Results	Requirement	Pass/ Fail
Force Reduction	34	Point Elastic: 25% - 75%	PASS
		Mixed Elastic: 45% - 75%	
		Area Elastic: 40% - 75%	
		Combined Elastic: 45% - 75%	
Force Reduction Uniformity	0	±5% from average	PASS
Vertical Deformation	1.3	Point Elastic: ≤ 3.5mm	PASS
		Mixed Elastic: ≤ 3.5mm	
		Area Elastic: 1.5mm – 5.0mm	
		Combined Elastic: 1.5mm - 5.0mm	
Vertical Deformation Uniformity	-0.1	±0.7mm from average	PASS
Ball Rebound	97	≥90%	PASS
Ball Rebound Uniformity	-1	±3% from average	PASS
Slip Resistance	83	Average ≥80 ≤110	PASS
Resistance to Wear	58	≤1000mg	PASS
Rolling Load	0.3	≤ 0.5mm permanent indentation	PASS
Rolling Load Visual Inspection	No Excessive Damage	No Excessive Damage	PASS
Summary notes: N/A			



Force Reduction - Overview

Force reduction is the ability of the surface to provide cushioning to the athlete during landing from a jump or during running. Higher force reduction values indicate a softer sports surface which absorbs the energy from impacts. A low force reduction value indicates a stiffer surface.

Force Reduction – Requirements

Test	Level 2 Synthetic Permanent & Mobile
Force Reduction	Point Elastic: 25% - 75%
	Mixed Elastic: 45% - 75%
	Area Elastic: 40% - 75%
	Combined Elastic: 45% - 75%
Uniformity	±5% from average

Force Reduction – Results

Date:	16/03/2020	Air Temperature (°C):	21.0	
Operator:	Yan Chongda	Relative Humidity (%):	55	
Location	Measurement No.			Average of Drops No. 2 and 3
	D1	D2	D3	
1	34	34	34	34
2	33	33	34	34
3	33	34	34	34
4	34	34	34	34
5	33	34	34	34
6 (if applicable)	N/A	N/A	N/A	N/A
7 (if applicable)	N/A	N/A	N/A	N/A
8 (if applicable)	N/A	N/A	N/A	N/A
Calculated Uniformity from Measured Locations:				0





Vertical Deformation - Overview

Vertical Deformation is the ability of the surface to deform during landing from a jump, during running or during any foot-floor contact. The test focuses on the deformation generated at the point of impact, and it is thought that vertical deformation values that are too high decrease foot stability. It involves computing a normalized deformation, measured in millimetres, under a standard load of 1500 N (ie 2.4 mm). A higher value for vertical deformation means that the sport surface deforms more during foot-floor impacts.

Vertical Deformation – Requirements

Test	Level 2 Synthetic Permanent & Mobile
Vertical Deformation	Point Elastic: $\leq 3.5\text{mm}$
	Mixed Elastic: $\leq 3.5\text{mm}$
	Area Elastic: 1.5mm – 5.0mm
	Combined Elastic: 1.5mm - 5.0mm
Uniformity	$\pm 0.7\text{mm}$ from average

Vertical Deformation – Results

Date:	16/03/2020	Air Temperature (°C):	21.0	
Operator:	Yan Chongda	Relative Humidity (%):	55	
Location	Measurement No.			Average of Drops No. 2 and 3
	D1	D2	D3	
1	1.3	1.2	1.2	1.2
2	1.4	1.3	1.3	1.3
3	1.4	1.3	1.3	1.3
4	1.3	1.3	1.3	1.3
5	1.2	1.2	1.2	1.2
6 (if applicable)	N/A	N/A	N/A	N/A
7 (if applicable)	N/A	N/A	N/A	N/A
8 (if applicable)	N/A	N/A	N/A	N/A
Calculated Uniformity from Measured Locations:				-0.1

Ball Rebound - Overview

A basketball is released from a height of 1.8m and the height of its rebound from the surface calculated in accordance to EN 12235 and expressed as a percentage relative to that of a rebound on a concrete surface. Higher ball rebound values rebound to levels that are closer to those generated on concrete.

Ball Rebound – Requirements

Test	Level 2 Synthetic Permanent & Mobile
Ball Rebound	≥90%
Uniformity	±3% from average

Ball Rebound – Results

Date:	20/03/2020			Air Temperature (°C):	24.7		
Operator:	Yan Chongda			Relative Humidity (%):	46		
Location	Measurement No					Average	Percentage Rebound %
	1	2	3	4	5		
Concrete	1.041	1.043	1.043	1.046	1.046	1.044	
1	1.014	1.014	1.016	1.016	1.016	1.015	97
2	1.007	1.007	1.010	1.012	1.012	1.010	96
3	1.014	1.014	1.016	1.019	1.019	1.016	97
4	1.007	1.007	1.010	1.010	1.010	1.009	96
5	1.019	1.019	1.019	1.021	1.021	1.019	97
6 (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7 (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8 (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Average:						1.014	97



Slip Resistance - Overview

Slip Resistance also referred to as 'linear friction', is a measure of the surfaces ability to resist slippage and to provide adequate friction to allow players to make safe changes in direction during the game of basketball. Testing simulates the shoe-surface interface. Linear slip resistance, as detailed in EN 13036, is the indicative friction of the surface under skidding or quick stopping activities and is presented in whole number value (i.e. 100).

Slip Resistance – Requirements

Test	Level 2 Synthetic Permanent & Mobile
Slip Resistance	Average $\geq 80 \leq 110$

Slip Resistance – Results

Date:	20/03/2020			Air Temperature (°C):	24.7	
Operator:	Yan Chongda			Relative Humidity (%):	46	
Direction	Measurement No					Direction Average:
	1	2	3	4	5	
0°	82	82	82	83	83	82
45°	86	86	86	85	85	85
90°	81	81	82	82	82	82
Surface Temperature at tested Location (°C):			22.1		Sample Average:	
					83	



Resistance to Wear - Overview

This test measures the surfaces ability to resist wear and provides results indicative to the expected lifetime of the surface or its coatings. This is of particular importance in areas such as the three-point line. Weighted abrasive wheels are repeatedly passed across the surface and the respective mass loss from the surface is measured. A lower loss of mass indicates a higher resistance to wear.

Resistance to Wear – Requirements

Test	Level 2 Synthetic Permanent & Mobile
Resistance to Wear	≤1000mg

Resistance to Wear – Results

Date:	20/03/2020	Air Temperature (°C):	24.7
Operator:	Yan Chongda	Relative Humidity (%):	46
Sample No.	Pre-Abrasion Mass (g)	Post-Abrasion Mass (g)	Loss of Mass (mg)
1	47.782	47.737	45
2	42.636	42.574	62
3	48.278	48.214	64
4	45.452	45.398	54
5	42.722	42.667	55
6	45.320	45.252	55
Average Loss of Mass (mg):			58



Rolling Load - Overview

A rolling load is repeatedly traversed across the upper surface of the flooring material to locally stress the surface and determine its ability to resist indentation. A weighted steel wheel is utilised in the application of the load representing a worst-case scenario of heavy equipment being rolled across the court.

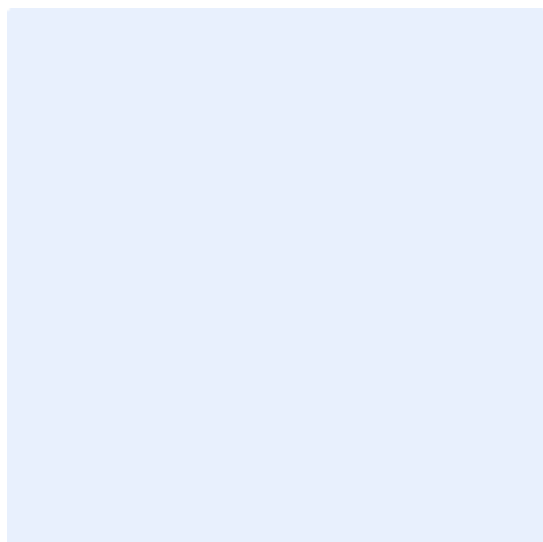
Rolling Load – Requirements

Test	Level 2 Synthetic Permanent & Mobile
Rolling Load	Permanent Indentation of $\leq 0.5\text{mm}$

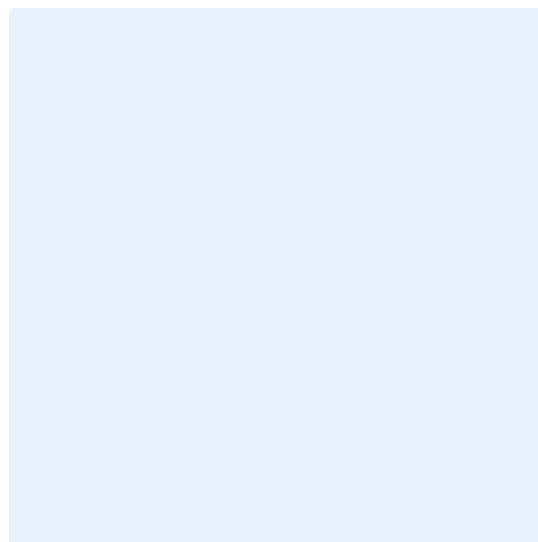
Rolling Load – Results

Date:	18/03/2020	Air Temperature (°C):	22.9
Operator:	Yan Chongda	Relative Humidity (%):	50
Deformation Measurement (mm):	Initial Post-Test Measurement		Post- Recovery Measurement
	0.3		0.3
Visual Inspection Result:	The area under test exhibited no notable dammage following the Rolling Load test.		

Reference Image 1



Reference Image 2



Note: N/A

Conclusion

The flooring samples submitted were tested in accordance with the most recent publication of the FIBA Equipment & Venue Centre Approval Programme for Basketball Equipment. We confirm all information presented within this report is accurate and appropriately reflects the performance of the samples submitted.

Based upon the test results we the test laboratory consider the samples supplied to have:



Met all requirements for FIBA product certification



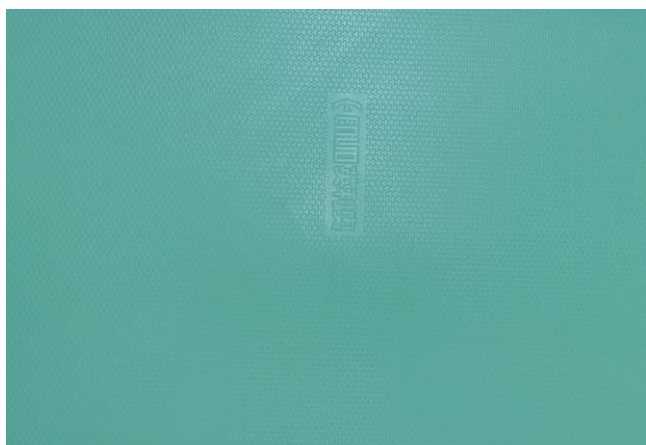
Failed to meet all requirements for FIBA product certification

Additional Notes

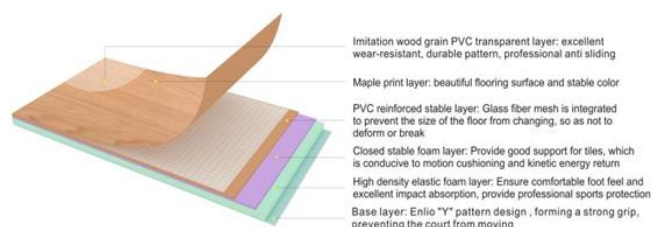
Use this section to insert any additional information or images relevant to the flooring samples submitted for assessment. Where the samples showed visible signs of deterioration following the Rolling Load test, images and a description of the damage observed may be supplied in this section. Any system with multiple, distinct layers should be recorded here, detailed the composition of each:

N/A

Reference Image A



Reference Image B



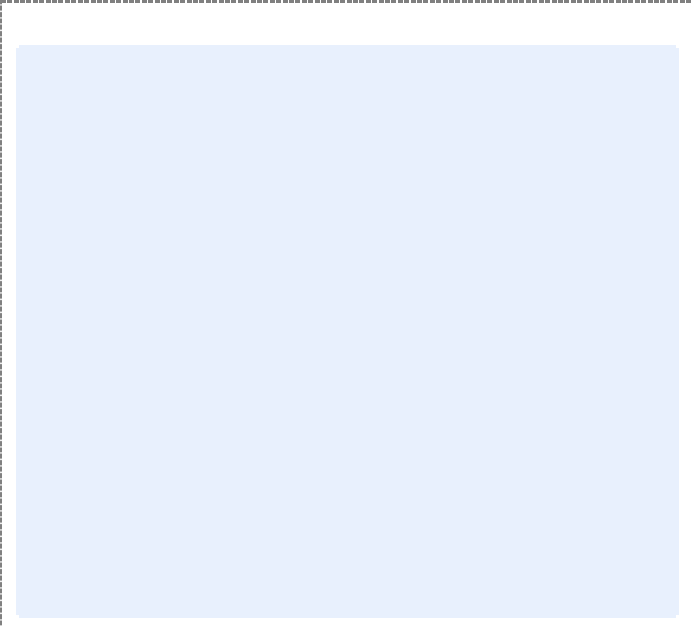


Additional Notes - Continued

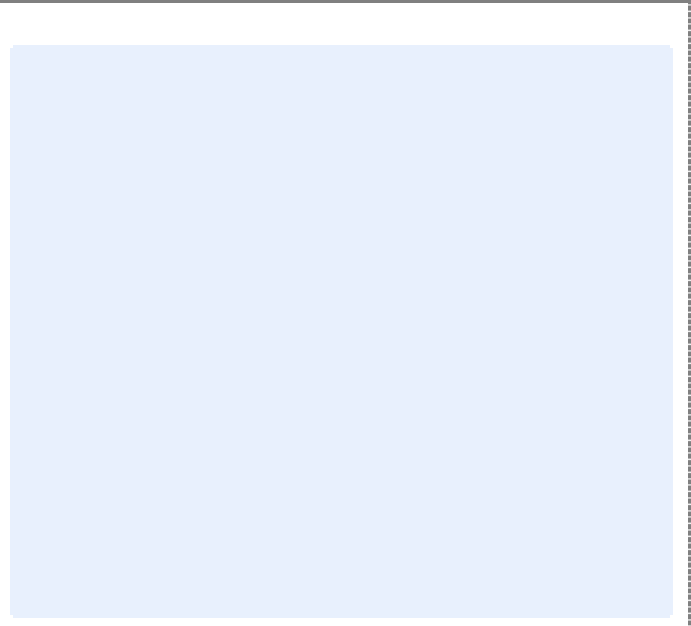
Use this section to insert any additional information or images relevant to the flooring samples submitted for assessment.

N/A

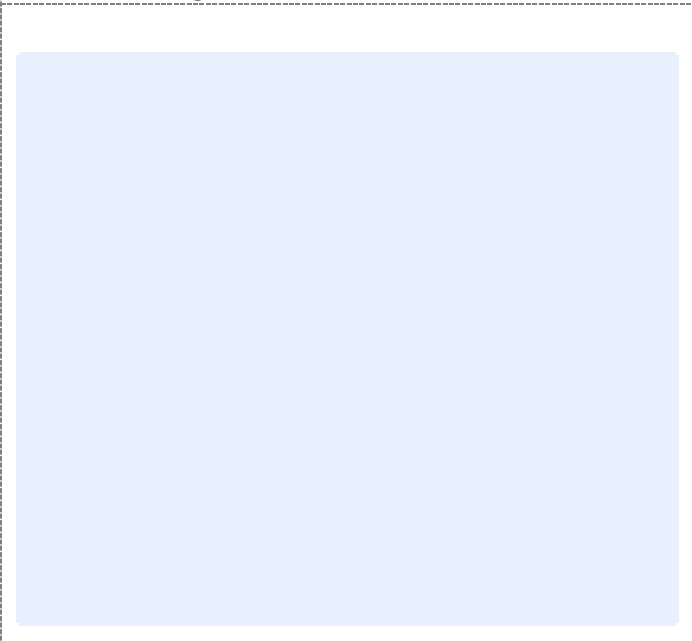
Reference Image C



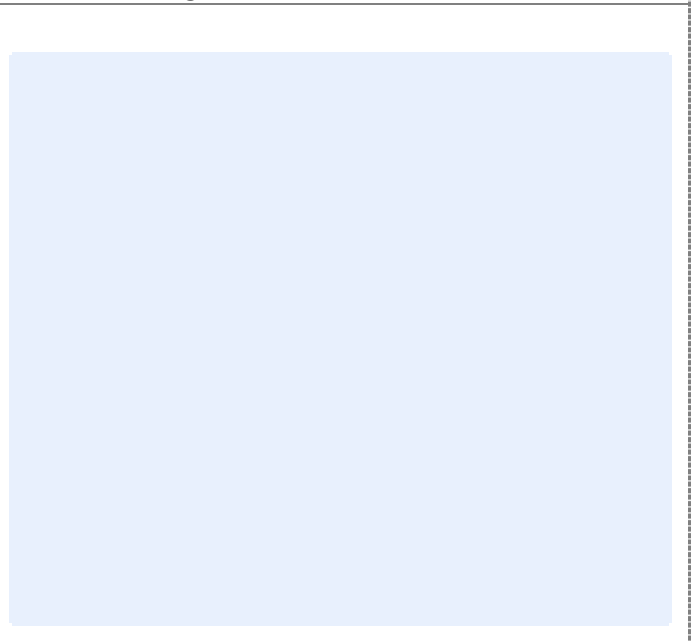
Reference Image D



Reference Image E



Reference Image F



END OF REPORT

Adherence to the FIBA requirements does not constitute adherence to any regional, national or international safety or trading standards. It is the responsibility of the manufacturer to ensure products are in full compliance to any mandatory safety regulations for the intended region of product sale or installation. Products holding FIBA approval which are deemed to be in breach of any mandatory safety requirements shall have their FIBA approval revoked from the date at which the breach occurred.

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