



Test Report

IMPORTANT NOTE:
This report does **not** constitute
an ITF Court Pace Classification

Test code: 01/02-23-L-GLA-891-A

Test location: Lab

Surface name: Enlio Interlock Flooring of Soft Connection I

Surface type: Other

Test laboratory: Guangzhou Labosport Co., Ltd.
1/F., Building C, Lianshang Xiapu Industrial Park
No.1, Huanbao 3rd Road
Guangzhou, Guangdong
China, P.R.

Client: Hebei Enlio Sports Goods Co., Ltd
10#Block, 4th Floor, Fang Da Science Park
No. 266 TianShan Street
Shijiazhuang, 050000
China, P.R.

Prepared by:
Yihai Xiong

Authorised by:
Olivier Ducrocq

Distribution: Copy 1 - Guangzhou Labosport Co., Ltd.
Copy 2 - Hebei Enlio Sports Goods Co., Ltd
Copy 3 - ITF

Test date: 22 December 2022

Issue date: 15 February 2023

Coefficient of restitution (COR):	0.80	Medium
Coefficient of friction (COF):	0.43	Low
Court pace rating (CPR):	58	Fast
Alternative category *		
Final classification		Fast

* see note 11 of Test protocol on Explanation page of this report



Surface name:	Enlio Interlock Flooring of Soft Connection I	Humidity:	47%	Test laboratory:	Guangzhou Labosport Co., Ltd.
Surface type:	Other	Ambient temp:	23°C	Surface temp:	23°C
				Test date:	22 December 2022

Test protocol:

1. For tests in the laboratory, the ITF Accredited laboratory requires either three samples of minimum dimensions 0.5 × 0.5 m, or (in the case of infilled and carpet surfaces) one sample measuring 1 × 1 m. In addition, a reference sample shall be sent to the ITF Technical Centre.
2. Test specimens should be flat. The body requesting the test should advise the laboratory on the preparation and storage of samples.
3. The body requesting the test is required to provide a detailed specification of the surface construction, which will be included in the Comments page of this report.
4. The test specimens shall be conditioned at 23 ± 2°C for a minimum of 3 hours prior to testing. Unless the surface is designed to be damp/wet when in its optimum condition, tests shall be made with the surface in a dry condition.
5. The laboratory shall use three high-specification balls to test the surface. The balls should be stored in their cans at 23 ± 2°C and pre-compressed before use.
6. The test balls shall be fired at an incident angle of 16 ± 2° and speed of 30 ± 2 m/s onto the surface, and the ball velocity shall be recorded before and after the impact.
7. Each of the three test balls shall be fired onto the surface three times (nine impacts in total), moving impact location for each shot. If the surface is disturbed or damaged by the test (e.g. movement of clay particles), the surface shall be restored before the next shot.
8. For any surfaces that have an inherent directional pattern – such as natural or artificial grass – test shots shall be fired in the typical directions of play, i.e. parallel to the length of the court. Where samples are used, the supplier shall indicate the direction the surface would be laid on court.
9. The temperature of the tests balls, surface and ambient conditions shall be monitored during the test, along with the relative humidity of the laboratory.
10. On completion of the test, the ITF Accredited laboratory will submit the test result to the ITF and subsequently to the body requesting the test. On receipt of the result, the body requesting the test may apply to the ITF for inclusion on the ITF list of classified tennis court surfaces.
11. If the mean CPR value for the three samples tested lies within two points of an adjacent category, the body requesting the test will be given the choice between the two categories.

Notation definitions & calculation of results:

v_{ix} = horizontal incident velocity (m/s)
 v_{iy} = vertical incident velocity (m/s)
 v_{fx} = horizontal rebound velocity (m/s)
 v_{fy} = vertical rebound velocity (m/s)
 e = coefficient of restitution (COR)
 μ = coefficient of friction (COF)
 T = mean ball temperature for test sample (°C)
 c = temperature coefficient (0.003)
 e_T = coefficient of restitution (COR)
 a = pace perception constant (150)
 b = mean COR for all surface types (0.81)
CPR = court pace rating

$$e = \frac{v_{fy}}{v_{iy}}$$
$$\mu = \frac{v_{ix} - v_{fx}}{v_{iy}(1 + e)}$$
$$e_T = e + c(23 - T)$$
$$CPR = 100(1 - \mu) + a(b - e_T)$$

Terms and conditions:

1. ITF Classification of a tennis court is valid for 3 years from the date of listing. If a company wishes a court to remain on the ITF Classified list, it shall arrange for the court to be reassessed by an ITF Accredited laboratory within 6 months prior to expiry.
2. The ITF reserves the right to refuse to classify a surface product which it does not consider to be suitable for the game of tennis.
3. A surface product included on the list of ITF Classified Court Surfaces is classified purely on the basis of its court pace rating.
4. ITF Classification does not imply any form of ITF approval or endorsement.
5. Only the ITF Court Pace Rating 'category' logo, as supplied to the applicant by the ITF, can be used in the marketing of the classified product.
Note: the ITF logo is a trademark of the ITF and cannot be used in any marketing or publicity materials (either printed or published on a website). Any unauthorised use of the ITF logo may result in legal proceedings against the Applicant and withdrawal of ITF Classification.

Surface name:Enlio Interlock Flooring of Soft Connection I

Humidity:47%

Test laboratory:Guangzhou Labosport Co., Ltd.

Surface type:Other

Ambient temp:23°C

Surface temp:23°C

Test date:22 December 2022

SAMPLE 1:		Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
Mean ball temp: 22.6°C	Vix	28.20	27.30	29.90	29.50	28.30	28.80	29.40	28.50	28.60
	Viy	8.90	8.80	9.70	9.40	9.10	9.30	9.40	9.20	9.20
	Vfx	21.20	20.40	22.30	22.10	21.10	21.90	22.20	21.30	21.50
	Vfy	7.10	7.00	7.60	7.60	7.30	7.40	7.50	7.40	7.30
	CORt	0.80	0.80	0.78	0.81	0.80	0.80	0.80	0.81	0.79
	COF	0.44	0.44	0.44	0.44	0.44	0.41	0.43	0.43	0.43
	CPR	57.9	58.3	59.9	56.5	57.1	60.6	59.0	57.3	59.3
SAMPLE 2:		Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
Mean ball temp: 22.6°C	Vix	29.30	28.00	29.20	29.70	29.50	29.60	30.30	28.00	29.20
	Viy	9.40	8.90	9.30	9.50	9.30	9.50	9.70	8.90	9.20
	Vfx	22.00	21.10	21.80	22.60	22.40	22.30	22.80	21.40	22.20
	Vfy	7.60	7.00	7.40	7.60	7.50	7.50	7.60	7.10	7.30
	CORt	0.81	0.79	0.80	0.80	0.81	0.79	0.78	0.80	0.79
	COF	0.43	0.43	0.44	0.42	0.42	0.43	0.43	0.41	0.42
	CPR	57.1	59.9	57.7	59.8	58.1	60.0	60.4	60.4	59.9
SAMPLE 3:		Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
Mean ball temp: 22.6°C	Vix	30.20	28.00	29.30	29.20	28.20	28.70	29.80	29.00	27.50
	Viy	9.50	8.90	9.30	9.20	9.00	9.00	9.60	9.30	8.70
	Vfx	22.90	21.10	22.10	21.90	21.40	21.50	22.40	22.00	20.90
	Vfy	7.60	7.30	7.50	7.40	7.30	7.20	7.70	7.50	7.00
	CORt	0.80	0.82	0.81	0.81	0.81	0.80	0.80	0.81	0.81
	COF	0.43	0.43	0.43	0.44	0.42	0.44	0.43	0.42	0.42
	CPR	58.6	55.7	57.5	56.7	57.9	56.9	58.2	58.7	58.6



Surface name:

Enlio Interlock Flooring of Soft Connection I

Humidity:

47%

Test laboratory:

Guangzhou Labosport Co., Ltd.

Surface type:

Other

Ambient temp:

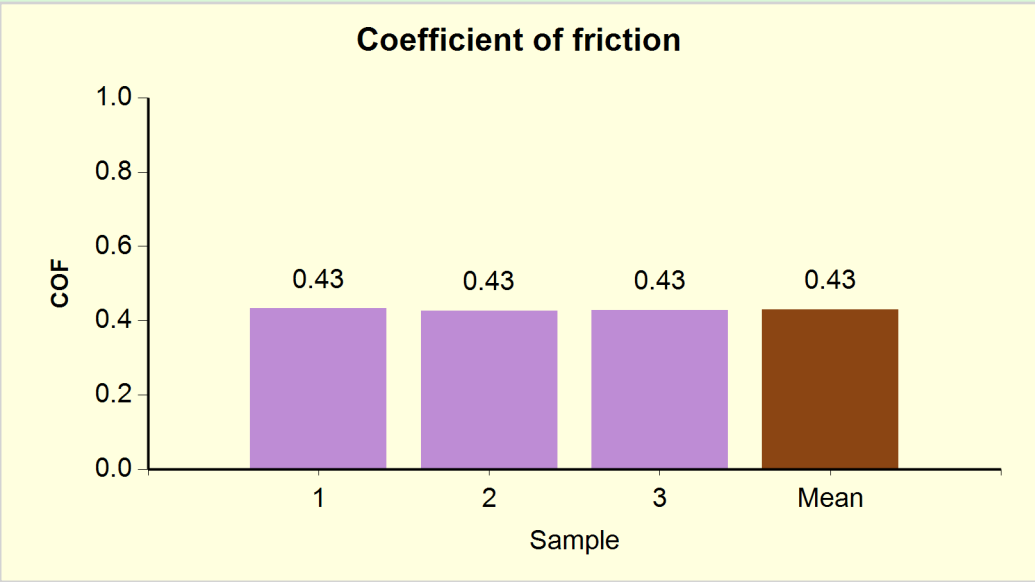
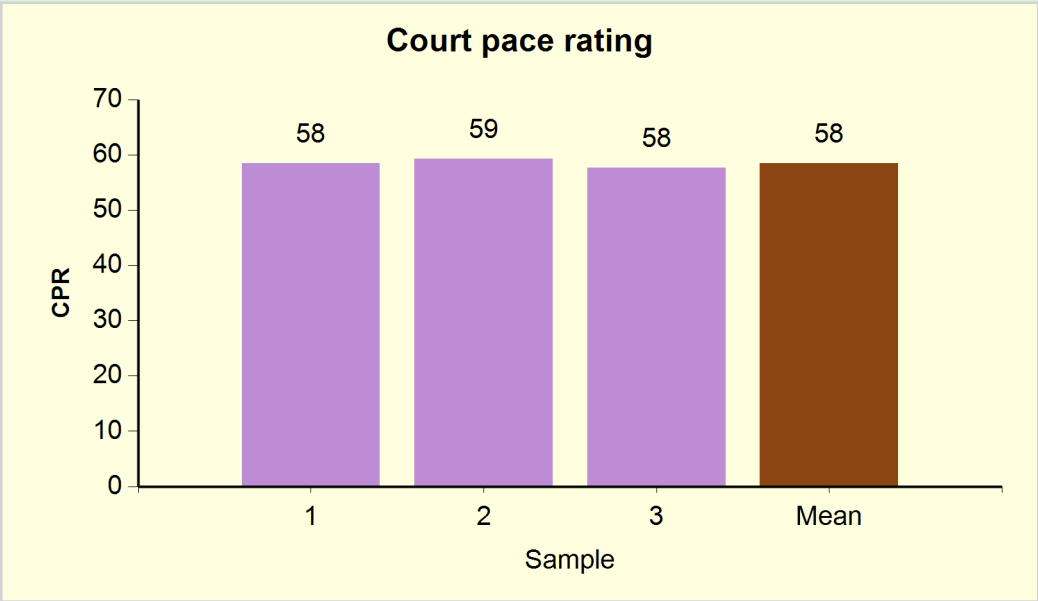
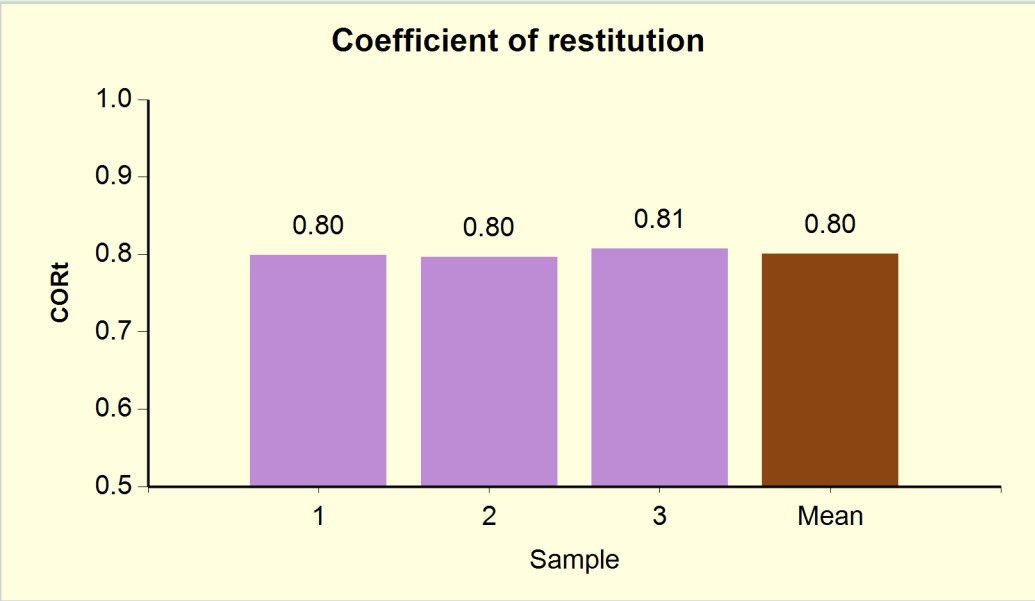
23°C

Surface temp:

23°C

Test date:

22 December 2022



Summary			
	COR	COF	CPR
Mean	0.80	0.43	58
SE	0.00	0.00	0
Range	0.01	0.01	2

ITF criteria:

COR

Low (0 - 0.78)

Medium (0.79 - 0.84)

High (0.85+)

COF

Low (0 - 0.55)

Medium (0.56 - 0.70)

High (0.71+)

CPR

Slow (0 - 29)

Medium-slow (30 - 34)

Medium (35 - 39)

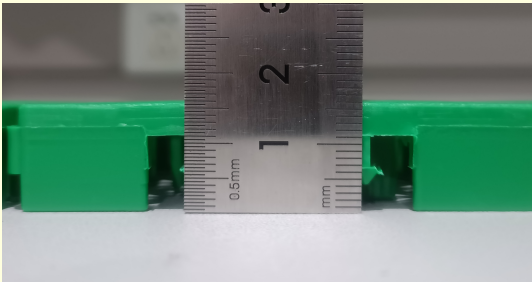
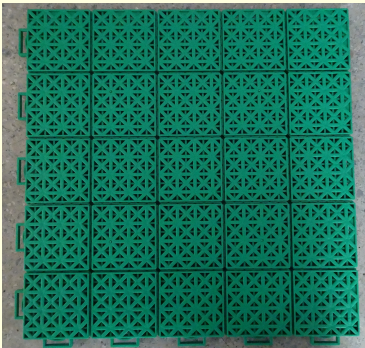
Medium-fast (40 - 44)

Fast (45+)

Surface name: Enlio Interlock Flooring of Soft Connection I
Surface type: Other

Test laboratory: Guangzhou Labosport Co., Ltd.
Test date: 22 December 2022

Full description of court surface - including manufacturer's reference, the type of supporting layers and their method of attachment:



Material: PP (polypropylene)

Dimensions of tile

Length (mm): 400
Width (mm): 400
Height (mm): 16
Weight (g): 490

Line markings: Polyurethane Paint

Laboratory comments:

Although the tests were carried out on laboratory samples the appearance and finish of the test specimens were considered by Guangzhou Labosport to be representative of the surface when laid as a tennis court.
A tennis court surface is defined as the top (playing) surface and any underlying layers of the construction that influence the sports performance (or bio-mechanical) response of a court. If any elements of the surface's construction change the response, performance and classification of the surface may be different. As such the results detailed in this report only apply to the surface when laid on a rigid (concrete, asphalt, etc.) base.

Laboratory recommendations:

The results detailed in this report are considered to be a valid assessment of the Court Pace characteristics of the product.
In Guangzhou Labosport's opinion the product satisfies the technical criteria required of tennis court surfaces wishing to appear in the ITF Court Pace Classification Programme. Guangzhou Labosport recommends, subject to ITF approval, that the surface is included on the list of classified surfaces.

General information:

Use: Indoor and outdoor Stabilisation time (days): 3
Permeable: Yes Installation time (days): 1

Additional test information:

Test ball: ITF High Specification 2021 (THA)