Test Report

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

Test code: 01/02-20-L-LUK-1172-A

Test location: Lab

Surface name: Matchplay 2

Surface type: Artificial Grass

Test laboratory:
Labosport Ltd
Unit 3, Aerial Way
Hucknall Business Park
Hucknall, NG15 6DW
United Kingdom

Client:
Playrite (A Division of National Floorcoverings)
Wellington Mills
Liversedge
West Yorkshire, WF15 7FH
United Kingdom

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Distribution:
Copy 1 - Labosport Ltd
Copy 2 - Playrite (A Division of National Floorcoverings)
Copy 3 - ITF

Test date: 14 August 2020

Issue date: 2 September 2020

Coefficient of restitution (COR):	0.80	Medium
Coefficient of friction (COF):	0.65	Medium
Court pace rating (CPR):	**37**	**Medium**
Alternative category *		
Final classification		**Medium**

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

Test Results - Court Pace : 01/02-20-L-LUK-1172-A

Surface name:	Matchplay 2			Humidity:	52%	Test laboratory:	Labosport Ltd
Surface type:	Artificial Grass	Ambient temp:	24ºC	Surface temp:	24ºC	Test date:	14 August 2020

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)

$e = \frac{v_{fy}}{v_{iy}}$

e = coefficient of restitution (COR)

$\mu = \frac{v_{ix} - v_{fx}}{v_{iy}(1 + e)}$

μ = coefficient of friction (COF)

T = mean ball temperature for test sample (ºC)

c = temperature coefficient (0.003)

$e_T = e + c(23 - T)$

e_T = coefficient of restitution (COR)

a = pace perception constant (150)

b = mean COR for all surface types (0.81)

CPR = court pace rating

$CPR = 100(1 - \mu) + a(b - e_T)$

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.

Test Results - Court Pace : 01/02-20-L-LUK-1172-A

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SAMPLE 1:

Mean ball temp: 24.4ºC

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
Vix	30.07	30.17	29.76	29.98	30.13	29.94	30.02	30.16	30.11
Viy	9.09	9.05	8.85	9.16	9.06	9.01	9.01	9.06	9.15
Vfx	19.40	19.44	19.52	18.90	19.18	19.67	18.93	19.72	19.79
Vfy	7.31	7.30	7.07	7.46	7.43	7.13	7.28	7.37	7.16
CORt	0.80	0.80	0.79	0.81	0.82	0.79	0.80	0.81	0.78
COF	0.65	0.66	0.64	0.67	0.66	0.64	0.68	0.64	0.63
CPR	**36.4**	**35.5**	**38.0**	**33.3**	**32.7**	**39.8**	**32.9**	**36.6**	**41.5**

SAMPLE 2:

Mean ball temp: 24.4ºC

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
Vix	29.68	30.03	29.44	29.71	29.77	29.46	29.69	30.35	30.36
Viy	8.85	9.06	8.77	8.92	8.86	8.86	9.05	9.22	9.13
Vfx	19.59	19.15	18.96	18.87	19.20	19.09	19.41	19.67	19.74
Vfy	7.17	7.09	7.02	7.30	7.27	7.29	7.26	7.08	7.22
CORt	0.81	0.78	0.80	0.81	0.82	0.82	0.80	0.76	0.79
COF	0.63	0.67	0.66	0.67	0.66	0.64	0.63	0.66	0.65
CPR	**37.6**	**37.4**	**35.7**	**32.5**	**33.5**	**34.5**	**38.8**	**41.4**	**38.6**

SAMPLE 3:

Mean ball temp: 24.4ºC

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
Vix	29.60	29.76	30.22	30.57	29.80	30.50	29.69	29.79	29.94
Viy	8.83	9.04	9.20	9.35	8.98	9.24	8.87	8.82	9.09
Vfx	18.90	19.09	19.47	19.85	19.92	19.62	19.19	19.40	19.39
Vfy	6.98	7.39	7.34	7.53	6.99	7.53	7.26	7.26	7.26
CORt	0.79	0.81	0.79	0.80	0.77	0.81	0.81	0.82	0.79
COF	0.68	0.65	0.65	0.64	0.62	0.65	0.65	0.65	0.65
CPR	**35.9**	**34.6**	**37.5**	**37.8**	**43.5**	**35.0**	**34.3**	**34.0**	**37.8**

Test Results - Court Pace : 01/02-20-L-LUK-1172-A

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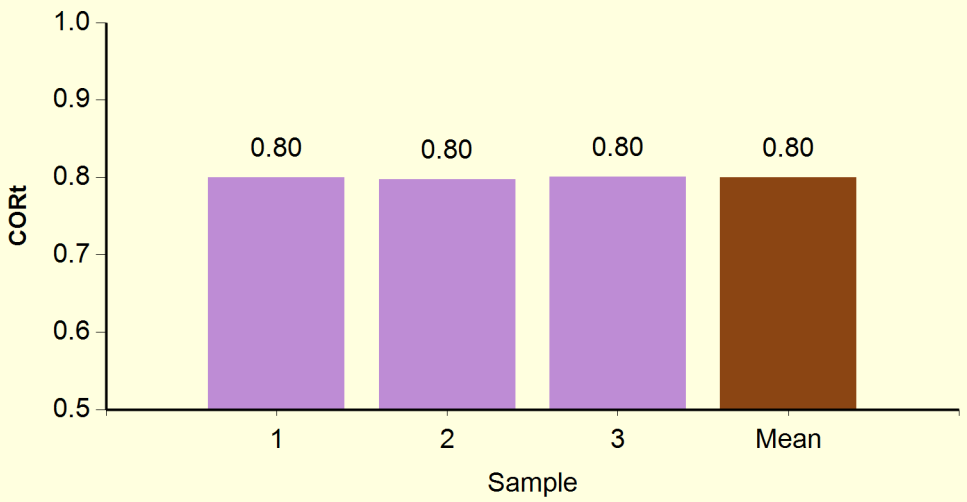
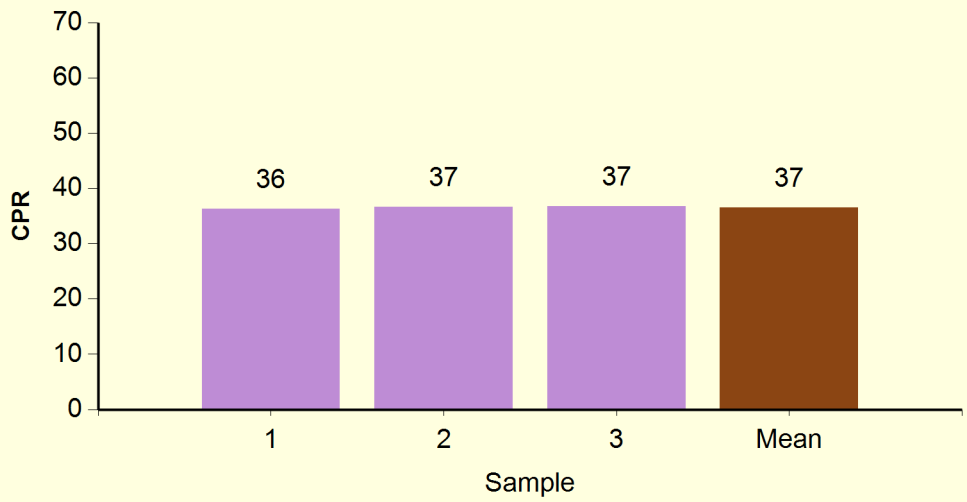
Surface type:	Artificial Grass	Ambient temp:	24ºC	Surface temp:	24ºC	Test date:	14 August 2020

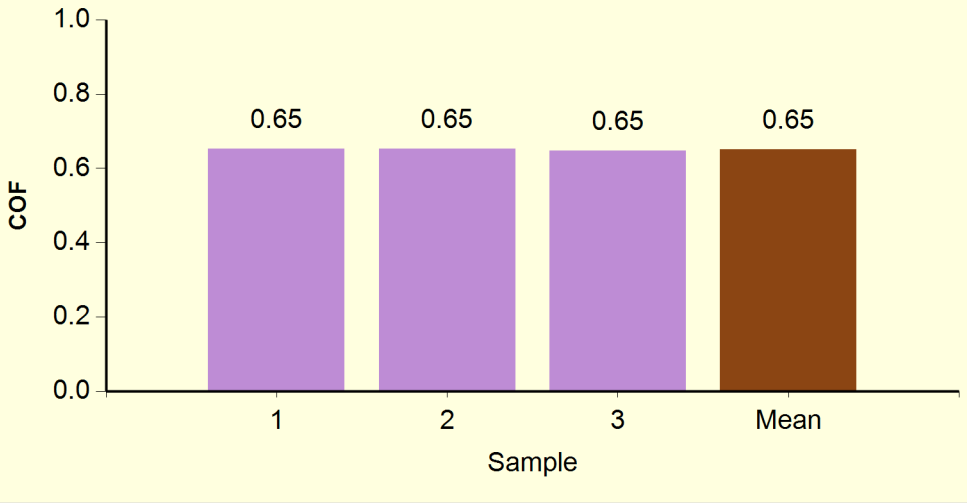
Coefficient of restitution



Court pace rating



Coefficient of friction



Summary

	COR	COF	CPR
Mean	**0.80**	**0.65**	**37**
SE	0.00	0.00	1
Range	0.00	0.01	0

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+)

Test Results - Court Pace : 01/02-20-L-LUK-1172-A

Surface name: Matchplay 2

Surface type: Artificial Grass

Test laboratory: Labosport Ltd

Test date: 14 August 2020

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

Carpet characteristics

Yarn: Polypropylene

Dtex: 0

Tuft characteristics

Pile weight (g/m²): 1220

Pile height (mm): 7

Stitch rate (/m): 0

Stitches (/m²): 0

Tufts (/m²): 0

Infill

Type of infill: sub-angular to rounded sand

Infill grading (mm): 0.2 - 0.7

Infill rate (kg/m²): 6

Infill height: Underfilled by 2 mm

Line markings: Pre-cut lines installed on site

Laboratory comments:

Although the tests were carried out on laboratory samples the appearance and finish of the test specimens was considered by 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 Labosport's opinion the product satisfies the technical criteria required of tennis court surfaces wishing to appear in the ITF Court Pace Classification Programme. Labosport recommend, subject to ITF approval, that the surface is included on the list of classified surfaces.

General information :

Use : Indoor and outdoor

Permeable : Yes

Stabilisation time (days): 7

Installation time (days): 2

Additional test information :

Test ball : ITF High Specification 2019 (THA)