



TESTING TECHNOLOGY FOR SPORT

Laboratory Analysis Report

UNE 147301: 2018 PADEL TENNIS

Padel TXT Solution

Report Number: 12181/5468

Report Status: Final

Client: Safitex

Via Opifici, 50

24024 Gandino BG, Italy



HEADQUARTERS

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REGIONAL LOCATIONS

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- Italy
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- Norway
- South Africa
- Turkey
- United States

Registered in Scotland. SC 186755

Foreword

This report has been prepared by Sports Labs Ltd with all reasonable skill, care and diligence within the terms of the contract with the Client and within the limitations of the resources devoted to it.



This report is confidential to the Client, and Sports Labs Ltd accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

* Not all tests carried out are within our scope of ISO 17025 accreditation.

This report is not an official National Governing Body report and does not imply NGB approval.

Declaration of Conformity

We confirm that the tests described in this report have been carried out in accordance with *UNE 147301: 2018 Superficies Deportivas de Hierba Artificial Para la Práctica del Pádel*, and this report accurately reflects the outcome of the tests conducted.



| | | | |
|---------------------------|--|---------------------------|--|
| Report Written By: | Craig Melrose | Report Checked By: | Sean Ramsay |
| Date: | 09/03/2023 | Date: | 09/03/2023 |
| Signed: |  | Signed: |  |

Test Laboratory

| | |
|--------------------------------------|---|
| Test Laboratory Name: | Sports Labs Ltd |
| Address: | 1 Adam Square, Brucefield Industry Park |
| City & Postal (ZIP) Code: | Livingston, EH54 9DE |
| State or Province: | West Lothian |
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Client

| | |
|--------------------------------------|------------------|
| Client's Name: | Safitex |
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| City & Postal (ZIP) Code: | 24024 Gandino BG |
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| Email: | info@safitex.it |

| Product Description | | | |
|--|-----------------------|---|--------------------------|
| Product Name: | Padel TXT Solution | | |
| Stabilising Infill: | Silica Sand | 8 kg/m2 (approx. 6mm) | |
| Shockpad: | N/A | - | |
| Substrate: | Rigid Engineered Base | | |
| Number of Conditioning Rolls: | N/A | | |
| Free Pile Height: | 6mm | | |
| Surface Profile Image [Plan View]: | | Surface Profile Image [End Elevation]: | |
|  | |  | |
| Sample Reference | | | |
| Laboratory Job No. | 12181/5468 | | Date Received |
| Sample Reference No. | Synthetic Turf | 5456 8437 | 02/02/2022 16/02/2023 |
| | Stabilising Infill | Stock Sand | - |
| | Shockpad | - | - |
| <p>Test Laboratories are required to store a reference sample of the tested product for a defined period. By checking the box opposite, we confirm that a 200x200mm sample has been placed in storage and will be retained as necessary.</p> | | <input checked="" type="checkbox"/> A sample of the tested product has been placed in storage and shall be retained as necessary. | |

| Performance Results Summary | | | | | |
|----------------------------------|------------------|---------------------|-------------|--|------------|
| Property | Test Method | Test Condition | Mean Result | Requirement | Pass/ Fail |
| Ball Rebound – Padel Tennis Ball | EN 12235: 2013 | DRY | 83 % | ≥ 80 % | PASS |
| | | WET | 81 % | | |
| Force Reduction | EN 14808: 2005 | DRY | 20 % (SA1) | Type SA1 15 - 24 % Type SA2 25 – 34 % | PASS |
| | | WET | 22 % (SA1) | | |
| Rotational Resistance - Dimpled | EN 15301–1: 2007 | DRY | 36 Nm | 25 – 50 Nm | PASS |
| | | WET | 29 Nm | | |
| Water Permeability | EN 12616: 2013 | Filled Turf | 902 mm/h | ≥ 500 mm/hr | PASS |
| | | Synthetic Turf only | 1109 mm/h | | |
| Wear Resistance | EN 13672: 2004* | Synthetic Turf only | 0.2 % | < 2 % loss after 2000 cycles | PASS |

(* note: these tests are outwith our scope of ISO 17025 Accreditation)

Synthetic Turf - Identification

| Test method | | Manufacturer's Declaration | Mean Result | Variation | Requirement | Pass/Fail |
|--------------|---|----------------------------|-----------------------------|-----------|-------------|-------------|
| Carpet Mass | ISO 8543: 1998 | 2833 g/m ² | 2677 g/m² | - 5.5 % | ≤± 10 % | PASS |
| No. of Tufts | ISO 1763: 1986 | 58000 /m ² | 60140 /m² | + 3.7 % | ≤± 10 % | |
| Gauge | ISO 1763: 1986 | 3/16" | 3/16" | Same | ≤± 10 % | |
| Stitch Rate | | 276 /m | 278 /m | + 0.7 % | ≤± 10 % | |
| Pile Length | ISO 2549: 1972 | 12 mm | 12 mm | 0 % | ≤± 5 % | |
| Pile Weight | ISO 8543: 1998 | 1660 g/m ² | 1520 g/m² | - 8.4 % | ≤± 10 % | |
| Pile Dtex | * EN 15330-1: 2013 - Section 4.8 Table 3 (Note b) | 8640 | 8150 | - 5.7 % | ≤± 10 % | |

(* note: these tests are outwith our scope of ISO 17025 Accreditation)

Synthetic Turf – Material Tests

| Test method | | Test Condition | Mean Result | Requirement | Pass/Fail |
|---|-----------------------------------|--------------------|-----------------------------|-----------------------------------|-----------|
| Tuft Withdrawal | ISO 4919: 2012 | Un-aged | 33 N | ≥ 30 N | PASS |
| | ISO 4919: 2012 & * EN 13744: 2004 | 14 Days Water Aged | 30 N | ≥ 30 N & ≥ 75 % of unaged | |
| Carpet Tensile Strength | * EN 13934–1: 2013 | Un-aged | Warp 33 N/mm | ≥ 15 N/mm and ≤ 30% difference | |
| | | | Weft 26 N/mm | | |
| Seam Strength – Peel (Method 2) | EN 12228: 2013 | Un-aged | 197 N/100mm ⁽¹⁾ | ≥ 60 N/100mm | |
| | EN 12228: 2013 & * EN 13744: 2004 | 14 Days Water Aged | 146 N/100mm ⁽¹⁾ | ≥ 60 N/100mm & ≥ 75 % of unaged | |
| Seam Strength – Direct Tension (Method 1) | EN 12228: 2013 | Un-aged | 2065 N/100mm ⁽¹⁾ | ≥ 1000 N/100mm | |
| | EN 12228: 2013 & * EN 13744: 2004 | 14 Days Water Aged | 1886 N/100mm ⁽¹⁾ | ≥ 1000 N/100mm & ≥ 75 % of unaged | |
| Wear Resistance | EN 13672: 2004* | 2000 cycles | 0.2 % | < 2 % loss after 2000 cycles | |

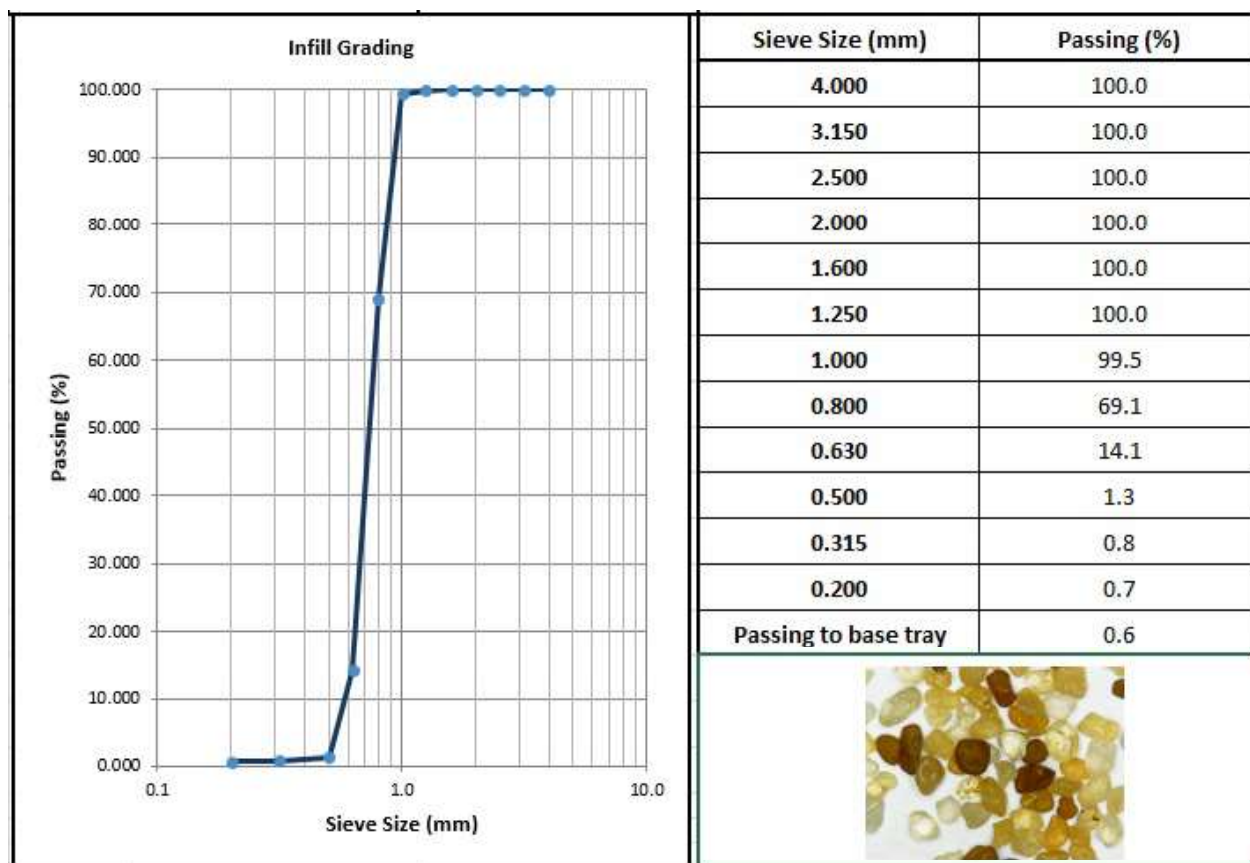
(* note: these tests are outwith our scope of ISO 17025 Accreditation)

(1) Joint Strength results extracted from Labosport IT test report 21-05055IT-B.

Stabilising Infill - Identification

| | |
|-------------------------|-------------------|
| Stabilising Infill Name | Silica Sand |
| Stabilising Infill Type | Clean, dried Sand |

Stabilising Infill – Material Tests



| Property | Test Method | Manufacturer's Declaration | Mean Result | Requirement | Pass/ Fail |
|--------------------|-----------------|----------------------------|-------------------------|-----------------------------|------------|
| Particle Size | EN 933-1: 2012 | 0.5 – 1.0 mm | 0.5 – 1.0 mm | Between 60 and 100% d and D | PASS |
| Particle Shape | EN 14955: 2005 | Rounded | C2 | Similar Shape | |
| Loose Bulk Density | EN 1097-3: 1998 | 1.50 kg/m ³ | 1.491 kg/m ³ | ≤± 15 % | |

Conclusion


The product submitted was tested in accordance with the methods and requirements outlined in UNE 147301: 2018. 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 consider the product supplied to have:

- ☒ Met all requirements of UNE 147301: 2018 for artificial grass surfaces for Padel Tennis
- ☐ Failed to meet some requirements of UNE 147301: 2018 for artificial grass surfaces for Padel Tennis

Sample Pictures



Manufacturer's Declaration



Rev. 013 del 3/11/22

ESPA.0050 PADEL TXT SOLUTION 12/58

SAFITEXX®

THE NEW GREEN

TECHNICAL DETAIL SHEET

| Product characteristics | Unit of measure | Data | Tolerance |
|--------------------------------|------------------------|-------------------------|------------------|
| Pile height | mm | 12 | +/- 5 % |
| Yarn length | mm | 33 | +/- 5 % |
| Gauge | | 3/16 | |
| Stitch rate for sqm | nr | 58.000 | +/- 10 % |
| Filaments for sqm | nr | 926.000 | +/- 10 % |
| Needles for sqm | | 21,00 | |
| Water permeability | l/h for sqm | 1000 L/H | |
| Total weight | gr/sqm | 2.633 | +/- 10 % |
| Roll width | m | 4,10 | +/- 1,00% |
| Rolls length | m | upon request | +/- 0,42% |
| Yarn characteristics | Unit of measure | Data | Tolerance |
| Yarn count | dtex | 8.640 | +/- 5 % |
| Thickness | micron | 175 | +/- 5 % |
| Composition | | 100% Polyethylene | |
| Yarn shape | | Monofilo testurizzato | |
| Color | | Blue | |
| Total yarn weight | gr/sqm | 1.660 | +/- 5 % |
| Backing characteristics | Unit of measure | Data | Tolerance |
| Primary backing composition | | Polypropylene/Polyester | |
| Primary backing weight | gr/sqm | 223 | +/- 6 % |
| Coating | | LATEX | |
| Weight of coating | gr/sqm | 950 | +/- 6 % |
| Infill recommendations | Unit of measure | Data | Tolerance |
| Silica sand | | | |
| Granulometry | mm | 0.2-0.4 | +/- 10 % |
| Apparent density | gr/cm3 | 1,50 | +/- 15 % |
| Friability | % | 20,00 | |
| Water permeability | cm/h | >50 | |
| Quantity | kg/sqm | 13 | +/- 5 % |

Safitex Turf srl reserves the right to modify the characteristics of the product at any time.
 The quantities of infill can vary according to the different types and characteristics of the materials used.
 It is advisable to carry out preliminary tests.
 Our technical office is available for any clarification.

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Test methods: ISO 8543, ISO 1763, ISO 2549
 Emesso dal D.T.

www.safitex.it

(* note: these tests are outwith our scope of ISO 17025 Accreditation)

Appendix A – Test Method, Equipment and Uncertainty Value Summary

| Test Method | | SL Equipment Number | Uncertainty Value |
|---------------------------------------|---|-----------------------------------|------------------------------------|
| Ball Rebound | EN 12235: 2013 | SL113, SL198, SL282, SL481 | (k=2.52) ± 2.21 % |
| Shock Absorption | EN 14808: 2005 | SL121, SL281, SL053 | (k=2.24) ± 2.13 % |
| Rotational Resistance | EN 15301–1: 2007 | SL098, SL194, SL224 | (k=2.11) ± 2.89 Nm |
| Water Permeability | EN 12616: 2013 | SL023, SL071, SL215 | (k=2.37) ± 14.3 % |
| Mass per unit area | ISO 8543: 2020 | SL093 | ± 8.9 g/m ² |
| Tufts per unit area | ISO 1763: 2020 | SL049 | ± 11.8 /m ² |
| Gauge and stitch rate | ISO 1763: 2020 | SL049 | ± 11.8 /m ² |
| Pile length above backing | ISO 2549: 1972 | SL049 | ± 0.76 mm |
| Pile Weight | ISO 8543: 2020 | SL093 | ± 8.4 g/m ² |
| Pile Dtex | * EN 15330-1: 2013 Section 4.8 Table 3 (Note b) | SL049, SL093 | ± 2.23 dtex |
| Tuft Withdrawal | ISO 4919: 2012 & * EN 13744: 2004 | SL178 | ± 5.1 % |
| * Colour (Tufted yarn) | * Visual (RAL) | SL204 | - |
| * Polymer Characterisation | * ISO 11357-3: 2013 | SL599 | ± 0.17 °C |
| Particle Size | EN 933–1: 2012 | SL160-169 | - |
| Particle Shape | EN 14955: 2005 | Visual, SL020 | - |
| Loose Bulk Density | EN 1097-3: 1998 | SL020, SL227 | (k=2.86) ± 0.004 Mg/m ³ |
| Thickness | EN 1969: 2000 | SL290 | (k=2.00) ± 0.14 mm |
| Shockpad Tensile | EN 12230: 2003 | SL178, SL084, SL479 | (k=2.87) ± 0.03 MPa |
| Joint Strength | EN 12228: 2013 & * EN 13744: 2004 | SL178, SL177 | (k=2.32) ± 7.05 N |
| * Carpet Tensile Strength | * EN 13934–1: 2013 | SL178 | - |
| * Yarn Tensile Strength | * EN 13864: 2004 | SL178 | - |
| * Resistance to Artificial Weathering | * EN 14836: 2018 & * EN 13864: 2004 | SL178, SL085, SL214, SL200, SL439 | - |
| * Colour Fastness (Grey-scale) | * EN 20105–A02 & * EN 14836: 2018 | SL085, SL214, SL200, SL439 | - |

END OF REPORT



TESTING TECHNOLOGY FOR SPORT