



**CLIENT:**

Company:	ForverLawn, Inc
Address:	8007 Beeson Road
	Louisville, OH 44641

**TEST MATERIAL:**

Date Material Received:	June 26, 2024
Surface Type:	Synthetic Turf w/ Infill System
Synthetic Turf Identification:	K9 Grass Endura
Infill System Installed:	None
Pad System Installed:	None

**TEST METHODS REQUESTED:**

Testing Services, Inc was instructed by the client to perform the following testing:			
Standard:	FIFA Section 17	Test Method:	Procedure for Simulated Mechanical Abrasion
Standard:	EN 15336	Test Method:	Surface for Sports Area, Exposure for Synthetic Turf to Simulated Wear (LISport)

**SAMPLING PLAN:**

Sampling Date:	6/26/24
<ul style="list-style-type: none"> <li>Specimen sampling is performed in the sampling department at TSI.</li> <li>The sampling size of specimens is determined by the test method requirements.</li> <li>In the event a specific sampling size is not called for, a determination will be made based on previous testing experience and approved for use by an authorized manager.</li> <li>All samples are subjected to the outside environmental conditions of temperature and relative humidity.</li> <li>Sample requiring pre-determined exposure to specified environmental conditions based on a specific test method, take place in the departments in which they are tested</li> </ul>	

**TEST EQUIPMENT:**

Wear Tester:	Dettec Manual 1.2m LISport
Model #:	Y2017 1701003
Date of Mfg:	1/2017
Dimensions:	3070mm X 1300mm

**TEST SCOPE:**

This procedure simulates high levels of athletic use of synthetic turf in an accelerated period of time under laboratory conditions. Two studded rollers were traversed to and fro over the infilled turf to produce mechanical action of the surface that occurs during normal use. This report details the effects of this mechanical action as it relates to degradation of the pile fiber. The client, commissioned TS to evaluate simulated wear of submitted finished synthetic turf, referenced above, with the use of an infill system. The results are indicative of mechanical wear only and do not take into account the effects of weathering, uv degradation, or use of the turf outside of competition.

**PROCEDURE:**

A test specimen, 560mm X 2438mm, was cut from the sample lot to be exposed to mechanical abrasion. The specimen was infilled with above listed infill. The rollers were positioned onto the surface of the system, with the pressure set automatically @ 1kg per cm. All speeds of the machine components were set in accordance with FIFA & CEN standards. The design of the machine ensures that the studs do not repeatedly impact the same spots.

The Lisport was then activated for 40,000 total cycles. The Lisport was stopped every 5,000 cycles and the pile fiber degradation was graded, the surface re-groomed, and displaced infill was reinstalled. Photos and fiber specimens were taken at each 5,000 increment.

**DEVIATION FROM TEST METHOD:**

State reason for any deviation from, additions to, or exclusions from test method:
None



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**TEST RESULTS:**

- A scale of 1 to 5 was used for descriptive evaluation of the pile fibers due to the effect of mechanical wear (Lisport) at each 5,000 cycle interval.
- The following is an explanation of the scale:

Rating	Description
1.0	None or Negligible
2.0	Slight
3.0	Moderate
4.0	Considerable
5.0	Severe

- The following was rated using the referenced rating scale: tuft loss, pile flattening, fiber splitting, and infill dispersion.

# of Cycles	Infill Dispersion	Tuft Loss	Pile Flattening/Compaction	Fiber Splitting
5,000	1.0-Negligible	1.0-None	1.0-Slight	1.0-None
10,000	1.0-Negligible	1.0-None	2.0-Moderate	1.0-None
15,000	1.0-Negligible	3.0-Negligible	2.0-Moderate	1.0-None
20,000	1.0-Negligible	3.0-Negligible	2.0-Moderate	1.0-None

**CONCLUSION:**

The exposed test specimen was returned to the client, if requested.

Based on the following "typical" use of the turf: 40 hours/per week, 50 weeks/per year or 2,000 hrs. of athletic competition, the Lisport wear would indicate at 20,000 cycles the equivalency of 8 years wear.

- Infill dispersion: Negligible for the duration of the exposure
- Tuft Loss: None to Negligible for the duration of the exposure
- Pile Flattening: Slight incrementally increasing to considerable/severe for the duration of the exposure
- Fiber Splitting: None incrementally increasing to moderate for the duration of the exposure



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Synthetic Turf Identification:	Playground Grass Endura
Infill System Installed:	None
Pad System Installed:	None

**APPENDIX A: Camera and Microscopic View of Fibers**

<p>After 5,000 Cycles of LiSport Exposure</p>	
<p>After 10,000 Cycles of LiSport Exposure</p>	
<p>After 15,000 Cycles of LiSport Exposure</p>	



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Surface Type:	Synthetic Turf w/ Infill System
Synthetic Turf Identification:	Playground Grass Apex
Infill System Installed:	None
Pad System Installed:	None

**APPENDIX A: Camera and Microscopic View of Fibers**

<p>After 20,000 Cycles of LiSport Exposure</p>	
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**Notes:**  
 We undertake all assignments for our clients on a best effort basis. Our findings and judgments are based on the information given to us using the latest test methods available. TSI can only ensure the test results for the specific items tested.  
 Unless otherwise noted in the deviation sections of this report, all tests are performed in compliance with the stated test method.

Test Report Approval:

Erie Miles, III, Lab Director Testing Services (TSI) LLC

**TSI Accreditation:** Our Laboratory is accredited by NVLAP (Lab Code 100108-0), which is part of NIST and the US Dept of Commerce. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, and any agency of the U.S. Government. The above testing is under the scope of our NVLAP accreditation. Testing Services LLC is a scientific body member of ISSS (International Sports Surface Science Society) and a member of the Synthetic Turf Council (STC).

