



SUBMITTAL FOR

Multi-Purpose Recreation Fields & Regional Stormwater Treatment System Project
Portsmouth, NH

Product: Synthetic Grass Infill System – Product Data

Date of Initial Submission: 10/7/2020
Date of Resubmission: 11/23/2020

Specification/Item #: 02790

Subcontractor/Supplier/Manufacturer: Fieldturf

PLEASE MARK BELOW WITH REVIEW & ACTION STAMP.

- 1.02F4 – Synthetic Grass & Certified Test Results
- 2.02B8 – Safeshell Infill
- Testing data provided is from a similar installation/project.
- Samples submitted separately

<i>QUIRK CONSTRUCTION CORP.</i>			
Job #	<u>000771</u>	Submittal #	<u>02790-03r1</u>
Date:	<u>11/23/2020</u>	Checked by:	<u>JW</u>

Testing update specific to Portsmouth shall be provided following the installation of the turf.

SUBMITTAL REVIEW

1 FURNISH AS SUBMITTED 3 REVISE AND RESUBMIT
2 FURNISH AS NOTED 4 REJECTED

This submittal has been reviewed for general conformance with the plans and specifications for this project. Corrections, comments and/or clarifications noted shall not relieve the contractor from coordinating and correlating all dimensions and quantities, selections of construction techniques, coordinating the work of its forces and the other trades, and performance of the work in a safe and satisfactory manner.

WESTON & SAMPSON ENGINEERS, INC.

Date 12-01-2020 By *G. J. [Signature]*

TECHNICAL PRODUCT SPECIFICATION

VERTEX



MONOFILAMENT/SLIT-FILM 2"

PROPERTY	VALUE	UNITS	METHOD
Product Stock Code	FTVT-50-4620		
Pile Yarn Type	UV-resistant polyethylene		n/a
Yarn Structure 1	Ridged Monofilament		n/a
Yarn Denier 1	12000	Denier	D1577
Tape Thickness 1	360	Microns	
Yarn Structure 2	Slit-Film		
Yarn Denier 2	5000	Denier	D1577
Tape Thickness 2	100+	Microns	
Pile Height	OK 2	inches	D5823
Pile Weight	OK 44	oz/yd ²	D5848
Primary Backing Weight	7+	oz/yd ²	D5848
Secondary Backing Weight (Perforated)	OK 20	oz/yd ²	D5848
Total Carpet Weight	OK 71	oz/yd ²	D5848
Stitch Gauge	3/4 inch centers		D5793
Tuft Bind	8+	lbs/force	D1335
Grab Tear Length	>200	lbs/force	D5034
Grab Tear Width	>200	lbs/force	D5034
Pill Burn Test	Pass		D2859
Impact Attenuation (Gmax)	<200	gmax	F1936
Water Permeability	>40	inch/hour	DIN 18-035
Shockpad	OK PP20	Schmitz Foam Products, ProPlay-Sport 20	


Issue Date: 11/18/2020

Disclaimer: Variation of +/-5% on above listed property values is within normal manufacturing tolerances



TEST SUMMARY

CLIENT:

 <p style="font-size: small;">THE ULTIMATE SURFACE EXPERIENCE</p>	Report Number:	80711R
	Lab Test Number:	3208-3950—3960
	Test Completion Date:	7/31/2020
	Report Date:	7/31/2020
	Page:	1 of 4
	Requested by:	Tanner Holloway

TEST MATERIAL:

Material Type:	Synthetic Turf	Date Received:	7/9/2020								
Material Condition:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">EXCELLENT:</td> <td style="width: 25%;">XXX</td> <td style="width: 25%;">GOOD:</td> <td style="width: 25%;">POOR:</td> </tr> <tr> <td style="text-align: center;">REJECTED:</td> <td></td> <td></td> <td></td> </tr> </table>	EXCELLENT:	XXX	GOOD:	POOR:	REJECTED:					
EXCELLENT:	XXX	GOOD:	POOR:								
REJECTED:											
Project:	Woodinville Fields Carol Edwards Center – 00016626										
Product ID:	32086-FTVT50-XM7-42-SG, 32085-FTVT50-XM7-42-FG										
Job #	01031526-32086-FTVT50-XM7-42SG, 01031527-FTVT50-XM7-42-FG										
Infill:	Bottom Layer: 4.5 lbs/ft ² 20/40 Silica Sand, Top Layer: 1.1 lbs/ft ² Cork/Purefill										
Pad:	Thermagreen SportLite™ 20mm										

TESTING METHODS REQUESTED:

<i>Testing Services Inc. was instructed by the client to test for the following...</i>			
Standard:	FTIR	Test Method:	Fourier Transform Spectroscopy, Fiber ID
Standard:	ASTM F1551	Test Method:	Standard Test Method for Comprehensive Characterization of Synthetic Turf Placing Surfaces and Materials, Suffix DIN 18-035, Part 6: Water Permeability of Synthetic Turf Systems and Permeable Bases
Standard:	ASTM D2859	Test Method:	Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
Standard:	ASTM D5848	Test Method:	Standard Test Method for Mass Per Unit Area of Pile Yarn Floorcoverings
Standard:	ASTM D5823	Test Method:	Standard Test Method for Tuft Height of Pile Yarn Floorcoverings
Standard:	ASTM D1335	Test Method:	Standard Test Method for Tuft Bind of Pile Yarn Floorcoverings
Standard:	ASTM D5034	Test Method:	Standard Test Method for Breaking Strength of Textile Fabrics (Grabs)

SAMPLING PLAN:

Sampling Date:	7/6/2020
<ul style="list-style-type: none"> Specimen sampling is performed in the sampling department at TSI. The sampling size of specimens is determined by the test method requirements. 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. All samples are subjected to the outside environmental conditions of temperature and relative humidity. 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 	

DEVIATION FROM TEST METHOD:

State reason for any Deviation from, Additions to, or Exclusions From Test Method.
None

TEST SUMMARY:

Ribbon					
TEST METHOD	TEST DESCRIPTION	TEST RESULTS – Lab # 3950 – Rust		Product Minimum Specifications per City of Woodinville Bid	Specification Results
		Slit Film	Monofilament		
FTIR	Yarn Fiber ID	Polyethylene	Polyethylene	Polyethylene	Pass

*Performance					
TEST METHOD	TEST DESCRIPTION	TEST RESULTS – Lab # 3951 – Green		Product Minimum Specifications per City of Woodinville Bid	Specification Results
		Slit Film	Monofilament		
FTIR	Yarn Fiber ID	Polyethylene	Polyethylene	Polyethylene	Pass

TEST SUMMARY:

TEST METHOD	TEST DESCRIPTION	TEST RESULTS	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM F1551-09; Suffix 30	Water Permeability	75.4 inches/hour	>20 inches/hour (Turf/Infill only)	Pass
ASTM F1551-09; Suffix 30	Water Permeability	96.3 inches/hour	N/A (Pad only)	N/A

TEST SUMMARY:

Construction Analysis					
TEST METHOD	TEST DESCRIPTION	TEST RESULTS		Product Minimum Specifications per City of Woodinville Bid	Specification Results
		Extra Rust Roll, No roll #	Lab # 3208-3950		
ASTM D5848-20	Total Product Weight	76.28 oz/yd ²		>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	51.19 oz/yd ²		38-46 oz/yd ²	Exceeds Spec
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²		7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	17.04 oz/yd ²		16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"		2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	14.4 lbs/force		8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	212 lbs/force		200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	311 lbs/force		200 lbs/force	Exceeds Spec


7/31 Updated test report to include FTIR results.

OUR LETTERS AND REPORTS APPLY ONLY TO THE SAMPLE TESTED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS. THESE LETTERS AND REPORTS ARE FOR THE USE ONLY OF THE CLIENT TO WHOM THEY ARE ADDRESSED AND THEIR COMMUNICATION TO ANY OTHERS OR THE USE OF THE NAME TESTING SERVICES, INC. MUST RECEIVE OUR PRIOR WRITTEN APPROVAL. OUR REPORTS, LETTERS, NAME, SEALS, OR INSIGNIA ARE NOT UNDER ANY CIRCUMSTANCES TO BE USED IN ADVERTISING TO THE GENERAL PUBLIC.

817 Showalter Ave
Dalton, GA 30722
(706) 226-1400
tsioffice@optilink.us

TEST SUMMARY

CLIENT:

 <p>FieldTurf A Tarkett Sports Company</p>	<p>THE ULTIMATE SURFACE EXPERIENCE</p>	Report Number:	80711
		Lab Test Number:	3208-3950—3960
		Test Completion Date:	7/31/2020
		Report Date:	7/31/2020
		Page:	2 of 4
		Requested by:	Tanner Holloway

TEST MATERIAL:

Material Type:	Synthetic Turf	Date Received:	7/9/2020
Material Condition:	EXCELLENT: XXX GOOD: POOR: REJECTED:		
Project:	Woodinville Fields Carol Edwards Center – 00016626		
Product ID:	32086-FTVT50-XM7-42-SG, 32085-FTVT50-XM7-42-FG		
Job #	01031526-32086-FTVT50-XM7-42SG, 01031527-FTVT50-XM7-42-FG		
Infill:	Bottom Layer: 4.5 lbs/ft ² 20/40 Silica Sand, Top Layer: 1.1 lbs/ft ² Cork/Purefill		
Pad:	Thermagreen SportLite™ 20mm		

TEST SUMMARY:

Construction Analysis

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 6 Lab # 3208-3951	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	69.39 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.08 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	19.25 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	12.4 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	217 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	318 lbs/force	200 lbs/force	Exceeds Spec

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 12 Lab # 3208-3952	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	68.58 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.10 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	18.42 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	13.0 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	208 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	307 lbs/force	200 lbs/force	Exceeds Spec

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 18 Lab # 3208-3953	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	68.72 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.05 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	18.61 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	12.5 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	212 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	291 lbs/force	200 lbs/force	Exceeds Spec


TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 24 Lab # 3208-3954	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	68.59 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.17 oz/yd ²	38-46 oz/yd ²	Exceeds Spec
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	18.36 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	13.2 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	226 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	312 lbs/force	200 lbs/force	Exceeds Spec

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TEST SUMMARY

CLIENT:

	Report Number:	80711
	Lab Test Number:	3208-3950—3960
	Test Completion Date:	7/31/2020
	Report Date:	7/31/2020
	Page:	3 of 4
	Requested by:	Tanner Holloway

TEST MATERIAL:

Material Type:	Synthetic Turf	Date Received:	7/9/2020
Material Condition:	EXCELLENT: XXX GOOD:	POOR:	REJECTED:
Project:	Woodinville Fields Carol Edwards Center – 00016626		
Product ID:	32086-FTVT50-XM7-42-SG, 32085-FTVT50-XM7-42-FG		
Job #	01031526-32086-FTVT50-XM7-42SG, 01031527-FTVT50-XM7-42-FG		
Infill:	Bottom Layer: 4.5 lbs/ft ² 20/40 Silica Sand, Top Layer: 1.1 lbs/ft ² Cork/Purefill		
Pad:	Thermagreen SportLite™ 20mm		

TEST SUMMARY:

Construction Analysis

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 42 Lab # 3208-3955	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	73.20 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.14 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	23.00 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	13.5 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	249 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	283 lbs/force	200 lbs/force	Exceeds Spec

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 48 Lab # 3208-3956	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	68.91 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.03 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	18.82 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	15.6 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	232 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	293 lbs/force	200 lbs/force	Exceeds Spec

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 54 Lab # 3208-3957	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	69.59 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.16 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	19.37 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	16.4 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	255 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	310 lbs/force	200 lbs/force	Exceeds Spec


TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 60 Lab # 3208-3958	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	69.82 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.00 oz/yd ²	38-46 oz/yd ²	Exceeds Spec
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	19.76 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	15.2 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	265 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	267 lbs/force	200 lbs/force	Exceeds Spec

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CLIENT:

 <p>THE ULTIMATE SURFACE EXPERIENCE</p>	Report Number:	80711
	Lab Test Number:	3208-3950—3960
	Test Completion Date:	7/31/2020
	Report Date:	7/31/2020
	Page:	4 of 4
	Requested by:	Tanner Holloway

TEST MATERIAL:

Material Type:	Synthetic Turf	Date Received:	7/9/2020
Material Condition:	EXCELLENT: XXX GOOD:	POOR:	REJECTED:
Project:	Woodinville Fields Carol Edwards Center – 00016626		
Product ID:	32086-FTVT50-XM7-42-SG, 32085-FTVT50-XM7-42-FG		
Job #	01031526-32086-FTVT50-XM7-42SG, 01031527-FTVT50-XM7-42-FG		
Infill:	Bottom Layer: 4.5 lbs/ft ² 20/40 Silica Sand, Top Layer: 1.1 lbs/ft ² Cork/Purefill		
Pad:	Thermagreen SportLite™ 20mm		

TEST SUMMARY:

Construction Analysis

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 66 Lab # 3208-3959	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	68.89 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.05 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	18.78 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	15.3 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	243 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	286 lbs/force	200 lbs/force	Exceeds Spec

TEST METHOD	TEST DESCRIPTION	TEST RESULTS Roll # 78 Lab # 3208-3960	Product Minimum Specifications per City of Woodinville Bid	Specification Results
ASTM D5848-20	Total Product Weight	69.64 oz/yd ²	>63 oz/yd ²	Exceeds Spec
ASTM D5848-20	Pile Yarn Weight	42.11 oz/yd ²	38-46 oz/yd ²	Pass
ASTM D5848-20	Primary Backing Weight	8.06 oz/yd ²	7.0+ oz/yd ²	Pass
ASTM D5848-20	Secondary Backing Weight	19.47 oz/yd ²	16.0+ oz/yd ²	Pass
ASTM D5823-19	Average Pile Height	2.0"	2.0"	Pass
ASTM D1335-17e1	Average Tuft Bind Strength	15.1 lbs/force	8.0 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Length)	245 lbs/force	200 lbs/force	Exceeds Spec
ASTM D5034-09(2017)	Average Grab Tear Strength (Width)	278 lbs/force	200 lbs/force	Exceeds Spec

Uncertainty:

We undertake all assignments for our clients on a best effort basis. Our findings and judgments are based on the information 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 deviations sections of this report, all tests are performed in compliance with stated test method.

Test Report Approval:



100108-0

Erlé Miles, III, Lab Director Testing Services Inc.

TSI Accreditation:

Our laboratory is accredited by the US Dept. of Commerce, National Institute of Standards and Technology: ISO/IEC 17025:2005. Our code # is: NVLAP 100108-0. TSI is a certified independent testing laboratory by the Synthetic Turf Council

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SAFESHELL TECHNICAL DATA SUMMARY

Safeshell is a natural infill crafted from 100% USA-Grown, allergen-free walnut shells.

PHYSICAL PROPERTIES

	Bulk Density	Size Range	Specific Gravity	Allergen Level	Micro-Deval ASTM D6928-10	Absorption ASTM C127	Swell % ASTM D4546	Roundness	Sphericity
Safeshell	44 lbs/ft ³ (705 kg/m ³)	8-20 (2.38mm - 0.841mm)	1.3	<2.4ppm	2.1%	21.3%	0.00%	0.6+	0.6+

Packaging: 2,000lb (907kg) supersacks. Also available in 25lb (11.4kg) bags, 60 bags per pallet.

100% PERCENT GROWN AND PROCESSED IN THE UNITED STATES.

ENVIRONMENTAL PERFORMANCE*

Heavy Metal Analysis			Carcinogenic Review	Flammability	Surface Temperature In same turf, heated for 3 hours		
ASTM F3188 (US Heavy Metal Test)	EN71-3 (EU Toy Standard)	CAM17 (California Title 22 Metals)	California Prop 65	PILL BURN	Wet Safeshell	Dry Safeshell	Dry SBR
PASS	PASS	PASS	PASS	PASS	113°F (30% cooler than SBR)	146°F (10% cooler than SBR)	162°F

PERFORMANCE

Recommended System Performance Data

Turf: Monofilament / slit film 1.75" | 46oz face weight

Infill: 5.0lbs± Round Sand | 1.5lbs± Safeshell

Pad: ProPlay 23, Brock SP14+

Performance Data* (as reported by SportsLabs Report No 91900/1988)

	Force Reduction (%)	Vertical Deformation (mm)	Energy Restitution (%)	355A "Flat" Gmax	Critical Fall Height (m)	Rotational Resistance (Nm)	Ball Rebound (m)	Infiltration (in/hr)	Abrasion Index
Score:	60	6.2	36	115	1.5	36	0.95	87	24
Desired Range:	57-68	4-11	<35	85-125	≥1.3	27-48	0.6-1.0	≥14	

Test results above were conducted with ProPlay 23 over concrete.

* Formal results for these tests are available upon request.

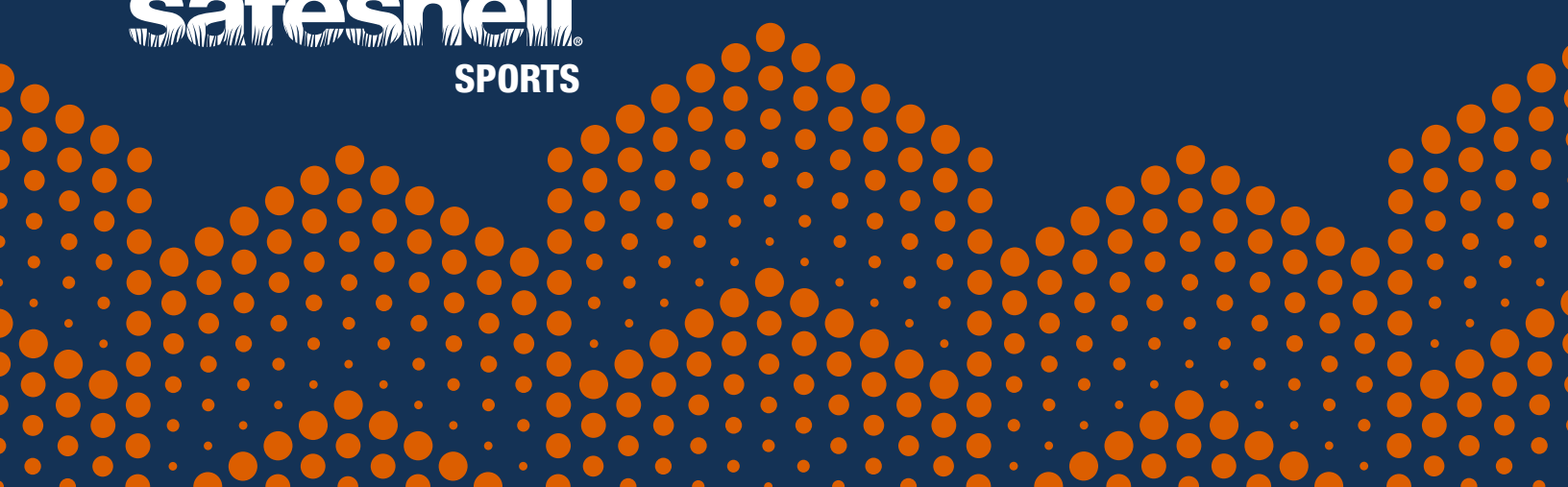


USGreentech

EVERYTHING YOU LOVE ABOUT A NATURAL INFILL.

Without the hassle.

safeshell
SPORTS



A NATURAL PRODUCT That's Also Low Maintenance



“ In the first six months, Safeshell has lived up to our expectations as being low-maintenance, durable, and safe. ”
-Keith Estey, The Wheeler School

Safeshell® is the low maintenance organic infill option made of 100% USA-grown walnut shells. Through a patent-pending process, the residual allergens from the nut are thoroughly removed from Safeshell. Safeshell excels at reducing surface heat, creating a firm and fast surface, and ensures peace of mind for all.

Benefits



Low maintenance. Unlike other organic infills, Safeshell stays in place, doesn't breakdown and doesn't change in hot or wet climates. The round shape of each grain helps resist compaction. It doesn't float and plays the same wet or dry.

Naturally durable. The most durable natural infill, Safeshell is made from one of the most dense nut shells on the planet so you won't have to worry about this product breaking down. It doesn't float which means there will be limited migration of the product and it will stay in place. With the 8-year warranty and limited top-off required, you'll be able to always depend on Safeshell.

Cooler temperatures. Safeshell excels at evaporative cooling - the key to a cooler playing surface. Safeshell absorbs water with minimal expansion and then releases it slowly over time to help keep surfaces from heating up too quickly. No water? That's okay, even dry, Safeshell plays cooler than crumb rubber.

Safe. We use a chemical-free process that eliminates residual allergens which remain on the shell after separation of shell from nut. This patent-pending process reduces allergens by 99.9% which is below the FDA limits for allergen-free foods. We partner with an ISO-certified, third-party lab to constantly verify the results.

Safeshell is a 100% natural and domestically-sourced walnut product.



www.safeshellinfill.com

Contact us today at: 800.548.0402

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