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# FIFA LABORATORY TEST REPORT

Test manual 2015  
01.01.2015

Product	Purefield Ultra HD ProPlay 20
FIFA Licensee	FieldTurf Inc.
Test Institute	Ghent University (ERCAT)

Test Number	44824
External Test Number	18-0310-04
Date of Test	15.03.2018
Test Result	Passed
Quality Level	FIFA Quality
Test Type	Initial



## Licensee

### Main Address

Name	FieldTurf Inc.
Address	7445 Cote-de-Liesse Rd, Suite 200
ZIP / City	H4T 1G2 / MONTREAL, QUEBEC
Website	www.fieldturf.com
Contact Email	
Contact Phone	

## Test institute

### Main Address

Name	Ghent University (ERCAT)
Address	Department of Textiles Technologiepark 907
ZIP / City	9052 / ZWIJNAARDE
Website	
Contact Email	
Contact Phone	

## Approval

Test Institute Director	Prof. Dr. Paul Kiekens
Signature	
Date	05.04.2018
Test Institute Engineer	Kristof Lannoo
Signature	
Date	05.04.2018



## 1 – Test Results

Name	Comment	Result
<b>1 - Summary</b>		
Vertical ball rebound FIFA Quality		Passed
Angeled ball rebound FIFA Quality		Passed
Reduced ball roll FIFA Quality		Passed
Shock absorption FIFA Quality		Passed
Deformation FIFA Quality		Passed
Rotational resistance FIFA Quality		Passed
Skin / surface friction		Passed
Skin abrasion		Passed
<b>1 - Test Details   Object</b>		
Product Name		FieldTurf Purefield Ultra HD PROPLAY 20
Product ID		FieldTurf Purefield Ultra HD PROPLAY 20
Synthetic Turf System		FieldTurf Purefield Ultra HD
Performance infill		/
Stabilising infill		Silica Sand
Shock-pad or elastic layer		Proplay 20
Sub-base composition		Rigid engineered base
<b>2 - Test Details   Test Institute</b>		
Date(s) of test		15.03.2018
Report created by		Kristof Lannoo
Other Test Engineer on site		
Laboratory Test report number		18-0310-04
Test Institute Project number		
<b>3 – Product Declaration (Manufacturer)</b>		
Manufacturer		FieldTurf Tarket
Tuft pattern		Straight
Yarn manufacturer   yarn 1		Morton
Product name, code   yarn 1		F12 GRE
Pile yarn profile   yarn 1		See details below
Pile thickness (µ m)   yarn 1		130.0
Pile colour (RAL)   value 1   yarn 1		6025
Pile colour (RAL)   value 2   yarn 1		





Name	Comment	Result
Pile colour (RAL)   value 3   yarn 1		
Pile width (mm)   yarn 1		11.00
Number of tufts/m2   yarn 1	ISO1773	17848.00
Pile length (mm)   yarn 1	ISO 2549	30.00
Pile weight (g/m2)   yarn 1	ISO 8543	2526.00
Pile yarn characterization   yarn 1		PE
Pile yarn dtex   yarn 1		13000
Yarn manufacturer   yarn 2		Morton
Product name, code   yarn 2		ULS OLI, ULS GRE
Pile yarn profile   yarn 2		See details below
Pile thickness (μ m)   yarn 2		320.0
Pile colour (RAL)   value 1   yarn 2		6013-O
Pile colour (RAL)   value 2   yarn 2		6025-G
Pile colour (RAL)   value 3   yarn 2		
Pile width (mm)   yarn 2		1.00
Number of tufts/m2   yarn 2	ISO1773	
Pile length (mm)   yarn 2	ISO 2549	30.00
Pile weight (g/m2)   yarn 2	ISO 8543	
Pile yarn characterization   yarn 2		PE
Pile yarn dtex   yarn 2		8000.0
Yarn manufacturer   yarn 3		
Product name, code   yarn 3		
Pile yarn profile   yarn 3		
Pile thickness (μ m)   yarn 3		
Pile colour (RAL)   value 1   yarn 3		
Pile colour (RAL)   value 2   yarn 3		
Pile colour (RAL)   value 3   yarn 3		
Pile width (mm)   yarn 3		
Number of tufts/m2   yarn 3	ISO1773	
Pile length (mm)   yarn 3	ISO 2549	
Pile weight (g/m2)   yarn 3	ISO 8543	
Pile yarn characterization   yarn 3		
Pile yarn dtex   yarn 3		
Primary backing   Product name, code		R3
Primary backing   Manufacturer		Carpet Backing
Re-enforcement scrim   Product name, code		
Re-enforcement scrim   Manufacturer		



Name	Comment	Result
Secondary backing   Product name, code		Latex
Secondary backing   Manufacturer		EOC
Secondary backing   Dry application rate (g/m <sup>2</sup> )		1100.0
Carpet   Minimum tuft withdrawel force (N)		30
Carpet   Carpet mass per unit area (g/m <sup>2</sup> )		3931.0
Method of jointing		Bonded Joints
Bonded joints   Adhesive brand name		R202
Bonded joints   Adhesive manufacturer		STAUF (Multiple Suppliers)
Bonded joints   Application rate (g/m)		600
Bonded joints   Jointing film brand name		M136
Bonded joints   Jointing film manufacturer		King Sports
Stitched seams   Tread brand name/product code		
Stitched seams   Tread manufacturer		
Stitched seams   Stitch rate (stitch per 1m)		
Performance Infill   Product name, code		/
Performance Infill   Manufacturer		/
Performance Infill   Material type		/
Performance Infill   Material grading		/
Performance Infill   Particle shape	prEN 14955	/
Performance Infill   Particle size range	EN 933-Part 1	0
Performance Infill   Bulk density (g/cm <sup>3</sup> )	EN 1097-3	0.000
Performance Infill   Application rate (kg/m <sup>2</sup> )		0.0
Stabilising Infill   Product name, code		Silica Sand
Stabilising Infill   Manufacturer		Various
Stabilising Infill   Material type		Silica Sand
Stabilising Infill   Material grading		0.315-1mm
Stabilising Infill   Particle shape	prEN 14955	Rounded



Name	Comment	Result
Stabilising Infill   Particle size range	EN 933-Part 1	0.315-1mm
Stabilising Infill   Bulk density (g/cm <sup>3</sup> )	EN 1097-3	1.40
Stabilising Infill   Application rate (kg/m <sup>2</sup> )		13.0
Shockpad, E-layer   Product name, code		Proplay 20
Shockpad, E-layer   Manufacturer		Schmitz Foam
Shockpad, E-layer   Type		Prefabricated shockpad
Shockpad, E-layer   Composition		Thermal bound cross linked Polyethene foam
Shockpad, E-layer   Bulk density (g/cm <sup>3</sup> )		
Shockpad, E-layer   Thickness	EN 1979	20.0
Shockpad, E-layer   Shock absorption (%)	FIFA 4a	56.0
Shockpad, E-layer   Deformation	FIFA 5a	5.3
Shockpad, E-layer   Tensile strength (N)		0.26
Shockpad, E-layer   Mass per unit area (kg/m <sup>2</sup> )		3.0
Other, detail		
<b>4 – Product Identification</b>		
Artificial Turf   Carpet mass per unit area [g/m <sup>2</sup> ]		4281
Artificial Turf   Tufts per unit area [m <sup>2</sup> ]		17735
Artificial Turf   Pile length above backing [mm]		31.0
Artificial Turf   Pile weight [g/m <sup>2</sup> ]		2369
Artificial Turf   Water permeability of carpet [mm/h]		>2000
Artificial Turf   Free pile height		20
Performance infill   Particle size range [mm]		/
Performance infill   Particle shape		/
Performance infill   Bulk density [g/cm <sup>3</sup> ]		0.000
Performance infill   Infill depth [mm]		0
Performance infill   Thermographic analysis   organic [%]		0



Name	Comment	Result
Performance infill   Thermographic analysis   inorganic [%]		0
Stabilising infill   Particle size range [mm]		0.315-0.8
Stabilising infill   Particle shape		C2
Stabilising infill   Bulk density [g/cm <sup>3</sup> ]		1.48
Shock pad / E-layer   Shock absorption [%]	if part of supplied system	58.0
Shock pad / E-layer   Deformation	if part of supplied system	6.5
Shock pad / E-layer   Thickness	if part of supplied system	20.0
Other, detail		
<b>5 – Test Results   Ball / Surface interaction</b>		
Vertical Ball Rebound   Initial   Dry (Quality)	0.6 - 1m	0.81
Vertical Ball Rebound   Initial   Wet (Quality)	0.6 - 1m	0.81
Vertical Ball Rebound   after simulated wear   6'000 cycles (5*)	0.6 - 1m	0.84
Vertical Ball Rebound   after simulated wear   6'000 cycles (20*)	0.6 - 1m	
Angeled Ball Rebound   Dry	45 - 80 %	57
Angeled Ball Rebound   Wet	45 - 80 %	77
Reduced Ball Roll   Initial   Dry (Quality)	4 - 10 m	7.6
Reduced Ball Roll   after simulated wear   6'000 cycles (5*)   Dry	4 - 12 m	9.3
Reduced Ball Roll   after simulated wear   6'000 cycles (5*)   Wet	4 - 12 m	10.5
Reduced Ball Roll   after simulated wear   6'000 cycles (20*)   Dry	4 - 12 m	
Reduced Ball Roll   after simulated wear   6'000 cycles (20*)   Wet	4 - 12 m	
Shock absorption   Initial   Dry (Quality)	57 - 68 %	59.0
Shock absorption   Initial   Wet (Quality)	57 - 68 %	58.0
Shock absorption   after simulated wear   6'000 cycles (5*)	57 - 68 %	59.0



Name	Comment	Result
Shock absorption   after simulated wear   6'000 cycles (20*)	57 - 68 %	
Shock absorption   50°C	57 - 68 %	60.00
Shock absorption   -5°C	57 - 68 %	59.00
Deformation   Initial   Dry (Quality)	6 - 11 m	7.4
Deformation   Initial   Wet (Quality)	6 - 11 m	8.3
Deformation   after simulated wear   6'000 cycles (5*)	6 - 11 m	7.5
Deformation   after simulated wear   6'000 cycles (20*)	6 - 11 m	
Rotational Resistance   Initial   Dry (Quality)	27 - 48 Nm	32
Rotational Resistance   Initial   Wet (Quality)	27 - 48 Nm	31
Rotational Resistance   after simulated wear   6'000 cycles (5*)	27 - 48 Nm	34
Rotational Resistance   after simulated wear   6'000 cycles (20*)	27 - 48 Nm	
Skin / surface friction   Dry	0.35 - 0.75 $\mu$	0.74
Skin abrasion   Dry	$\pm$ 30 %	25
Other, detail		
<b>6 – Environmental impact (artificial, light, water)</b>		
Pile yarn 1   Colour change   after artificial weathering	$\geq$ Grey scale 3	4
Pile yarn 2   Colour change   after artificial weathering	$\geq$ Grey scale 3	4-5
Pile yarn 3   Colour change   after artificial weathering	$\geq$ Grey scale 3	4-5
Pile yarn 1   Yarn tensile strength   after artificial weathering	Change $\leq$ 50 %	5
Pile yarn 2   Yarn tensile strength   after artificial weathering	Change $\leq$ 50 %	-3
Pile yarn 3   Yarn tensile strength   after artificial weathering	Change $\leq$ 50 %	-12
Polymeric infill   Colour change   after artificial weathering	$\geq$ Grey scale 3	no polymeric infill
Polymeric infill   Visual change in composition   after artificial weathering	No change	no polymeric infill
Complete system   Water permeability	> 180 mm/h	2000
Stitched joints   Strength   un-aged	$\geq$ 1000N/100mm	
Stitched joints   Strength   water aged	$\geq$ 1000N/100mm	



Name	Comment	Result
Bonded joints   Strength   un-aged	$\geq 75/100\text{mm}$	113
Bonded joints   Strength   water aged	$\geq 75/100\text{mm}$	111
Carpet tuft   Withdrawal force   un-aged	$\geq 30\text{N}$	48
Carpet tuft   Withdrawal force   water aged	$\geq 30\text{N}$	40
Heat   Category	for information	2
Splash   Characteristics	for information	<1.5
<b>7 - Miscellaneous (shock pad, sub-base - if part of the system)</b>		
Shock Pad / E-layer   tensile strength   un-aged	$\geq 0.15 \text{ MPa}$	0.23
Sub-base   Composition		
Sub-base   Particle size range		
Sub-base   Particle shape		
Sub-base   Thickness		
Sub-base   Compaction & test method		
Other, detail		



## 2 – Test Images

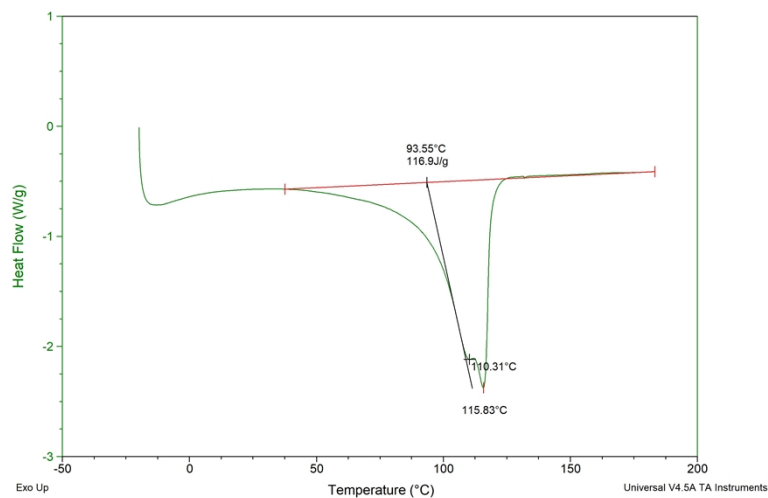
DSC Diff. Scan. Colorimetry scans of pile yarn



Sample: 18-0310 Fibrilated  
Size: 5.4360 mg  
Method: methode kunstgras FIFA

DSC

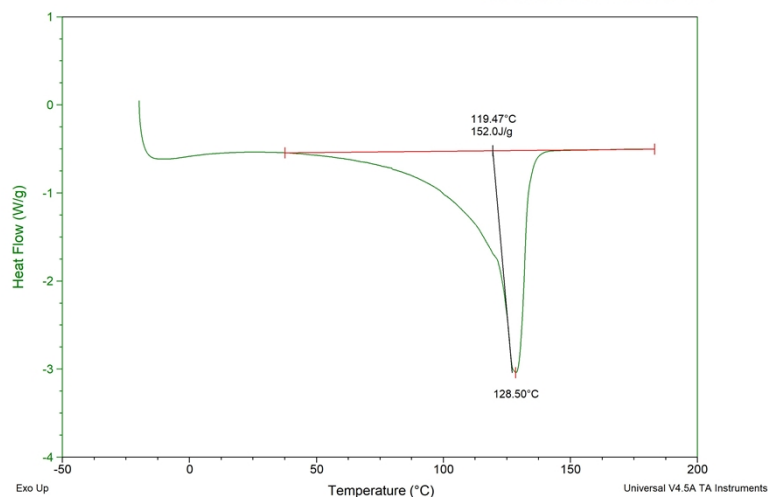
File: V:\...\DSC\GV\18-0310 Fibrilated.001  
Operator: GV  
Run Date: 06-Apr-2018 08:21  
Instrument: DSC Q2000 V24.11 Build 124



Sample: 18-0310 Monofilament Dark green  
Size: 4.8820 mg  
Method: methode kunstgras FIFA

DSC

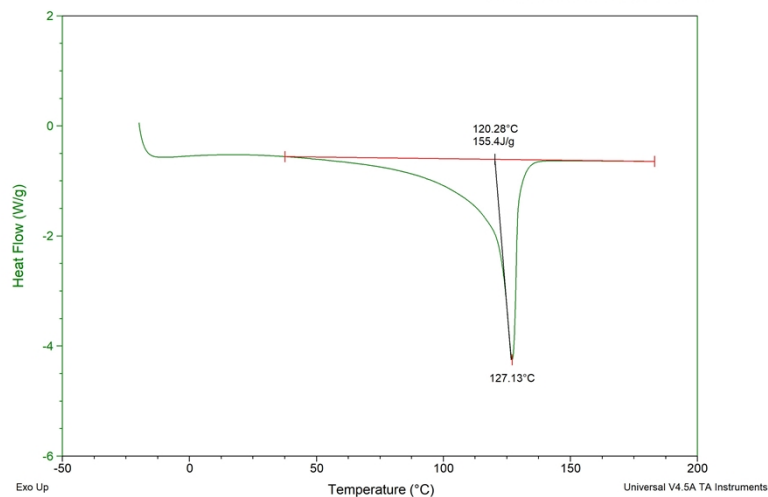
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Operator: GV  
Run Date: 06-Apr-2018 09:10  
Instrument: DSC Q2000 V24.11 Build 124



Sample: 18-0310 Monofilament Olive green  
Size: 5.1600 mg  
Method: methode kunstgras FIFA

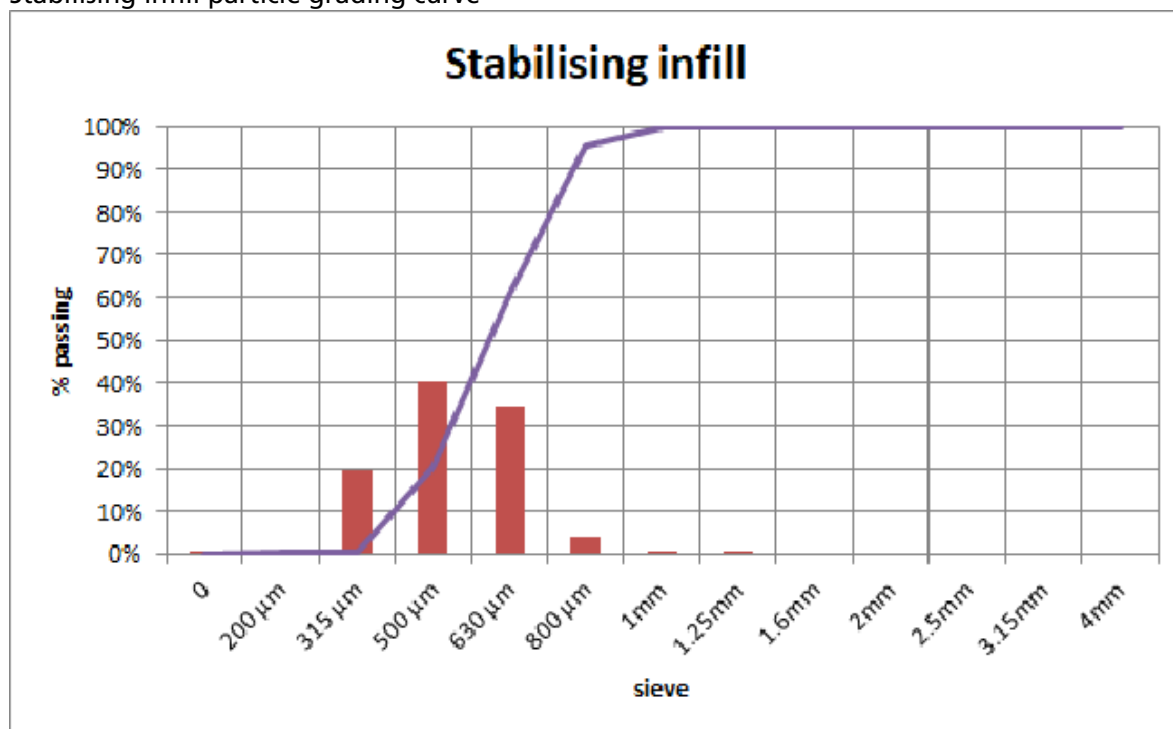
DSC

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Instrument: DSC Q2000 V24.11 Build 124

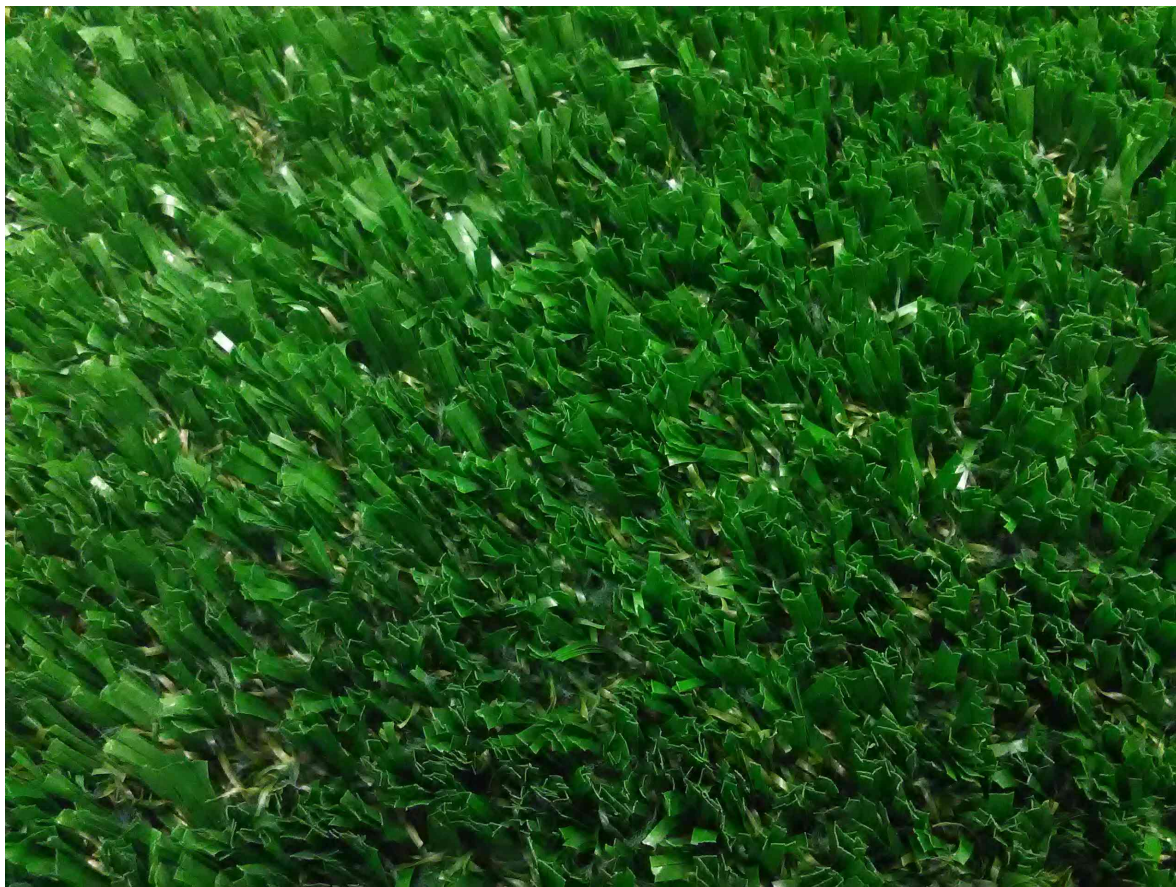




Stabilising infill particle grading curve



Simulated wear - Before 1

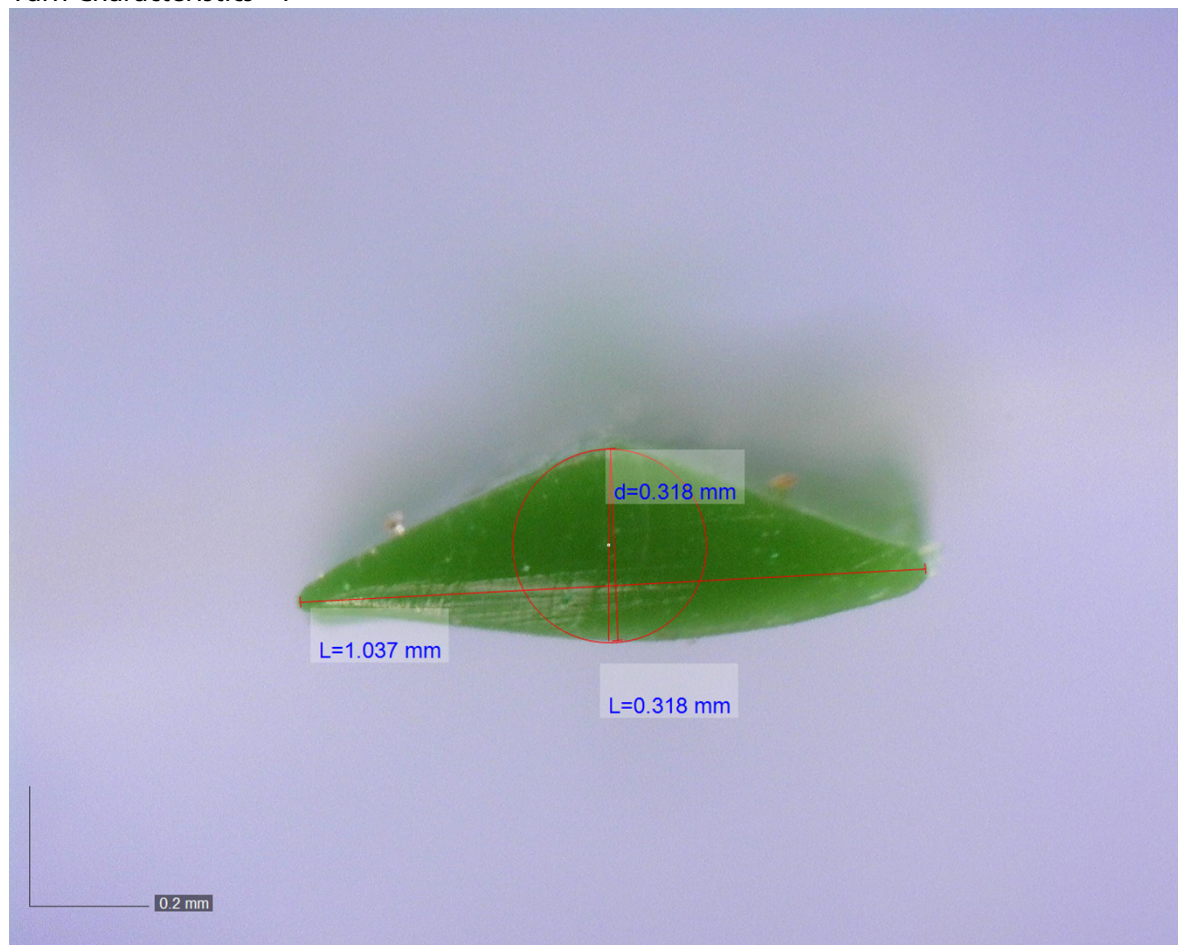


Simulated wear - After 1





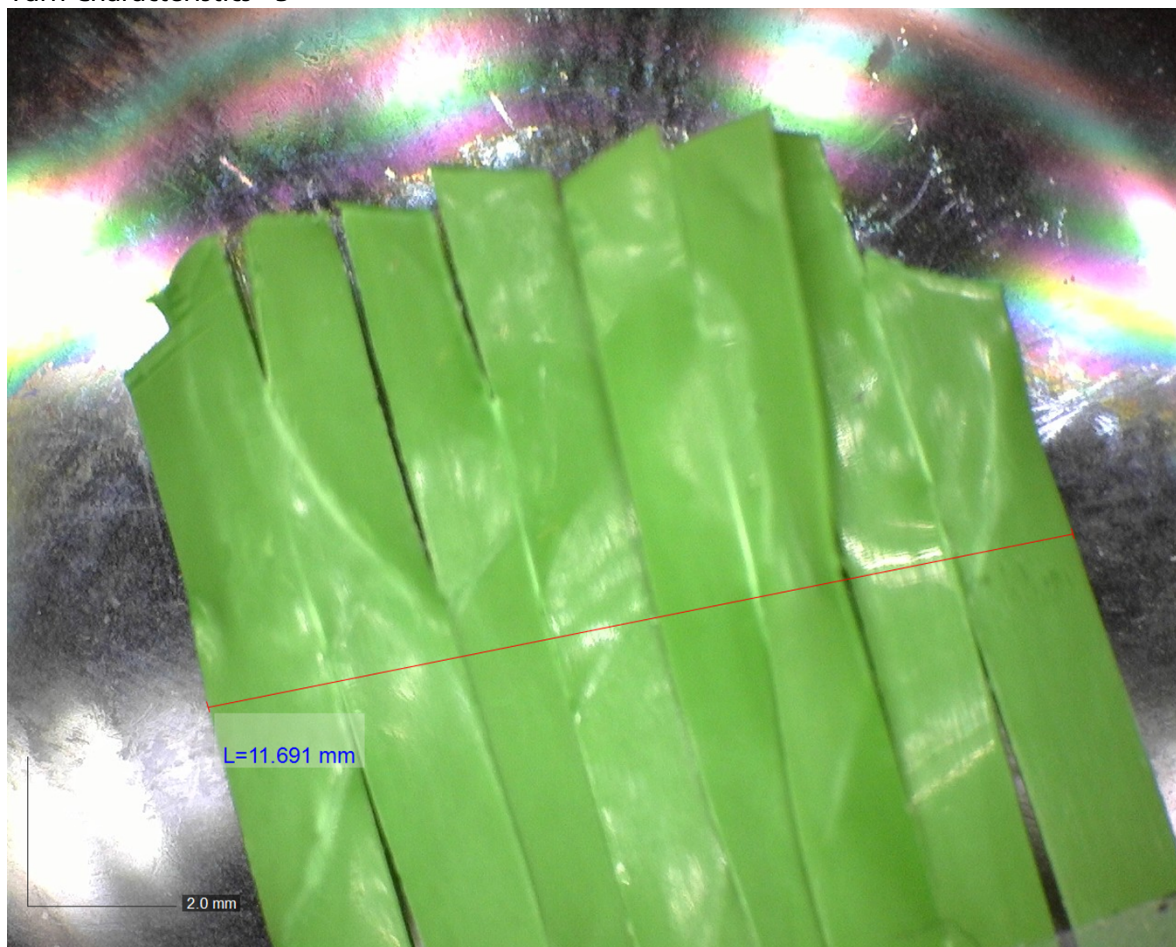
## Yarn Characteristics - 1



## Yarn Characteristics - 2



## Yarn Characteristics - 3





## Yarn Characteristics - 4

