

Lano Sports
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TEST REPORT 15-115A

Samples received :

Surface name		Profoot MXSi TLT 40 EPDM PF12		
Shockpad or e-layer		PF 12		
Base		concrete		
Infill	Stabilising infill	Filtersand 0408	20 kg/m ²	0.4-0.8 mm
	Performance infill	Socamont EPDM	7 kg/m ²	0.5-2.5 mm

Aim of the test :

EN 15330-1 (2013)

The test results only apply to materials that correspond to the tested sample. Forgery will be legally prosecuted, just like partial reproduction without prior written permission. Tests that are marked *are accredited. Advices and interpretations are not covered by the accreditation.

The department of Textiles is Notified laboratory n°1611 for the European Products Regulation N° 305/2011.

Test conditions :

Classification of a football field system

Standard: EN 15330-1 (2013)^o

Method: An artificial turf system is tested in lab on sport functional characteristics:

- vertical ball rebound : EN 12235(2013)*
- ball roll: EN 12234(2013)*
- shock absorption: EN 14808(2005)*
- vertical deformation: EN 14809(2005)*
- rotational resistance: EN 15301-1(2007)*
- wearing test with lisport: EN 15306 (2014)*
- water permeability: EN 12616 (2013)

The carpet is identified and compared to the manufacturer's declaration on:

- Mass per unit area: ISO 8543 (1998)
- Tufts per unit area: ISO 1763 (1986)
- Pile length above backing: ISO 2549(1998)
- Gauge: ISO 1763 (1986)
- tuft withdrawal force: ISO 4919 (2012)*
- Pile weight: ISO 8543 (1998)*
- Pile yarn characterization: DSC: ISO 11357-3(2011)
- Seam strength: EN 12228 (2013)

The infill materials are identified and compared to the manufacturer's declaration on:

- Granulometry : EN 933-1 (2012)
- Shape : EN 14955 (2005)
- Bulk density: EN 1097-3 (1998)

The shockpad is identified and compared to the manufacturer's declaration on:

- Shock absorption: EN 14808(2005)*
- Thickness: EN 1969 (2000)
- Tensile strength: EN 12230 (2003)

The tests were ended in week 08/2015

OBTAINED RESULTS

Property	Test condition	Unit	Result	Requirement	Pass/Fail
Vertical ball rebound	Dry	%	62	45-75%	Pass
	Wet	%	60	45-75%	Pass
	After 20200 cycles simulated wear	%	59	45-75%	Pass
Ball roll	Dry	m	6.6	4.0-10.0m	Pass
	Wet	m	6.1	4.0-10.0m	Pass
Shock absorption	Dry	%	62	55-70%	Pass
	Wet	%	62	55-70%	Pass
	After 20200 cycles simulated wear	%	61	55-70%	Pass
Deformation	Dry	mm	6.9	4.0-9.0mm	Pass
	Wet	mm	5.9	4.0-9.0mm	Pass
	After 20200 cycles simulated wear	mm	6.4	4.0-9.0mm	Pass
Rotational Resistance	Dry	Nm	40	25-50Nm	Pass
	Wet	Nm	42	25-50Nm	Pass
	After 20200 cycles simulated wear	Nm	49	25-50Nm	Pass
	Studded sole Dry	Nm	27	25-50Nm	Pass
	Studded sole Wet	Nm	26	25-50Nm	Pass

Property	Aspect	Unité	Requirement	Result	Pass/ Fail
Pile Yarn (s)	colour change after artificial weathering	-	≥ grey scale 3	5	PASS
		-		5	PASS
		-			
	Difference in yarn tensile strength after artificial weathering	%	% change ≤ 50%	3.2	PASS
		%		6.3	PASS
		%			
	Tensile strength of pile yarns	N	>8N monofil >30N fibrillated	24.2	PASS
N		24.9		PASS	
N					
Polymeric infills	colour change	-	≥ grey scale 3	4	PASS
	change in composition	-	No change	No change	PASS
Water permeability of complete system		mm/h	>500	698	PASS
Joint strength	Stitched joints original	N/100mm	>1000		
	Stitched joints after ageing	N/100mm	>75%		
	Bonded joints original	N/100mm	>60	166	PASS
	Bonded joints after ageing	N/100mm	>75%	142	PASS
Tensile strength of carpet	>15N/mm other; >25N/mm Rugby	N/mm	cross direction	29	PASS
		N/mm	transverse direction	23.6	PASS
	max 30% difference	N/mm	difference between direction	19%	PASS
Tensile strength of shockpads	≥ 0.15MPa	MPa	Unaged	0.16	PASS
	≥ 0.15MPa	MPa	aged EN 13817	0.15	PASS
	difference	%	>75%	94%	PASS

Product identification results

	Property	Unit	Result	manu declaration	variation	tolerance	Pass/ Fail
Artificial turf	carpet mass per unit area	g/m ²	2606	2550	2%	≤10%	PASS
	Tufts per unit area	-	8864	9135	-3%	≤10%	PASS
	Pile length above backing	mm	40	40	1%	≤5%	PASS
	tuft withdrawal force	N	72	30	240%	min 85% and >30N	PASS
	gauge	-	5/8	5/8	same	≤10%	PASS
	stitch rate	st/10 cm	14.2	14			
	Pile weight	g/m ²	1276	1340	-5%	≤10%	PASS
	Pile dtex		16027	15000	7%	≤10%	PASS
	Pile colour	RAL	6010/6020	6010/6020		similar colours	PASS
	pile yarn characterisation	°C	107.5/107.5& 119.8	108/108&12 0		same peaks max +/-4°C	PASS
	water permeability	mm/ h	1005	1000	101%	≥50%; >500mm/h	PASS
Performan ce infill	Particle size range	mm	1/2.5	0.5/2.5		same d&D	PASS
	Particle shape	-	B3	irregular	same	similar	PASS
	Bulk density	g/cm ³	0.72	0.77	-6%	≤ 10%	PASS
Stabilising infill	Particle size	mm	0.315/0.8	0.4/0.8		same d&D	PASS
	Particle Shape	-	C2	80% round	same	similar	PASS
	Bulk density	g/cm ³	1.58	1.60	-1%	≤ 15%	PASS
Shockpad/ e-layer	Shock Absorption	%	48	46	2	<5%	PASS
	Thickness	mm	12.1	12	101%	> 90%	PASS

Conclusion:

The system Profoot MXSi TLT 40 EPDM PF12 meets the requirements of EN 15330-1 (2013).

Stijn Rambour
Head of chemical and artificial turf tests

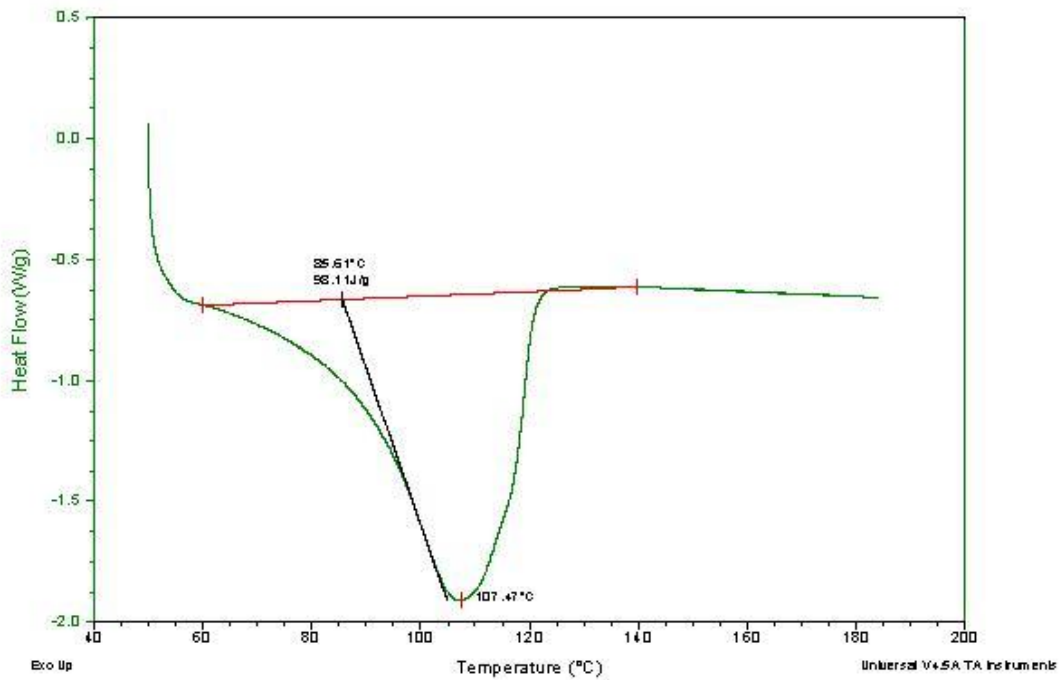
Prof. Dr. Paul KIEKENS, dr. h. c.
Head of Department

Annex: DSC scan(s) of pile yarn(s)

Sample: 13_1045 Light
Size: 2.7780 mg
Method: methode kristgras FIFA

DSC

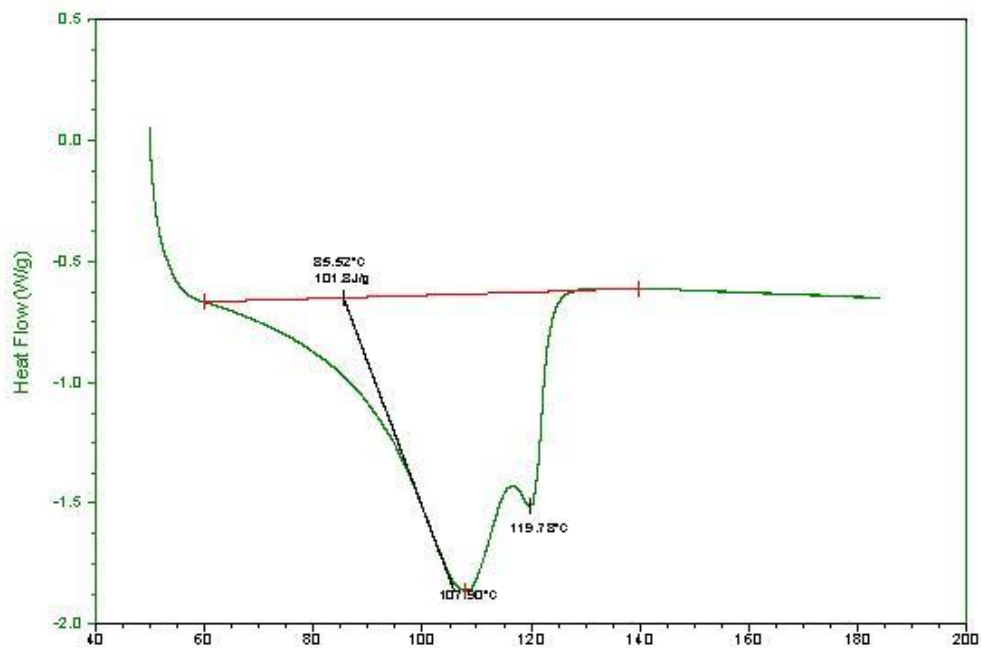
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Run Date: 19-Dec-2013 16:25
Instrument: DSC Q 2000 V24.10 Build 122



Sample: 13_1045 Dark
Size: 3.1600 mg
Method: methode kristgras FIFA

DSC

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Operator: sdb
Run Date: 19-Dec-2013 17:01
Instrument: DSC Q 2000 V24.10 Build 122



Annex 2

50c



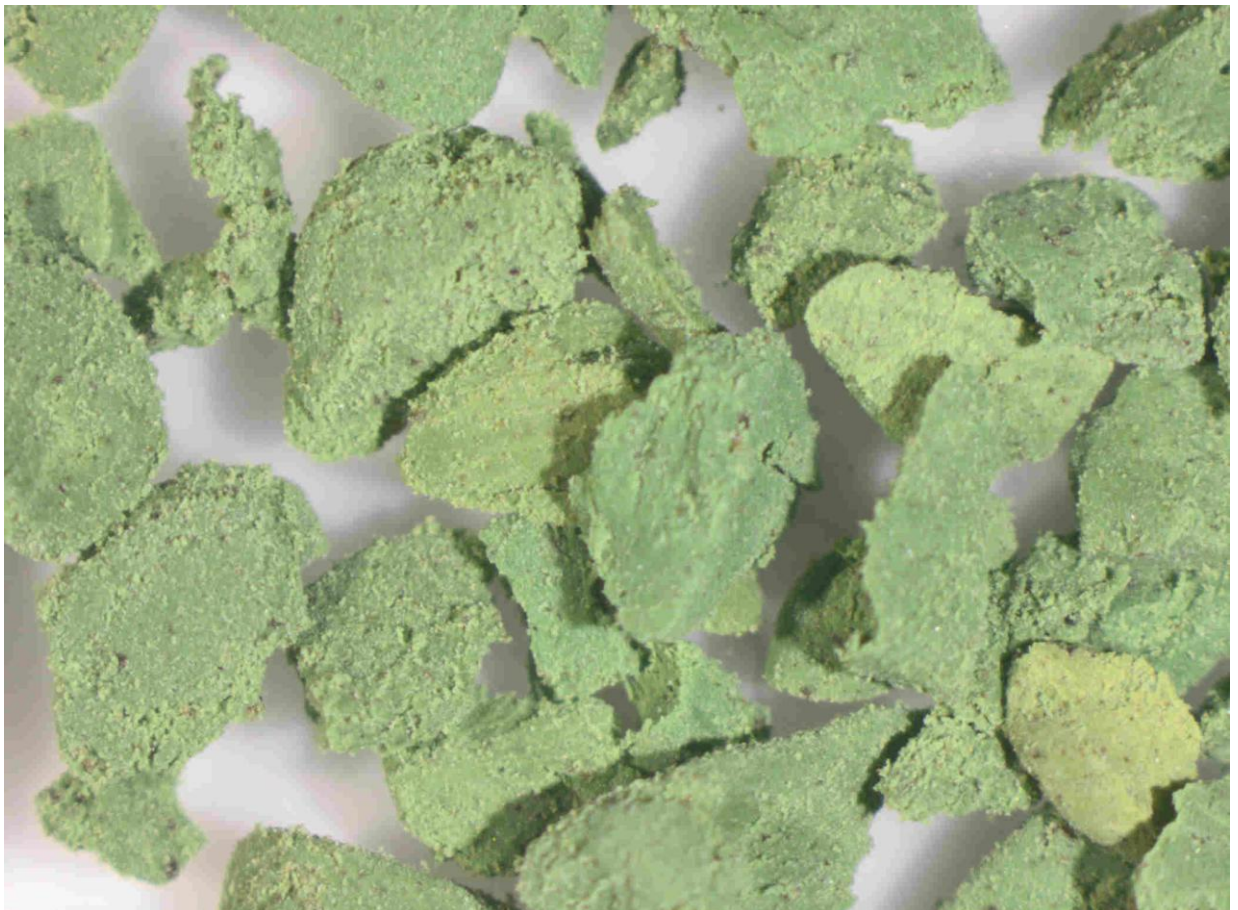
20200
c



Performance infill



Sieve opening	Cumul. Through sieve (%)
3.15 mm	100.0
2.5 mm	100.0
2 mm	73.2
1.6 mm	34.1
1.25 mm	15.4
1 mm	7.7
0.5 mm	0.7
0	0.0



Stabilising infill



sieve	Cumulative through sieve
1.25	100.0
1.00	100.0
0.80	98.9
0.63	53.5
0.50	16.6
0.32	0.3
0.20	0.2
0.00	0.0

