



**WORLD
RUGBY™**

**RUGBY TURF PRODUCT TEST REPORT FOR
REGULATION 22**

Domo Varioslide S Pro 50/14/SBR/Shockwave 40

Domo Sports Grass

Tested by

Manufacturer



FACULTY OF ENGINEERING



UNIVERSITEIT
GENT



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Test details

Test	
Test date	05/02/2021
Technician Name	Stijn Rambour
Report Date	05/02/2021
Base Type	Concrete

Product	
Manufacturer Name	Domo Sports Grass
Carpet Name	Domo Varioslide S Pro 50/14
Pile Height	52
Shockpad Name	Shockwave
Product Name	Domo Varioslide S Pro 50/14/SBR/Shockwave 40

Infill		
Material	Supplier	Application Rate (kg/m ³)
Silica Sand	DOMO	35
SBR	DOMO	6

Shockpad	
Manufacturer Name	
Shockpad Name	Shockwave
Thickness	40
Mass per unit area (kg / m ²)	1.7

Accredited Test Institute	
Institute Name	University of Ghent (ERCAT)
Institute Director	Stijn Rambour
ATI Reference Number	20-0861-02
Contact Details	textiles@ugent.be / +32 9 264 57 35

Domo Sports Grass Domo Varioslide S Pro 50/14/SBR/Shockwave 40 has been found to satisfy the product test requirements of World Rugby Regulation 22, the Performance Specification for Rugby Turf (2016 Performance Specification) and the World Rugby Laws of the Game – Law 1 for use on Outdoor and Indoor venues.

Performance Testing

Shock Absorption (%)				
Requirement		57% - 68%		
Test	Result	Max	Min	Test Status
Preconditioned – Dry	68%	68%	68%	Pass
Preconditioned – Wet	68%	68%	68%	Pass
After simulated wear	64%	65%	63%	Pass
@ -5°C	65%			Pass
@ +50°C	68%			Pass

Vertical Deformation (mm)				
Requirement		6mm - 10mm		
Test	Result	Max	Min	Test Status
Preconditioned – Dry	9.98	10.00	9.95	Pass
Preconditioned – Wet	9.97	10.00	9.95	Pass
After simulated wear	8.42	8.60	8.10	Pass
@ -5°C	9.50			Pass
@ +50°C	10.00			Pass

Energy Restitution (%)				
Requirement		22% - 48%		
Test	Result	Max	Min	Test Status
Preconditioned – Dry	39%	39%	38%	Pass
Preconditioned – Wet	37%	39%	36%	Pass
After simulated wear	40%	41%	40%	Pass
@ -5°C	30%			Pass
@ +50°C	40%			Pass

Vertical Ball Rebound (m)				
Requirement		0.6m - 1m		
Test	Result	Max	Min	Test Status
Preconditioned – Dry	0.74			Pass
Preconditioned – Wet	0.75			Pass
After simulated wear	89%			Pass

Angled Ball Rebound (%)				
Requirement		45% - 80%		
Test	Result	Max	Min	Test Status
Preconditioned – Dry	53%			Pass
Preconditioned – Wet	68%			Pass



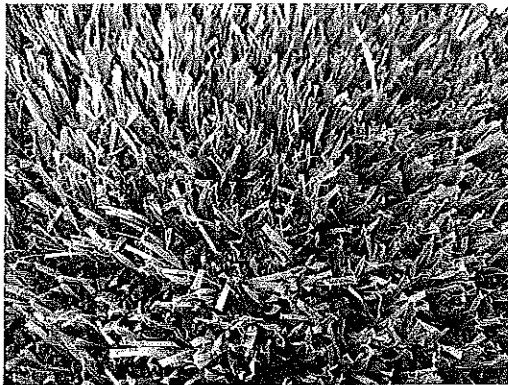
Rotational Resistance (Nm)				
Requirement		32Nm - 43Nm		
Test	Result	Max	Min	Test Status
Preconditioned - Dry	36.80			Pass
Preconditioned - Wet	36.80			Pass
After simulated wear	44.67			Pass

Impact Attenuation (m)				
Requirement		≥1.3m (Single drop ≤1,000 HIC)		
Test	Result	Max	Min	Test Status
Preconditioned - Dry	2.51			Pass
Preconditioned - Wet	2.48			Pass
After simulated wear	2.19			Pass
@ -5°C	610.00			Pass
@ +50°C	442.00			Pass

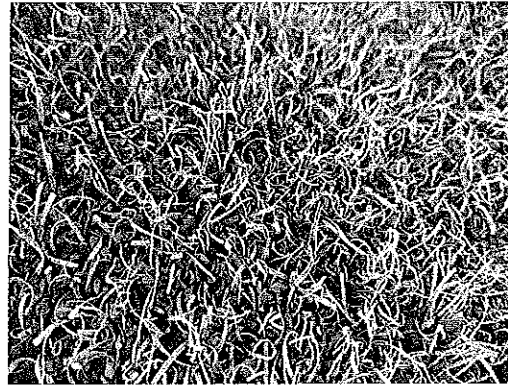
Ratings		Result
Test		
Splash		Normal
Heat		2-3

Identification Tests

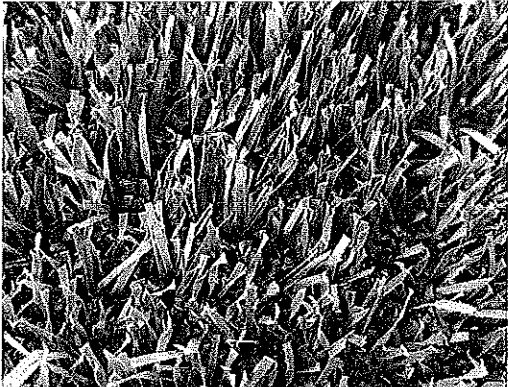
Rugby Turf - Carpet				
Test	Result	Declaration	Permitted Variance	Test Status
Pile length (mm)	52	50	≥ 60 m	Pass
Mass per unit area (kg/m ²)	2,935	2,882	± 10%	Pass
Tufts/Knots per unit area (m ⁻²)	9,130	8,820	± 10%	Pass
Tuft withdrawal force (N)	54	40	≥ 90%	Pass
Total pile weight (kg/m ²)	1,735	1,630	± 10%	Pass
Water permeability (mm/hr)	1,273	-	≥ 500mm/hr	Pass



Pre-wear carpet



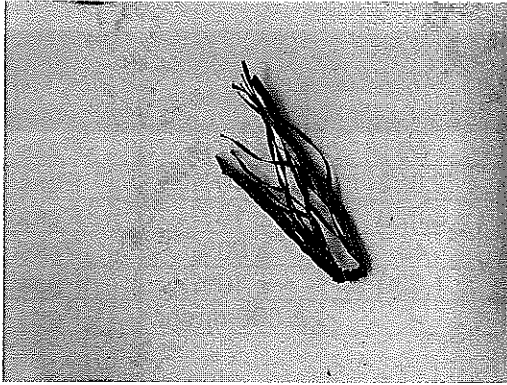
Post-wear carpet



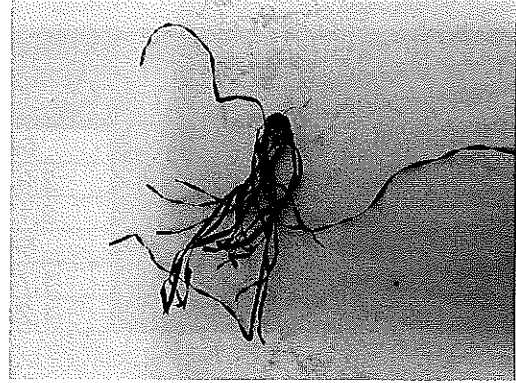
Pre-wear closeup



Post-wear closeup

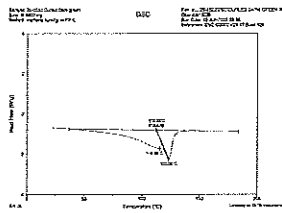


Pre-wear yarn closeup

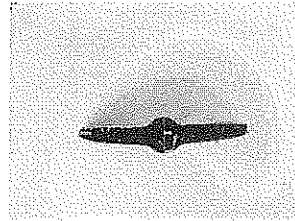


Post-wear yarn closeup

Yarn 01 - Field green - central spine				
Test	Result	Declaration	Permitted Variance	Test Status
Thickness - Cross Section (nm)	277	300	≥ 90%	Pass
Thickness - Width (mm)	1.3	1.3	≥ 90%	Pass
Thickness - Depth (mm)	0.29	0.3	≥ 90%	Pass
dTex (dTex)	5,743	5,500	± 10%	Pass
DSC - Peak 01 (°C)	123.08	123	± 3°C	Pass
DSC - Peak 02 (°C)	115.35	113	± 3°C	Pass

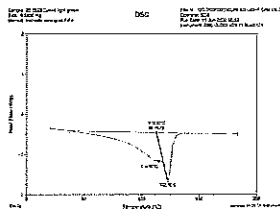


Yarn 1 DSC

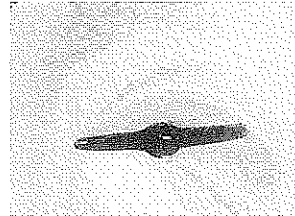


Yarn 1 cross section

Yarn 02 - Olive green - central spine				
Test	Result	Declaration	Permitted Variance	Test Status
Thickness - Cross Section (nm)	274	300	≥ 90%	Pass
Thickness - Width (mm)	1.35	1.3	≥ 90%	Pass
Thickness - Depth (mm)	0.29	0.3	≥ 90%	Pass
dTex (dTex)	5,591	5,500	± 10%	Pass
DSC - Peak 01 (°C)	122.76	123	± 3°C	Pass
DSC - Peak 02 (°C)	114.97	113	± 3°C	Pass

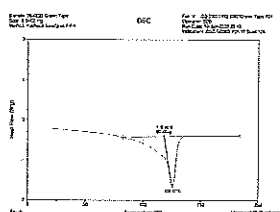


Yarn 2 DSC

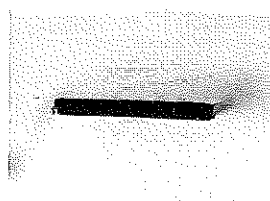


Yarn 2 cross section

Yarn 03 - Field green - Flat				
Test	Result	Declaration	Permitted Variance	Test Status
Thickness - Cross Section (mm)	120	110	≥ 90%	Pass
Thickness - Width (mm)	6.01	6	≥ 90%	Pass
Thickness - Depth (mm)	0.12	0.11	≥ 90%	Pass
dTex (dTex)	5,623	5,500	± 10%	Pass
DSC - Peak 01 (°C)	125.57	125	± 3°C	Pass
DSC - Peak 02 (°C)	0	0	± 3°C	Pass

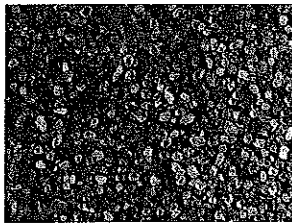


Yarn 3 DSC

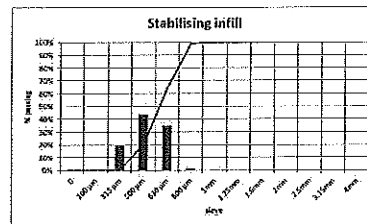


Yarn 3 cross section

Infill 01 - Silica Sand - multi-coloured - Stabilising				
Test	Result	Declaration	Permitted Variance	Test Status
Shape	C2 - Round - Medium sphericity	C2 - Round - Medium sphericity	Same shape	Pass
Size	0.315 - 0.8	0.315 - 0.8	± 1 Sieve Size	Pass
Bulk Density	1,500	1,580	± 15%	Pass
% Organic	0	0	± 10%	N/a

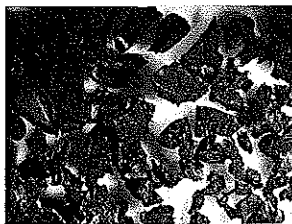


Infill 1

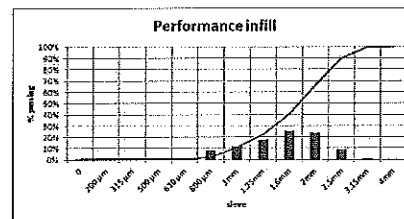


Infill 1 Grading

Infill 02 - SBR - black - Performance				
Test	Result	Declaration	Permitted Variance	Test Status
Shape	A2 - Angular - Medium sphericity	A2 - Angular - Medium sphericity	Same shape	Pass
Size	0.8 - 2.5	0.8 - 2.5	± 1 Sieve Size	Pass
Bulk Density	450	450	± 15%	Pass
% Organic	0.65	0.63	± 10%	Pass

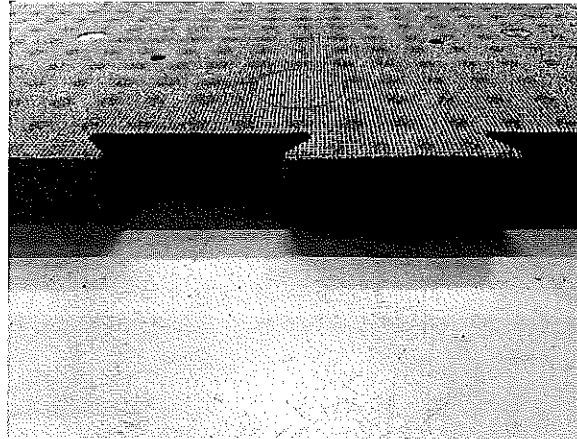


Infill 2



Infill 2 Grading

Shockpad				
Test	Result	Declaration	Permitted Variance	Test Status
Thickness	39.8	40	≥ 90%	Pass
Shock Absorption	0.75	0.72	± 5%	Pass
Deformation	11.5	10	± 10%	Pass
Energy Restitution	0.37	-	-	N/a
Mass per unit area	1.72	1.7	± 10%	Pass
Tensile strength	0.23	-	≥ 0.15Nm	Pass



Shockpad

Laboratory Tests

Skin Interaction Tests

Test	Result	Requirement	Test Status
Skin/Surface Friction	0.72	0.35 - 0.75 μ	Pass
Skin Abrasion	19%	\pm 30%	Pass

Unaged Carpet Strength Tests

Test	Result	Requirement	Test Status
Parallel to Stitching	25.2	25 N/mm	Pass
Perpendicular to Stitching	26.1	25 N/mm	Pass

Unaged Joint Strength

Test	Result	Requirement	Test Status
Stitched	0	2500 N/100mm	N/a
Bonded	3,026	2500 N/100mm	Pass
Peel	155	25 N/mm	Pass

Aged Joint Strength

Test	Result	Requirement	Test Status
Stitched	0	2500 N/100mm	N/a
Bonded	2,956	2500 N/100mm	Pass
Peel	154	25 N/mm	Pass

Unaged Tensile Strength

Test	Result	Requirement	Test Status
Yarn 01	16.3	\geq 8N (mono), \geq 30 (fibb)	Pass
Yarn 02	16.1	\geq 8N (mono), \geq 30 (fibb)	Pass
Yarn 03	56.9	\geq 8N (mono), \geq 30 (fibb)	Pass

Aged Strength Tests

Test	Result	Requirement	Test Status
Yarn 01	14.7	>50% of unaged	Pass
Yarn 02	14.6	>50% of unaged	Pass
Yarn 03	48.9	>50% of unaged	Pass



Comments