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LABORATORY PERFORMANCE REPORT

On


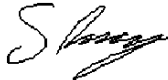
Edel Soccer Superblade 57-15 SB - S

In accordance with

Handbook of Test Methods for Football Turf 2009

For

**Edel Grass B.V.
Prinses Beatrixstraat 3
P.O. Box 164
8280 AD Genemuiden
Holland**

REPORT STATUS:	Final	Signature	Date
Report No:	13195/2918		
Prepared By	N MacPhee		7/05/10
Checked By	S Ramsay		7/05/10

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1.0 INTRODUCTION

1.1 Edel Grass B.V. requested Sports Labs Ltd to carry out performance testing on their Soccer Superblade 57-15 SB-S system. The system was tested using the test methods described in the Handbook of test methods for football turf.

2.0 TEST DETAILS

2.1 The test Specimens were prepared in accordance with the manufacturer’s instructions.

Test Details			
Carpet Name		Superblade 57-15 SB-S	
Shockpad type		-	
Substrate		Concrete Base	
Infill	Layer 1	Granulat Fein SBR (0.8 – 2.5mm)	15 kg/m ² ≈ 33mm
	Layer 2	Filicom Silica Sand (0.5 – 1.0mm)	15 kg/m ² ≈ 10mm

3.0 TESTING

- 3.1 Ball Rebound
- 3.2 Ball Roll
- 3.3 Angle Ball Rebound
- 3.4 Linear Stud Friction/Deceleration
- 3.5 Rotational Resistance
- 3.6 Skin Abrasion
- 3.7 Skin friction
- 3.8 Shock absorption
- 3.9 Vertical Deformation
- 3.10 Porosity
- 3.11 Product Identification



4.0 TEST RESULTS

Property	Test condition	Mean Results
Ball Rebound	Dry	0.84 m
	Wet	0.83 m
	5,200	0.85 m
	20,200	0.89 m
Ball Roll	Dry	6.7 m
	Wet	6.7 m
Angle Ball Rebound	Dry	53 %
	Wet	61 %
Rotational Resistance	Dry	35 Nm
	Wet	35 Nm
	5,200	39 Nm
	20,200	39 Nm
Stud Slide	Dry	183
	Wet	178
Stud Deceleration	Dry	3.5 g
	Wet	3.4 g
Shock Absorption	Dry	64 %
	Wet	64 %
	5,200	60 %
	20,200	60 %
	-5 °C	63 %
	40 °C	63 %



Vertical Deformation	Dry	7.1 mm
	Wet	7.3 mm
	5,200	5.8 mm
	20,200	5.6 mm

Property	Test condition	Mean result
Skin / surface friction	Dry	0.69 μ
Skin abrasion	Dry	18 %


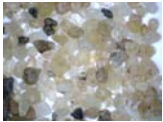
Effects of artificial weathering

Property		Result	
Pile yarn (s)	Colour change (Grey Scale)	Light	Dark
		4/5	4/5
	Yarn tensile strength (%)	Light	Dark
		6	6
Polymeric infill	Colour change	3-4	
	Visual change in composition	No Change	

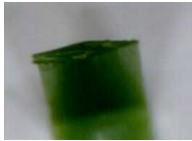
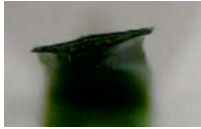


Miscellaneous

Property		Condition	Result
Joint strength	Stitched joints	Unaged	-
		Water aged	-
	Bonded joints	Unaged	101 N/100mm
		Water aged	72 N/100mm
Water permeability of complete system		N/A	2635 mm/hr
Tensile strength of shock / e-layer		Unaged	-
Carpet tuft withdrawal	Unaged	45 N	
	Water aged	31 N	



PRODUCT IDENTIFICATION			
Artificial turf and pile yarn(s)	Mass per unit area	2800 g/m ²	
	Tufts per unit area	9450 /m ²	
	Tuft withdrawal force	45 N	
	Pile length above backing	58 mm	
	Pile weight	1454 g/m ²	
	Water permeability of carpet	6838 mm/hr	
	Pile yarn characterisation	Light Green 121.25 °C Dark Green 121.75 °C	
Performance infill 	Particle size range	1.0 – 2.5 mm	
	Particle shape	B1	
	Bulk density	452 Mg/cm ³	
	Polymer Type	SBR	
	Thermo-gravimetric analysis	% organic	63 %
		% inorganic	37 %
Stabilising infill 	Particle size range	0.5 – 1.0 mm	
	Particle shape	B2	
	Bulk density	1554 Mg/cm ³	
Shockpad or e-layer (if supplied as part of system)	Shock Absorption	-	
	Thickness	-	
	Deformation	-	

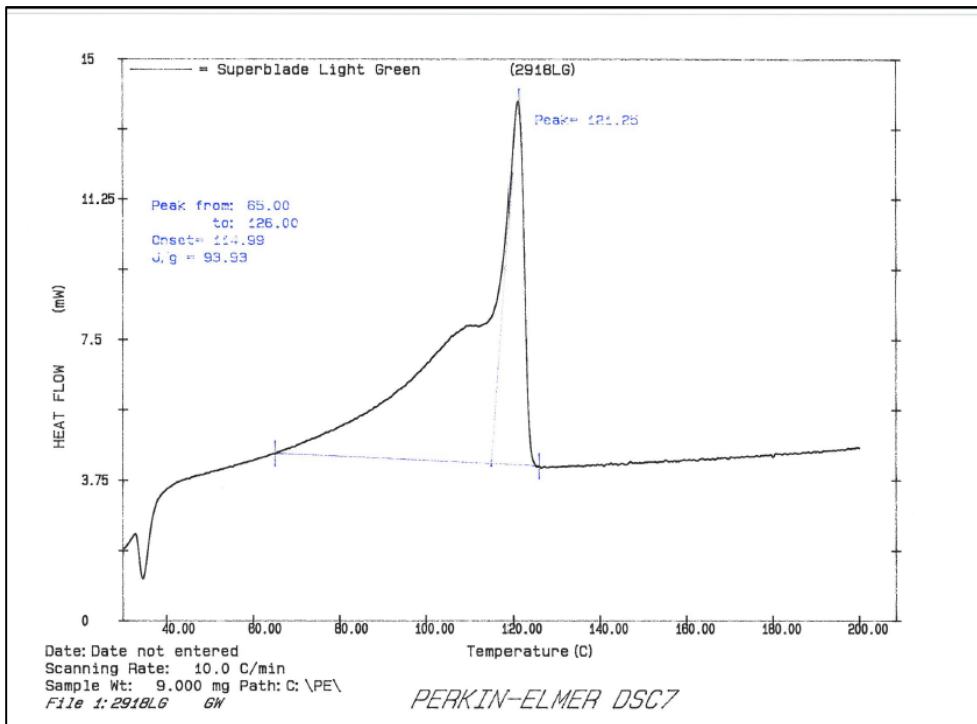


Yarn	Light	Dark
Yarn thickness (micron)	240 Micron	240 Micron
Yarn Width (mm)	1.5 mm	1.5 mm
Colour (RAL 6 Digit)	130 50 40	120 40 30
dTex	6225	6254
Profile View		
Plan View		



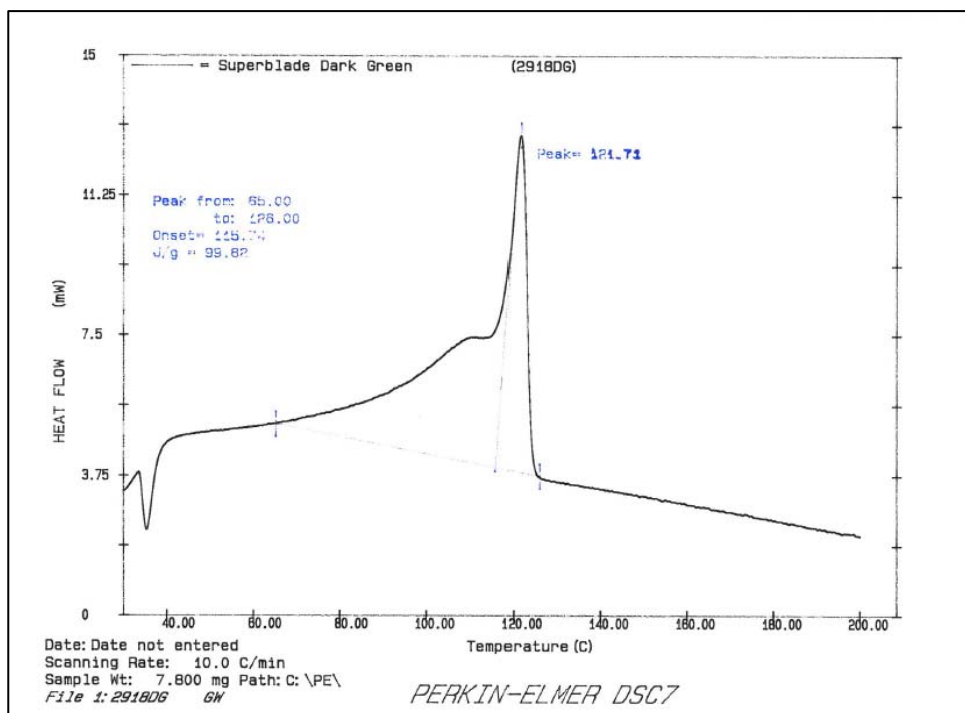
DSC Graph

Light Yarn



DSC Graph

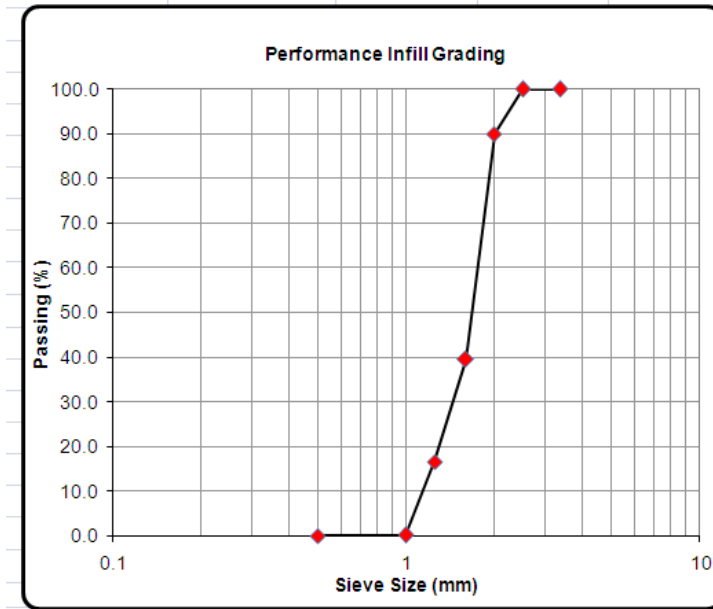
Dark Yarn





Particle Grading

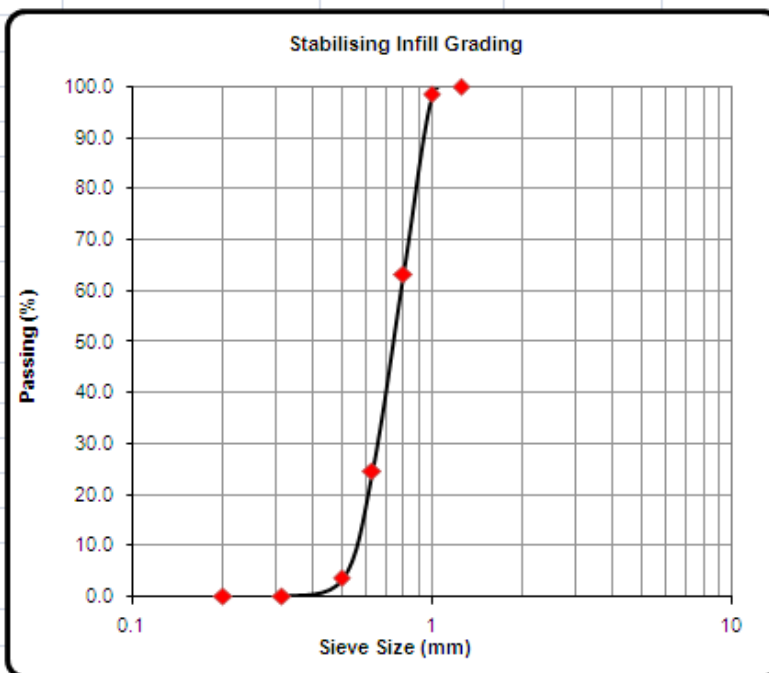
Performance Infill



SEIVE SIZE	PASSING
3.35 mm	100.0
2.50 mm	100.0
2.00 mm	90.0
1.60 mm	39.5
1.25 mm	16.7
1.00 mm	0.2
0.50 mm	0.1
RETAINED IN BASE TRAY	0.1
MICROSCOPIC PICTURE	
BULK DENSITY	
452 Mg/cm ³	

Particle Grading

Stabilising Infill

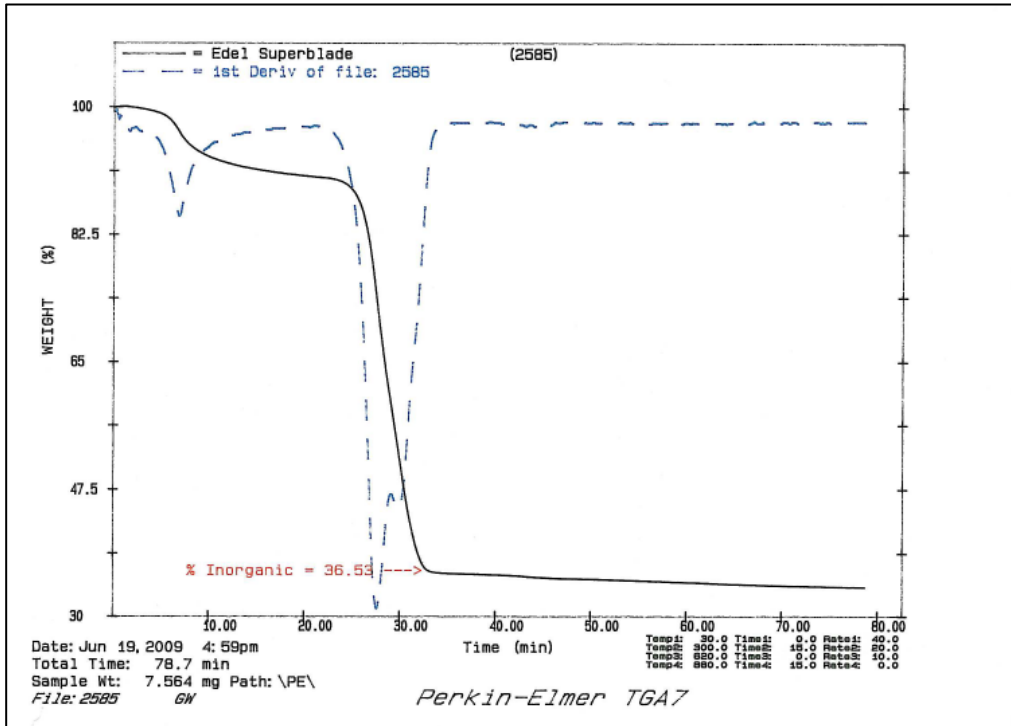


SEIVE SIZE	PASSING %
1.25mm	100.0
1.00 mm	98.8
0.800 mm	63.3
0.630 mm	24.6
0.500 mm	3.7
0.315 mm	0.1
0.200 mm	0.1
Passing to Base Tray	0.0
Microscopic Picture	
Bulk Density	
1554 Mg/cm ³	



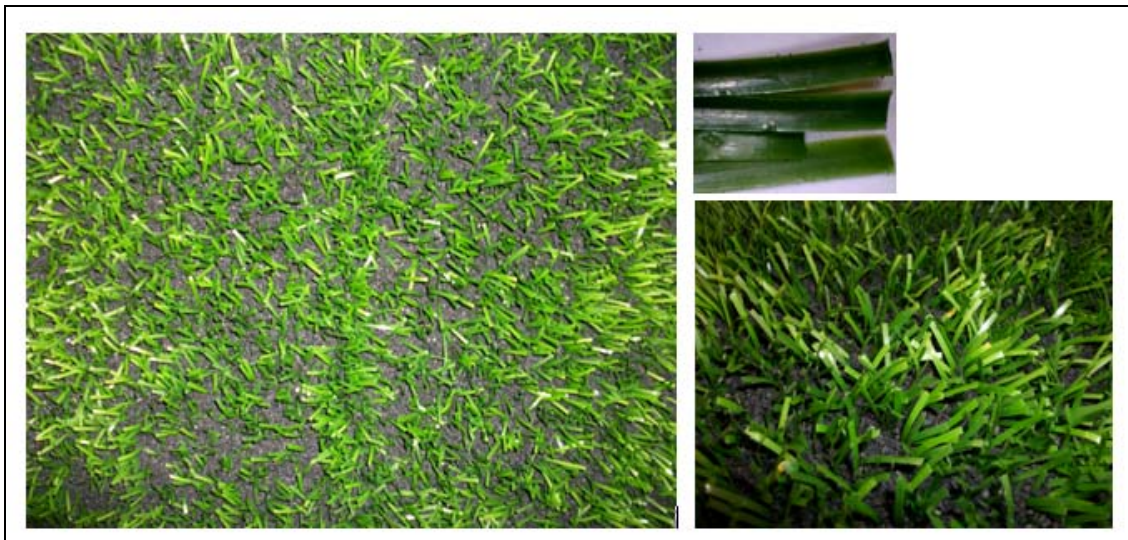
TGA Graph

Performance infill



Sample

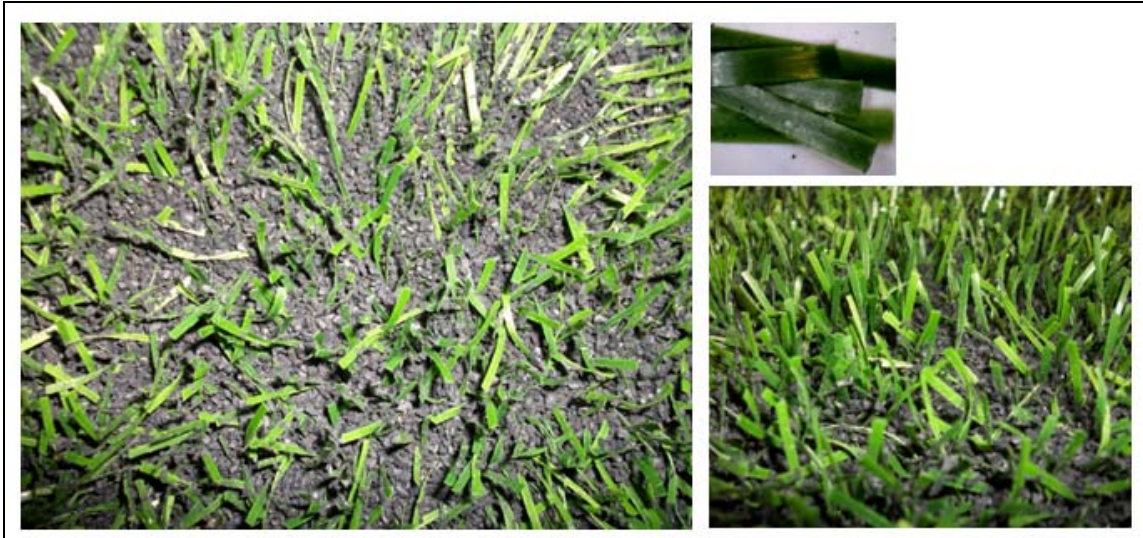
Pre Conditioned





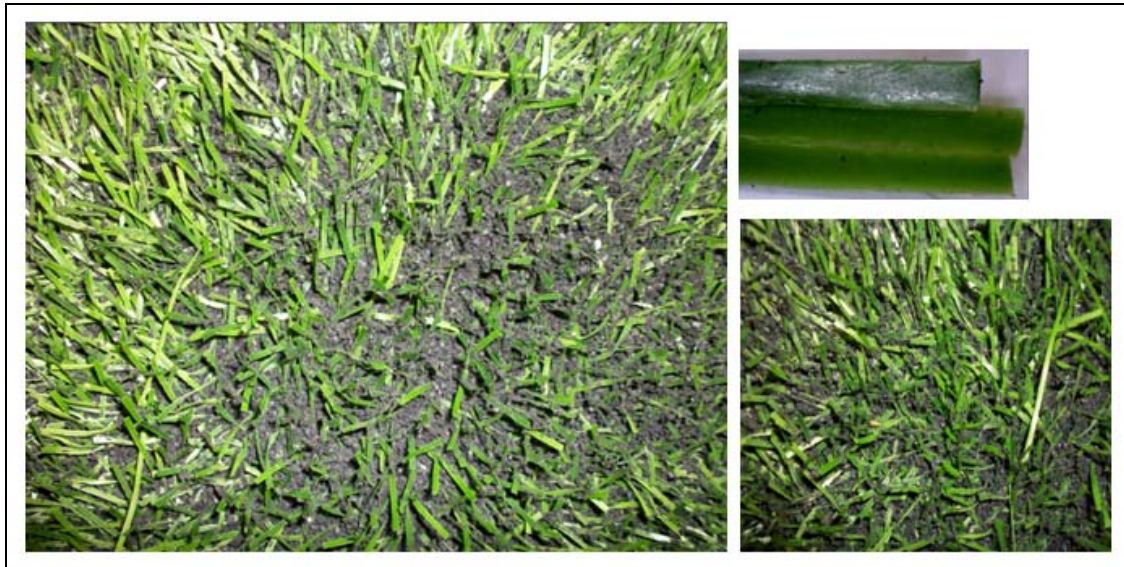
Sample Conditioned

5,200 Cycles



Sample Conditioned

20,200 Cycles



End of Report