



Antea Group
Realisatie Geleen
Postbus 17
6160 AA Geleen



Productspecification/Information

EDEL SOCCER XP 57 SB-S

A	Name of product Sports application	EDEL SOCCER XP 57 SB-S Football, Soccer
B	Producer Production process	EDEL GRASS B.V. - Genemuiden - The Netherlands tufted, cut pile
C	Pile material Yarn Dtex Cross-section of tapes Colour Line colour UV-stability Light fastness Colour fastness	Thiolon® PE 10000 XP PRO yarn, fibrillated, environment friendly, UV-stabilised 11000/1 Dtex width : 12 mm, ±5% thickness : 100 µm, ±5% field green white/yellow DIN 53387 meets 6000 hours W.O.M. test >7 on blue scale 1-8 >4 on gray scale 1-5
D	Primary backing Coating Water permeability	Thiobac® polypropylene double layer, UV-stabilised, total weight ± 222 gr/m ² Carboxylated (SBR) latex, appr. 988 gr/m ² with 4mm perforation holes > 180 mm/h
E	Product details Pile height Total construction height Pile weight Total weight Gauge Stitch per m ¹ linear Stitch per m ² Filaments per m ²	appr. 57 mm ±10% appr. 59 mm ±10% appr. 1380 gr/m ² ±10% appr. 2590 gr/m ² ±10% 5/8" 160 ±10 10080 ±10% 20160 ±10%
F	Infill Stabilizing infill Amount Performance infill Amount	silica-sand, gradation 0.5 - 1.0 mm, min. 80% round of shape 15 kg/m ² (appr. 10 mm) SBR, gradation 0.8 - 2.5 mm 15 kg/m ² (appr. 30 mm)
G	Installation method Roll width Roll length Joints/seams Line marking	loose laid on bound or unbound sub-base 4 m ¹ (± 2 cm) according to installation schedule the seams in the turf are joined with a reinforcing tape type 220 glued to the back of the turf tufted-in or to be laid in by installation
H	Approvals	FIFA* (Lab report: 29090036/12)

The above data are subject to modifications based on technical improvements or company-internal developments. All data are higher than the DIN-standards. All figures are average values and can vary slightly.





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RESEARCH REPORT - LABORATORY

PROJECT : artificial turf for football "Edel XP 57"

PURPOSE RESEARCH : testing artificial turf for football

PRINCIPAL : Edel Grass B.V.
contact: [REDACTED]

EXECUTION : ISA Sport Innovation & Quality
Project Manager: [REDACTED]

PRODUCT DESCRIPTION : page 2

RESEARCH RESULTS : pages 3 - 10

REMARK:

Test results as described in this report are a summary of researched sports functional, durability, climatic resistance characteristics and product identification. Test results are valid only for the complete system as described in this report. Test methods and procedures are in accordance with the "Handbook of Test Methods for Football Turf" (May 2009 edition). Data should be interpreted as a summary of test results and do not imply approval of the system or product by FIFA.

30th March 2010

Instituut voor Sportaccommodaties B.V.

[REDACTED]
Business Unit Manager
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1. Product description

Surface name	Edel XP 57			
Carpet name	Edel XP 57			
Pile length (mm)	57			
Infill layer(s)	Type	Application rate		Size (mm)
		(kg/m ²)	(mm)	
Performance infill	SBR	15	30	0.8 – 2.5
Stabilising infill	Sand	15	10	0.5 – 1.0
Shockpad	Name	Composition		Thickness (mm)
Shockpad or e-layer	n.a.	n.a.		n.a.
Base type	Concrete			

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2. Test results

Test results as described in this report are a summary of researched sports functional, durability, climatic resistance characteristics and product identification. Test results are valid only for the complete system as described in this report. Test methods and procedures are in accordance with the "Handbook of Test Methods for Football Turf (May 2009 edition)". The final results of the research program have been sent to FIFA for approval of the system. Data should therefore be interpreted as a summary of test results and do not imply approval of the system or product by FIFA.

Property	Test condition	Mean result
Vertical ball rebound	Dry	0.98 m
	Wet	0.92 m
	After simulated wear 20.200 cycles	0.98 m
Angle ball rebound	Dry	54%
	Wet	78%
Ball roll	Dry	7.7 m
	Wet	8.2 m
Shock absorption	Dry	63%
	Wet	64%
	After simulated wear 20.200 cycles	58%
	-5°C	60%
	40°C	64%

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Property	Test condition	Mean result
Deformation	Dry	7.5 mm
	Wet	7.0 mm
	After simulated wear 20.200 cycles	5.0 mm
Rotational resistance	Dry	41 Nm
	Wet	40 Nm
	After simulated wear 20.200 cycles	48 Nm
Linear friction Stud deceleration value	Dry	5.5 g
	Wet	5.4 g
Linear friction Stud slide value	Dry	207
	Wet	204
Skin / surface friction	Dry	0.68
Skin abrasion	Dry	-15%

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Effects of artificial weathering			
Property		Aspect	Result
Pile yarn (s)	Colour change		4 - 5
	Yarn tensile strength		7%
Polymeric infill	Colour change		4 - 5
	Visual change in composition		No change
Property		Condition	Mean Result
Joint strength	Stitched joints	Unaged	n.a.
		Water aged	n.a.
Joint strength	Bonded joints	Unaged	104 N
		Water aged	82 N
Water permeability (complete system)		N/A	8000 mm/h
Tensile strength of shockpad / e-layer		Unaged	n.a.
Carpet tuft withdrawal	Unaged		48 N
	Water aged		48 N

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Product identification			
Artificial turf and pile yarn(s)	Mass per unit area		2.4 kg/m ²
	Tufts per unit area		10182 /m ²
	Pile length above backing		57 mm
	Pile weight		1503 g/m ²
	Water permeability of carpet		10300 mm/h
Performance infill	Particle size range		0.5 - 2 mm
	Particle shape		Irregular
	Bulk density		0.46 g/cm ³
	Thermo-gravimetric analysis	% organic	65
		% inorganic	35
Stabilising infill	Particle size range		0.25 - 1mm
	Particle shape		Spherical, not angular
	Bulk density		1.52 g/cm ³
Shockpad or e-layer (if supplied as part of system)	Shock absorption		N.A.
	Deformation		N.A.
	Thickness		N.A.

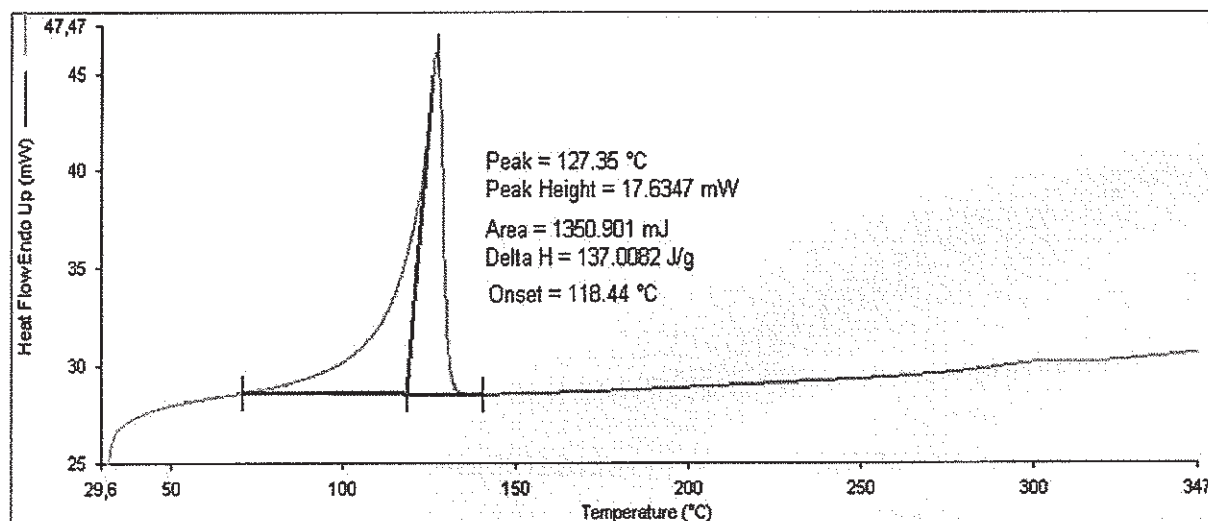
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DSC scan(s) of pile yarn(s)

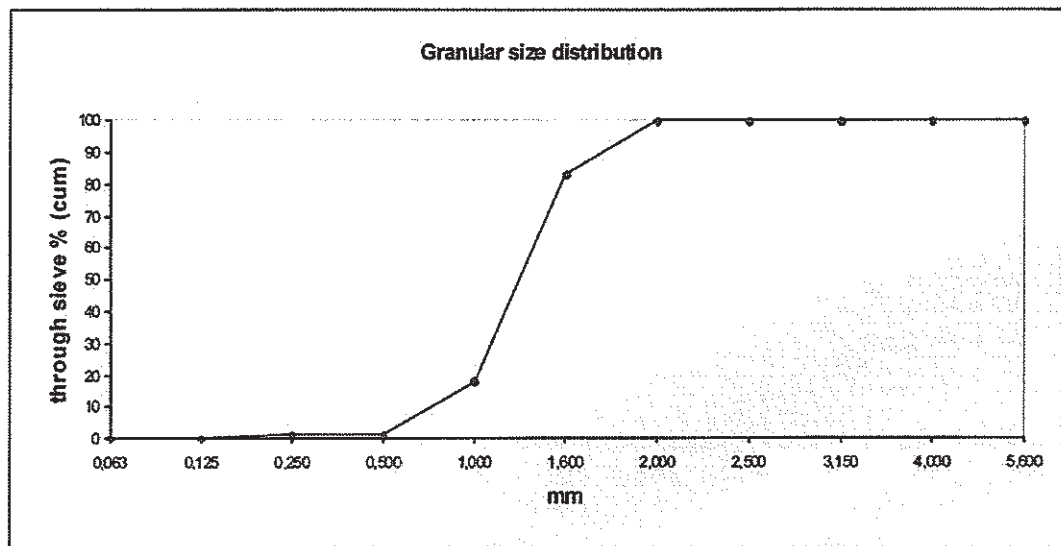


1. Heat from 30.00 °C to 300.00 °C at 50.00 °C/min
2. Cool from 300.00 °C to 30.00 °C at 40.00 °C/min
10.00 °C/min
3. Hold for 8.0 min at 30.00 °C
4. Heat from 30.00 °C to 350.00 °C at

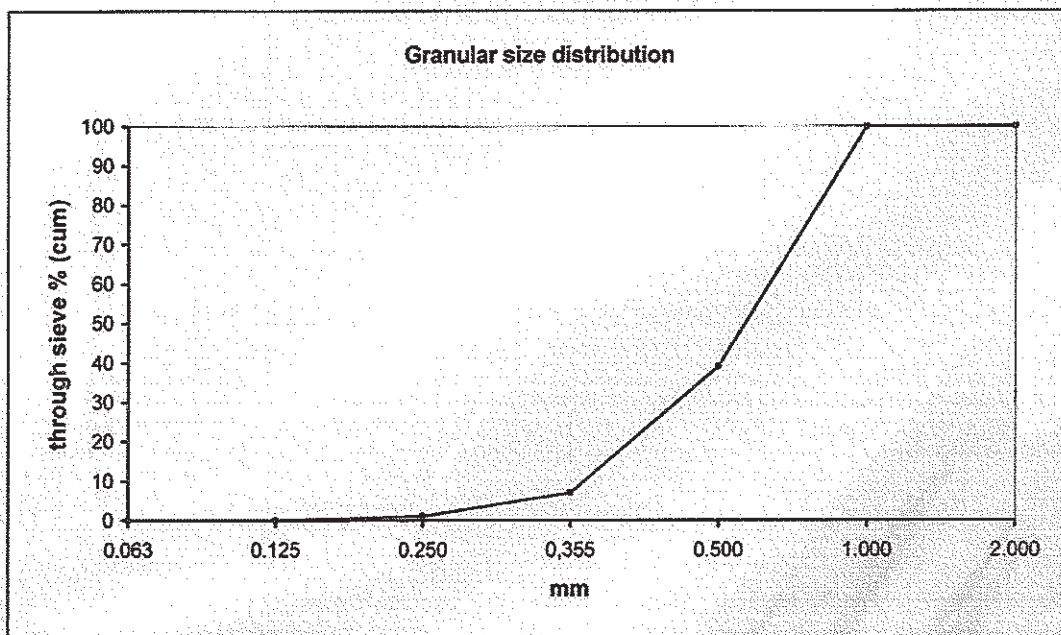
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Performance infill particle grading curve



Stabilising infill particle grading curve



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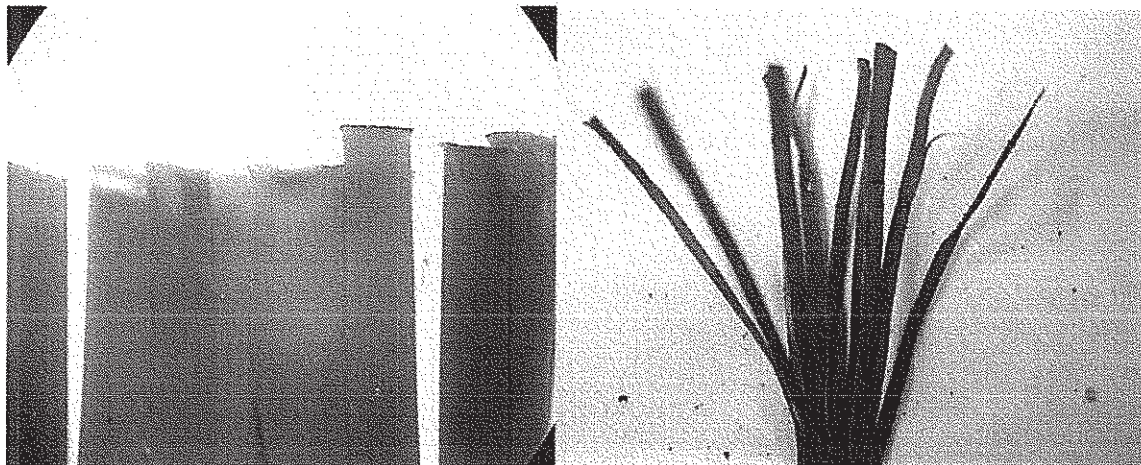


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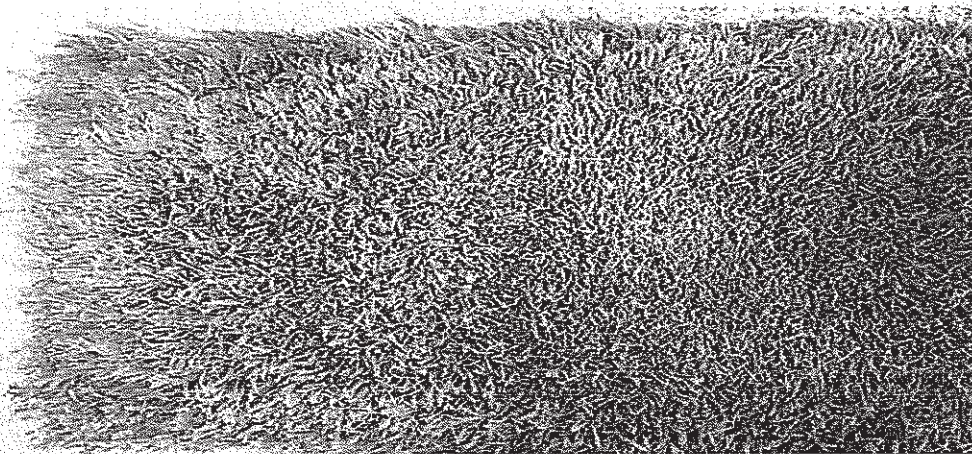
Product identification		
Unbound sub-bases (if tested as part of system)	Composition	N.A.
	Particle size range	N.A.
	Particle shape	N.A.
	Thickness	N.A.

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Photographs showing the effects of simulated wear



Before (left) and after (right) tread simulation



Before (left) and after (right) tread simulation

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