

PRESUPUESTO

“REMODELACIÓN CAMPO DE FUTBOL F-11 92x63m EN CÉSPED ARTIFICIAL CD CANILLAS – MADRID.



Octubre de 2.021

RESUMEN DE PRESUPUESTO



REMEDIACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CAPÍTULO	RESUMEN	IMPORTE	%
C01	ACTUACIONES PREVIAS.....	21.742,98	8,81
C02	PAVIMENTO CÉSPED SINTÉTICO	119.745,36	48,51
C03	MANTENIMIENTO CÉSPED ARTIFICIAL	1.168,50	0,47
C04	PROTECCIONES Y CERRAMIENTOS	10.225,80	4,14
C05	ALUMBRADO.....	72.324,00	29,30
C06	GESTION DE RESIDUOS	21.619,08	8,76
PRESUPUESTO DE EJECUCIÓN MATERIAL		246.825,72	
21% IVA		51.833,40	

PRESUPUESTO BASE DE LICITACIÓN 298.659,12

Asciende el presupuesto a la expresada cantidad de DOSCIENTOS NOVENTA Y OCHO MIL SEISCIENTOS CINCUENTA Y NUEVE EUROS con DOCE CÉNTIMOS

MADRID, OCTUBRE DE 2.021.

LA CONTRATA

OBRAS Y PAVIMENTOS ESPECIALES SA

PRESUPUESTO Y MEDICIONES



REMODELACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	PRECIO	IMPORTE
01	ACTUACIONES PREVIAS							
01.01	ud DESMONTAJE EQUIPAMIENTO DEPORT. EXIST I/INST. POSTERIOR Desmontaje del equipamiento deportivo existente, mediante la retirada de las porterías fijas de fútbol f-11, abatibles de fútbol f-7 y banquillos existente, acopio en el interior de la instalación, i/instalación posterior una vez concluidos los trabajos de sustitución del césped artificial, con pp. De medios auxiliares.							
	CAMPO F-11	1				1,00		
						1,00	2.152,50	2.152,50
01.02	m2 RETIRADA CÉSPED ARTIFICIAL EXIST. I/ACOPIO INTER. INST. Retirada del césped artificial existente en el campo de futbol f-11, mediante el corte en rollos de 2m. De ancho, levantado del césped con maquinaria especifica autopropulsadaturmuncher tm2000d o similar, enrollado del césped artificial en rollos compactos de 2m. De ancho y longitud variable de 15-17m, extracción de las cargas de caucho y arena de forma simultanea con posterior ensacado de las mismas, i/acopio de los rollos de césped artificial y de las cargas ensacadas en el interior de la instalación o a una distancia < 5km., Con pp. De medios auxiliares.							
	CAMPO F-11	1	92,00	63,00		5.796,00		
						5.796,00	3,38	19.590,48
TOTAL 01.....								21.742,98

REMODELACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	PRECIO	IMPORTE
02	PAVIMENTO CÉSPED SINTÉTICO							
02.01	m2 CESPED GREENFIELDS SLIDE MAX PRO 60 I/CARGAS FIFA QUALITY PRO Suministro de césped sintético, greenfields slide max pro 60, de las siguientes características: *Tipo: 5/8" Tejido con patrón de puntos rectos. *Composición: 100% Polietileno thiolon, monofilamento bicolor estructura de hilo en forma de diamante con un espesor de 365 micras, resistente a los rayos uv y 13.200 Dtex. *Base: Doble, 100% thiobac pp tejido de poliéster estabilizado a los rayos uv, peso 265 gr/m2. *Revestimiento: Látex con una base de estireno-butadieno (sbr), con perforaciones para drenaje. *Altura de fibra: ± 60Mm ± 10%. *Espesor total: ± 62Mm ± 10%. *Nº puntos 10cm largo: ± 6,3 *Nº puntos 10cm ancho: ± 13,5 ± 1 *Nº puntadas por m2: ± 8.505 ± 5%. *Peso de la fibra: ± 1.541 Gr/m2 ± 10% *Peso de la base: ± 252 Gr/m2 ± 10% *Peso del revestimiento: ± 1.000 Gr/m2 ± 10% *Peso total: ± 2.793 Gr/m2 ± 10% *Ancho de los rollos: 410Cm. *Longitud de los rollos: Ancho del campo. *Color: Verde hierba y verde oliva. Instalación del césped incluyendo extendido, encolado de juntas sobre bandas de poliéster de 30 cm. De anchura, señalización longitudinal de f-11 y transversal de f-7 según r.F.E.F. Y distribución e introducción de mezcla formada por 20 kg/m2. De arena de sílice de granulometría 0.3/0.8 Mm. Y 14 kg/m2. De granulado de caucho s.B.R negro de granulometría 0.5/2.5 Mm., Mediante maquina dosificadora autopropulsada.							
	CAMPO F-11	1	92,00	63,00		5.796,00		
						5.796,00	20,66	119.745,36
	TOTAL 02.....							119.745,36

PRESUPUESTO Y MEDICIONES



REMODELACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	PRECIO	IMPORTE
03	MANTENIMIENTO CÉSPED ARTIFICIAL							
03.01	ud SERVICIO MANTENIMIENTO CAMPO F-11-1 VISITA ANUAL							
	Servicio de mantenimiento formado por 1 visita durante el año, consistente en la limpieza, descompactación y homogeneización del relleno del césped sintético (NO SE INCLUYEN LAS REPARACIONES PROVOCADAS POR UN USO INADECUADO, ACTOS VANDALICOS O NEGLIGENCIAS), realizado con maquinaria especifica autotopulsada SPORTCHAMP, con pp. de medios auxiliares.							
	CAMPO F-11	1				1,00		
						1,00	1.168,50	1.168,50
	TOTAL 03.....							1.168,50

PRESUPUESTO Y MEDICIONES



REMODELACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	PRECIO	IMPORTE
04	PROTECCIONES Y CERRAMIENTOS							
04.01	m2 SUST. REDES PARABALONES POLIAMIDA 100x100mm. e=3mm I/RET EXIST. Suministro e instalación nuevas redes parabalones fabricadas en poliamida trenzada de 3 mm. de espesor y malla de 100x100 mm., i/retirada de las existentes con pp. de elementos de fijación, cables de tensión, grapas de fijación y medios auxiliares de elevación.							
	FONDO	2	80,00		6,00	960,00		
						960,00	8,73	8.380,80
04.02	ud SUM. E INST. BARRAS TELESCOPICAS RIGIDIZACIÓN D=50x1.5mm I/FIJACIÓN Suministro e instalación de barras telescópicas para rigidización, formadas por tubo de acero Φ50x1.5 mm., galvanizado en caliente, i/elementos de fijación a postes existentes con pp. de medios auxiliares de elevación.							
	FONDO	2	2,00			4,00		
						4,00	461,25	1.845,00
TOTAL 04.....								10.225,80

PRESUPUESTO Y MEDICIONES



REMODELACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	PRECIO	IMPORTE
05	ALUMBRADO							
05.01	ud PROYECTOR SIMETRICO LED 4 MOD 250W POT=1000W I/INST. Suministro e instalación de proyector simétrico de led mod. Sportled Stadium Samsung 5K de Faeber o similar de 1000W de potencia y 130.000 lumenes, formado por 4 fuentes luminicas de 250w SMD Led SAMSUNG 3535, driver: Mean Well Vida Útil: 50.000 Horas Regulable: 1-10 V, clase Energética: A++, protección IP: IP66, temp. de trabajo: -30°C / +50°C, material: aluminio / PC multitensión: 100-277V AC, factor de potencia: 0.93, protección IK: IK08, índice de respuesta cromática (CRI): 70, clase aislamiento eléctrico: II, eficiencia luminaria: 130 lm/W, cableado en la plataforma de la columna (SE HA CONSIDERADO QUE EXISTE SUMINISTRO ELECTRICO FUNCIONAL EN CADA COLUMNA), i/retirada de los existentes, con pp. de medios auxiliares.							
	COLUMNA N°=1	1	6,00			6,00		
	COLUMNA N°=2	1	6,00			6,00		
	COLUMNA N°=3	1	6,00			6,00		
	COLUMNA N°=4	1	6,00			6,00		
						24,00	3.013,50	72.324,00
TOTAL 05.....								72.324,00

PRESUPUESTO Y MEDICIONES



REMODELACIÓN CÉSPED ARTIFICIAL CAMPO F-11 92x63m. CD CANILLAS-MADRID

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	PRECIO	IMPORTE
06	GESTION DE RESIDUOS							
06.01	NOTA: - Este capitulo no sera necesario incluirlo, si el césped artificial y rellenos se quedan en la instalación o se retiran a una dist. < 5Km.					0,00	0,00	0,00
06.02	m2 CANON GESTION RCD'S MEZCLADOS I/CARGA Y TTE. Canon de gestión de rcd's mezclados, procedentes de la retirada del césped artificial del campo de futbol f-11 existente, consistente en la carga y tte. A vertedero autorizado, i/canón de vertido, con pp. De medios auxiliares.							
	CAMPO F-11	1	92,00	63,00		5.796,00		
						5.796,00	3,73	21.619,08
TOTAL 06.....								21.619,08
TOTAL.....								246.825,72



PREFERRED PROVIDER FOR FOOTBALL TURF

CERTIFICATE

FIFA is pleased to confirm that

Greenfields B.V.

Is classed as a PREFERRED PROVIDER for Football Turf

Valid

from 01/01/2021 to 31/12/2022

Total Quality Service is guaranteed by

- Additional expertise in civil engineering (subbase) and project management (general contractor)
- Full responsibility for the production, installation and maintenance from inception to completion
- High level of service and continuous development of football turf products
- Experience as a FIFA Quality Programme licensee with FIFA-certified fields

A stylized blue ink signature of Gianni Infantino.

Gianni Infantino
Presidente de la Fédération Internationale de Football Association

www.FIFA.com/footballturf



GreenFields Slide Max Pro

60 135 13.2

ESPECIFICACIONES TECNICAS

RE1T1310631356003GP

TIPO:	Sistema de césped sintético con patrón de puntos recto, tuftado, con galga 5/8", relleno con arena/caucho.	
COMPOSICION:	Monofilamento 100% polietileno sección en diamante, resistente a los rayos U.V. 13.200/6 dTex. Espesor 365 micras	
BASE PRIMARIA:	Doble: 100% PP Thiobac, color negro, estabilizado a la acción de rayos U.V., peso aproximado 252 gr/m ² .	
BASE SECUNDARIA:	Compuesto de látex con base de estireno-butadieno (SBR) con orificios de drenaje	
ALTURA DE FIBRA:	± 60 mm	± 10%
ALTURA TOTAL:	± 62 mm	± 10%
Nº DE PUNTOS POR 10 CM (ANCHO):	± 6,3	
Nº DE PUNTOS POR 10 CM (LARGO):	± 13,5	± 1
Nº PUNTADAS/M ² :	± 8.505	± 5%
PESO DE LA FIBRA:	± 1.541 gr/m ²	± 10%
PESO BASE PRIMARIA:	± 252 gr/m ²	± 10%
PESO BASE SECUNDARIA:	± 1.000 gr/m ²	± 10%
PESO TOTAL:	± 2.793 gr/ m ²	± 10%
ANCHO DE LOS ROLLOS:	410 cm	± 2 cm
LARGO DE LOS ROLLOS:	conforme a pedido	
RESISTENCIA DE LAS PUNTADAS:	≥ 30 Newton	
PERMEABILIDAD:	60 Ltr/m ² /min (sin carga)	
RESISTENCIA DEL COLOR:	Ensayo Xenon: escala azul ≥ 7, escala gris ≥ 4	

COLOR

Dos tonos (Verde campo, verde lima), blanco y amarillo para las líneas de marcaje



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FIFA LABORATORY TEST REPORT

Manual 2015

Product name	GreenFields Slide MAX Pro 60 135 13.2 s sbr
Product type (Field/Lines)	Field
FIFA Licensee	TenCate Thiolon B.V.
FIFA accredited Test Institute	Sports Labs Ltd.
Laboratory Test report number	17428/3212
Date of test	28.02.2017

Football Turf Laboratory Test Report

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5.7.1 DSC (Differential Scanning Colorimetry) scans of pile yarn	
5.7.2 a) Performance infill particle grading curve	
5.7.2.b) Stabilising infill particle grading curve	
5.7.3 TGA of performance infill	
5.7.4 Unbound sub-base Composition	
5.7.5 Simulated wear, photos before / after	

Football Turf Laboratory Test Report

1 – Introduction / The Process of certification

In order to be certified, football turf fields must reach the performance and quality criteria established to be as close as possible to playing characteristics of natural grass. To this end, each field must undergo four steps as outlined below:

- a thorough composition and resilience test of the product in the laboratory (step 1)
- the installation of the product as declared, applying the outlined procedures (step 2)
- a test of the final installation for the relevant characteristics of the field as a whole system (step 3)
- if successful, certification FIFA QUALITY or FIFA QUALITY PRO field (step 4)

After expiration of the certificate, the field can be retested (step 3/4)



Fig. 1.2 Approval process steps and the related documents / parties

Legend:



This process is part of the FIFA Quality Programme for Football Turf in order to

- replicate the playing qualities of good quality natural grass,
- create a playing environment that does not increase the risk of injury to players
- achieve adequate durability (providing it is properly maintained)

For more details on *FIFA Quality Programme for Football Turf* see www.fifa.com/quality.

This document covers the complete step 1, FIFA LABORATORY TESTS REPORT. Consider:

- Tests are performed on a representative sample of the manufacturer's sample delivered to the FIFA accredited test institutes
- The test report is only valid if reproduced in its entirety
- The results are only valid for the complete Football Turf (related product) as stated in 2.1
- The related product is eligible for undergoing a field test on a final installation.

IMPORTANT:

To reach FIFA QUALITY PRO (or QUALITY) field certification, as next steps

- the installation has to comply with the related Product Declaration / Method Statement (step 2)
- a successfully passed subsequent FIELD TEST (step 3/4)

This FIFA LABORATORY TEST REPORT may only be used in relationship to Football Turf fields that are going to be submitted for certification under the *FIFA Quality Programme of Football Turf*. Any other use of this report is a violation of the report's copy right which is held by FIFA and breaches the terms of the FIFA Quality Programme of Football Turf licensing agreement.

Football Turf Laboratory Test Report

2 – Test Object, Participants

2.1 Test Numbers

Report Identification	Laboratory Test report number	17428/3212
	Test Institute Project number	17428

2.2 Test Objects

	Product Name	GreenFields Slide MAX Pro 60 135 13.2 s sbr
	Product Identification code	RE1T1300631356003GP
	Name of the synthetic turf system	GreenFields Slide MAX Pro 60 135 13.2
	Performance infill	SBR
	Stabilising infill	Sand
	Shock-pad or elastic layer (if applicable)	--
	Sub-base composition	Rigid engineered Base

2.3 Participants, Addresses

Applicant • FIFA preferred producer • Licensee 	Name	TenCate Thiolon B.V.			
	Address	TenCate Thiolon B.V.			
	Contact	Phone	+31 38 337 2010	email	info@greenfields.eu
FIFA accredited Test Institute	Name	Sports Labs Ltd.			
	Address	Sports Labs Ltd., LIVINGSTON			
	Contact	Phone	+44(0)1506 444 755	email	sean@sportslabs.co.uk

3 – Test Conclusion, Product Approval

The presented Football Turf surface satisfies the FIFA LABORATORY TEST requirements of

FIFA QUALITY	Passed	«passed» or «failed»
FIFA QUALITY PRO	Passed	«passed» or «failed»
IMPORTANT: A successfully passed test of the final installation (FIFA FIELD TEST) is mandatory to obtain FIFA QUALITY / QUALITY PRO Certification!		

Report originated by	Name	Craig Melrose	
	Position	Laboratory Coordinator	
	Date	28.02.2017	
Report approved by	Name	Sean Ramsay	
	Position	Laboratory Director	
	Date	28.02.2017	

Football Turf Laboratory Test Report

4 – Product Information / Specifications

4.1 Overview – a typical product composition

The basic structure and composition of artificial turf varies. To reach the goal of defined quality and specific functional performances, a set of the relevant parameters for the products / materials used was defined. Materials / products typically used are as follows:

TYPICAL ASSEMBLING PROCESS

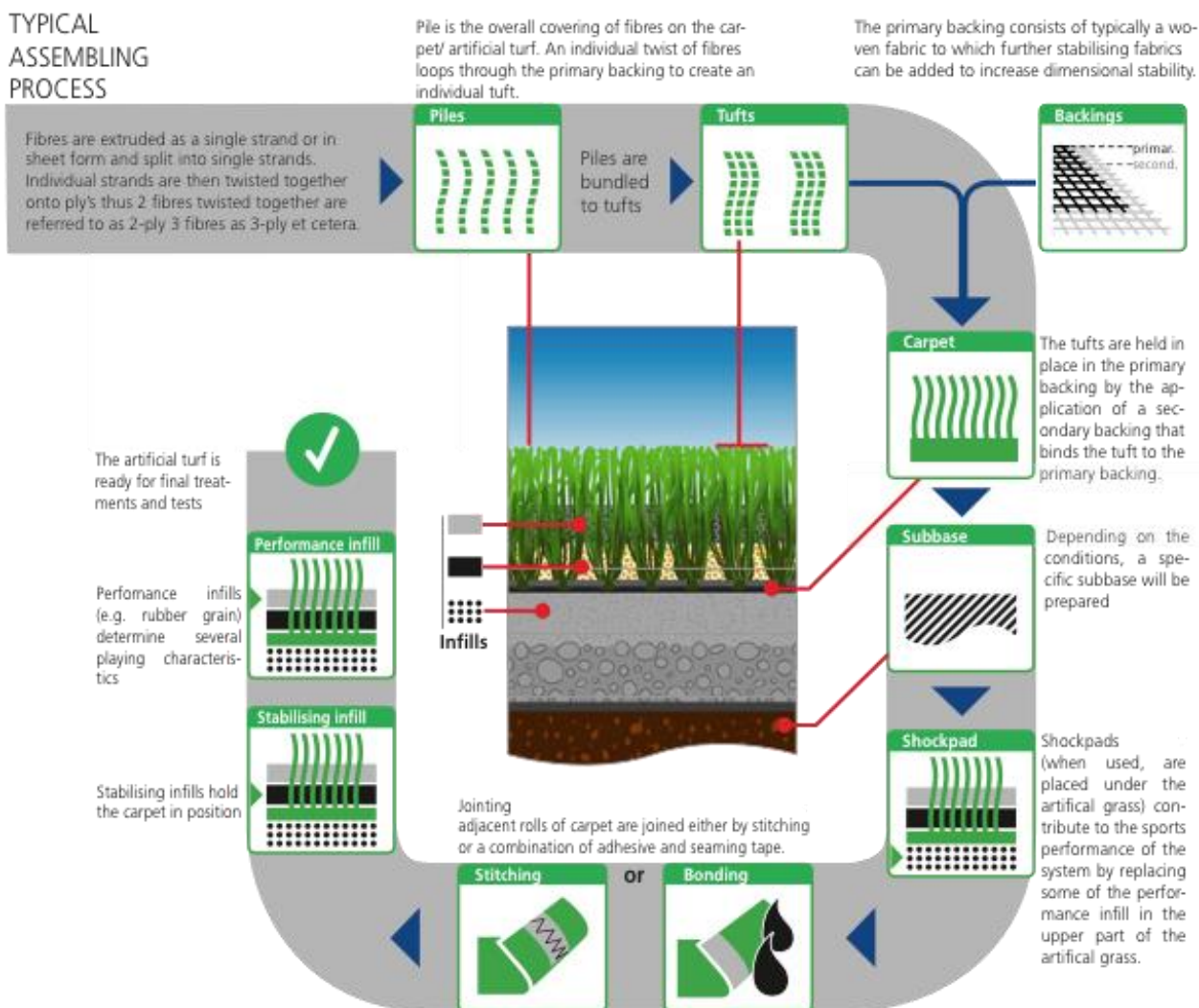


Fig. 1.3 Products / materials used to build up artificial turf

Football Turf Laboratory Test Report

4 – Product Information / Specifications

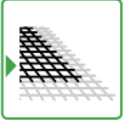
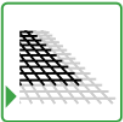


4.2 Artificial turf (1/2)

Manufacturer		Belakos BV, Belgotex Pty or Sports & Leisure Group N.V.			
Tuft pattern		Straight Stitch Pattern			
Pile yarns		Yarn A	Yarn B	Yarn C	Standard Test Method
Yarn Manufacturer		TenCate Grass	--	--	
Product name, code		MS 13700/6 DIAMOND XQ RIB 365: MS D2 132-6 XWr	--	--	
Pile yarn profile		See details below	See details below	See details below	—
Pile thickness [μ m]		365 micron	--	--	—
Pile colour [RAL]	1	6003	--	--	—
	2	6025	--	--	—
	3	or 6010	--	--	—
Pile width [mm]		1.05 mm	--	--	—
No of tufts/m²		8505 /m2 (total)	--	--	ISO1773
Pile length [mm]		60 mm	--	--	ISO 2549
Pile weight [g/m²]		1585 g/m2	--	--	ISO 8543
Pile yarn characterization		PE monofilament Slide Max XQ (1T131)	--	--	—
Pile yarn dtex		13200/3/3	--	--	—

Football Turf Laboratory Test Report

4 – Product Information / Specifications

4.2 Artificial turf (2/2)			
	Primary backing	Product name / code	D12 (Double PP)
		Manufacturer	TenCate Thiobac
	Re- enforcement scrim	Product name / code	--
		Manufacturer	--
	Secondary backing	Product name / code	Latex
		Manufacturer	Eurocompound
		Dry application rate [g/m ²]	1000 g/m ²
	Carpet	Minimum tuft withdrawal force [N]	> 30 N
		Carpet mass per unit area [g/m ²]	2850 g/m ²
	Method of jointing		
	Bonded joints	Adhesive brand name	Helmitin KR 149/140
		Adhesive manufacturer	Forbo
		Application rate [g/lm]	300 - 350 g/lm
		Jointing film brand name	Seaming tape 145
		Jointing film manufacturer	CECO
	Stitched seams	Tread brand name/product code	--
		Tread manufacturer	--
		Stitch rate [stitch per lm]	--

4.3 Performance infill			
		Specifications	Standard Test Method
	Product name / code	SBR	
	Manufacturer	Airlastic BV	
	Material type	Airlastic SBR	
	Material grading	0.7 - 2.0 mm	
	Particle shape	Rectangular clean cut	prEN 14955
	Particle size range	0.7 - 2.0 mm	EN 933-Part 1
	Bulk density [g/cm³]	0.49 g/cm ³	EN 1097-3
	Application rate [kg/m²]	16 kg/m ²	

Football Turf Laboratory Test Report

4 – Product Information / Specifications

4.4 Stabilising infill

	Specifications	Standard Test Method
Product name / code	Sand	
Manufacturer	Filcom	
Material type	Filter Sand	
Material grading	0.4 - 1.0 mm	
Particle shape	Rounded	prEN 14955
Particle size [range]	0.4 - 1.0 mm	EN 933-Part 1
Bulk density [g/cm³]	1.56 g/cm ³	EN 1097-3
Application rate [kg/m²]	10 kg/m ²	



4.5 Shockpad / elastic layer*

	Specifications	Standard Test Method
Product name / code	--	
Manufacturer	--	
Type	--	
Composition**	--	
Bulk density [g/cm³]	--	
Thickness	--	EN 1979
Shock absorption [%]	--	FIFA 4a
Deformation	--	FIFA 5a
Tensile strength [N]	--	
Mass per unit area [kg/m²]	--	



* if part of system supplied

** type, rubber granule grading, binder content, etc

Football Turf Laboratory Test Report

4 – Product Information / Specification

4.6 Maintenance requirements (recommendations)

Equipment / material		Remarks
Tractor Unit		Purpose - the power unit that pulls the maintenance tools over the field
Drag	Brush	A maintenance attachment that re-distributes the infill and brings the fibres into a more upright position
	Mat	A maintenance tool used to re-distribute infill
Ball roll ramp		A testing device used to assess the speed of a football over the surface

Maintenance logbook		Is used to record all the maintenance activities that take place on the Football Turf Surface
Top up infill materials		to top up penalty spot and corner areas
...		For further maintenance requirements, please consult the manufacturer's recommendations for your specific system



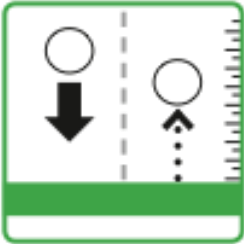
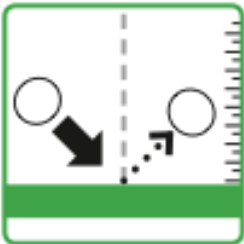
FIFA Licensee's comments / hints

Football Turf Laboratory Test Report

5 – Detailed Laboratory Test Results

5.1 Overview – ball and player to surface interactions

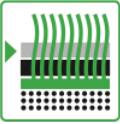
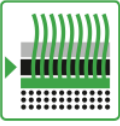
How is the field to play? By means of the following 8 parameters, this question can be answered very well. Furthermore, some values allow conclusions regarding maintenance in order to keep the field in top shape.

Parameter	Comments / hints	Parameter	Comments / hints
1- Vertical ball rebound  The higher the value the higher the ball will rebound. The ball should not bounce too high or too low. Ball / surface interaction		5- Shock absorption  Shock absorbercy is an indicatic of how hard the field feels to th player. A value that is too lo indicates a hard field and cau: damage to player's joints too so and the surface is energy sappir resulting in increases in fatigu and over-use injuries. Player / surface interaction	
2- Angled ball rebound  Angled ball rebound is a combination of the hardness of the field and the resistance from the fibres to the ball and thus a high reading can come from a hard surface, or a low grip surface or a combination of both Ball / surface interaction		6- Deformation  A surface that deforms too much will result in overstretching of ligaments particularly the around the ankle. Player / surface interaction	
3- Ball roll  The higher the value the faster the ball will run over the surface. The ball should not be too fast or too slow. Ball / surface interaction			
4- Rotational resistance  This simulates the player's ability to alter direction, too high a value and stress can occur across knee ligaments, too low and the player will not be able to grip the surface and may slip causing ligament damage. Player / surface interaction			

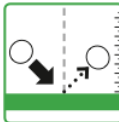
Football Turf Laboratory Test Report

5 – Detailed Test Results

5.2 Product identification

		Property	Test result
	Artificial Turf	Carpet mass per unit area [g/m ²]	2848 g/m ²
		Tufts per unit area [m ²]	8694 /m ²
		Pile length above backing [mm]	60 mm
		Pile weight [g/m ²]	1534 g/m ²
		Water permeability of carpet [mm/h]	4826 mm/hr
		Free pile height	20 mm
		Yarn cross section and thickness	See Annex
	Performance infill	Particle size range	0.8 - 2.0 mm
		Particle shape	A2
		Bulk density [g/cm ³]	0.430 g/cm ³
		Infill depth	32 mm
		Thermographic analysis	% organic 63 % % inorganic 37 %
	Stabilising infill	Particle size range	0.315 - 0.8 mm
		Particle shape	C2
		Bulk density [g/cm ³]	1.488 g/cm ³
	Shockpad / elastic layer (if part of system supplied)	Shock absorption [%]	--
		Deformation	--
		Thickness	--

5.3 Ball / surface interaction

					FIFA Approval requirements		P = passed F = failed	
Property		Condition		Test Results	QUALITY	PRO	QUAL-ITY	PRO
	Vertical ball rebound	Initial, un-aged	Dry	0.84	0.6 – 1m	0.6-0.85 m	Passed	Passed
			Wet	0.82			Passed	Passed
		After simulated wear	3'020 cycles	0.85				Passed
			6'020 cycles	0.95	0.6 – 1m		Passed	
	Angled ball rebound	Dry		51	45 – 80%	45 – 80%	Passed	Passed
		Wet		66			Passed	Passed

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	Reduced Ball roll	Initial, un-aged	Dry	5.2	4 – 10m	4 – 8m	Passed	Passed
		After simulated wear 3'020 cycles	Dry	6.0				Passed
			Wet	6.4				Passed
		After simulated wear 6'020 cycles	Dry	7.0	4 – 12m		Passed	
			Wet	7.2			Passed	

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5 – Detailed Test Results

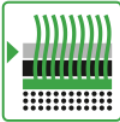
5.4 Player / surface interaction

				FIFA Approval requirements		P = passed F = failed	
Property	Condition		Test Results	QUALITY	QUALITY PRO	QUALITY	PRO
 Shock absorption	Initial, Un-aged	Dry	66	57 – 68%	62 – 68%	Passed	Passed
		Wet	66			Passed	Passed
	After simulated wear	3'020 cycles	64				Passed
		6'020 cycles	59			Passed	
	50°C		66	57 – 68%	62 – 68%	Passed	Passed
	– 5°C ⁽¹⁾		64			Passed	Passed
 Deformation	Initial	Dry	9.9	6 – 11mm	6 – 10mm	Passed	Passed
		Wet	10.0			Passed	Passed
	After simulated wear	3'020 cycles	9.1				Passed
		6'020 cycles	8.2	6 – 11mm		Passed	
 Rotational resistance	Initial	Dry	36	27–48Nm	32–43Nm	Passed	Passed
		Wet	33			Passed	Passed
	After simulated wear	3'020 cycles	41				Passed
		6'020 cycles	41	27–48Nm		Passed	
 Skin / surface friction	Dry		0.73	0.35 – 0.75 μ	0.35 – 0.75 μ	Passed	Passed
	Dry		23	$\pm 30 \%$	$\pm 30 \%$	Passed	Passed
Skin abrasion							

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5.5 Environmental impact (artificial, light, water)

					FIFA Requirements P= passed F= failed		
Property		Aspect		Condition	Test result		P/F
	Pile yarns	Colour change	1	After artificial weathering	5	≥ Grey scale 3	Passed
			2		4 - 5		Passed
			3		5		Passed
		Yarn tensile strength	1		5 %	Change ≤ 50%	Passed
			2		6 %		Passed
			3		1 %		Passed
	Polymeric infill	Colour change			4 - 5	≥ Grey scale 3	Passed
		Visual change in composition			No Change	No change	Passed
	Complete system	Water permeability		N/A	2163 mm/hr	>180 mm/h	Passed
	Stitched joints	Strength	Un-aged	--	≥ 1000N/100mm		
			Water aged	--			
	Bonded joints	Strength	Un-aged	139 N/100mm	≥ 75N/100mm	Passed	
			Water aged	147 N/100mm		Passed	
	Carpet tuft	Withdrawal force	Un-aged	49 N	≥ 30N	Passed	
			Water aged	43 N		Passed	
	Heat	category			Category 2/3	Information	
	Splash	Splash characteristic			> 1.5 %	Information	

5.6 Miscellaneous

	Shockpad Elastic layer	Tensile strength	Un-aged	--	≥ 0.15 MPa	
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5 – Detailed Test Results

5.7 Explanatory graphs / pictures

5.7.1 DSC (Differential Scanning Colorimetry) scans of pile yarn

5.7.2 Performance infill particle grading curve / Stabilising infill particle grading curve

5.7.3 TGA (Thermo Gravimetric Analysis) of performance infill

5.7.4 Composition of unbound sub-base (if tested as part of system) Sub-base particle grading curve

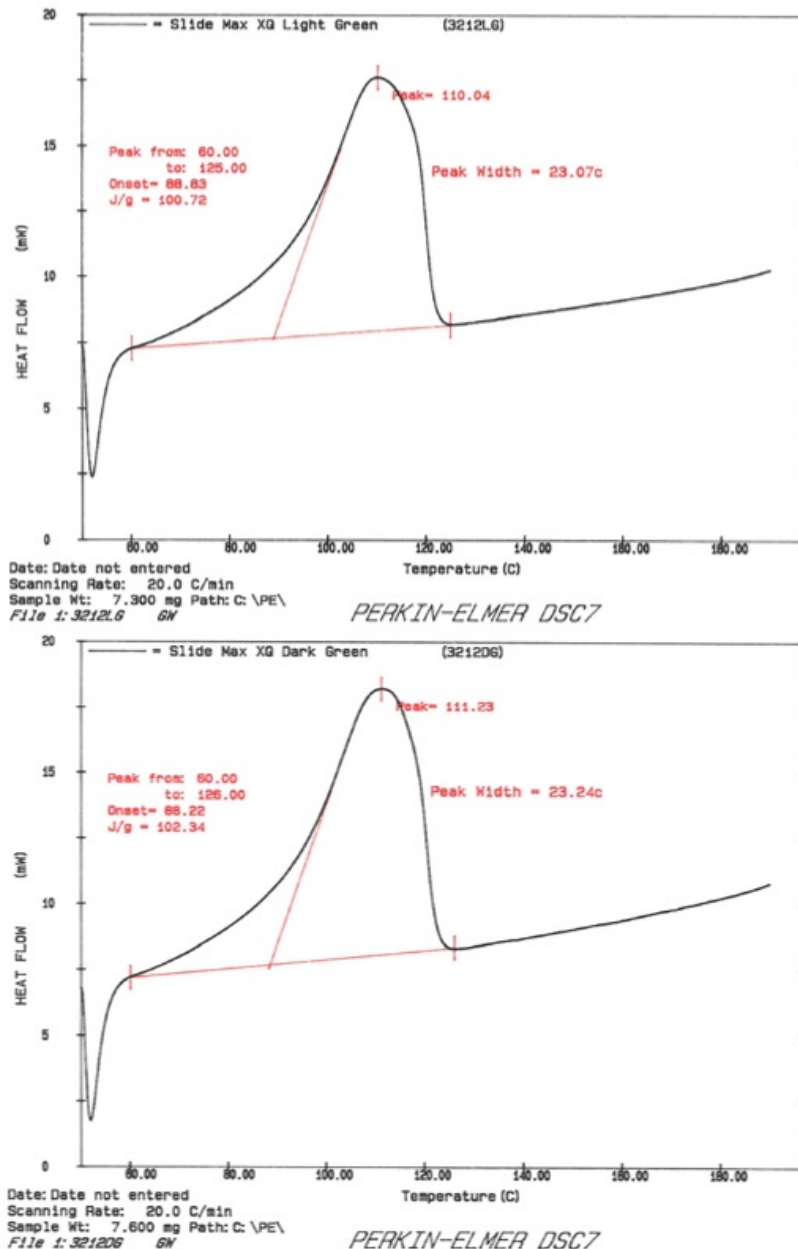
5.7.5 Simulated wear, photos before / after

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5 – Detailed Test Results

5.7 Explanatory graphs / pictures

5.7.1 DSC Differential Scanning Colorimetry scans of pile yarn



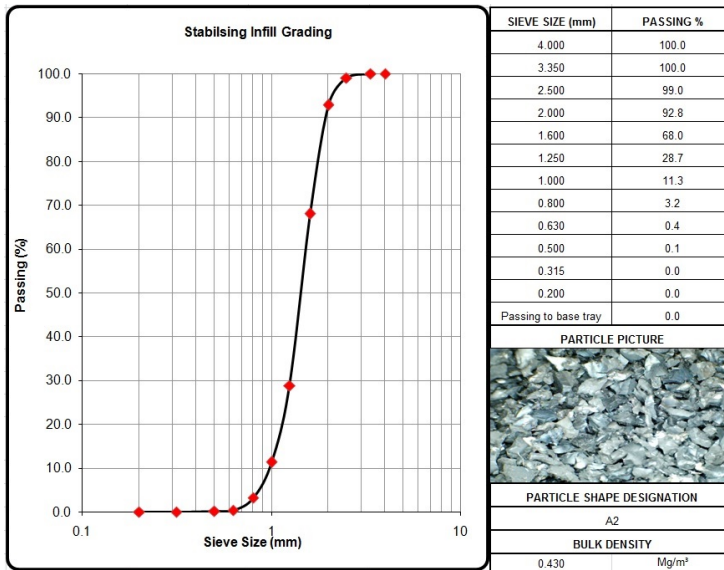
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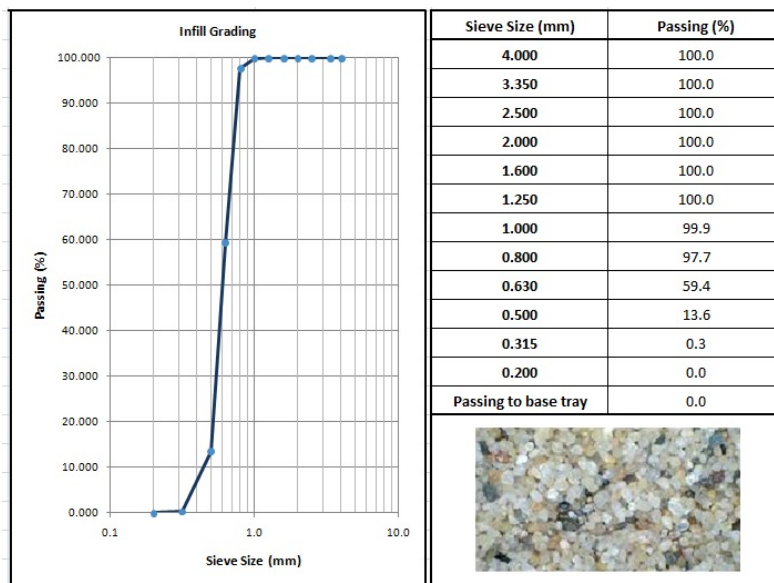
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5.7 Explanatory graphs / pictures

5.7.2 a) Performance infill particle grading curve



5.7.2 b) Stabilising infill particle grading curve



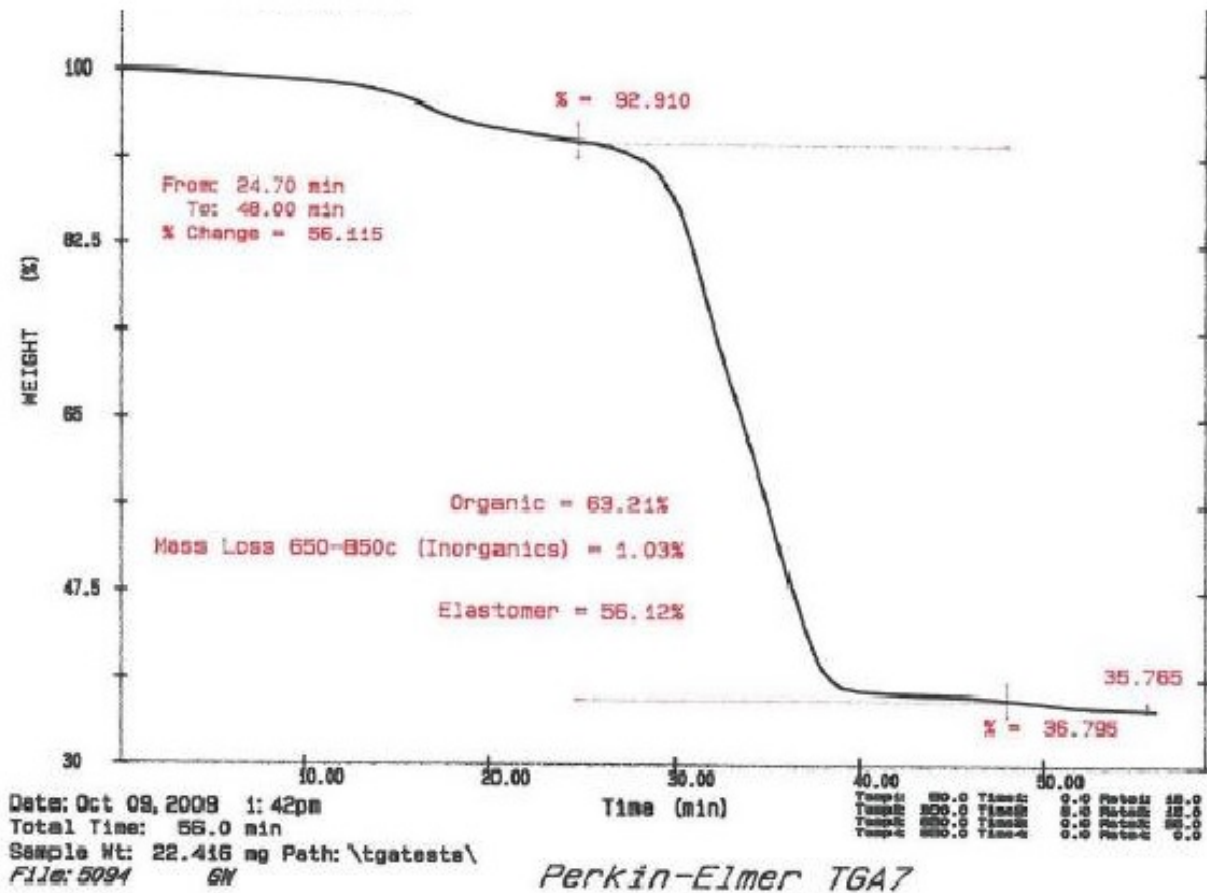
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5.7 Explanatory graphs / pictures

5.7.3 TGA of performance infill



Comments:

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5.7 Explanatory graphs / pictures

5.7.4 Sub base (if tested as part of system)

	Composition	--
	Particle size range	--
	Particle shape	--
	Thickness	--
	Compaction & test method	--

Sub-base particle grading curve

Comments:

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5 – Detailed Test Results

5.7 Explanatory graphs / pictures

5.7.5 Simulated wear (photos before / after wear)

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Before wear	After wear
Pre Wear   	3010 Lisport XL Cycles   
	6015 Lisport XL Cycles   

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5.7 Explanatory graphs / pictures

5.7.5 Simulated wear (photos before / after wear)

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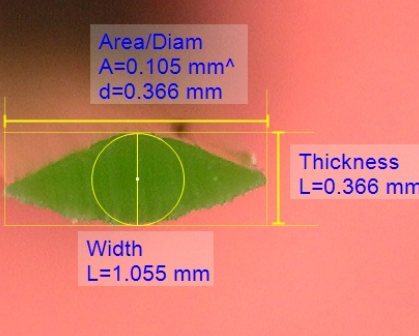
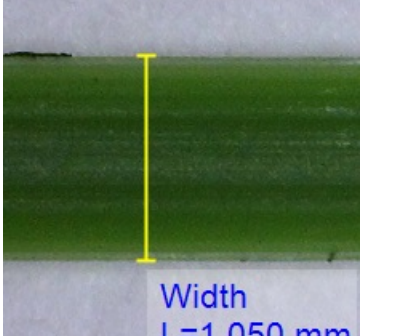
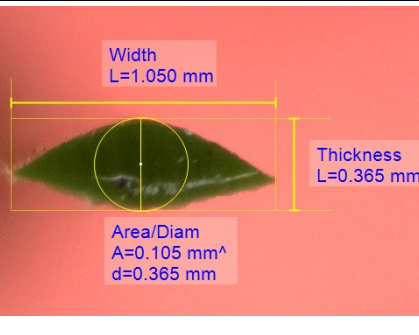
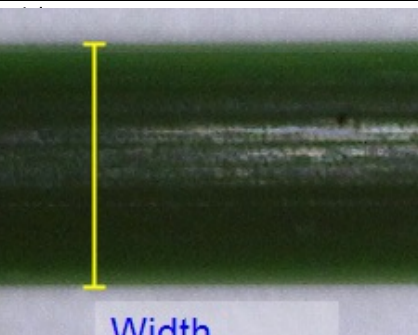
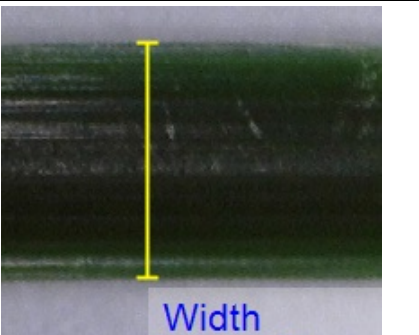
Before wear	After wear

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5 – Detailed Test Results

5.7 Explanatory graphs / pictures

5.7.5 Yarn characteristics

		
		
Cross-section Yarn 3	Side A Yarn 3	Side B Yarn 3

Details of dimension measurements

LG yarn - 366 microns, 1.05 mm, diameter of circle 366 microns, DG yarn - 365 microns, 1.05 mm, diameter of circle 366 microns