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2024 EDITION

FIFA QUALITY PROGRAMME FOR FOOTBALL TURF

TEST MANUAL II: TEST REQUIREMENTS

VERSION JUNE 2024

CONTENTS

01.

INTRODUCTION	6
--------------	---

02.

FIELD CERTIFICATION	8
---------------------	---

2.1 Test procedure and technical assessment of the playing surface	10
2.2 Field certification	10
2.3 Certification period	11
2.4 Retesting	11
2.5 Certification following retests	11

03.

TEST METHODS	12
--------------	----

04.

LABORATORY TEST REQUIREMENTS	14
------------------------------	----

4.1 General	15
4.2 Calculation of variations	15
4.3 Calculation of relative consistency during field testing	15
4.4 Uncertainty of results	15
4.5 Resistance to artificial weathering	15
4.6 Infill material: definitions	15
4.7 Systems: definitions	16
4.8 Systems under development	16
4.9 Synthetic yarns with recycled content	16
4.10 Critical Fall Height determination and Head Injury Criterion	17
4.11 Order of testing	18

Table 1 – laboratory test requirements	19
--	----

Table 2 – laboratory test requirements for shockpads	22
--	----

Table 3 – product identification tests	23
--	----

05.

FIELD TEST REQUIREMENTS	26
-------------------------	----

5.1 Use of existing infills	27
5.2 Use of existing shockpads/ elastic layers	27
5.3 Use of geomembrane and drainage layers	27
5.4 Field test procedures	28
5.5 Video footage of field (site) tests	28
5.6 Material identification – initial field test	28
5.7 Material identification – field retests	28
5.8 Maintenance equipment	29
5.9 Sprinklers	29
5.10 Maintenance during field tests	29

Table 4 – field test requirements for FIFA Quality Pro and FIFA Quality certification	30
---	----

5.11 Visual inspection	31
------------------------	----

Table 5 – material identification for initial site test: FIFA Quality Pro and FIFA Quality certification	32
--	----

Table 6 – material identification for site retests: FIFA Quality Pro and FIFA Quality certification	34
---	----

06.

FIELD DIMENSIONS AND MARKINGS	35
-------------------------------	----

6.1 Field dimensions	36
6.2 Field markings and eligibility for international competitions	36

07.

RUN-OFF AREA	38
--------------	----

7.1 Football turf fields	39
7.2 Football turf field repairs	39
7.3 Natural-turf fields	40
7.4 Maintenance requirements	41

Annexes.

ANNEXE A: GENERAL REQUIREMENTS	43
--------------------------------	----

1. Code of Practice for the Design, Construction and Testing of Football Turf Fields	43
2. Bearing capacity	43
3. Glare	43
4. Staining	43
5. Toxicology	43
6. Environmental compatibility	43
7. Climatic conditions	43
8. Resistance to fire	43

ANNEXE B: FACTORY QUALITY CONTROL PROCEDURES	44
--	----

1. Introduction	44
2. Organisation	44
3. Control procedures	44
4. Document and data control	44
5. Subcontract services	44
6. Knowledge of raw material	44
7. Management of production	45
8. Inspection and test	45
9. Control of non-conforming products	46
10. Handling, storage and conditioning in production areas	46
11. Transport and packaging	46
12. Training of personnel	46
13. Minimum test frequencies for general properties	46
14. Communication	47
15. Design and construction verification	47

ANNEXE C: FIFA BASIC STANDARD	48
-------------------------------	----

1. Introduction	48
2. Eligibility for FIFA Basic standard field test	48
3. Certification period	48
4. Information for certification applicants	48
5. Field dimensions	49
6. Field markings and eligibility for international competitions	49
7. Field test positions for pitches smaller than 45.0m x 90.0m	49
8. Field test requirements	50

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01

INTRODUCTION



The development of artificial grass surfaces – designated “football turf” by FIFA – that replicate the playing characteristics of good-quality natural grass has resulted in the rapid acceptance of such surfaces amongst the global football community. Manufacturers are able to produce surfaces that provide a credible alternative solution in parts of the world where the climate or resources make the provision of good-quality natural-grass pitches difficult or impossible. Similarly, the development of football turf has provided a potential solution for facility owners/operators wishing to maximise the use of their facilities through community use and those struggling with stadium microclimates that make the maintenance and growth of natural grass difficult.

To ensure that these new forms of playing surface replicate the attributes of good-quality natural grass, provide a playing environment that does not increase the risk of injury to players and match officials, and are of adequate durability (provided that they are correctly maintained), FIFA has developed the FIFA Quality Programme for Football Turf. Launched in 2001, it is a rigorous test programme for football turf that assesses ball and surface interaction, player and surface interaction and the durability of products, and allows successful manufacturers to enter into a licensing agreement for the use of the prestigious FIFA Quality (formerly FIFA Recommended) marks.

Football turf was endorsed for official competitive matches in July 2004, when The International Football Association Board included the option of using artificial surfaces that met the requirements of the FIFA Quality Concept for Football Turf or the International Artificial Turf Standard in the Laws of the Game. To further meet the needs of professional clubs and international stadiums, FIFA has introduced a second category that is geared specifically towards the demands of the professional game (FIFA Quality Pro, formerly FIFA 2 Star). The broader category (FIFA Quality, formerly FIFA 1 Star) has wider bands of

acceptability, as it is geared towards durability and safety for more intense use at community level. Fields certified to both categories are eligible to host international matches, subject to the relevant competition regulations.

The laboratory test programme that football turf must pass as part of the FIFA Quality Programme for Football Turf includes a schedule of simulated use to assess the ability of the surface to perform for a minimum period of time. The degree of simulated use undertaken on FIFA Quality Pro-compliant products is designed to

MANUFACTURERS ARE ABLE TO PRODUCE SURFACES THAT PROVIDE A CREDIBLE ALTERNATIVE SOLUTION IN PARTS OF THE WORLD WHERE THE CLIMATE OR RESOURCES MAKE THE PROVISION OF GOOD-QUALITY NATURAL-GRASS PITCHES DIFFICULT OR IMPOSSIBLE.

replicate the low-to-moderate levels of use typically found on football-specific stadium pitches, whilst the degree of simulated use undertaken on FIFA Quality-compliant products is designed to replicate the higher levels of use found on training and community pitches (pitches are also referred to in this Test Manual as “fields”). Potential installers of football turf pitches should note, however, that experience has shown that pitches subject to excessive high-intensity use may not be able to meet the demanding

performance criteria of the FIFA Quality Programme for Football Turf for the lifetime of the playing surface. Failure to undertake adequate maintenance also reduces the period of time that a pitch may satisfy the requirements of the FIFA Quality Programme for Football Turf.

This edition of the Test Manual supersedes all previous editions with effect from 15 April 2024.

02

FIELD CERTIFICATION

The FIFA Quality Programme for Football Turf certifies fields that have been found to fulfil the requirements of the programme. It should be noted that **certification does not constitute product approval**. To be certified, football turf fields must meet the established performance and quality criteria to provide the best possible playing conditions under either of the two specific quality levels. In order to obtain FIFA certification, a field must undergo the four steps laid out in Figure 1.

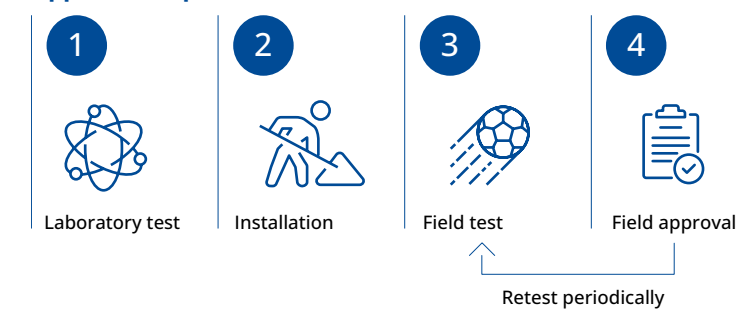
The testing phases are described below.

Step one: thorough laboratory product testing

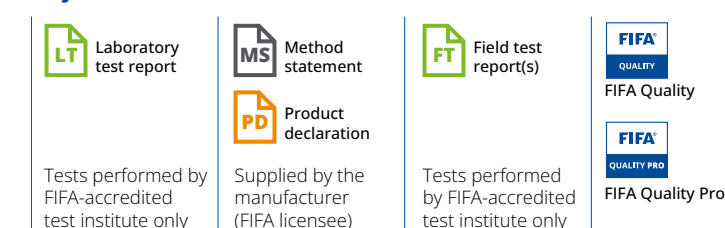
- The manufacturer (an existing or potential FIFA licensee) submits the constituent components of a system to a FIFA-accredited test institute. The list of FIFA-accredited test institutes is available on FIFA.com.
- The FIFA-accredited test institute performs all of the tests laid out in the FIFA Quality Programme for Football Turf – Test Manual: Test Methods under the ISO 17025 quality management system. If the sample fulfils all sections of the FIFA Quality Programme for Football Turf – Test Manual: Test Requirements, a test report is submitted to FIFA confirming that the manufacturer's product has met the requirements. NB: The test report is not a product certificate.
- The manufacturer is informed that the product is available for installation and is eligible for the next stage of testing, subject to the establishment of the licence agreement between FIFA and the manufacturer.

Figure 1: Four steps to obtain a FIFA recommended football turf field: approval process – steps and related documents/parties

Approval steps



Key documents



Step two: installation of the product as declared, in line with the outlined procedures

- The product must be installed using a similar composition of materials within the required manufacturing tolerances and perform similarly to when it was tested in the laboratory and as recorded in the corresponding laboratory test report.
- The licensee must complete further documentation, i.e. the method statement and product declaration, to confirm the installation procedure.

Step three: initial assessment**2.1 TEST PROCEDURE AND TECHNICAL ASSESSMENT OF THE PLAYING SURFACE**

- Following the installation, licensees must request a field test by contacting a FIFA-accredited field test institute listed in FIFA's online database, to which each licensee is granted access upon signing the licence agreement.
 - The licensee must appoint one of the FIFA-accredited field test institutes to undertake a field test. The list of FIFA-accredited field test institutes is available on EIFA.com.
 - The request must contain the details of the product to be tested, the method statement and the product declaration. In addition, the licensee must indicate which FIFA-accredited test institute it has appointed.
- The field must be tested in accordance with the procedures laid out below in Table 3 – product identification tests.
- Samples of the artificial grass and any infill used to construct the football turf field must be collected from the site by the FIFA-accredited field test institute and tested using the procedures detailed below in Table 4 – field test requirements for FIFA Quality Pro and FIFA Quality certification to ensure that they are within specification (subject to the tolerances detailed in Table 4).
- The results of the field and quality control tests are recorded in a FIFA field test report by the FIFA-accredited field test institute and submitted to FIFA (via an online database) for review within three months of the date on which the field test was conducted.

NB: If a field fails the initial test, the FIFA-accredited field test institute is still required to prepare and submit a FIFA field test report to inform FIFA of the failure. If a second test is required, the licensee must request a new field test report number from FIFA.

2.2 FIELD CERTIFICATION

If a field satisfies all aspects of the above steps within the FIFA Quality Programme for Football Turf, FIFA will grant the facility the relevant certification.

**FIFA Quality**

FIFA Quality certification is awarded to pitches installed with products that have undergone and passed a comprehensive battery of tests assessing durability, resistance, safety and performance. These tests, performed in laboratory and on-site, are designed to ensure that the football turf meets the specific demands for recreational, training and grassroots football applications, typically accommodating 40-60 hours of play per week. Football turf pitches achieving FIFA Quality certification are recognised for their relatively softer playing surface compared to FIFA Quality Pro-certified pitches.

**FIFA Quality Pro**

FIFA Quality Pro certification is reserved for pitches that satisfy elevated standards of performance and safety requisite for professional football. This implies a more rigorous testing protocol, including but not limited to, specifications for pitch dimensions and the prohibition of logos, to ensure compliance with the stringent demands of international match standards. Maintenance of FIFA Quality Pro-certified pitches is inherently more challenging than maintaining FIFA Quality-certified pitches, necessitating meticulous and advanced maintenance practices to preserve the pitch's performance quality over time, especially regarding the ball roll length limited to 8.0 metres.

2.3 CERTIFICATION PERIOD

FIFA Quality certification is valid for three years, and FIFA Quality Pro certification is valid for one year, unless:

- the field is subsequently found to no longer satisfy all aspects of the FIFA Quality Programme for Football Turf following a scheduled or random spot check field test; or
- the football turf is removed or replaced (if replaced, a new field test must be conducted to ensure that the field complies with the requirements).

2.4 RETESTING

FIFA initial test requirements are applicable to fields installed within the past three years. FIFA retest requirements are applicable to fields installed more than three years prior to the date of the initial field test.

- A retest can be requested for any field that has previously been tested and has not been subsequently modified. If a field has been resurfaced, an initial test should be performed.
- A field should be retested according to the standard to which it was first tested, but it can, on request, be tested to the latest version of the standard.
- A field retest may be requested by the licensee, the field owner/operator or a FIFA-accredited test institute contacted by a field stakeholder, a national football association, a confederation or FIFA. The licensee must request a field test through the FIFA online database. All other requesters should submit their requests by sending an email to the FIFA Quality Programme Workgroup (quality@fifa.org).
- Testing must be undertaken by a FIFA-accredited field test technician in accordance with the above procedure and in full accordance with the procedures laid out below in Table 3 – product identification tests.

- Retesting may be undertaken up to three months in advance of the renewal date without the subsequent renewal date changing. Fields may only be tested more than three months before the expiry of the certification in exceptional cases, e.g. if there are requirements under national competition regulations to test at more frequent intervals.
- The results of the field and quality control tests are recorded in a FIFA field test report by the FIFA-accredited field test technician and are submitted to FIFA (via the online database) for review.

2.5 CERTIFICATION FOLLOWING RETESTS

- If a field is found to comply fully with the criteria laid out in tables 3 and 5 below, as well as the Laws of the Game with regard to field markings (as detailed below), it is recertified for a further year under the FIFA Quality Pro mark and a further three years under the FIFA Quality mark.
- If a field fails to satisfy the requirements for the FIFA Quality Pro category, it will lose its FIFA certification. It is not possible for a field to be recertified for FIFA Quality certification. Certification to FIFA Quality level can only be obtained by carrying out a new initial test in accordance with step one above.
- If a field fails to satisfy the requirements for the FIFA Quality category, it will lose its FIFA certification.
- There is no limit on the number of retests that can be performed on any given field, provided that the procedure laid out in this subsection is followed.

03

TEST METHODS



The test methods used to assess football turf and installed fields are described in either the FIFA Quality Programme for Football Turf – Test Manual: Test Methods (2024 edition), International Standards (ISO) or European Standards (EN). Where a test method is given a dated reference, subsequent amendments to or revisions of the method will apply to this Test Manual: Test Requirements only when incorporated into it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

NB: Only the fields that meet the 2024 edition of the FIFA Quality Programme for Football Turf – Test Manual: Test Requirements may be submitted for initial testing in accordance with the 2024 edition of the FIFA Quality Programme for Football Turf – Test Manual: Test Methods.



4.04

LABORATORY TEST REQUIREMENTS

4.1 GENERAL

When subject to laboratory testing for initial approval, the football turf must fully satisfy the requirements listed below in Table 1 – laboratory test requirements using the stipulated test methods.

Coloured yarn filaments must be tested in the exact same manner as green yarn filaments (thickness, decitex, differential scanning calorimetry – DSC – characterisation, resistance to artificial weathering, colour change and peak breakage force).

The football turf's components must be identified using the test methods specified below in Table 3 – product identification tests, and the results must be compared against the data provided by the licensees. The differences between the product identification tests and the licensee's data must be within the tolerances specified in Table 3 below.

4.2 CALCULATION OF VARIATIONS

Unless explicitly stated, variations are to be calculated as a percentage of the manufacturer's declared value and not of the site sample.

4.3 CALCULATION OF RELATIVE CONSISTENCY DURING FIELD TESTING

None of the results from any testing position may vary from the average, plus or minus, of the consistency requirement within the field test. The consistency is relative (not absolute) to the average.

4.4 UNCERTAINTY OF RESULTS

The uncertainty of the test method should not be taken into account when determining whether a product or a field passes the test or fails to meet the requirements.

4.5 RESISTANCE TO ARTIFICIAL WEATHERING

If a football turf yarn is manufactured from a yarn that has been previously tested by a FIFA-accredited test institute for resistance to artificial weathering, the results may be used for the new football turf, provided that:

- a DSC characterisation of the pile yarn shows the yarn to be within the tolerances defined below in Table 3 – product identification tests of that previously tested under the artificial weathering test;
- the thickness of the tested pile yarn is no less than 90% of the declared value (for a group of otherwise identical yarns with different thicknesses, only the thinnest should be tested);
- the profile of the pile yarn is the same as the previously tested yarn; and
- the colour (RAL Classic system) of the yarn is within the normal manufacturing tolerances of the previously tested yarn.

4.6 INFILL MATERIAL: DEFINITIONS

Polymeric infill: material with non-biodegradable polymeric infill. Any material with synthetic or chemically modified natural solid polymer contained in microparticles or microparticles that have a solid polymer surface coating as a substance on their own or in a mixture in a concentration equal to or greater than 0.01% by weight or any particles containing or coated with at least 1% of polymer by weight.

Biodegradable infill: material with biodegradable polymeric infills without non-biodegradable polymeric infill. Degradable or water-soluble polymers and natural polymers that have not been chemically modified. Material (except natural polymers) that presents an ultimate degradation of $\geq 90\%$ relative to the degradation of the reference material within six months in an aquatic test and 24 months in soil and water/sediment interface tests.

04. LABORATORY TEST REQUIREMENTS

Vegetal infill: material containing non-chemically modified natural organic material infill without polymeric infill or biodegradable infill.

Mineral infill: material filled with only solid, non-organic infill without any polymer added.

4.7 SYSTEMS: DEFINITIONS

Mineral-stabilised: system partly filled with mineral infill that does not exceed 25% of the non-elongated pile height.

Mineral-filled: system filled with mineral infill that exceeds 25% of the non-elongated pile height.

Non-filled: system without any infill.

4.8 SYSTEMS UNDER DEVELOPMENT

Mineral-infill stabilised, mineral-infill filled and non-filled systems are currently under development for football and are not yet approved by FIFA. As a result, fields that feature these systems cannot be awarded FIFA Quality or FIFA Quality Pro certification.

4.9 SYNTHETIC YARNS WITH RECYCLED CONTENT

A green reference yarn is defined as follows:

- A green yarn that has been tested at the time of the FIFA product approval, passing all the tests requirements, including Lisport XL cycles and UV resistance colour and peak breakage force.
- A green yarn used as the reference for the UV-aged peak breakage percentage calculation of the coloured yarns. The percentage change from the green reference unaged yarn filament must be no greater than 25%. In the event that there is more than one green yarn, the highest peak breakage force has to be used as the reference.

A green yarn with recycled content is defined as follows:

- A green yarn that has been produced with a proof of recycling emitted by the International Sustainability & Carbon Certification (ISCC) under the PLUS scheme (www.iscc-system.org).
- A green yarn that is identical to the green reference yarn in terms of colour, cross section dimension (thickness, depth and width) but only differs in terms of DSC curve (shape and temperature peaks).
- A green yarn that complies with the current requirement for coloured yarns in term of peak breakage force. The percentage change from the green reference unaged yarn filament must be no greater than 25%. In the event that there is more than one green yarn, the highest peak breakage force has to be used as the reference.
- A green yarn that successfully passed a 6,000-cycle Lisport XL test, with requirements being based on visual inspection. Results should be similar to the reference green yarn.
- A green yarn with a minimum recycled content of 15% for post-industrial recycled (PIR) material and/or 15% for post-consumer recycled (PCR) material.

A coloured yarn with recycled content is defined as follows:

- A coloured yarn that has been produced with a proof of recycling emitted by the ISCC under the PLUS scheme (www.iscc-system.org).
- A coloured yarn that is identical to the green reference yarn in terms of cross section dimension (thickness, depth, and width) but only differs in terms of DSC curve (shape and temperature peaks) and colour.

- A coloured yarn that complies with the current requirement for coloured yarns in terms of peak breakage force. The percentage change from the green reference unaged yarn filament must be no more than 25%. In the event that there is more than one green yarn, the highest peak breakage force has to be used as the reference.
- A coloured yarn with a minimum of recycled content of 15% for PIR material and/or 15% for PCR material.

Physical segregation and mass balance recycling of both PIR and PCR material are approved under the definition of recycled green yarn.

The percentage of recycled content must be at least 15% for both PIR and PCR material.

Every pitch produced with recycled yarns for, and certified according to, the FIFA Quality Programme for Football Turf must be declared and uploaded by the licensee in the FIFA database using the ISCC PLUS sustainability declaration form.

PIR material is recycled from scraps or by-products generated during the manufacturing process before a product reaches the consumer. It is often considered to be of higher quality than PCR material because it has not been exposed to the elements or other contaminants.

PCR material is recycled from products that have been used by consumers and discarded. PCR material is a more sustainable type of recycled material than PIR material.

4.10 CRITICAL FALL HEIGHT DETERMINATION AND HEAD INJURY CRITERION

The Critical Fall Height (CFH) on sports surfaces, when using the Head Injury Criterion (HIC) index of 1000 according to EN 17435 method A, is a safety measure that indicates the maximum height from which a fall would not be expected to cause a life-threatening head injury. This criterion is based on the assessment of the impact attenuation of the surface material. The HIC is a calculated value representing the likelihood of head injury from an impact with the playing surface, with a value of 1000 or less indicating a low risk of serious head injury. EN 17435 method A outlines the procedure for measuring the impact attenuation of sports surfaces to determine the CFH in metres, evaluating the potential risk of playing surfaces where falls are a possibility.

Within the FIFA Quality Programme for Football Turf, the purpose of determining the CFH using the HIC index of 1000 is not to specifically address the risk of concussions. Instead, it aims to introduce a high-energy impact test intended to prevent the development of football turf systems that could be hazardous. This consideration is crucial, especially for scenarios in which players, such as goalkeepers, fall onto the playing surface. The focus is on collecting data for future investigation and ensuring that the football turf systems reduce the risk of harm to players falling on the playing surface, not only in relation to head injuries.

The establishment of a minimum CFH – using the HIC index of 1000 over 0.60 metres – is based on the performance of existing football turf systems considered not to increase the risk of injuries to players from high-energy impacts with the surface.

04. LABORATORY TEST REQUIREMENTS

4.11 ORDER OF TESTING

To improve the consistency of test results between laboratories, all FIFA-accredited test institutes should carry out the procedures in the same order.

The six samples should therefore be used as listed below. Where laboratory conditions allow, the tests performed under dry conditions may be carried out on sample 2 instead of on samples 1 or 3.

Sample 1: new
Size: 1x1m
Peak shock absorption: dry
Peak deformation: dry
Energy return: dry
Vertical ball rebound: dry
Peak torque and rotational shear stiffness: dry
Surface friction
Sample preparation
Conditioning
Angle ball rebound: dry
Infill splash
Reconditioning
Wetting
Vertical ball rebound: wet
Redistribute infill manually
Peak shock absorption: wet
Peak deformation: wet
Energy return: wet
Redistribute infill manually
Peak torque and rotational shear stiffness: wet
Redistribute infill manually
Angle ball rebound: wet
End of tests

or

Sample 2: Lisport XL 6000
Size: 4x1m
Peak shock absorption: dry
Peak deformation: dry
Energy return: dry
Vertical ball rebound: dry
Peak torque and rotational shear stiffness: dry
Surface friction
Sample preparation
Reduced ball roll: dry
Non-elongated free pile height and infill depth
Lisport XL mechanical abrasion
Reduced ball roll: dry
Redistribute infill manually
Vertical ball rebound: dry
Redistribute infill manually
Peak shock absorption: dry
Peak deformation: dry
Energy return: dry
Redistribute infill manually
Peak torque and rotational shear stiffness: dry
Reconditioning
Surface friction
Reconditioning
Wetting
Reduced ball roll: wet

Sample 3: new
Size: 1x1m
Sample preparation
Surface friction
Reconditioning

Samples 4 and 5: new
Size: 0.45x0.45m (x2)
Peak shock absorption: -5°C and +50°C tests
End of tests

Sample 6: new
Size: 0.5x0.5m
Heat test
End of tests

TABLE 1 - LABORATORY TEST REQUIREMENTS

Property	FIFA Test method	Test conditions			Requirements			
		Preparation	Temp.	Condition	FIFA Quality Pro	FIFA Quality		
Vertical ball rebound	FIFA Test Method 2024-01	Preconditioning	23°C	Dry	0.60-0.85m	0.60-1.00m		
		Simulated wear ***		Wet				
Angle ball rebound	FIFA Test Method 2024-14	Preconditioning	23°C	Dry	45-60%	45-70%		
				Wet	45-80%	45-80%		
				Relative increase dry/wet	≤40% relative	≤40% relative		
Reduced ball roll	FIFA Test Method 2024-02a	Preconditioning	23°C	Dry	4.0-8.0m	4.0-10.0m		
		Simulated wear ***		Dry	4.0-8.0m	4.0-12.0m		
Peak shock absorption	FIFA Test Method 2024-03	Preconditioning	23°C	Wet	60-70%	60-75%		
				Simulated wear ***	Dry	60-70%	60-75%	
				Preconditioning	50°C*	Dry	60-70%	60-75%
Peak deformation	FIFA Test Method 2024-04	Preconditioning	23°C	Frozen	60-70%	60-75%		
				Preconditioning	50°C*	Dry	≤15mm	≤16mm
				Simulated wear ***	-5°C**	Frozen	≤15mm	≤16mm
Energy returned	FIFA Test Method 2024-05	Preconditioning	23°C	Dry	For info.	For info.		
				Preconditioning	Wet	For info.	For info.	
CFH HIC 1000	EN 17435 Method A	Preconditioning	23°C	Dry	>0.60m	>0.60m		
				Preconditioning	Wet	>0.60m	>0.60m	
				Simulated wear ***	Dry	>0.60m	>0.60m	
Peak torque	FIFA Test Method 2024-06	Preconditioning	23°C	Dry	30-45Nm	25-50Nm		
				Preconditioning	Wet	30-45Nm	25-50Nm	
				Simulated wear ***	Dry	30-45Nm	25-50Nm	
Peak at 10°	FIFA Test Method 2024-07	Preconditioning	23°C	Dry	For info.	For info.		
				Preconditioning	Wet	For info.	For info.	
				Simulated wear ***	Dry	For info.	For info.	
Rotational shear stiffness	FIFA Test Method 2024-07	Preconditioning	23°C	Dry	For info.	For info.		
				Preconditioning	Wet	For info.	For info.	
				Simulated wear ***	Dry	For info.	For info.	
Skin/surface friction	FIFA Test Method 2024-10	Preconditioning	23°C	Dry	0.35-0.75	0.35-0.75		
		Simulated wear ***	23°C	Dry	0.35-0.75	0.35-0.75		
Heat determination	FIFA Test Method 2024-12	Preconditioning	N/A	Dry	Mandatory info.	Optional info.		
Infill splash	FIFA Test Method 2024-14	Preconditioning	23°C	Dry	Note <1.5% or ≥1.5%	N/A		

Key:
 * optional for vegetal infill materials
 ** optional test
 *** 6,000 cycles

04. LABORATORY TEST REQUIREMENTS

Component	Property	Test method	Requirement
Artificial turf – all colours	Colour change	EN ISO 20105-A02	≥ Grey scale 3
All pile yarn(s) – all colours	Peak breakage force	FIFA Test Method 2024-24	Percentage change from the green reference unaged yarn filament must be no greater than 25%. In the event that there is more than one green yarn, the highest peak breakage force has to be used as the reference.
	Yarn brittleness	FIFA Test Method 2024-24	≤40%
	Yarn tenacity	FIFA Test Method 2024-24	For information
Pile yarn(s) with recycled content – all colours	Resistance evaluation	Lisport XL 6,000 cycles and visual assessment	Visual assessment with photo evidence No significant differences from reference yarns
Polymeric infill	Colour change	EN ISO 20105-A02	≥ Grey scale 3, no change in shape
Joint strength – stitched seams	Joint strength – unaged	EN 12228 method 1	1,000N/100mm
	Joint strength – after immersion in hot water	EN 13744 and EN 12228 method 1	
Joint strength – bonded seams	Joint strength – unaged	EN 12228 method 2	75N/100mm
	Joint strength – after immersion in hot water	EN 13744 and EN 12228 method 2	



Component	Property	FIFA Test Method	Condition	Requirement
Artificial turf – green	Tuft withdrawal	FIFA Test Method 2024-25	Unaged	≥40N average
			After immersion in hot water	≥40N average
	Water permeability ¹ – using a single ring infiltrometer in which the artificial-turf carpet is sealed prior to infilling and testing	FIFA Test Method 2024-20	Unaged	≥180mm/h ⁽²⁾

Key:

¹ Not applicable to surfaces designed specifically for indoor use.

² To ensure adequate drainage of a field, all individual elements of the football turf should satisfy this requirement. Any value above 2,000mm/h should be recorded as “>2,000mm/h”.

04. LABORATORY TEST REQUIREMENTS

TABLE 2 – LABORATORY TEST REQUIREMENTS FOR SHOCKPADS

If a shockpad, defined as a layer of at least 20% peak shock absorption, is part of the artificial-turf system, it must comply with the EN 15330-4 requirements.

Peak shock absorption and peak deformation testing must be performed according to the FIFA test methods, which differ from the test methods specified under EN 15330-4.

Component	Property	Test method	Requirement
Shockpad	Peak shock absorption	FIFA Test Method 2024-03	≥20%
	Peak deformation	FIFA Test Method 2024-04	±2mm from peak deformation
	Vertical water infiltration	EN 12616, part 1, method A	≥500mm/h
	Horizontal water flow capacity	EN 12616, part 2	>0.1L/s*m If the shockpad is designed to provide horizontal drainage, the horizontal drainage should be tested.
	Tensile properties	EN 12230	≥0.15MPa (method 1) ≥0.10MPa (method 2) ≥0.5kN/m (method 3)
	Dimensional stability	EN 17326	≤5mm
	Resistance to dynamic fatigue	EN 15330-4 (EN 17324 modified)	Peak shock absorption change ≤5% and thickness ≤15%
	Resistance to permanent deformation after short-term loading	EN 15330-4, Appendix A	≤1.00mm after 1 hour
	Resistance to permanent deformation after static loading	EN15330-4, Appendix B	≤1.50mm after 72 hours
	Thermal conductivity	EN 12664	For information
	Thickness	EN 1969, method A	For information
	Mass per unit area	ISO 8543, section 6	For information
	Product description	EN 15330-4	Same as declared
	Environmental and toxicological properties	EN 15330-4, Appendix D	

TABLE 3 – PRODUCT IDENTIFICATION TESTS

Component	Characteristic	Test method	Permitted variation between laboratory component and manufacturer's declaration	
Artificial turf – all colours	Total mass per unit area	FIFA Test Method 2024-28	≤ ±10%	
	Tufts per unit area Knots per unit area (woven carpets) ¹	FIFA Test Method 2024-26	≤ ±10%	
	Tuft withdrawal force ²	FIFA Test Method 2024-25	≥90% of manufacturer's declaration ≥40N average for new samples ≥30N average for used samples	
	Pile length above backing	FIFA Test Method 2024-27	≤ ±5%	
	Non-elongated free pile height	FIFA Test Method 2024-22	For information	
	Total pile weight Pile weight above backing (woven carpets) ³	ISO 8543	≤ ±10%	
	Water permeability	FIFA Test Method 2024-20	≥180mm/h ⁴	
	All pile yarn(s) – all colours	Thickness of yarn	FIFA Test Method 2024-21	≥90%
		Depth	FIFA Test Method 2024-21	≥90%
		Width	FIFA Test Method 2024-21	≥90%
Shape		FIFA Test Method 2024-21	Same shape	
Yarn characterisation		FIFA Test Method 2024-15	Same polymer (main peak ±3°C, same DSC graph shape with same position and same proportions of the peaks and shoulders)	
Yarn decitex		FIFA Test Method 2024-23	≤ ±10%	

TABLE 3 – PRODUCT IDENTIFICATION TESTS (CONTINUED)

Component	Characteristic	Test method	Permitted variation between laboratory component and manufacturer's declaration
Pile yarn(s) with recycled content – all colours	Yarn characterisation	FIFA Test Method 2024-15 for physical segregation recycling	Same polymer as valid recycled green yarn, same polymer (main peak $\pm 4^{\circ}\text{C}$, same DSC graph shape with same position and similar proportions of the peaks and shoulders)
		FIFA Test Method 2024-15 for mass balance recycling	Same polymer as valid recycled green yarn, same polymer (main peak $\pm 3^{\circ}\text{C}$, same DSC graph shape with same position and same proportions of the peaks and shoulders)
Performance infill (if supplied as part of system)	Particle size	FIFA Test Method 2024-18	Maximum one sieve difference, 60% between d and D Maximum two sieve difference for vegetal infill materials
	Particle shape	EN 14955, procedure 6.3	Similar shape
	Bulk density (dry) – all infill materials, including vegetal infill materials	EN 1097-3 dried at $45\pm 5^{\circ}\text{C}$ (not 110°C)	$\leq \pm 15\%$
	Bulk density (moisture conditioned) – vegetal infill materials	EN 1097-3 at moisture conditioned, no drying	$\leq \pm 15\%$
	Composition	FIFA Test Method 2024-16	-
	Infill depth	FIFA Test Method 2024-19	-

TABLE 3 – PRODUCT IDENTIFICATION TESTS (CONTINUED)

Component	Characteristic	Test method	Permitted variation between laboratory component and manufacturer's declaration
Stabilising infill (if supplied as part of system)	Particle size	FIFA Test Method 2024-18	Maximum one sieve difference, 60% between d and D
	Particle shape	EN 14955, procedure 6.3	Similar shape
	Bulk density	EN 1097-3 dried at $45\pm 5^{\circ}\text{C}$ (not 110°C)	$\leq \pm 15\%$
Shockpads/ elastic layers (if supplied as part of system)	Peak shock absorption	FIFA Test Method 2024-03	$\leq \pm 5\%$ absolute force reduction
	Peak deformation	FIFA Test Method 2024-04	$\pm 2\text{mm}$ from product declaration
	Thickness	EN 1969	$\geq 90\%$ of manufacturer's declaration
Unbound sub-bases (if tested as part of system)	Mass per unit area	ISO 8543	$\leq \pm 10\%$
	Composition	-	Similar composition
	Particle size range (attach particle size grading to test report)		$\leq \pm 20\%$
	Particle shape	EN 14955, procedure 6.3	Similar shape

Key:

- Many woven carpets use W bindings. Ensure that the complete Ws are counted as one knot. It may be easier to count the number of knots by splitting warp and weft yarns or shearing off the pile yarns.
- If all yarns are breaking, the tuft withdrawal force is greater than the breaking force. Report the mean of the broken results.
- Try to split the warp and weft of the carpet. If the coating that is applied makes this impossible, shear off the piles following the procedure in ISO 8543. This is the pile weight above the backing.
- Not applicable to surfaces designed specifically for indoor use.



FIELD TEST REQUIREMENTS

ISO

5.1 USE OF EXISTING INFILLS

If an existing artificial-turf pitch is to be converted to football turf or if an existing football turf surface is to be replaced, any existing infill may be incorporated into the new surfacing system, provided that the characteristics (particle size, particle shape, bulk density and composition) comply with the infill identification requirements.

A more comprehensive analysis of the suitability of the infill to perform adequately throughout the lifetime of the next football turf installation can be performed by following the EN 15330-5, section 11 "Assessment of reclaimed infills to determine suitability for reuse" standard.

5.2 USE OF EXISTING SHOCKPADS/ELASTIC LAYERS

If an existing artificial-turf pitch is to be converted to football turf or if an existing football turf surface is to be replaced, any existing shockpad or elastic layer may be incorporated into the new surfacing system, provided that:

- the peak shock absorption of the existing shockpad is between 90% and 110% of the peak shock absorption value declared by the manufacturer when the football turf system incorporating this type of shockpad was initially approved;
- the deformation of the existing shockpad is ± 2 mm of the deformation value declared by the manufacturer when the football turf system incorporating this type of shockpad was initially approved; and
- the water permeability of the shockpad is greater than 180mm/h when tested in accordance with EN 12616. If the football turf system is to be installed at an indoor venue, this criterion does not apply.

The installed shockpad should be tested for each property detailed above in the positions featured in section 6 of the FIFA Quality Programme for Football Turf – Test Manual: Test Methods by a FIFA-accredited field test technician. Despite the practical implications when a turf has not been replaced, it is not acceptable for suitability to be determined based on the values obtained from testing the corner areas only. The results of the shockpad tests must be appended to the FIFA field test report and submitted to FIFA following the initial field test. Compliance with the above requirements does not supersede the need for the field to fully satisfy the field test requirements laid down in the FIFA Quality Programme for Football Turf.

5.3 USE OF GEOMEMBRANE AND DRAINAGE LAYERS

If football turf is installed on a surface such as geomembrane or drainage layer, it must be tested by the FIFA-accredited test institute to assess its peak shock absorption capacity.

If the recorded peak shock absorption value is below 20%, the layer is not considered to be a shockpad or an elastic layer and is therefore not required to meet all of the specifications laid down above in Table 2 – laboratory test requirements for shockpads. However, if the geomembrane or drainage layer presents a peak shock absorption value below 20% and is designed to contribute to the football turf's dynamic performance, including player and surface interaction and ball and surface interaction, the following properties must be measured on a test sample comprising the football turf and the drainage layer: vertical ball rebound, angle ball rebound, peak shock absorption, peak deformation and energy returned. The tests conducted on the test sample must comply with the requirements detailed below in Table 4 – field test requirements for FIFA Quality Pro and FIFA Quality certification.

05. FIELD TEST REQUIREMENTS

5.4 FIELD TEST PROCEDURES

When tested, a field must fulfil the requirements set out below in Table 4 – field test requirements for FIFA Quality Pro and FIFA Quality certification tests in any position on the field using the specified test methods. The field must be tested in the positions specified in the FIFA Quality Programme for Football Turf – Test Manual: Test Methods. Field tests should not be carried out on joints or inlaid lines, other than ball roll that will cross them. Maintenance must not be undertaken during a field test.

If a field fails to fulfil the requirements laid out below in Table 4 – field test requirements for FIFA Quality Pro and FIFA Quality certification, the report must be completed and submitted to FIFA indicating why it failed. The field may be tested again at a later date.

The meteorological conditions during field tests must be as specified in the FIFA Quality Programme for Football Turf – Test Manual: Test Methods.

5.5 VIDEO FOOTAGE OF FIELD (SITE) TESTS

Field tests must be recorded in accordance with the video footage test method. The FIFA-accredited field test technician may be supported by a technician from the same test institute who does not have to be accredited. Any additional people from third-party organisations (club, community, installer, etc.) should not be present on the field during testing.

5.6 MATERIAL IDENTIFICATION – INITIAL FIELD TEST

To ensure that the components of football turf are within tolerance when compared to those previously tested in the laboratory, the initial field test should include the identification tests of samples collected from the site, as detailed below in Table 5 – material identification for initial site test: FIFA Quality Pro and FIFA Quality certification. The maximum variation between the installed materials and the manufacturer's declaration, as explained in the FIFA Quality Programme for Football

Turf Laboratory Report, should be as specified in Table 5 – material identification for initial site test: FIFA Quality Pro and FIFA Quality certification.

The samples of artificial turf and infill should be collected on-site by the FIFA-accredited field test institute when it undertakes the field test. **When alternative suppliers of infill materials to those recorded in the original laboratory test report are to be used, infill samples should also be submitted prior to construction to enable the compliance of these materials with the requirements stated in the FIFA Quality Programme for Football Turf – Test Manual: Test Methods to be determined prior to installation.** Irrespective of which supplier is used, the name of the supplier must be noted. Samples should be submitted in adequate time so that if it is found that they do not comply with the requirements laid out in the FIFA Quality Programme for Football Turf – Test Manual: Test Methods, a new laboratory test using new materials can be conducted prior to the installation of the football turf and subsequent field tests.

Each field may only feature one product (defined by a system with a fully compliant laboratory test report). The use of two different coloured yarns in alternating rolls to create visual patterns is not permitted.

Only one product may be used per field. Combinations of different products or different colours other than those for field markings or logos, yarn compositions or other may not be used on a single field.

5.7 MATERIAL IDENTIFICATION – FIELD RETESTS

To confirm that football turf has not been materially altered from the turf tested in the FIFA-accredited test institute test report, any retest should include the identification tests detailed below in Table 6 – material identification for site retests: FIFA Quality Pro and FIFA Quality certification. The football turf must comply with the requirements laid out in Table 6.

5.8 MAINTENANCE EQUIPMENT

The FIFA-accredited field test technician must verify that the end user has received both the product declaration and method statement in accordance with the FIFA licensee agreement. The FIFA-accredited field test technician must verify that the maintenance equipment recommended by the licensee is on-site or that an appropriate maintenance contract is in place (evidence is required).

For a field to be certified under the FIFA Quality Programme for Football Turf, the facility owner/operator must ensure that all equipment specified by the surface manufacturer for the installed product is available to maintain the field in accordance with the manufacturer's instructions. This may either be achieved by the facility owner/operator purchasing the equipment, entering into a service agreement with a specialist maintenance contractor, or a combination of both. If maintenance is outsourced, the manufacturer must present written evidence of the outsourcing agreement to maintain the field in accordance with the manufacturer's instructions.

On-site maintenance equipment must include at least a tractor unit, a drag brush and/or a drag mat, additional infill to top up the field, a maintenance log and a ball-roll ramp. If these items are absent, the FIFA-accredited field test technician should note this on the field test report and indicate that the field has failed to obtain certification.

The facility owner/operator must ensure that all required maintenance equipment is available for the FIFA-accredited test institute to inspect during the field test.

5.9 SPRINKLERS

FIFA does not encourage the use of sprinklers within the playing area of a field. However, it does acknowledge that sprinkler systems occasionally have to be installed within the playing area, primarily due to a lack of water pressure available to project water from outside the playing area onto the central part of the field. Such systems have been installed on both natural- and artificial-turf pitches.

One of the primary aims of the FIFA Quality Programme for Football Turf is to take into consideration the players' well-being and safety. Therefore, if a sprinkler system is installed within the playing area, an additional test is required to check that the sprinklers do not present an additional hazard to players and match officials. The FIFA-accredited field test institute must undertake a peak shock absorption and peak deformation assessment, in accordance with this manual, on two separate sprinklers (one of either side of the field). The values obtained must be within the requirements for the specified performance level that the field has been constructed to meet. Neither FIFA nor the FIFA-accredited field test institute may be held liable for any damage to the sprinklers arising from these tests. In requesting/allowing a FIFA field test, the facility owner/operator is deemed to have accepted this condition of the testing process.

The contractor responsible for installing the football turf should clearly state whether additional maintenance work is required to ensure the consistency of the infill after the sprinkler has been elevated and returned to its lowered position. If an additional maintenance procedure is required, the FIFA-accredited field test institute must undertake further peak shock absorption and peak deformation testing after the maintenance procedure to ensure that the area above the sprinkler fulfils the requirements. To achieve this, the sprinkler system must be activated, and the maintenance procedure must be carried out before the tests can be performed.

5.10 MAINTENANCE DURING FIELD TESTS

Field maintenance must not be undertaken during a field test.

TABLE 4 – FIELD TEST REQUIREMENTS FOR FIFA QUALITY PRO AND FIFA QUALITY CERTIFICATION

Property	Test method	Requirements			
		FIFA Quality Pro	Consistency	FIFA Quality	Consistency
Vertical ball rebound	FIFA Test Method 2024-01	0.60-0.85m	±5% relative	0.60-1.00m	±10% relative
Ball roll (length)	FIFA Test Method 2024-02	Initial 4.0-8.0m	±10% relative	Initial 4.0-10.0m	±15% relative
		Retests 4.0-8.0m	±10% relative	Retests 4.0-12.0m	±15% relative
Ball roll (deviation)	Visual	Straight ball roll		Straight ball roll	
Peak shock absorption	FIFA Test Method 2024-03	60-70%	±5% relative	60-75%	±10% relative
Peak deformation	FIFA Test Method 2024-04	≤15mm	±10% relative	≤16mm	±15% relative
Energy return	FIFA Test Method 2024-05	For information	±10% relative	For information	-
Peak torque	FIFA Test Method 2024-06	30-45Nm	±6% relative	25-50Nm	±10% relative
Torque at 10°	FIFA Test Method 2024-06	For information		For information	
Rotational shear stiffness	FIFA Test Method 2024-07	For information		For information	
Visual inspection	FIFA Test Method 2024-09	No defects hazardous to players and match officials and no installation defects listed in 5.11		No defects hazardous to players and match officials and no installation defects listed in 5.11	
Surface regularity of playing surface	FIFA Test Method 2024-08	<10mm	-	<10mm	-
Non-elongated free pile height	FIFA Test Method 2024-22	For information	-	For information	-
Infill depth	FIFA Test Method 2024-19	For information	-	For information	-
Maintenance equipment inspection	Ball-roll ramp	Mandatory		Mandatory	-
	Brush	Mandatory		Mandatory	
	Tractor	Mandatory		Mandatory	
	Extra infill	Mandatory (if part of system)		Mandatory (if part of system)	
Minimising infill migration into the environment – field design	FIFA Test Method 2024-31	For information		For information	

5.11 VISUAL INSPECTION

During the test, the FIFA-accredited field test technician should conduct a visual inspection to ensure that the field has been installed properly and that there are no significant defects that they consider to be hazardous to players and match officials.

Specifically, there should be no:

- product defect;
- improper installation or improper repairs;
- failed or excessively open joints (greater than 3mm);
- looped piles;
- ripples;
- excessive fibres trapped under the infill;
- excessively uneven infill distribution: the difference in infill height between the lowest and highest points should not exceed 10mm;
- exposed irrigation sprinkler heads within the playing area;
- exposed goalpost sockets; or
- hazards within 3m of the perimeter of the field of play.

Checks should also be carried out to ensure that all line markings are straight, with any significant deviations commented on.

If unacceptable joints, looped piles, ripples, meandering lines or any other defect considered hazardous to play are found, they should be reported to the licensee who will rectify the defects to the satisfaction of the certification field test technician before the latter submits the field test report to FIFA. The FIFA-accredited field test technician should provide visual confirmation of the rectification work in the report.



Additionally, the FIFA-accredited field test technician should note the presence of:

- logos on the field of play or the run-off area (within 3m of the field of play or in accordance with the local definition of the run-off area); and
- alternative line markings on the field.

NB: The visual inspection undertaken by the FIFA-accredited field test technician does not constitute a formal site audit and does not remove the legal responsibility of the installation company and/or the facility owner/operator to ensure that the field is safe and fit for purpose. Neither FIFA nor the FIFA-accredited test institutes accept any liability for any defects or other issues that subsequently result in an injury to a player or match officials or any other user.

05. FIELD TEST REQUIREMENTS

TABLE 5 – MATERIAL IDENTIFICATION FOR INITIAL SITE TEST: FIFA QUALITY PRO AND FIFA QUALITY CERTIFICATION

Material identification aims to confirm that the installed product is the same as the product approved in the laboratory by using samples collected on-site.

The installed product must perform in the same way as the approved product. Requests can be made for additional tests, as defined in the product approval process, to be carried out. If any of these tests fail, the certification may not be accepted or may be removed.

Component	Characteristic	Test method	Permitted variation between manufacturer's declaration and installed materials
Artificial turf – all colours including field markings	Mass per unit area	FIFA Test Method 2024-28	≤ ±10%
	Tufts per unit area	FIFA Test Method 2024-26	≤ ±10%
	Gauge	FIFA Test Method 2024-26	≤ ±10%
	Tuft withdrawal force	FIFA Test Method 2024-25	≥90% of manufacturer's declaration ≥40N average
	Pile length above backing	FIFA Test Method 2024-27	≤ ±5%
	Total pile weight	ISO 8543	≤ ±10%
	Water permeability of carpet (non-infill) ¹	FIFA Test Method 2024-20	≥180mm/h and >75% of laboratory result ²
	Pile yarn(s) – all colours including field markings	Thickness of yarn	FIFA Test Method 2024-21
Depth		FIFA Test Method 2024-21	≥90%
Width		FIFA Test Method 2024-21	≥90%
Shape		FIFA Test Method 2024-21	Same shape
Pile yarn characterisation		FIFA Test Method 2024-15	Same polymer (main peak ±3°C, similar DSC graph with same position of the peaks and shoulders)
Pile yarn colour		RAL Classic	Same colour
Yarn decitex		FIFA Test Method 2024-23	≤ ±10%
UV stabiliser		FIFA Test Method 2024-17	Report for every masterbatch

Component	Characteristic	Test method	Permitted variation between manufacturer's declaration and installed materials
Performance infill (if supplied as part of system)	Particle size	FIFA Test Method 2024-18	Maximum one sieve difference, 60% between d and D Maximum two sieve difference for vegetal infill materials
	Particle shape	EN 14955, procedure 6.3	Similar shape
	Bulk density (dry) – all infill materials including vegetal infill materials	EN 1097-3	≤ ±15%
	Bulk density (moisture conditioned) – vegetal infill materials	EN 1097-3	≤ ±15%
	Composition	FIFA Test Method 2024-16	≤ ±15% relative
	PAH(8) content (recommended)	AfPS 2019:01 PAK or ASTM F3496	≤20mg/kg (recommended)
	Determination of potential migration of chemical elements - EN71-3	FIFA Test Method 2024-30	Category 3 (recommended)
Stabilising infill (if supplied as part of system)	Particle size	FIFA Test Method 2024-18	Maximum one sieve difference, 60% between d and D
	Particle shape	EN 14955, procedure 6.3	Similar shape
	Bulk density	EN 1097-3	≤ ±15%
Shockpads/elastic layers ³ (if supplied as part of system)	Brand and model of shockpad	Visual	Same as approved in laboratory
	Peak shock absorption	FIFA Test Method 2024-03	≤ ±5% force reduction
	Thickness	EN 1969	≥90% of manufacturer's declaration
	Type	Visual/photo evidence	Same as product declaration

Key:

¹ Outdoor pitches only. Compliance with this requirement may also be waived by FIFA for pitches located indoors or in arid parts of the world. Such waivers will be granted on a case-by-case basis and permission should be sought from FIFA at the design stage of a pitch's construction.

² If the result exceeds 2,000mm/h, record ">2,000mm/h".

³ Measured on-site in at least four locations if possible. If not possible, a shockpad sample and photographic evidence of the shockpad installation must be submitted to the test institute.

05. FIELD TEST REQUIREMENTS

TABLE 6 – MATERIAL IDENTIFICATION FOR SITE RETESTS: FIFA QUALITY PRO AND FIFA QUALITY CERTIFICATION

The following tests are performed to check that the carpet has not been replaced and to ensure that coarser infill material has not been installed on the pitch.

Component	Characteristic	Requirement	Sampling procedure
Artificial turf	Pile height (above primary backing)	≤ ±5% of the value measured on the site sample tested during the initial site test	Measurements should be made in four different areas of the field not subject to high wear or usage
	Number of stitches per 100mm	The number of tufts per m ² must not differ by more than ±10% from the manufacturer's declaration	The number of tufts per m ² must be calculated by multiplying the number of stitches per 100mm by the stitch gauge
	Stitch spacing (mm)		
Performance infill	Particle grading	The largest sieve retaining at least 10% by mass of the infill must be within the range detailed in the manufacturer's declaration, forming section 4 of the product's FIFA laboratory test report	<p>A minimum sample of 250g must be taken from the performance infill (20mm) on each of the six test positions detailed in the FIFA Quality Programme for Football Turf – Test Manual for Test Methods</p> <p>The infill must be graded according to FIFA Test Method 20 and the largest sieve retaining at least 10% by mass of the infill determined</p>



FIFA U-20 WOMEN'S WORLD CUP COSTA RICA 2022

FIELD DIMENSIONS AND MARKINGS



6.1 FIELD DIMENSIONS

Field dimensions must be in accordance with the Laws of the Game. The field of play must be rectangular. The length of the touchline must be greater than the length of the goal line. **Special dispensation may be granted for FIFA Quality Pro pitches that do not meet the requirements, subject to a request by a FIFA member association.**

	FIFA Quality	FIFA Quality Pro
Length (m)	Minimum: 90.0 Maximum: 120.0	Minimum: 100.0 Maximum: 110.0
Width (m)	Minimum: 45.0 Maximum: 90.0	Minimum: 64.0 Maximum: 75.0

Run-off areas must be in accordance with national and/or competition regulations. In the absence of any such regulations, a minimum of three metres per boundary is recommended. The provision of adequate run-off distances does not form part of the FIFA Quality Programme for Football Turf.

NB: International matches may only be played on pitches with the following dimensions:

International matches		
Length (m)	Minimum: 100.0	Maximum: 110.0
Width (m)	Minimum: 64.0	Maximum: 75.0

6.2 FIELD MARKINGS AND ELIGIBILITY FOR INTERNATIONAL COMPETITIONS

The field must be marked in accordance with Law 1 – The Field of Play as detailed in the Laws of the Game. The goalposts must also be the same width as the goal line.

The Laws of the Game allow international matches to be played on fields with several sets of lines. Law 1 states: “Where artificial surfaces are used, other lines are permitted provided they are of a different colour and clearly distinguishable from the football lines.” Competition organisers may, however, have stricter rules on the use of additional lines.

The FIFA-accredited field test institute must take note of any additional markings (logos, writing, adverts, etc.) other than those specified in the Laws of the Game.

- As the professional standard, **FIFA Quality Pro** installations must meet the requirements for international match dimensions as indicated in Law 1 of the Laws of the Game and may not display additional markings (such as logos) other than those stipulated in the Laws of the Game. In addition, field equipment (goals, corner flags, etc.) must be in the correct position and of the correct dimensions.
- **FIFA Quality** installations may lose their eligibility to host competitive matches in accordance with the Laws of the Game if additional markings (logos, etc.) are present on the field. The certificate is awarded to confirm technical compliance with the requirements only.

NB: If a FIFA-certified field is to be used for competition matches, it must meet the conditions laid down in the competition regulations and be checked by the relevant local authorities.



FIFA Quality Pro fields are designed to meet the criteria for international competitions. FIFA Quality fields may have varying dimensions or markings but must still meet the minimum requirements of the Laws of the Game. A field may only host competitive matches if it complies with the Laws of the Game and the national or local competition regulations. While a FIFA Quality Programme for Football Turf certificate is essential for this eligibility, the pitch markings and dimensions need to be verified.

The Laws of the Game: laws 1.12 and 1.13

Law 1.12 – Commercial advertising: “No form of commercial advertising, whether real or virtual, is permitted on the field of play, on the ground within the area enclosed by the goal nets, the technical area or the referee review area (RRA), or on the ground within 1 m (1 yd) of the boundary lines from the time the teams enter the field of play until they have left it at half-time and from the time the teams re-enter the field of play until the end of the match. Advertising is not permitted on the goals, nets, flagposts or their flags and no extraneous equipment (cameras, microphones, etc.) may be attached to these items.

In addition, upright advertising must be at least:

- 1 m (1 yd) from the touchlines
- the same distance from the goal line as the depth of the goal net
- 1 m (1 yd) from the goal net”

Law 1.13 – Logos and emblems: “The reproduction, whether real or virtual, of representative logos or emblems of FIFA, confederations, national football associations, competitions, clubs or other bodies is forbidden on the field of play, the goal nets and the areas they enclose, the goals, and the flagposts during playing time. They are permitted on the flags on the flagposts.”

07

RUN-OFF AREA



If a natural-turf pitch uses artificial-turf within the run-off area (starting directly on the outer limit of the touchlines and goal lines), its quality must be in line with the high standard of the FIFA Quality Programme for Football Turf, as it is an area that players and match officials interact on and with. Due to the use of artificial-turf surfaces in the run-off areas around both natural- and artificial-turf pitches, a simplified testing protocol based on the testing of football turf pitches has been developed to ensure minimum quality standards for these areas.

7.1 FOOTBALL TURF FIELDS

For artificial-turf surfaces, the run-off areas should be made of the same product and tested at four different locations (one on each of the four sides) around the pitch, including the area most likely to be used by the assistant referees. The product used in the run-off area should be of the same specification as the product used for the pitch itself.

The definition of the dimensions and surface quality of run-off areas is subject to the competition organiser's regulations. FIFA defines a run-off area as being a minimum of three metres, starting at the outer edge of the goal lines and the touchlines.

Property	FIFA Test Method	Requirement	
		FIFA Quality Pro	FIFA Quality
Vertical ball rebound	2024-01	60-85cm	60-100cm
Peak shock absorption	2024-03	60-70%	60-75%
Peak deformation	2024-04	≤15mm	≤16.0mm
Energy return	2024-05	For information	For information
Peak torque	2024-06	30-45Nm	25-50Nm
Rotational shear stiffness	2024-07	For information	For information
Surface regularity of playing surface	FIFA Test Method 2024-08	<10mm	<10mm
Product identification	-	Same as pitch	Same as pitch

7.2 FOOTBALL TURF FIELD REPAIRS

The product used for field repairs should be of the same specification as the product used for the pitch itself.

7.3 NATURAL-TURF FIELDS

For natural-turf surfaces, the run-off areas must be tested at ten different locations (at the FIFA-accredited test institute's discretion) around the pitch, including at least two points within the touchline areas most used by the assistant referees.

Due to the diverse nature of natural-turf surfaces, it is strongly recommended that the surface of the run-off area have similar characteristics to those of the pitch itself. This should be taken into consideration when selecting the product.

For the avoidance of doubt, subsections 7.1 and 7.3 do not constitute part of the FIFA Quality Programme for Football Turf testing requirements, but they may have an impact on the pitch's eligibility to host competitive matches in accordance with the Laws of the Game and the competition organiser's regulations.

All run-off areas should be maintained to ensure that they continue to perform to the required standard. Maintenance vehicles will inevitably traverse the run-off area to access the pitch. Assistant referees will also continually run along the same areas on the touchlines, which leads to consolidation of the infill and flattening of the fibres. Therefore, it is important that all maintenance operatives have the appropriate maintenance equipment to ensure that all run-off areas are kept in peak condition.

The FIFA-accredited field test technician employed to assess the run-off areas should check that either the correct maintenance equipment, as recommended by the manufacturer, is on-site or that a maintenance contract is in place to ensure that all run-off areas are maintained in accordance with the manufacturer's recommendations.

Property	FIFA Test Method	Requirement	
		FIFA Quality Pro	FIFA Quality
Vertical ball rebound	2024-01	60-85cm	60-100cm
Peak shock absorption	2024-03	60-70%	60-75%
Peak deformation	2024-04	≤15mm	≤16.0mm
Energy return	2024-05	For information	For information
Peak torque	2024-06	30-45Nm	25-50Nm
Rotational shear stiffness	2024-08	For information	For information
Surface regularity of playing surface	FIFA Test Method 2024-08	<10mm	<10mm
Product identification	-	Same as product declaration	Same as product declaration

7.4 MAINTENANCE REQUIREMENTS

Maintenance is key to keeping the surface in good condition for player performance and to guarantee that the pitch's life expectancy is met.

When submitting a football turf for laboratory testing, the licensee must provide the FIFA-accredited test institute with a fully descriptive list (including photographs) of all equipment required for routine maintenance of the surface. This list will form part of the FIFA laboratory test report.

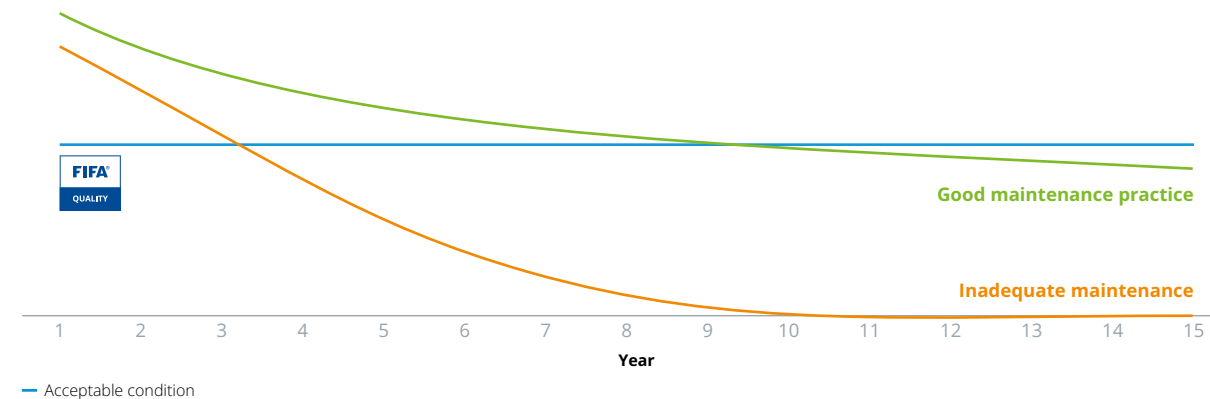
For each field test (initial and retests), the FIFA-accredited field test technician will compare the licensee's list of equipment to the equipment on-site using supporting photographic evidence. If the maintenance equipment is supplied and operated by a third party, the licensee must supply the FIFA-accredited field test institute with a copy of the maintenance contract.

Upon handover of the pitch, the licensee must provide the owner/operator with a maintenance log with instructions for the owner/operator to complete in accordance with the maintenance instructions.

When requesting a FIFA field test report number from FIFA in advance of a field retest, the licensee must provide a copy of the maintenance log (in electronic format, i.e. a scanned copy of the original) for the previous 12 months. If required by FIFA, the licensee must translate the maintenance log into English.

When requesting a FIFA field test report number from FIFA in advance of an initial test or a field retest, the licensee must also confirm in writing that the ground staff responsible for maintaining the field have been appropriately trained. This should include details of all training undertaken, including dates. To enable the FIFA-accredited field test technician to verify this, the maintenance operative should be able to demonstrate the correct operation of the maintenance equipment and the ball-roll equipment. The maintenance operative should be asked to confirm the frequency of maintenance operations. The FIFA-accredited field test technician should then be in a position to verify the competency of the maintenance operative by comparing the actions of the individual with the maintenance instructions in the manufacturer's maintenance manual.

Figure 2: Pitch quality over time



Annexes.



ANNEXE A: GENERAL REQUIREMENTS

1. CODE OF PRACTICE FOR THE DESIGN, CONSTRUCTION AND TESTING OF FOOTBALL TURF FIELDS

The success of a football turf field is not only dependent on the quality of the football turf, but also the base on which it is laid. Experience has shown that if the base is not correctly designed or constructed, it can result in a field that players find unsatisfactory, or in the worst case, hazardous or unusable. **Therefore, to provide further assistance to those designing and building football turf fields, FIFA has prepared the Code of Practice for the Design, Construction and Testing of Football Turf Fields, which describes the construction standards that FIFA recommends be used whenever a new football turf field is being built.**

In some countries, there may already be national standards that cover some of the criteria described in the above-mentioned code of practice. In such cases, and unless otherwise specified, the national standards should take precedence over the code of practice.

2. BEARING CAPACITY

The formation and subsoil must have sufficient bearing capacity to support the playing surface and any machinery used to maintain the surface. The bearing capacity can be assessed using the methods described in the Code of Practice for the Design, Construction and Testing of Football Turf Fields. No responsibility shall be accepted for any damage caused to the surface by the use of equipment or structures (e.g. collapsible seating) for which the surface was not intentionally designed.

FIFA reserves the right to reject or revoke the certification of a new or existing installation if evidence of insufficient bearing capacity is provided.

3. GLARE

It is not acceptable to incorporate any material or construction that will cause excessive glare to players and match officials from the reflection of sunlight or artificial lighting.

4. STAINING

Where practicable, every effort should be employed to use non-staining materials.

5. TOXICOLOGY

The manufacturer should be asked to provide the purchaser with assurances that the final surface, together with its supporting layers, does not contain any substance that is known to be toxic, mutagenic, teratogenic or carcinogenic when in contact with the skin, or that no such substances will be released as vapour or dust during normal use.

6. ENVIRONMENTAL COMPATIBILITY

The manufacturer and purchaser shall abide by all relevant local environmental legislation during the construction, use, operation and disposal of the surface and its supporting layers. Where no relevant local environmental legislation exists, the manufacturer and purchaser should, during the construction, use, operation and disposal phases, act as if there were accepted levels of legislation in operation.

7. CLIMATIC CONDITIONS

The manufacturer and purchaser shall take the prevailing climatic conditions into consideration when designing the surface specification.

8. RESISTANCE TO FIRE

When installing an artificial-turf surface, the manufacturer/supplier shall ensure that the completed installation complies with all relevant local building and fire safety regulations.

ANNEXE B: FACTORY QUALITY CONTROL PROCEDURES

1. INTRODUCTION

This annexe sets out a factory production control system for constituent components to ensure that they conform to the relevant requirements of this standard.

The performance of the factory production control system shall be assessed according to the principles noted in this document.

NB: The overall quality of the surface remains the licensee's responsibility.

2. ORGANISATION

2.1 Responsibility and authority

It will be necessary to produce a quality assurance line management diagram outlining the individuals responsible for quality. One individual shall be appointed as the contact person in cases of quality disputes. These individuals shall have the capability to:

- initiate action to prevent the occurrence of product non-conformity; and
- identify, record and deal with any product quality deviations.

2.2 Management representative for factory production control

For every manufacturing plant, the licensee shall make sure that a qualified person with appropriate authority ensures that the requirements of this document are implemented and maintained.

2.3 Management review

The factory production control system adopted to satisfy the requirements of this document shall be audited and reviewed at appropriate intervals to ensure its continuing suitability and effectiveness. Records of such reviews shall be maintained. It is assumed that, for most manufacturers, this would be covered under an ISO 9000 scheme.

3. CONTROL PROCEDURES

The licensee shall establish and maintain a factory production control manual setting out the procedures by which the requirements for factory production control are satisfied for all products directly produced by the licensee. Furthermore, they shall establish similar procedures for all suppliers of products that are part of their systems.

4. DOCUMENT AND DATA CONTROL

Document and data control shall include all documents and data relevant to the requirements of this standard covering purchasing, processing, inspection of materials and the factory production control system documents.

A procedure for the management of documents and data shall be laid down in the production control manual covering procedures and responsibilities for the approval, issuance, distribution and administration of internal and external documentation and data, as well as the preparation, issuance and recording of changes to documentation.

5. SUBCONTRACT SERVICES

If any part of the operation is subcontracted by the producer, a means of control shall be established. The producer shall retain overall responsibility for all subcontracted components.

6. KNOWLEDGE OF RAW MATERIAL

There shall be documentation detailing the nature of all constituent parts specified in the licensee's technical data sheets.

It is the licensee's responsibility to ensure that, if any dangerous substances are identified, their content does not exceed the limits in force.

NB: see EU Council Directive 76/769/EEC

7. MANAGEMENT OF PRODUCTION

The factory production control system shall fulfil the following requirements:

- There shall be procedures to identify and control the materials.

NB: These can include procedures for maintaining and adjusting processing equipment, inspection or testing material sampled during processing, etc.

- There shall be procedures to identify and control any hazardous materials identified above to ensure that they do not exceed the limits in force.
- There shall be procedures to ensure that material is put into storage in a controlled manner and that the storage conditions are appropriate for the materials being stored.
- Certain materials are known to deteriorate in storage. There shall be procedures to ensure that material taken from storage has not deteriorated in such a way that its conformity is compromised.
- The product shall be identifiable up to the point of sale as regards source and type.



8. INSPECTION AND TEST

8.1 General

The licensee shall ensure that they have all necessary facilities, equipment and trained personnel to carry out the required inspections and tests.

8.2 Equipment

The licensee shall be responsible for the control, calibration and maintenance of inspection, measuring and test equipment.

Accuracy and frequency of calibration shall be in accordance with the appropriate standards.

Equipment shall be used in accordance with documented procedures.

Equipment shall be uniquely identified. Calibration records shall be retained.

8.3 Frequency and location of inspection, sampling and tests

The production control document shall describe the frequency and nature of inspections.

8.4 Records

The results of factory production control shall be recorded, including sampling locations, dates, times and product tested with any other relevant information.

If the product inspected or tested does not satisfy the requirements laid down in the specification, or if there is an indication that it will not do so, a note shall be made in the records of the steps taken to deal with the situation (e.g. carrying out of a new test and/or measures to correct the production process).

The records required by all clauses of this standard shall be included.

The records shall be kept for at least the statutory period.

NB: The "statutory period" is the period of time for which records are required to be kept in accordance with regulations applying at the place of production.

9. CONTROL OF NON-CONFORMING PRODUCTS

Following any inspection or test that indicates that a product does not conform, the affected material shall be:

- reprocessed;
- diverted to another application for which it is suitable; or
- rejected and marked as non-conforming.

All cases of non-conformity shall be recorded and investigated by the producer and, if necessary, corrective action shall be taken.

NB: corrective actions may include the following: Investigating the cause of non-conformity, including an examination of the testing procedure and making any necessary adjustments

Analysing the processes, operations, quality records, service reports and customer complaints to detect and eliminate potential causes of non-conformity

Initiating preventive actions to deal with problems to a level corresponding to the risks encountered

Applying controls to ensure that effective corrective actions are taken

Implementing and recording changes in procedures resulting from corrective action

10. HANDLING, STORAGE AND CONDITIONING IN PRODUCTION AREAS

The manufacturer shall make the necessary arrangements to maintain the quality of the product during handling and storage. This is of particular importance to any materials that may deteriorate in storage.

**11. TRANSPORT AND PACKAGING**

The manufacturer's factory production control system shall identify the extent of the manufacturer's responsibility in relation to storage and delivery.

Products should be packaged appropriately to prevent any damage of the materials in transit. Any precautions necessary to achieve this during the handling and storage of the packaged goods shall be marked on the packaging or accompanying documents.

12. TRAINING OF PERSONNEL

The manufacturer shall establish and maintain procedures for the training of all personnel involved in the factory production system. Appropriate training records shall be maintained.

13. MINIMUM TEST FREQUENCIES FOR GENERAL PROPERTIES

The manufacturer shall be asked to give details of the frequency under which the products are tested for compliance with the product data sheet. If it is felt that the frequency is inadequate, extra testing and/or third-party attestation may be requested.

14. COMMUNICATION

Before any goods leave the factory for site installation, the product quality assurance sheets shall be signed and dispatched to a third party for attestation. These documents shall unequivocally state the testing that has taken place and the frequency of testing.

The minimum testing that is acceptable is statistically verifiable to ensure full compliance with the technical data sheet for that product. If the data sheet is deemed to be inadequate, a new data sheet shall be produced to ensure that it meets the needs of the quality assurance programme.

Only when the goods have undertaken all relevant quality control checks in accordance with the quality assurance manual shall the goods be dispatched. The quality assurance of the product, dispatch (including its constituent parts) and installation is the sole responsibility of the licensee.

A third party shall take site samples (FIFA-accredited field test technician or FIFA's appointed representatives) in accordance with the requirements of the FIFA Quality Programme for Football Turf. The above quality assurance measures are additional to the provisions outlined in the FIFA Quality Programme for Football Turf Manual.

15. DESIGN AND CONSTRUCTION VERIFICATION

As requested by FIFA, the FIFA licensee shall make available all design drawings and bills of quantities for any field submitted for FIFA certification, together with the details of the materials actually used during the construction. This shall include the following:

- I. Depth of sub-base materials, density of sub-base materials (when compacted), tonnage of material delivered to site (checked against delivery notes)
- II. Length and type of drainage pipes delivered to site (checked against delivery notes)

- III. Quantity and quality of drainage aggregate delivered to site (checked against delivery notes)
- IV. Quantity and quality of synthetic grass delivered to site (checked against delivery notes)
- V. Quantity and quality of infill sand delivered to site (checked against delivery notes)
- VI. Quantity and quality of infill rubber/elastomer/organic infill delivered to site (checked against delivery notes)
- VII. Quantity and quality and usable date of adhesive delivered to site (checked against delivery notes)
- VIII. Quantity and quality of seaming tape delivered to site (checked against delivery notes)
- IX. Quantity and quality of sewing thread delivered to site (checked against delivery notes)
- X. Quantity and quality of sports equipment delivered to site (checked against delivery notes)
- XI. Quantity and quality of maintenance equipment delivered to site (checked against delivery notes)
- XII. Quantity and quality of edging kerbs delivered to site (checked against delivery notes)
- XIII. Quantity and quality of haunching materials delivered to site (checked against delivery notes)
- XIV. Quantity and quality of additional contract materials delivered to site, e.g. perimeter paths (checked against delivery notes)
- XV. Confirmation of maintenance manual, training and maintenance log delivered

ANNEXE C: FIFA BASIC STANDARD

1. INTRODUCTION

In July 2021, The International Football Association Board decided to integrate the new FIFA Basic standard into the Laws of the Game, replacing the previous International Match Standard. The FIFA Basic standard has been developed to identify products, technologies and playing surfaces that are cost-efficient and offer a viable alternative to FIFA Quality or FIFA Quality Pro products for FIFA member associations, competition organisers and clubs with limited budgets.

Official testing to the FIFA Basic standard must only be carried out by independent test institutes accredited by FIFA.

The FIFA Basic standard is an installation certification scheme and not a product approval scheme. FIFA Basic certification does not include any laboratory product testing that would ensure the quality of the system prior to its installation. It does not include the assessment of the materials installed (carpet, fibres, infills or shockpad).

FIFA Basic certification only recognises the very minimum performance of the playing surface for football and does not guarantee the durability of the system installed.

If a FIFA Basic-certified pitch is to be used for competition matches, it must meet the conditions laid down in the competition regulations and be checked by the relevant local authorities and the competition organiser.

2. ELIGIBILITY FOR FIFA BASIC STANDARD FIELD TEST

All pitches installed with artificial surfaces are eligible to receive the FIFA Basic standard.

Existing pitches that have been certified to FIFA Quality standard can be retested under the FIFA Basic standard.

3. CERTIFICATION PERIOD

Unless the pitch is subsequently found to no longer satisfy all aspects of the FIFA Quality Programme for Football Turf following a scheduled or random spot check field test:

- FIFA Basic certification is valid for three months; and
- a retest for FIFA Basic certification from an existing FIFA Quality certification is valid for one year.

4. INFORMATION FOR CERTIFICATION APPLICANTS

To request a field test, the applicant must submit the following information to the FIFA-accredited test institute that is appointed to carry out the FIFA Basic test:

- Stadium or site name and address
- Product name of the installed football turf (if known)
- Proposed date of the field test
- Start date of the competition

5. FIELD DIMENSIONS

Field dimensions must be in accordance with the Laws of the Game and approved by the competition organiser to host competitive matches. The field of play must be rectangular. The length of the touchline must be greater than the length of the goal line.

	FIFA Basic
Length (m)	Minimum: 25.0
Width (m)	Minimum: 16.0

6. FIELD MARKINGS AND ELIGIBILITY FOR INTERNATIONAL COMPETITIONS

The field must be marked in accordance with Law 1 – The Field of Play as detailed in the Laws of the Game. The goalposts must also be the same width as the goal line.

The Laws of the Game allow international matches to be played on fields with several sets of lines. Law 1 states: "Where artificial surfaces are used, other lines are permitted provided they are of a different colour and clearly distinguishable from the football lines." Competition organisers may, however, have stricter rules on the use of additional lines.

The FIFA-accredited field test institute must take note of any additional markings (logos, writing, adverts, etc.) other than those specified in the Laws of the Game.

FIFA Basic installations may lose their eligibility to host competitive matches in accordance with the Laws of the Game if additional markings (logos, etc.) are present on the field and if the dimensions are not compliant with the competition regulations. The certificate is awarded to confirm technical compliance with the requirements only.



7. FIELD TEST POSITIONS FOR PITCHES SMALLER THAN 45.0M X 90.0M

If a pitch is tested against FIFA Basic standards and its dimensions are smaller than 45.0m x 90.0m, the number of test locations must be adjusted to six specific locations (1, 2, 3, 4, 5, 6), as detailed in the FIFA Quality Programme for Football Turf – Test Manual: Test Methods.

8. FIELD TEST REQUIREMENTS

Field tests should be recorded in accordance with section 5.5: Video footage of field (site) tests.

Property	Test method	FIFA Basic	Consistency
Vertical ball rebound (optional)	FIFA Test Method 2024-01	60-115cm	±10% relative
Ball roll: length (optional)	FIFA Test Method 2024-02	4.0-15.0m	±3m absolute
Peak shock absorption	FIFA Test Method 2024-03	55-75%	±10% absolute
Peak deformation	FIFA Test Method 2024-04	≤16mm	±4mm absolute
Peak torque	FIFA Test Method 2024-06	25-50Nm	±7Nm absolute
Surface regularity of playing surface	FIFA Test Method 2024-08	<14mm	-
Visual inspection	FIFA Test Method 2024-09	No defects hazardous to players and no installation defects	
Non-elongated free pile height	FIFA Test Method 2024-22	For information	-
Pile length above backing	FIFA Test Method 2024-27	For information	
Tufts per unit area	FIFA Test Method 2024-26	For information	
Thickness of yarn	FIFA Test Method 2024-21	For information	
Tuft withdrawal*	Visual inspection	Fibres not easily torn off the surface	
Performance infill	Visual inspection	Description for information	
Shockpads/elastic layers (if supplied as part of system) Peak shock absorption	FIFA Test Method 2024-03	< ±5% force reduction	
Shockpads/elastic layers (if supplied as part of system) Thickness	EN 1969	≥90% of manufacturer's declaration	
Shockpads/elastic layers (if supplied as part of system) Shockpad type	Visual	Similar to product declaration	
Infill depth	FIFA Test Method 2024-19	For information	-
Minimising infill migration into the environment – field design	FIFA Test Method 2024-30	For information	-

Product identification requirements (optional)

Component	Characteristic	Test method	FIFA Basic
Artificial turf – green	Tufts per unit area	FIFA Test Method 2024-26	≤ ±10% of product declaration
	Pile length above backing (all colours)	FIFA Test Method 2024-27	≤ ±5% of product declaration
	Total pile weight	ISO 8543	≤ ±10%
Pile yarn(s) – all colours including line markings	Thickness of yarn	FIFA Test Method 2024-21	≥90%
	Pile yarn characterisation	FIFA Test Method 2024-15	Same polymer (main peak ±3°C, similar DSC graph with same position of the peaks and shoulders)
	Yarn decitex	FIFA Test Method 23	≤ ±10%
Performance infill (if supplied as part of system)	Particle size	FIFA Test Method 2024-18	The largest sieve retaining at least 10% by mass of the infill must be within the range detailed in the manufacturer's declaration
	Particle shape	EN 14955, procedure 6.3	Similar shape
	Composition (TGA)	FIFA Test Method 2024-16	≤ ±15% relative
	PAH (8) content (recommended)	AfPS 2019:01 PAK or ASTM F3496	≤20mg/kg (recommended)
Stabilising infill (if supplied as part of system)	Particle size	FIFA Test Method 2024-18	> d0.315 Maximum two sieves difference
	Particle shape	EN 14955, procedure 6.3	Similar shape
	Bulk density	EN 1097-3	≤ ±20%

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