



WMF QUALITY PROGRAMME FOR ARTIFICIAL TURF

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1. INTRODUCTION

In the last 20 years we have been able to witness a huge increase of artificial turf for all the main sports. Minifootball is one of these.

In order to guarantee overall the safety of players but also the “quality of the game”, WMF (as well as the most important sports federations in the world) presents in the following pages the specific Technical Manual for all the pitches in artificial turf.

The regulation studied for the installations in artificial turf (both for those already completed and for those to be done) is today necessary to guarantee a homogeneity of the play all over the world with a right management.

Last but not least is the aspect of the sustainability of the needed important investment to realize a Minifootball pitch in artificial turf (in terms of financial, environmental and social aspects).

In the following pages we could evaluate all the parameters that a Minifootball pitch in artificial turf will have to reach to be certified by the WMF.

Evidently, since there are different types of competitions and having to test different solutions (already installed and not), this Manual deals with regulating these situations as follows:

- **TOP LEVEL COMPETITIONS** (International and National competitions as WMF Wolrd Cup or EMF MiniEuro, for exemple);
- **STANDARD COMPETITIONS:**
 - o Specific parameters for the pitches already installed (valid exclusively up to the year 2030);
 - o Specific parameters for the “ new “ installations.

2. DIFFERENT LEVELS OF CERTIFICATION

A. TOP LEVEL COMPETITIONS

For the “ TOP LEVEL ” competitions, in consideration that the different pitches would be installed in a temporary mode, the installation of a NO-INFILL system will be mandatory.

It will be allowed to use a stabilizing infill (sand) in case of necessity to guarantee a higher mechanical stability to the system and lower the risk of slipping for the players in the circumstance of particularly humid location or with specifically adverse weather conditions.

Following the parameters to be respected to obtain the Certification.

I. Artificial Turf identification

ARTIFICIAL TURF PRODUCTS FOR “ TOP COMPETITION ”	
PRODUCT IDENTIFICATION – ARTIFICIAL TURF	
System technology	NO-INFILL
Pile height	20mm ($\pm 20\%$) – Ref. MI-LND033
Composition	100% PE – Ref. MI-LND046
Number of stitches x sqm	> 20.000 ($\pm 10\%$) – Ref ISO 1763
Dtex	> 18.000 in total ($\pm 10\%$) x tuft combination of straight and TXT yarns Ref. MI-LND003
Structure	a structure composed by straight and texturized yarns is mandatory due to the fact there's no infill
Product identification	Dtex – Ref. MI-LND003 Thickness (μm) – Ref. MI-LND002 Pile height (extended yarns) – Ref. MI-LND033 Colour – Ref. MI-LND004 Stitches x sqm – Ref. ISO 1763 Pile weight – Ref. ISO 8543 Total weight of the turf – Ref. ISO 8543

II. Yarn – Minimum technical parameters and characteristics

ARTIFICIAL TURF PRODUCTS FOR “ TOP COMPETITION “

<i>YARN – Minimum technical parameters and characteristics</i>	
Yarn	DSC before and after the UVB test – Exposure Ref. EN ISO 4892-3 – Results ref. MI-LND010 No changes allowed The DSC test must be done on every single different yarn composing the carpet: means all the different green colours and the white and yellow for the lines. – Ref. MI-LND046
UVB tests	4896 KJ \pm 125 KJ of total energy with irradiance of 0,80 W/m ² with UVB lamps 313 nm (4h 0,80 W/m ² 55°C and 2h 45°C with off lamps for a total of 2550 hours). Maximum variation allowed \geq 3 Grey Scale Exposure Ref. EN ISO 4892-3 – Results ref. MI-LND010
Chemical analysis	Compliant to EU REACH Regulation in terms of IPA and PHTHALATES
<i>If the Turf Producer has already tested the used yarn for other applications/sports in any approved laboratory, the tests are considered valid.</i>	
Dtex	> 18.000 in total (\pm 10%) x tuft combination of straight and TXT yarns – Ref. MI-LND003
Structure	a structure composed by straight and texturized yarns is mandatory due to the fact there's no infill

III. Shock-pad - minimum technical parameters and characteristics

<i>SHOCK-PAD – Minimum technical parameters and characteristics</i>	
Identification	Weight x sqm – Ref. ISO 8543 Thickness – EN 1969 Method A Density where applicable – Ref. ISO 8543
Chemical analysis	Compliant to EU REACH Regulation in terms of PAH and PHTHALATES
<i>The installation of the shock-pad is mandatory for all the NO-INFILL systems.</i>	

IV. Performance tests on the system

PERFORMANCE TESTS ON THE SYSTEM	
Shock-Absorption	50 %-70 % Ref. EN 14808
Vertical deformation	4-12 mm Ref. EN 14809
Ball roll	4-12 m Ref. EN 12234 - carried out using the specific MINIFOOTBALL ball “ Officially approved “ by WMF
Ball rebound	0,60-1,00 m Ref. EN 12235 - carried out using the specific MINIFOOTBALL ball “ Officially approved “ by WMF
Tests must be carried out using the specific MINIFOOTBALL ball “ Officially approved “ by WMF	

- Since the system is used purely for a limited temporary period, no performance and/or identification tests of any stabilizing infill are envisaged.
- The decision to infill the system “ in situ “ could be taken exclusively by WMF in order to overcome any problem of excessive humidity.

B. STANDARD COMPETITIONS

B1. Existing pitches

Being this certification related to the existing pitches and with a consequent impossibility to evaluate the installed systems, the certification will consist exclusively in an identification of what is installed.

In order to maintain a minimum quality standard but above all to safeguard the safety of the athletes, the basic parameters that these fields must guarantee are listed below.

It is understood that this possibility of certification will be valid only in relation to the pitches already installed and could be done only up to the year 2030.

Starting from the issue of these regulations, the newly built pitches will have to comply with the new parameters of this Manual.

I. Artificial Turf identification

ARTIFICIAL TURF PRODUCTS FOR “ STANDARD COMPETITIONS “ > EXISTING PITCHES <
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<i>PRODUCT IDENTIFICATION – ARTIFICIAL TURF</i>	
System technology	INFILLED TURF (sand or sand + performance infill)
Pile height	≥ 30mm (+/- 10%) – Ref. MI-LND033
Composition	PP/PE/PA - Ref. MI-LND046
Number of stitches x sqm	to be identified – Ref. ISO 1763
Dtex	≥ 8.000 – Ref. MI-LND003
In order to certify the pitch it will be necessary to take a sample from the pitch of at least 30x30cm to identify it in the laboratory (dtex).	

B2. New installations

A. Artificial Turf identification

ARTIFICIAL TURF PRODUCTS FOR “ STANDARD COMPETITION “ > NEW INSTALLATIONS <
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<i>PRODUCT IDENTIFICATION - TURF</i>	
System technology	INFILLED TURF
Pile height	≥ 40mm (+/- 10%) – Ref. MI-LND033 ≤ 60mm (+/- 10%) – Ref. MI-LND033
Composition	100% PE – Ref. MI-LND046
Number of stitches x sqm	≥ 7.875 (+/- 10%) – Ref. ISO 1763
Dtex	≥ 14.000 (+/- 10%) – Ref. MI-LND003
Thickness	≥ 400 μ (+/- 10%) – Ref. MI-LND002
As these systems are installed for Standard competitions and having to bear extremely heavy workloads, the yarn used will have to be subjected to the LISPORT STD test with a high number of cycles (to ensure extreme wear resistance). It is understood that the LISPORT test will be done on the fibre not on the specific system. It means that if a fibre has been successfully tested, it could be used in different systems (different pile height and number of stitches x sqm).	
LISPORT STD	≥ 200.000 cycles Rif. EN 15306

B. Yarn identification

PRODUCT IDENTIFICATION - YARN	
Yarn	DSC before and after the UVB tests - – Exposure Ref. EN ISO 4892-3 – Results ref. MI-LND010 No changes allowed The DSC test must be done on every single different yarn composing the carpet: means all the different green colours and the white and yellow for the lines. – Ref. MI-LND046
UVB tests	4896 KJ \pm 125 KJ of total energy with irradiance of 0,80 W/m ² with UVB lamps 313 nm (4h 0,80 W/m ² 55°C and 2h 45°C with off lamps for a total of 2550 hours). Maximum variation allowed \geq 3 Grey Scale Exposure Ref. EN ISO 4892-3 – Results ref. MI-LND010
Chemical analysis	Compliant to EU REACH Regulation in terms of IPA and PHTHALATES
<i>If the Turf Producer has already tested the used yarn for other applications/sports in any approved laboratory, the tests are considered valid.</i>	
Dtex	> 14.000 in total (\pm 10%) – Ref. MI-LND003
Composition	PE – Ref. MI-LND046
Product identification	Dtex – Ref. MI-LND003 Thickness (μ m) – Ref. MI-LND002 Colour – Ref. MI-LND004 Stitches x sqm – Ref. ISO 1763 Pile weight – Ref. ISO 8543 Total weight of the turf – Ref. ISO 8543

C. Shock-pad identification (if present in the system)

SHOCK-PAD – TECHNICAL PARAMETERS AND CHARACTERISTICS	
Identification	Weight x sqm – Ref. ISO 8543 Thickness – EN 1969 Method A Density where applicable – Ref. ISO 8543
Chemical analysis	Compliant to EU REACH Regulation in terms of IPA and PHTHALATES

D. Sand identification

PRODUCT IDENTIFICATION - SAND	
Particle size distribution	d ≥ 0,4mm – D ≤ 1,5mm Ref. MI-LND041
Spectrometry	Minimum silica content in the product ≥ 85%

E. Performance infill identification

PRODUCT IDENTIFICATION – PERFORMANCE INFILL	
Particle size distribution	d ≥ 0,5mm – D ≤ 3,15mm Ref. MI-LND042
Bulk density	Declared ± 15% Ref. EN 1097-3
UVB tests	4896 KJ ± 125 KJ of total energy with irradiance of 0,80 W/m ² with UVB lamps 313 nm (4h 0,80 W/m ² 55°C and 2h 45°C with off lamps for a total of 2550 hours). Maximum variation allowed ≥ 3 Grey Scale Exposure Ref. EN ISO 4892-3 – Results ref. MI-LND010
Chemical analysis	Compliant to EU REACH Regulation in terms of PAH and PHTHALATES

F. Performance tests on the system

PERFORMANCE TESTS ON THE SYSTEM	
Shock-Absorption	50%-70% Ref. EN 14808
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Tests must be carried out using the specific MINIFOOTBALL ball “ Officially approved “ by WMF	

3. CERTIFICATION PROCESS

Laboratory Tests:

All the different single components must be tested following the requested parameters.



The system, as it will be installed on the pitch, must be tested in order to reach the performance parameters.



In situ test:

The WMF approved laboratory will test the installed pitch verifying the following parameters:



Once it has been verified that the results of the tests carried out in the pitch comply with those of the laboratory and meet the minimum necessary parameters, WMF will issue the Certificate of approval for the pitch with the following validity:

- 1 year for TOP competitions
- 3 years for STANDARD competitions



The WMF Certificate would be emitted following a fee payment to the Federation.

4. CONCLUSIONS

It is understood that any test has to be carried out on every single component of the system both in the WMF approved Laboratory and on the installed pitch.

The results obtained on the pitch tests must correspond (with the permitted tolerances) to what has already been tested in the laboratory.

WMF has agreed specific particularly advantageous rates for the realization of the needed tests with the approved laboratory.

A specific communication in this regard will be issued separately with an official press release.

Once verified that the parameters of the different materials, systems and performance comply to the needed criteria and having received the fee payment, WMF will emit the Official Pitch Certificate for the tested pitch.

Consequently the infrastructure could host all the official matches according to the tested level.

Concerning the Certificate validity and consequently the-testing period following the different categories:

- WMF TOP LEVEL COMPETITIONS -> “ Top Certification ” – 1 year validity;
- WMF STANDARD LEVEL COMPETITIONS -> “ Standard Certification ” – 3 years validity;

The target of the WMF QUALITY PROGRAMME INNOVATION is:

- To preserve and guarantee high qualities for the ball dynamics during the match and thereby increase the attractiveness of the sport;
- To eliminate any bad investment by public institutions and private companies in the construction and reconstruction of minifootball pitches;
- To eliminate the low-quality on the surfaces in artificial turf;
- To ensure high-quality surface for the top minifootball competitions.

**WMF QUALITY PROGRAMME INNOVATION
Team**