

LABORATOIRE AGREE EN QUALITE DE CONTROLEUR TECHNIQUE

PAR LE MINISTERE DE L'AMENAGEMENT DU TERRITOIRE,
DE L'EQUIPEMENT ET DES TRANSPORTS.

**STUDY OF THE CHARACTERISTIC OF
SPORTS SURFACES BEFORE AND AFTER
CLEANING**

SYNTHETIC TURF

STADIUM R.DELEON IN LE MANS

For

AQUA CLEAN

Report n°06-0514

This report has been realised from the report R05-0565 dated of the 22th of June 2005.



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1. - TEST PROGRAMME :

On AQUA CLEAN's request of the 02/06/05, LABOSPORT has made the following tests:

- Shock absorption
- Ball roll
- Vertical Rebound
- Rotational Slip resistance (torque)

Before and after a cleaning made by AQUA CLEAN.

Tests conditions : Temperature = 26°C Hygrometry = 29%
State of the turf : Dry.

Operator : A.LOUVEAU

2. - SURFACE DESCRIPTION :

The surface «PRESTIGE 55 mm », made for fields of sports use and football, is a infill synthetic turf . The infill comprises 17 kg/m² sand (0,4/0,8 mm) and rubber 12 kg/m² (0,5/1,5 mm). The carpet has straight polyethylene fibrillated fibres 55 mm in length, green in colour.

This field was laid in August 2001 by Tarkett Sommer Sports Systems.

3. - CLEANING DESCRIPTION :

The field was cleaned by AQUA CLEAN.

The cleaning process is undertaken in two steps, one on the surface and one on the top two first centimetres of infill.

The material used for the cleaning of the surface is a tractor with a rotating brush in front. The brush sweeps away the infill to a depth of a few millimetres. The infill and debris sucked up are screened through a sieve selected to match the particle size distribution for the infill used. The infill of the rubber is dropped back onto on the surface.

Fibre fibrils were screened and captured in a container made for this purpose.

Two return passes were made on the field .

Concerning the breaking down, the brush is replaced by a « herse » made of leaned claws. The turf is clawed by this « herse » to a depth estimated in between 20 and 25 mm. Two added returns were made on the surface.

4. - PHYSICAL TESTS:

Shock Absorption

Before cleaning : 44% (average on two points)

After cleaning : 47% (average on two points)

Improvement: 3%

Note : Although the improvement does not appear very great, we would anticipate that between 2 to 3 mm of additional rubber granules would have to be added to produce the same affect.

Roll ball

Before cleaning : 12.5 m

After cleaning : 9.0 m

Improvement: 2.5 m

Labosport comments:

The improvement is clear to see. The pile is raised which helps reduce the ball roll and almost returns this aspect back to that of the filed when installed. How long this improvement will be retained form has not been quantified.

Note : Before the test the product was out the requirements made by the French Football Federation), after the cleaning the result of the ball roll test is within the requirements (maximum 10 m).

Vertical rebound :

Before cleaning : 102 cm

After cleaning : 82 cm

Improvement : 20 cm

Labosport comments :

The requirements of the rules made by the French Football Federation indicates that the rebound must be in between 100 cm and 60 cm. The decompaction of the infill of the enabled the field to satisfy this requirement.

Rotational Slip resistance (traction) :

Before cleaning : 38 N.m⁻¹

After cleaning : 32 N.m⁻¹

Improvement: 6 N.m⁻¹

Labosport comments :

The requirements of the French Football Federation for rotational slip resistance are 30 N.m⁻¹ to 45 N.m⁻¹. Although this requirement has been met throughout the life of the field the rejuvenation process has caused the rotational slip resistance to reduce.

5. - VISUAL ASPECTS :

The breaking down effect cannot be clearly seen. On the other hand, we can notice the efficiency of the cleaning on the surface :

Debris and litter were removed from the surface (vegetables, cigarette ends, papers, etc).

Contaminated area before cleaning:



Same area after cleaning :

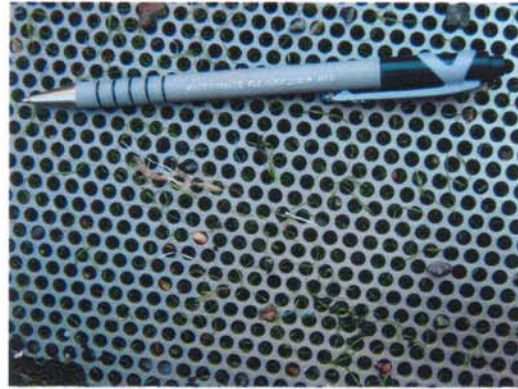
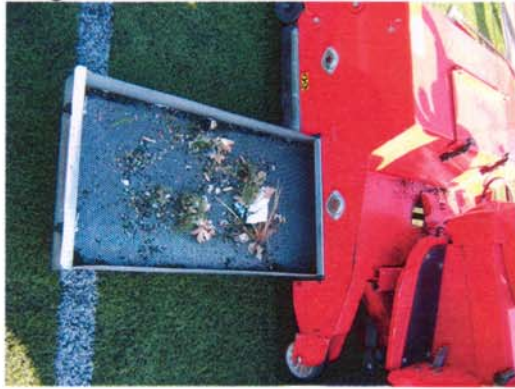


Collected of detritus:

Fibre debris



Large debris



The basin does not get any tufting turf which could have been pulled out.

6. - CONCLUSION :

The cleaning and decompaction have positive effects on the characteristics of the sports field. We have noticed a real improvement in all the measured properties.

The longevity of these improvements has not been studied and will be directly linked to the use of the surface.

This treatment seems perfectly adapted to a new certification -

No detrimental effects to the surface were noted .

Le Mans, 22/06/2005

Dominique Boisnard

Arnaud Louveau

Executive Manager

Sport Equipment Department

