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## A. INTRODUCTION

The durability of the system will be influenced by the quality of the artificial grass, the installation and the construction of the substructure, but also by the maintenance.

This section outlines the regular and general maintenance, as well as the procedures that are specific small repairs, the removal of snow and the preparation of special events.

Good maintenance procedures will have a positive influence on:

- the durability of the system
- the quality of the game
- the security of the players and other users
- the aesthetics of the field
- ...

Please distribute this section to those responsible for the day-to-day care of the turf field and check that they are familiar with the content.

## B. GENERAL PRINCIPLES



Never use flat sole shoes and metal spiked shoes on the surface.

As a form of regular maintenance, the surface of the grass should be made free from any kind of litter (leaves, twigs, cans, paper, fibres due to normal wear, ...) and be brushed frequently.



The surface will also suffer from the presence of moss and weeds. Preventive maintenance will be more efficient in this case than any form of curative treatment.

Some specific actions will have to be taken, such as repairing, adding sand and/or rubber, maintaining the draining system, ...

Provide trash and litter cans and post signs prohibiting smoking and carrying food or drinks on the field.

Finally, we suggest to use a rotational system where different fields are available, so as not to put too much of a burden on the same field.

## C. DIFFERENT PROCEDURES

### 1. BRUSHING

Frequency: very regularly, at least once a week during heavy use times of the year. A standard brushing takes about one hour (on a full size pitch). Please also note that areas of high intensive usage (eg rugby scrummaging) can require more frequent brushing.



Purpose:

- to spread the infill evenly and keep it embedded between the fibres rather than on the tips of the surface.
- to straighten the pile and improve the traction and the ball roll.
- to keep the infill in a loose condition and avoid compaction.
- to pop up foreign particles

You can use a sweeper or a triangular brush, with nylon or polyolefin fibre bristles. The brush must not contain metal or wire. The best results are obtained when it takes place against the direction of the fibres.

Turf loading limitations:

We recommend always using vehicles with pneumatic tires with a maximum pressure of 2.5 kg per m<sup>2</sup> or 35 pounds per square inch (PSI).

- Do not park vehicles, to prevent burning or melting the turf due to exhaust or over heating.
- Never change or add fluids (oil, gas, battery acid, ...) on the turf surface

## 2. STRONG BRUSHING

Frequency: 1 or 2 times a year

Purpose: To prevent compactation and hardening of the surface, we recommend to have the pitch brushed with a special decompactation device consisting of a rake with thin, spring-loaded and flexible tines to loosen the infill.

How: Specialized maintenance companies have the equipment that is needed to fulfill these requirements.

## 3. COLLECTION OF LITTER, LEAVES, TWIGS, ...

Frequency: very regularly



Purpose:

- to make the lines more visible
- to guarantee the players' safety
- to avoid the growth of moss and weeds

How: a triangular brush, a motorized vacuum sweeper, with leaf-blower or manually.

Make sure:

- there are enough dustbins around the field and place them in full view.
- route field access traffic is organized in such a way as to minimize bringing mud and dirt on the field.
- you enforce a smoke-free environment

## 4. ANTI-MOSS AND ANTI-HERB TREATMENTS

Frequency: once or twice a year; preferably in the spring and autumn. Choose a preventive rather than a curative treatment.

Purpose:

- makes it easier for the water to drain through.
- guarantees better performing properties.

How: Never use acid based liquids (bleach or sodium hypochlorite) because they could damage the fibres when applied in a too strong concentration. For anti-moss treatment, we suggest Bayer's Dimanin A or Dimanin Spezial; as anti-herb, a liquid, such as Monsanto's Roundup, should do. However, do not forget to take into account the local legislation, as some countries prohibit the use of Roundup, for instance.

To remove fungus or mould spots we recommend to use a biocide such as X-thallo2.

## 5. SNOW AND ICE REMOVAL

The artificial turf pitch can't be used when there is snow or ice on the surface. In general, snow or ice should be left to melt and drain off the system without assistance. In case of a scheduled event, the snow or ice has to be removed by applying the following guidelines.

Snow or ice removal should be done as near as possible to the event time.

Snow removal when snow is sticky and wet:

- use a rubber snow plow with a rubber tipped blade (never wood, metal or other rigid surface blades)
- prevent digging the blade into the infill or primary backing
- remove the snow in layers
- make the blade kiss the surface
- push the snow into piles
- scoop the snow into trucks using front end loaders
- use a rotary mechanical brush or snow blower to clean off the remaining snow
- break up any ice using a small weighted lawn roller and then proceed again with the procedure above
- do not forget the recommendations regarding weight and use of the vehicles.

Snow removal when snow is powdery:

- use a rotary brush or snow blower
- if using a snow blower, make the first pass from goal to goal
- the blower must be adjusted so that the snow is deposited in the truck
- the other passes should be made at the edge of the precedent pass
- use a mechanical brush for the remaining snow
- do not forget the recommendations regarding weight and use of the vehicles.

Ice removal:

If possible, try to prevent any building up of ice.

In case of a thin layer of ice, break it up by using a small weighted lawn roller. The broken ice can then be swept off the field.

In the event of excessive ice, there is no other alternative but the use of chemicals to melt the ice. Remember that any chemical placed on the field will result in residue, which may leave the field sticky or slippery. Flush the residue of the field as soon as weather permits.

Never use calcium chloride, ammonium nitrate, common salt, rock salt or other corrosive or toxic chemicals. We can recommend Snowmelt from Eurochemie Holland ([www.eurochemie.nl](http://www.eurochemie.nl))

## 6. FIELD MARKINGS

The key point to remember is that paint should be applied lightly and evenly to reduce the risk of paint build up. Light applications give good aesthetics and adequate life but are less abrasive than heavy layers of paint.

- Apply paint to a dry, grease-free and dust-free surface.
- Old degraded paint must be removed for the best appearance and resistance to foot traffic.
- In order to process better the yarn during the tufting, the yarns are coated with a coating. As time progresses, the coating washes off the yarn and the paint will retain better.
- Suggested turf temperature for the best results is between 18° and 30 ° C.
- Test application procedure on a scrap of turf before going on the field.
- Avoid thick layers. Paint should be applied lightly to the tips of the grass blades.
- Curing time is crucial. Allow a curing time of at least 24 hours.

For short events, you can apply an acrylic water-based exterior paint, which is diluted in ratio of 1 dose of paint with one dose of water prior to use. The removal can generally be made by brushing the painted area with a solution of mild detergent and by flushing it thoroughly with water.

For 'permanent' solutions (+/- one season), apply a special turf polyurethane spray of type Conipur L 63.

## 7. WATERING THE SURFACE

In general, water is the best cleanser. It cleans the turf fibers of dust, pollen and airborne pollutants. In many instances, coaches, players and trainers prefer to wet the turf down during use, in order to lower the temperature/humidity index. This is a good idea because, in periods of very hot weather, a wet field provides evaporation, which indeed lowers the temperature of the field rapidly.

If you wet the field, distribute the water evenly over the area to be used. Aim to simply dampen the surface, not to soak or to saturate it. Never use water from a polluted supply.

## 8. REPAIRS OF LOOSE JOINTS OR TEARS

Some areas will be used more extensively than others (e.g. penalty spots) or the seam of a line is getting loose. These are minor problems, which can quickly become major problems if not corrected immediately.

Small loose spots on glued seams extending a few inches to a foot or two are to be expected with these systems. They are not unusual and should not cause great concern. They can generally be repaired by the maintenance staff. Cuts, rips and tears in the surface that do not exceed six inches or so in length do not generally require a special trip by external technicians and can also be repaired by the maintenance staff.

Guidelines for seam or tear repairs:

- Perform repairs during dry weather conditions.
- Vacuum infill from the turf to be repaired.
- Make sure fabrics to be repaired are free from loose sand and rubber, dirt, old adhesive and other foreign material.
- Clean the area to be repaired with methyl-ethyl-ketone, toluene, or with a mineral spirit.
- Position the fabric to check for satisfactory final placement.
- Squirt a small amount of adhesive on to the seaming tape. Avoid excessive adhesive to reduce the possibility of bleed through or bleed out. Spread the adhesive with a knife or spatula so that the entire fabric is coated lightly, but evenly.
- The adhesive is allowed to cure in the open air. Use a moisture-curing brand of polyurethane adhesive, which absorbs moisture from the air to "kick" or activate. Allow at least 30 minutes of curing time before closing the turf and weighting it down at an ambient temperature of 25 ° C with 50% relative humidity.
- Press the fabric into the adhesive bed uniformly.
- Weigh down the area and allow curing for at least 24 hours.
- Spread filling on the repaired area and brush into the turf thoroughly until even with surrounding playing areas.

## 9. REPAIR OF CIGARETTE BURNS



Cigarette burns cause a hard spot comprised of fused fibres.

Use a metal brush (such as is used to remove paint) and brush the spot vigorously to separate the fibres. If brushing the turf does not break the fibres apart, take a razor knife and cut the fused area into smaller sections and then brush again.

## 10. ADDING INFILL

A few months after having started using the field, the rubber is mostly settled and the field may require some more rubber in some areas. The same phenomenon can happen after extremely heavy rainfall.

- Only apply once all the litter, leaves, moss and weeds have been removed from the field.
- Add the in-fill in thin layers before working it into the field.
- Brush the turf against the grain.
- Cross brush the complete field.

## D. CONCLUSION

### 1. PROHIBITED ACTIVITIES

- Storage of materials such as drums, timber, equipment, etc.
- Unnecessary vehicular traffic
- Golfing, shot putting, javelin or discus throwing, and the use of long spike track shoes associated with athletics tracks.
- Open flames, fireworks, welding, etc.
- Use of wire brushes in any form
- Heavy loads
- Use of unauthorized cleaning equipment, methods or materials
- High pressure water sprays exceeding 300 psi
- Vehicles with non-pneumatic tires
- Introduction of sand or fills that vary from Lano Sports specifications

### 2. KEY POINTS TO REMEMBER

- Keep the field clean. Sweep and hose the field as needed per this manual. Keep plenty of trash containers on site for participants to use.
- Cross brush the turf surface often!
- Keep vehicular traffic off the field as much as possible.
- Post NO SMOKING signs around the turf.
- Make minor repairs.
- Follow exactly the recommendations and procedures incorporated in this manual.

