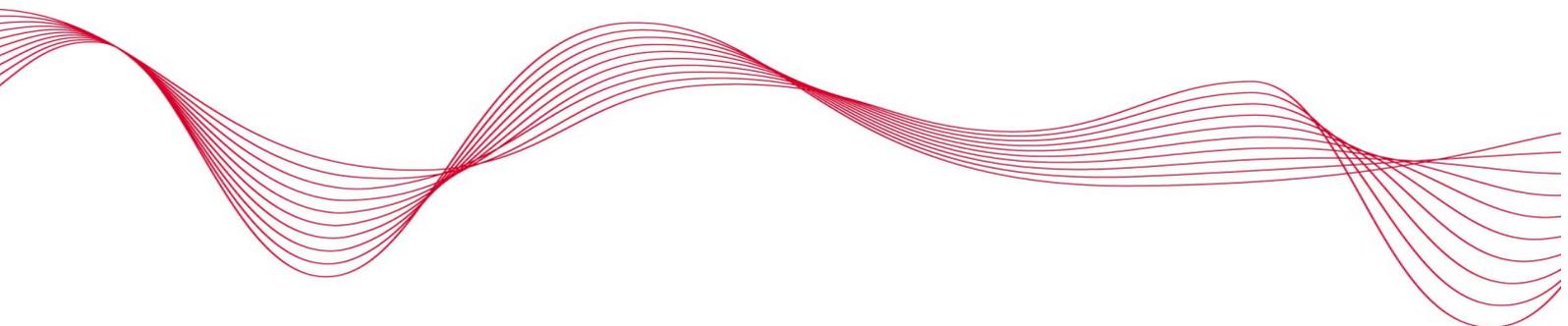
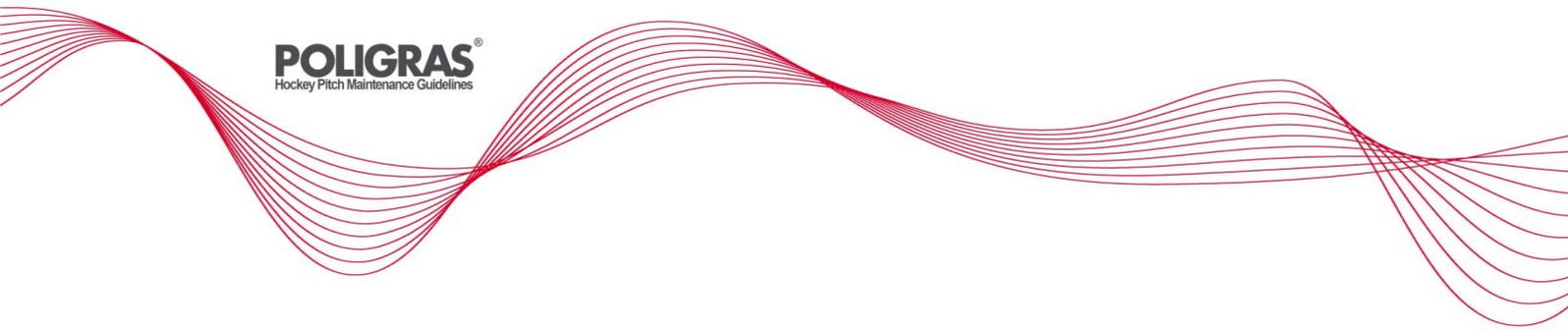




# **POLIGRAS<sup>®</sup>**

## **Hockey Field Maintenance Guidelines**





**POLIGRAS**<sup>®</sup>  
Hockey Pitch Maintenance Guidelines

## Caring for your Poligras Hockey Pitch

The construction of a hockey pitch and its associated facilities represents a significant capital investment and major influence on the enjoyment and potential development of the sport in the local and wider community.

To maximise the benefits that a synthetic hockey pitch can provide a key factor that cannot be over emphasized is the implementation of the correct maintenance regime.

These maintenance guidelines are provided for use by the players, facility maintenance personnel and contracted professionals. The information contained herein covers regular and frequently occurring cleaning and maintenance matters required to maintain a Poligras pitch. Please contact STI directly if advice is required on an occurrence that is not addressed in this document.

Synthetic sports surfaces generally require far less maintenance and upkeep than natural surfaces. However no synthetic sports surface is 100% maintenance free, regular maintenance and cleaning of synthetic sports surfaces is required to keep them at their optimal playing condition.

Why maintain:

- ✓ Optimises playing conditions
- ✓ Minimises the potential for player injury
- ✓ Maximises the life of the pitch
- ✓ Greater return on investment over the life of the pitch

## Planning Ahead

There are a few simple decisions that can be made that will greatly assist in maintaining the pitch without lifting a single cleaning tool. Clubs and association will do well to consider the implementation of the following suggestions for their facility:

- ✓ Landscape using non-leaf shedding trees and shrubs;
- ✓ Installation of concrete or asphalt paths rather than earth, crushed rock or stone paths around the pitch;
- ✓ Publish specific static and rolling load limits to be observed on the pitch;
- ✓ Control access to minimise vehicles entering the pitch area;
- ✓ Construct separate Poligras turf practice and warm up areas;
- ✓ Provision of markings and extra goals for cross pitch practice;
- ✓ Routing of player traffic through specific access points to minimise tracking of impurities onto surface;
- ✓ Installation of boot cleaning devices for use prior to stepping onto pitch;
- ✓ Food and beverages facilities located well away from pitch;
- ✓ Strategic placement of rubbish bins with adequate capacity and cleared regularly; and
- ✓ Erection of Pitch Rules signage displaying actions to be followed by all players and spectators. These rules should include the following:
  - ✗ No smoking;
  - ✗ No animals;
  - ✗ No food or drink on the pitch surface (water excepted)
  - ✗ No chewing gum
  - ✗ No spitting
  - ✗ No glass containers or bottles
  - ✗ No sharp tags on boots
  - ✗ No standing or swinging on gates and fences
  - ✗ No stiletto heeled shoes

## The Three Step Action Plan

Preventative maintenance actions will greatly increase the longevity of your Poligras pitch, it will also reduce the cost of and sometimes the requirement of major professional maintenance occurrences. The 'Three Step Action Plan' maintenance routine is based on preventative actions. Regular diligent completion of the tasks outlined below is an excellent routine to follow. In general it is possible to break down maintenance tasks into three categories:

- **Daily Maintenance**
- **Weekly Maintenance**
- **Pitch Grooming and Special Inspections**

It is good practice to keep a maintenance register recording the activities undertaken and any required actions. STI can provide maintenance registers for this purpose.

### 1. Daily Maintenance

General inspection and simple preventative actions should be carried out daily. The more diligently preventative action is carried out the easier it will be to maintain the pitch in pristine condition. Weekly, pitch grooming and special care maintenance will not take as long and costs will be kept to a minimum.

#### Daily Maintenance – The Tasks

- ✓ **Remove surface dirt**  
Remove leaves, pine needles, paper etc. Surface dirt can be removed with a leaf blower or appropriate soft bristled rake or broom.
- ✓ **Remove organic material**  
Remove any natural grass, moss and/or weeds. Pay particular attention to areas of the pitch that have hospitable climatic conditions for moss and mildew growth, such as shaded areas. Remove organic growth by gently pulling organic material from the Poligras surface.
- ✓ **Sharp objects**  
Stones, shards of glass, hair pins, sports equipment fragments etc. must be removed immediately. They can damage the structure of the surface and are an injury risk to players and spectators.
- ✓ **Organic Contamination, ie. bird and animal droppings**  
Organic contamination should be removed as soon as possible. Remove any animal waste solids and then neutralise with a mixture of white distilled vinegar with equal part water. Flush thoroughly with water immediately after application.

## 2. Weekly Maintenance

Weekly maintenance should be scheduled prior to any regular match activity, this will help minimise any mishaps during games and have the pitch in excellent condition when there is an increased number of players and spectators.

Weekly maintenance should be recorded in the maintenance register including any anomalies observed and required actions noted. Over time trends can be identified that may be unique to the facility. Identifying such trends can enable maintenance requirements and practices to be tailored accordingly.

### Weekly Maintenance – The Tasks

#### ✓ **Check High Use Areas**

Hockey pitches experience significant stick/player sliding contact. Particularly heavy stress can be experienced at penalty areas, short corners and regular drag out spots. If wear on the surface of the pitch in these areas is starting to become apparent institute preventative measure as follows:

- Structure training routines to distribute wear more evenly across the entire pitch, including practicing short corners and penalties at locations on the pitch than within the competition goal areas.
- Introduce a revolving practise area schedule, using different part of the pitch for consecutive sessions.
- Make players aware of the high usage areas and instructed that they are to avoid these areas when training.
- On filled or hybrid pitches check the level of infill in high use areas and top up as required to the appropriate level.

#### ✓ **Check Seams and Lines**

Seams should be inspected on a regular basis as some climatic conditions and regular wetting of hockey pitches can be a catalyst for minor separation. Walk along the lines and seams of the pitch checking for any separation. Pay particular attention to high usage areas and any cut-in pitch markings such as goal circles, penalty spots and dashes.

Minor separation of seams can be rectified by re-gluing with an approved adhesive using the technique advised by STI. Please contact STI if refresher training of club and grounds personnel is required. Any significant separation should be reported to STI at the earliest possibility.

#### ✓ **Inspect Sprinkler Systems and Silt Traps**

Check the sprinkler heads are free from any deleterious material. Clear silt traps of any built up material. Dispose of any material away from the pitch.

- ✓ **Inspect Drainage System**  
Check drainage catchment areas and remove any rubbish and built up material. Ensure to dispose of any material away from the pitch in accordance with environmental requirements. Check drainage pits and traps for any damage and replace as necessary. If the drainage system has experienced significant damage from to vehicle impact or other occurrences contact STI for assistance with rectification.
- ✓ **Inspect Fencing**  
Check to ensure perimeter fencing has not been damaged, paying particular attention to fencing behind goal areas. Carry out repairs to any identified problems as soon as practicable to prevent further damage. Secure fencing around the perimeter of the Poligras pitch is a necessary part of preventing unauthorised access to the pitch and associated random damage. It is important to ensure fencing is maintained adequately at all times.
- ✓ **Inspect Gates**  
Check all gates onto the pitch for 'hinge drop'. Hinge drop can occur when gates are stood on and causes the gate to drop from its intended location. This can result in the gate scraping on top of the surface causing friction and wear. Correct any hinge drop immediately by appropriately repairing the gate.
- ✓ **Inspect Sporting Equipment**  
Check all sporting equipment for damage ie. goals, flags, balls etc. Carry out any appropriate repairs or replace damaged items.

### 3. Pitch grooming and Special Inspections

With use, the synthetic fibres on the pitch surface will flatten and begin to lie flat. This is particularly prevalent in areas of highest use, such as the goal mouths, goal circles and penalty corner marks. If not addressed, then this can alter the playability and performance characteristics of the pitch surface and can accelerate wear of the synthetic fibres.

To help maintain the pitch surface with the synthetic fibres in the optimal upright orientation regular grooming is essential. Pitch grooming can be classified into two key categories:

1. Regular brushing/grooming to keep the pile upright; and
2. Seasonal major service grooming to thoroughly clean the pitch surface

#### Regular brushing/grooming

Regular grooming should be carried out with a towable, stiff bristled broom or purpose manufactured synthetic sports surface grooming machine. The purpose of this grooming work is to maintain the synthetic fibres in an upright orientation.

Grooming should predominantly be undertaken laterally across the pitch from sideline to sideline. Grooming laterally across the pitch places least stress on the pitch seams, as this is the direction in which the rolls of synthetic turf are installed. All pitch grooming should be undertaken when the pitch surface is dry, if possible, for maximum effectiveness.

All synthetic grass has a nap (lean of the pile) that develops through the manufacturing process. This nap causes the synthetic fibres to lean slightly in the direction that they were manufactured on the roll of synthetic grass. For optimal grooming effectiveness, grooming should be undertaken in the opposite direction to that in which the rolls were installed, so that the grooming process pushes the fibres back upright against the natural nap of the product.

For heavily used pitches, occasional grooming perpendicular to the installed direction of the synthetic grass rolls (grooming from goal line to goal line) can assist in standing up pile that is severely flattened, particularly in the goal mouths. This should be done with care to prevent damage to seams or inlaid pitch markings. Following any such grooming, the pitch should then be brushed once again with a final pass as per the standard grooming direction from sideline to sideline against the installation direction.

For pitches that are used intensively for matches and training (5-6 hours per day across most days of the week), then pitch grooming should be conducted on a weekly basis. For pitches with less intense usage then grooming can be conducted on a less frequent cycle, however should be undertaken as a minimum on a monthly basis. It is also strongly recommended that the pitch surface be groomed in advance of any tournament or major match, to ensure optimum playing characteristics for the event.

The recommended frequency of maintenance activities are set out in the maintenance schedule appended to this document.

! NOTE: Care must be undertaken when grooming to not apply excessive downward (vertical) force during the grooming process onto the pitch surface. Equipment should be adjusted so that the turf rolls do not become corrugated and/or displaced by the maintenance work. In this respect, special attention must be paid when grooming around inlaid pitch markings.

! NOTE: During the initial stages of pitch use and during regular grooming activities you may often see loose fibre on the synthetic surface. This does not mean that your synthetic surface is damaged, but is due to tuft loss around the perforation holes that are placed into the synthetic surface during the tufting process for pitch drainage purposes. The loss of tufts from around the perforation holes will dissipate with time and any removed tufts should be disposed of in accordance with routine maintenance requirements.

### Seasonal major service grooming

Despite undertaking the maintenance activities listed in this document, over time impurities can accumulate within the synthetic fibres on the hockey pitch surface. These impurities can typically include fine soil particles, airborne dust, smoke or vehicle/chemical emissions and organic materials (e.g. decomposing leaves or grass clippings) that were not detected during routine maintenance.

If left unattended, the accumulation of such material within the pile can negatively impact on the play characteristics, drainage performance and aesthetic appearance of your synthetic surface.

STI recommend's that major service grooming be undertaken by a specialist synthetic grass pitch maintenance provider as a minimum on an annual basis. This major maintenance service will include all of the routine tasks outlined within this document, however in addition thorough grooming of the pitch surface will be conducted using specialist grooming equipment designed to agitate the synthetic fibres and vacuum extract any detritus material from within the pile structure.

Major servicing of your Poligras hockey pitch should be conducted on at least an annual basis. For facilities that are exposed to frequent strong winds, dusty environments or have significant vegetation surrounding the facility, then major service grooming on a more frequent such as every six months may be required.

Major service inspections and associated grooming can be arranged with STI or professional synthetic grass grooming and surface care companies. Professional grooming must be carried out with the use of appropriate machinery and it is vital that the operator of professional equipment has the correct knowledge and experience to ensure that the surface is not damaged by the grooming process.

Major service grooming must be undertaken on a dry pitch surface to effectively remove accumulated material from within the pile.



## Treatment for Common Stains and Issues

### Algae

If the climatic conditions are conducive algal growth can occur on watered hockey pitches and in filled pitches.

The first sign of alga growth is often flecks of dark 'dirt-like' material on the back of players socks and legs. Algal growth within the pitch can then be identified by patches of brown or black areas on the surface particularly in white lines that quickly become slippery.

Alga growth should be removed during daily and weekly inspections. If daily and weekly maintenance are not kept up there is a high probability of alga growth, this is particularly so in warmer more humid climates.

Treatment:

- ✓ Remove visible algae material by hand taking care to carry it off the pitch to an appropriate disposal area and treat the affected area with an approved heavily diluted algae spray or treatment.
- ✓ Preventative action is the most successful treatment for algae. Adding a heavily diluted algae spray to sprinkler watering systems will assist greatly in the retardation of alga growth.
- ! The use of any chemical treatment on the surface should be approved by STI prior to its application as to its suitability and potential to damage the fibre structure.
- ! Player and spectator safety should be of paramount consideration. Facility owners should consult the Material Safety Data Sheet of the chemical to ensure its use is appropriately safe and follow manufacturer's instructions.
- ! Consider environmental implications of water runoff and the surrounding areas and catchment systems when using any chemical on the pitch.

## Moss and Weeds

Sand filled pitches are more prone to moss and weed growth. Again early detection and removal of any organic growth during daily and weekly maintenance is critical. This action will usually be all that is required, however if moss and weeds become established carry out the following treatment:

### Treatment:

- ✓ Remove any visible moss or weeds carefully by hand. Take care not to damaged the turf and its sub-base when removing.
- ✓ Remove residue moss and weeds using high pressure water in the affected area taking care not to expose any one spot to prolonged use of high pressure water.
- ✓ If the problem reoccurs a herbicide may be required. Seek advice from STI or a suitably qualified professional surface cleaning company as to the best product and practice to use.

! The use of any chemical treatment on the surface should be approved by STI prior to its application as to its suitability and potential to damage the fibre structure.

! Player and spectator safety should be of paramount consideration. Facility owners should consult the Material Safety Data Sheet of the chemical to ensure its use is appropriately safe and follow manufacturer's instructions.

! Consider environmental implications of water runoff and the surrounding areas and catchment systems when using any chemical on the pitch.

## Oils and Fuels

### Treatment:

- ✓ Oil and fuel spills must be cleared immediately. Absorb liquid with sand, saw dust or suitably absorbent material.
- ✓ Remove contaminated absorbent medium taking care to dispose of appropriately.
- ✓ Wipe all spills promptly with a clean rag moistened with a suitably diluted spot remover.
- ✓ Wash the affected area immediately with a mild pH balanced detergent such as wool wash, followed by a thorough rinsing with water.
- ✓ If residue remains repeat the process until it has been removed.
- ✓ If the surface subsequently picks up dirt quickly in the affected area, repeat the process.

! The use of any chemical treatment on the surface should be approved by STI prior to its application as to its suitability and potential to damage the fibre structure.

! Player and spectator safety should be of paramount consideration. Facility owners should consult the Material Safety Data Sheet of the chemical to ensure its use is appropriately safe and follow manufacturer's instructions.

! Consider environmental implications of water runoff and the surrounding areas and catchment systems when using any chemical on the pitch.

## General Household Type Spills

The first rule for any spill is to act promptly. Fresh spills are easier to remove and this will minimise the possible damage to the turf. Clubs and facility owners should consider erecting pitch care signage in and around the facility prohibiting the consumption of food and drink on the pitch and surrounds.

An easily accessible “Spills Action Kit” should be made available for the use of responsible persons for use in the event of a spill. The kit could include:

- Absorbent medium, such as sand, saw dust or kitty litter.
- Paper towels.
- Material rags.
- Low sudsing mild household detergent.
- Rubbish bags for the removal of contaminated absorbent medium.

For common spills such as coffee, tea, juice, sports drinks, milk, sauce, food solids, beer, soft drinks apply the following treatment:

Treatment:

- ✓ Soak up excessive liquid with paper towels and/or absorbent mediums.
- ✓ Remove any solids and dispose of appropriately.
- ✓ Mix a mild solution of low sudsing household detergent and apply to affected area. Ensure that solution is mild using no more than one teaspoon of detergent per half litre of water.
- ✓ Thoroughly flush the surface with cold water immediately afterwards.
- ✓ Repeat treatment if required.

For more severe problems:

- ✓ Soak up excessive liquid with paper towels and/or absorbent mediums.
- ✓ Remove any solids and dispose of appropriately.
- ✓ Mix a mild solution of 3% ammonia and 97% water. Thoroughly flush the surface with cold water immediately afterwards.
- ✓ Blot surface with absorbent paper towels or dry absorbent medium, dispose of towels and/or absorbent medium appropriately.

- ! For more stubborn stains, you may need both the detergent solution as well as a dry cleaning fluid. Contact STI or consult a commercial carpet cleaner for assistance with stains such as paint, shoe dye and glue.

## Chewing Gum and Gluing Agents

Again, prevention is easier than treatment and is far more preferable. Ensure signs and pitch use rules include the prohibition of chewing gum in and around the facility.

Extreme care should be taken when using gluing agents on or around the pitch. Should glue be spilt or chewing gum found imbedded in the turf engage the following treatment:

Treatment:

- ✓ Chewing gum and cured gluing agents can be best removed by freezing. Apply an aerosol refrigerant spray or similar to the chewing gum or cured gluing agent, taking care not to damage the surrounding turf.
- ✓ Once sufficiently frozen carefully clip the substance from the turf pile.
- ✓ Clip directly under the frozen chewing gum or gluing agent, do not clip the turf pile.
- ✓ Residue chewing gum or gluing agent can be removed by scraping the individual blades of turf with a narrow dull edged metal instrument, such as the edge of a metal ruler.
- ! The turf pile should not be cut if at all possible. If unavoidable, only the minimum length of turf pile should cut be to extradite the chewing gum or cured gluing agent. Cutting the turf may result in an uneven patch of surface.

## Animal Waste and Bird Droppings

Treatment:

- ✓ Remove any solids place in appropriate waste bin.
- ✓ Mix a solution of white distilled vinegar with equal amounts of water and apply to affected areal.
- ✓ Flush the area thoroughly with water immediately after application.

## Load Limits

From time to time it may become necessary to traverse the pitch surface with emergency and/or maintenance vehicles. This should be kept to an absolute minimum and travelling around the pitch on the surrounds surface is preferable. Correct steps and precautions should be taken to mitigate damage to the surface and the elastic shock layer.

As a general rule it is recommended that neither long term fixed loads of:

- more than 10 kPa; and
- rolling load of more than 250 kPa,

be applied to the surface in any instance.

Rolling loads of up to 200 kPa are acceptable occasionally with great care (the loading of a pneumatic tyre vehicle is approximately equal to the total air pressure in the tyres)

Eliminate any unnecessary long-term loads and keep necessary loads as low and brief as possible. Use sheets of 20mm exterior plywood or similar to spread loads to further minimise risk of damage to the turf system. Ensure that the material used to spread the loads does not contain substances that may leak out and stain the turf if it gets wet. A geotextile barrier placed beneath the plywood is recommended as it can prevent staining.

## Watering

One of the most important maintenance aspects is ensuring that the pitch is properly watered. Many aspects dictate the amount and frequency of watering; environmental, drainage systems, player preference and availability to mention a few.

Experience and testing has shown that turf in a hot, sunny environment will use up to one litre of water per square metre every hour.

It is not advisable to play on wet designed surfaces without watering. Doing this may negatively affect the playability of the pitch, could shorten its lifespan and may void manufacturers warranties.

Insufficient or incorrect watering of a pitch may result in it losing its cleansing properties. Through build up of impurities within the pile which may result in abrasion and degradation of the yarn. Furthermore, if played on dry, much greater forces are in action, which can have a detrimental effect on the turf (fibres/joints/interface with the shockpad) causing wear and more rapid deterioration (rippling, tearing, uneven stretching), ultimately reducing the longevity of the pitch.

When watering, be careful to distribute the water evenly over the area. The correct amount of water should just dampen the surface, but should not saturate it. Over a 10 -20 minute watering period, it is suggested that application of approximately 2mm (or 2 litres per square metre) to the playing surface.

Pitches that are specifically designed and constructed to play dry do not require irrigation although watering such surfaces can enhance their play characteristics. Watering of infilled hockey surfaces increases the need for diligent maintenance regarding algal and weed growth.

## Water Quality

### **Potable water is recommended for pitch irrigation.**

Lesser quality water may contain quantities of dissolved solids, which cause a noticeable film to appear on the surface, and may attack the structure of the yarn.

High concentrations of calcium carbonate within water can result in a chalky white residue appearing on the pitch surface when dry. This is cosmetic only and does not affect play, but pitch grooming should be conducted regularly to prevent lime scale build –up.

High concentrations of iron within water can cause rust staining of the pitch surface.



Maintenance Activity	Daily	Weekly	Pitch Grooming & Special Care
Removal of surface dirt from on and around the pitch			
Removal of any organic growth on and around the pitch			
Removal of inorganic material from on and around the pitch and the surrounding area; including glass, bottles, food wrappers, and general rubbish items			
Removal of contamination such as bird and animal droppings ensuring the area is neutralised			
Check high use areas on the pitch for any wear and stress applying the correct remedy if necessary			
Check all seams and lines on the pitch and remedy if necessary			
Inspect and test all sprinkler systems ensuring performance is correct			
Inspect and clear all slit traps around the pitch			
Inspect all drainage infrastructure areas around the pitch clearing as necessary			
Inspect all perimeter and back goal fencing for damage, repair as necessary			
Inspect all gates for damage and drag. Repair and/or replace as necessary			
Inspect all sporting equipment to ensure repair is in good condition and/or replace as necessary.			
Thorough major inspection and machine grooming by senior grounds persons and/or professional surface grooming company			

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