

Document Ref: FS1013-SEL-EX-XX-T-SC-9004

Doc Title: 2G Synthetic Turf System Maintenance Manual

Revision: P01

Purpose of Issue: S4 - For Stage Approval



**SIS (UK) LTD
MAINTENANCE MANUAL
FOR
2G PITCHES**

Product Installed: SISTurf Xcel

Project Name:
Star Academy

Project Address

Client:

SIS Ref: 26-5057

Date of Installation:



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FORWARD

Thank you for purchasing an SIS synthetic grass pitch.

This manual outlines simple day-to-day maintenance and those occasional special procedures necessary for minor repairs, snow removal and unusual events or uses. By following the maintenance procedures outlined in this manual your pitch will be kept in optimum condition ensuring that its superior playing characteristics remain for many years to come.

Failure to record the maintenance carried out on the pitch in the separate booklet will invalidate the warranty of this carpet.

Maintenance procedures are designed to ensure that;

- The playing surface is kept clean
- The infill materials are evenly distributed over the surface
- Surface drainage is maintained
- The facility looks good and well-kept at all times
- The infill does not compact
- The fibres remain in good condition

These objectives are achieved by;

- Sweeping leaves and other detritus from the surface
- Grooming the surface through brushing and drag matting
- Applying suitable weed killers, moss killers and algaecide when required
- Controlling access to the pitch
- Ensuring footwear is clean
- Providing rubbish bins
- Prohibiting smoking, chewing gum, and carrying food or drinks on to the pitch
- Suitable footwear should always be used. Most shoe manufacturers produce a boot which is specifically designed for synthetic grass pitches. Boots with studs or blades are prohibited.
- Repair minor damage immediately

Settling in period

After the initial installation, sand filled/dressed pitches require many weeks of use and weathering to reach optimum playing condition. This time allows the granular fill to settle properly to its best playing level for ideal comfort, playability and longevity of the system. This period of time varies, depending on local conditions, use, and system specifications.

During the settling in period surface tension can slow down the drainage of the surface and some "ponding" may occur.

This will soon resolve itself as the pitch is played on and the maintenance regime commences.

Please distribute this manual to those responsible for the day-to-day care of the pitch and see that they are thoroughly familiar with its contents. You should also review the Warranty provided with the turf system for specific prohibitions and limitations contained therein.

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1. CLEANING AND STAIN REMOVAL

On outdoor pitches rain is your best cleanser. Rainfall gently cleans the turf fibers of dust, pollen and airborne pollutants in way that is difficult to duplicate in any other fashion. However this is not applicable to indoor pitches and you may wish to spray the surface with a disinfectant such as TurfD antimicrobial product to reduce the risk of infection.

Keeping the surface clean is essential and the litter deposited by users and spectators should be removed on a regular basis. Good housekeeping practices will minimize these problems:

- ✓ Keep rubbish and litter containers on site--make sure there are enough containers so as to eliminate overflow
- ✓ Route field access traffic in such a way as to minimize mud and dirt tracking on to the field
- ✓ Set up drinks for athletes during practice breaks off the field itself, if possible
- ✓ Ban smoking

Litter Removal:	Paper, food, debris from surrounding trees, etc., should be picked up manually or removed with a leaf blower or sweeper immediately after any event
Turf Loading Limitations:	Brushing and brush cleaning may require several trips over the pitch to finish the operation. Any sweeper, which weighs more than 150 kg, should have pneumatic tyres with a maximum tyre pressure of 2.5 kg per square centimeter (psi). Do not park vehicles on the turf, especially in the heat of the day, or leave vehicles on wet turf for long periods of time.
Vehicle Exhaust:	Never leave a parked vehicle idling on the turf in order to prevent the possibility of burning or melting the turf due to exhaust or overheating. Make certain the hot engine exhaust is never discharged in to the field when using any kind of vehicle.
Oil Spillage, etc:	Care should be taken to prevent lubricating oil, grease, transmission fluids, etc., from dripping or spilling on your turf surface during sweepings. Such spills can discolour the turf. Proper maintenance procedures should be observed in this regard. Battery acid and other fluids should not be allowed on the turf. Never change or add fluids to maintenance equipment while on the turf surface.
Frequency:	The removal of loose rubbish should be performed on an as needed basis, generally on a weekly basis or more often during heavy use periods.
Stain Removal, General:	The fibres used in our synthetic grass are among the most stain resistant fibres known to man because most stains are moisture borne and our fibres generally do not absorb moisture. Hence, most stains are not true stains but rather residues of foreign matter, which must be promptly and thoroughly removed. The first rule is promptness. It is much easier to clean up a fresh spill before it has time to dry and harden.
Procedures for removing stains:	Most stains can be removed easily with a solution of hot (not boiling) water and a household detergent such as washing up liquid. Heavy oil marks can be removed with a cloth and white spirit. Use an aerosol freezing material to remove chewing gum. Bodily fluids such as blood and vomit should be treated with an enzyme based cleaner. The

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	affected infill material should be removed and replaced with new and the cleaning detergent should be thoroughly flushed through the surface. Avoid cleaners with alcohol or harsh acids, generally we say no to bleach unless the stain is particularly stubborn and only then if heavily diluted. If you use bleach use it 1 part bleach with 10 parts water and rinse thoroughly. Detergents should not be industrial strength – normal dishwashing liquid is ideal – look for low suds and pH neutral, always rinse thoroughly after use. You can also use a vinegar solution, you can use pure distilled and undiluted on small stain areas, for larger areas dilute 1 part vinegar to 3 parts water, and again rinse thoroughly after use.
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2. WEEDS, MOSS AND ALGAE

Weeds:	Weeds can occur on synthetic grass surfaces, usually as a result of windblown seeds. Small weeds can be removed by hand ensuring that the full root is extracted and not broken off. If weeds are wide spread and deep rooted it is advisable to kill them off with an appropriate weed killer such as Roundup.
Moss and Algae	Moss and algae can become established on synthetic surfaces particularly when the pitch is not being correctly maintained or if there are unusual amounts of shade from trees or buildings. Particular attention should be paid to the pitch perimeters as moss and algae are not usually found in highly trafficked areas. A water based moss killer/algaecide should be applied and the affected infill should be removed and replaced with new. If your pitch is likely to suffer from moss and algae, prevention is better than cure and it would be advisable to treat the area at least once a year as part of the routine maintenance procedures.

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3. PITCH USAGE GUIDELINES

The SIS (UK) Ltd Warranty and all specifications list "designated uses" for the pitch installation. While these lists are not comprehensive, they give a good indication of the components we have selected to incorporate in our surfacing systems. This list should be consulted to set up your guidelines for the field's use.

Line Markings:	The key point to remember is that paint should be applied lightly and evenly to reduce the likelihood of paint buildup. Light applications give good aesthetics and adequate life and are less abrasive than heavy layers of paint. Best results occur when paint is applied to a dry, clean surface. The turf must be grease-free. The old, degraded paint and dirt must be removed from the turf to be painted for the best appearance and resistance to foot traffic. Remember that no paint is truly permanent. Properly applied, these paints can be expected to last through one season. They are latex type, highly flexible to resist flaking and are available through SIS (UK) Ltd. Recommended: 1. Conica – Polyurethane based paint for synthetic turf
Painting Procedures:	The following procedures refer to the application. 1. Apply the paint on a dry pitch. 2. Suggested turf temperature for best results: 18o C to 30o C 3. The field should be as clean as possible. 4. Thickness of the paint on the turf is important. Very thick layers should be avoided. 5. Curing time is crucial. Allow a minimum cure time of 24 hours after painting before the pitch is put into service. See the application manual shipped with the Conica PU Paint if this type will be used. Support in Sport (UK) Ltd does not recommend painting fields with brushes or rollers.
Load Limits:	SIS (UK) Ltd recommends that no long term static load of more than 2 PSI (0. 15 KG/CM²), nor any transient or dynamic load of more than 25 N/ CM² be allowed on the surface. The loading of a pneumatic-tired vehicle is approximately equal to the air pressure in its tyres. Hence, it is good practice to eliminate any unnecessary long-term parking and loading and to keep the necessary ones as low and brief as possible. Sheets of 18 mm thick plywood, exterior grade, are ideal to spread loads. Cover the turf with plastic prior to placing the load spreaders to keep the turf clean.
Snow and Ice Removal:	Snow and ice are not harmful to synthetic grass pitches and generally should be left to melt and drain off the system without assistance. At times, however, it may be necessary to remove snow or ice to make the pitch playable for a scheduled event. Provided that the foothold is adequate the pitch may be played on when frozen, but heavy use is to be discouraged because the fibre is relatively brittle at low temperatures. The degree of shock absorption will also be substantially reduced and players should be made aware of this fact. The health and safety of the users should be the primary consideration.

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	There are a few different methods that can be employed to remove snow and ice depending on the situation. This is a highly sensitive operation and should only be undertaken if absolutely necessary. The key is to act quickly and avoid infill removal.
Sweepers/Snow Blowers:	If the snow is dry and powdery, it can be swept from the field using a rotary brush and / or PTO-driven snow blower. Be careful that the machinery used is not set in such a way as to dig into the infill as this will cause material to be dislodged. Ideally, the rotary broom should be set so as to leave approximately 0.5mm – 0.75mm of snow between the top of the surface and the bottom of the brush. The remaining snow can then be left to melt naturally. If using a snow blower: ✓ The first pass of the blower should be made down the centre of the field, from goal to goal. ✓ The second pass should be made at the edge of either side of the first pass and the blower must be adjusted so that the snow is deposited in the truck. ✓ The blower then continues on down one side and up the other accompanied by the truck. ✓ Finally, clean off the remaining snow with a mechanical broom.
Snow Removal Using a Rubber Bladed Snow Plough	As a last resort, wetter / more sticky snow can be removed from the field by using a snow plough with a rubber-tipped blade. This blade may be mounted on a light tractor. Extreme care must be used to prevent digging the blade into the surface as this will cause material to be dislodged. The best blade configuration is one that sets the blade above the surface (approx. 0.5mm – 0.75mm). This results in the blade ‘kissing’ the surface and rolling the snow ahead of the blade. The snow itself will maintain contact with the surface. Wood, metal or other rigid surface blades should not be allowed. If using a (rubber-tipped) snow plough: ✓ Remove the snow layer by layer. ✓ Adjust the blade to proper height taking care that it does not make contact with the surface. ✓ Push the snow into piles at the side of the field. ✓ Scoop the snow into trucks using front end loaders. ✓ Use a rotary mechanical broom or snow blower to clean off the remaining snow, following the instructions provided under the ‘Sweepers/Snow Blowers’ section. ✓ Break up any ice using a small weighted lawn roller and then proceed with procedure above. ✓ Care should be taken so as to not remove / dislodge any infill.



Equipment:	Note: Use only pneumatic tyres on equipment used in the removal of snow and ice. Lugs and chains are damaging to the surface and should never be used on the field. Do not park equipment on the field overnight or for extended periods of time as this can damage the system. (Note that the equipment should not create dynamic loads that exceed 25N/ cm² or static loads that exceed 0.15kg/cm²) If the tuft begins to stretch or move with this process, discontinue the procedure.
Ice Removal:	In some cases it may be necessary to use a weighted lawn roller over the field in order to break up ice. The broken ice can then be swept off the field. Generally, if the sun is out and the ice or frost is not excessive, it tends to melt rapidly, especially if players use the field. In the event of excessive ice, there may be no other alternative but the use of chemicals to melt the ice. Be very cautious using salt and / or ice melt on a field that will be used by athletes. These products can cause skin irritation and can also leave a sticky and/or slippery deposit that may discolour the fibres. Any residue should be flushed from the field as soon as weather permits. If necessary use vacuum-dried salt which will dissolve quickly and melt the ice without harming the fibre. This deicer is best used as a preventative measure and applied in advance of cold weather conditions. If heavy rain falls on a frozen pitch, or the snow and ice thaw quickly, the field may become flooded. This is because the sand in the infill is still frozen and prevents the water draining. This is not a problem, as the field will drain properly once the infill has thawed. DO NOT USE COMMON SALT, ROCK SALT, CALCIUM CHLORIDE, AMMONIUM NITRATE, UREA or other corrosive or toxic chemicals to melt ice on SIS Turf surfaces. Their presence can be harmful to players and personnel and can damage equipment, and damage the turf itself.
Watering the Surface:	In some instances, coaches, players and trainers may prefer to water the pitch during periods of hot weather in order to lower the temperature/humidity index. Whilst this is not a maintenance requirement it can be advantageous in periods of very hot weather, a wet field provides evaporation, which indeed lowers the temperature of the field rapidly. The temperature of a wet synthetic turf field should match that of a natural grass field in the same area. Remember that evaporation can be very rapid (up to 8,000 liters of water per hour on an average sized field) so with long uses of the turf, an additional sprinkling may become necessary. If you wet the field, distribute the water evenly over the area to be used. Aim to simply dampen the surface, not soak or saturate it. Never use water from a polluted supply.

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Event Preparation:	SIS (UK) Ltd pitches are designed for the sports which the surface has been installed and non-athletic events such as exhibitions, shows, and concerts etc. are not covered under the SIS (UK) Ltd warranties. If events are held which are outside of the specification of the carpet, the following areas of concern should be noted, 1. These events can create loads on the turf that exceed the surface load limit set forth in the Warranty and in the load limits outlined in this Manual. 2. Large crowds and acts on the turf generally fall outside the "designated uses" for the system and damage of the turf can occur unless it is fully protected. Protect the Turf 1. Spread the Load! Remember that chairs and high heel shoes create high psi levels on the turf. The basic precaution is to keep long-term static loads below 2 psi (0.15 kg per cm²) by means of load spreaders. The best, most economical load spreader is outdoor plywood. Be sure to spread a polyethylene sheet under the plywood to protect the turf. Sheets of plywood are ideal and readily available. 18 mm plywood is recommended as long as the loads are not excessive (such as concert stage or sounds systems). 2. Ban Open Flames! No such acts should be allowed on the turf for obvious reasons. 3. Clean Up Immediately! Animal waste should be removed and the area flushed thoroughly. The field should be inspected for damage so that small problems do not become major repair cases. 4. Ban Smoking! Cigarettes cannot ignite the turf but they can damage the turf. If large crowds are expected, a cigarette ban should be enforced. However, in these cases, even if heavy loads will not be present on the turf, the turf should be covered. Call SIS (UK) Ltd for suggestions on ways to minimize the risk of damage to the turf. IN THE CASE OF ALL NON-DESIGNATED USES FOR SIS (UK) Ltd SYSTEMS, THE OWNER SHOULD BE AWARE THAT DAMAGE TO THE TURF OR PAD IS NOT COVERED BY THE SIS (UK) Ltd WARRANTY.
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Sand Filled & Sand Dressed Pitches Footwear Guidance:	Recommended Footwear for Synthetic Surfaces					
	Footwear Types					
		Football Boot (screw-in stud)	Football Boot (moulded stud)	Trainer ('Astro' trainer)	Trainer (flat sole)	Football Boot (blade)
	Turf / short pile Carpet	x	x	✓	✓	x
	KEY: ✓ Recommended ✗ Not permitted					
	1.	1. Suitable footwear should always be used. Most shoe manufacturers produce a shoe which is specifically designed for synthetic grass pitches. <u>Boots with any kind of stud or blade profile are prohibited.</u>				
	2.	It is also advisable that the facility owner and/or club ensure that all footwear is clean and free from mud, soil and stones, prior to usage on pitch. Failure to monitor this aspect will affect the sports performance and drainage of the turf system, plus bring onto the pitch foreign debris which could lead to player injury.				



Footwear Examples (not-exhaustive)

Football Boots (Screw-in Studs)



Football Boots (Moulded Studs)



Trainers ('Astro' shoes)



Trainers (Flat sole)



Football Boots (Blades)



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4. MINOR REPAIRS

All areas of the pitch including seams should be inspected on a regular basis. Any areas of damage should be reported to SIS (UK) Ltd.

Whether performed by SIS UK Ltd or by the owner, all repairs must be made in warm, dry weather. Gluing seams and filling the turf should not take place if the field is wet or damp.

"Minor" vs. "Major" Repairs:	Experience has taught us that most field repairs are minor in nature. However, minor problems can become major problems quickly if not corrected. Small loose spots on glued seams, cuts and tears, can be repaired by the owner's maintenance staff. These problems should be regarded as minor unless allowed to grow.
Seam Repairs:	These instructions refer to open seams up to 5m in length. If the seam openings are widespread or severe, the user should contact SIS UK Ltd promptly for assistance. To repair minor seam openings or loose seam areas: 1. Vacuum fill from the turf to be repaired. 2. Be sure fabrics to be glued are free from loose rubber, dirt, old adhesive and other foreign matter, and are dry. 3. Clean the area to be repaired. 4. Position the fabric to check for satisfactory final placement. 5. Apply 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. 6. Prop open the seam so that the adhesive is allowed to cure in the open air. 7. Press the fabric into the adhesive bed uniformly. 8. Weight down the area and allow to cure for at least 24 hours. 9. Spread filling on the repaired area and hand brush into the turf thoroughly until even with surrounding playing areas.
Cigarette Burns:	Generally, a cigarette will fuse the tips of the fibers resulting in an abrasive patch. Ban smoking on the pitch.



5. BRUSHING AND GROOMING

Grooming the surface is a crucial operation if premature deterioration of playing characteristics, appearance and drainage properties is to be prevented. Regular brushing will ensure the infill remains level and un-compacted; the fibres remain vertical and will discourage moss and algae. Brushing should be undertaken in alternate directions; up and down the length of the pitch and then at right angles to it.

Drag brushing is carried out with a wide brush with bristles of a medium stiffness. On full size pitches it would normally be pulled by a mini tractor with low pressure pneumatic tyres. On smaller installations brushing can be done manually but will take longer.

The frequency of grooming will depend on usage but weekly is the minimum recommended frequency increasing to twice a week if the pitch is heavily used, is shaded or subject to pollution.

Grooming need not be time consuming or onerous, and its benefits are profound. An ungroomed pitch will look scruffy, may compact and become hard, and the fibres will flatten.

Power Brushing:	To ensure that infill does not compact and the fibres remain upright we recommend that in addition to the regular brushing detailed above, power brushing takes place up to four times per year depending on usage and the environment. We can provide this service and we use our specialist machinery with attachments which include a rotary and drag brush, tines and mats. Our machine also cleans the top layer of infill through a sieve removing dirt and dust.		
Typical Maintenance Schedule:	Daily Maintenance - The surface should have a visual examination every day especially the seams, the lines, the penalty spots and other high wear areas. - Litter should be removed into the bins provided. - Check all equipment.	Weekly Maintenance - Drag brushing should be carried out at least once a week and more frequently if usage is high or environmental conditions dictate. - The machine should be used lengthways and then width ways to ensure an accurate finish. - Treat any new weeds, moss or algae. - A leaf blower should be used to remove leaves etc. - Infill levels must be checked, particularly around high wear areas such as penalty spot goals and any high use areas i.e. short corner markings. - Add infill as necessary in accordance with the recommended procedures.	This work will ensure the pitch continues to play and perform and is recommended to ensure the pitch warranties are maintained.

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6. CONCLUSION

SIS (UK) Ltd pitches will perform, look and feel better for a longer period of time if the maintenance procedures outlined in this manual are followed closely, **in fact your warranty depends on it.**

This manual attempts to encounter and answer the most frequently asked questions regarding your pitch. However, there are always new uses, new problems and unanticipated twists or needs. Do not hesitate to contact us.

Enclosed with this manual are spreadsheets which must be completed on a daily basis and maintained to record the maintenance carried out on the synthetic pitch. Failure to record the maintenance carried out will invalidate the warranty.

Prohibited Activities:	✓ Storage of materials such as drums, timber, metal equipment, etc. ✓ Unnecessary vehicular traffic ✓ Golfing, shot putting, javelin or discus throwing, and the use of long spike track shoes associated with cinder tracks. ✓ No blades should be allowed on any synthetic pitches ✓ Open flame, fireworks, welding, etc. ✓ Use of wire brushes in any form ✓ Heavy loads exceeding (0.15 kg / cm² static) or (25 N/cm² dynamic) ✓ Use of cleaning equipment, methods or materials not authorized ✓ High pressure water sprays exceeding 300 psi (20 bar) ✓ Vehicles with non-pneumatic tyres ✓ Introduction of sand or fills that vary from SIS (UK) Ltd specifications ✓ Smoking and chewing gum
Key Points to Remember:	✓ Keep the field clean. Sweep the field as needed per this manual. Keep plenty of rubbish containers on site for participants to use. ✓ Keep vehicular traffic off the field as much as possible. ✓ Post NO SMOKING signs around the pitch. ✓ Don't abuse the turf by overloading it. Use plywood and fabrics to protect the turf- especially if special events are scheduled on the field. ✓ Make minor repairs. Report major problems to SIS UK Ltd right away. ✓ Follow exactly the recommendations and procedures incorporated in this manual.

SIS UK has provided maintenance sheets with this maintenance manual and these must be used at all times. To ensure the warranty remains valid, the maintenance outlined above must be completed and the maintenance sheets submitted to SIS (UK) Ltd via email to sales@sispitches.com or by post to the following address every 6 months.

Alternatively maintenance can be logged online via our SISPlus Maintenance Portal www.sisplusportal.com

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