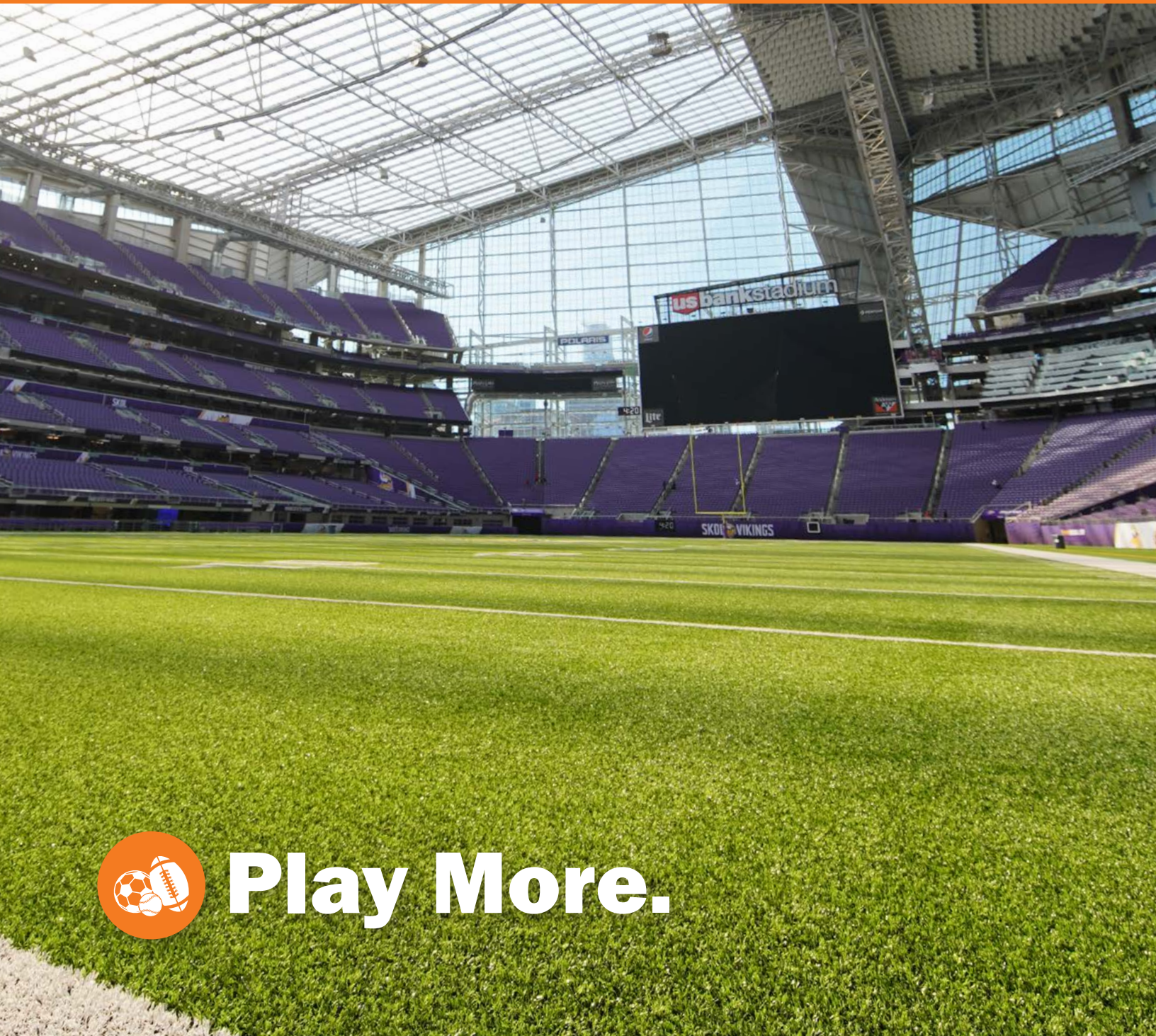




# Maintenance Manual



**Play More.**



# MAINTENANCE MANUAL

## THE PREAMBLE

Act Global created this manual with the purpose of providing potential customers with the necessary knowledge, background, information, understanding, and insight concerning the proper care and maintenance of a synthetic turf playing surface.

The index provided as part of the document allows for quick access to the variety of subject matter covered within the document. The various matters are grouped together under headings to facilitate better comprehension of the subject matter.

Our hope is that the information provided will educate and provide important insight that will assist you in making informed decisions.

The Care and Maintenance Manual provided will arm each Act Global customer with the adequate information to ensure the successful and safe use of their synthetic turf playing surface throughout its entire useful life.

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## INTRODUCTION TO CARE & MAINTENANCE

Your Synthetic Turf Playing Surface represents a significant financial investment and is a critical element of your sport, physical education and/or recreational program. Proper care and maintenance recommendations contained in this manual will allow you to realize the full potential of your playing surface. Following these simple suggestions will significantly extend the life and performance of the product.

### Keep It Clean

Do not abuse it. Example; vehicle traffic, heavy static loads, fireworks, etc. Make all minor repairs to your surface promptly. Consult with an Act Global certified professional if your repairs and/or renovations are complicated.

### NOTE

This manual is intended for customer use. It is important that the people who are responsible for field maintenance are thoroughly familiar with its contents and refer to it regularly. The contents in this manual represent the most current information regarding suggested procedures for the proper care and maintenance of Act Global Synthetic Surfaces. All information has been presented in good faith and is believed to be accurate.

Act Global makes no representations, warranties or guarantees of any kind, expressed or implied, regarding the information contained herein and disclaims all liability for any loss or damage arising out of its use.

Do not perform any maintenance or other activity that may invalidate the warranty. Make sure in advance any maintenance equipment, personnel, techniques, repairs and materials comply.

We hope you find the Act Global care and maintenance manual as informative and insightful as we found it enjoyable to provide. While reading the manual if you should have any questions please contact Act Global directly at +1-512-733-5300, by fax at +1-512-733-5326 or email at [sports@actglobal.com](mailto:sports@actglobal.com).

### PROTECTING YOUR SURFACE

It is good business to protect the investment in your playing surface. To do this most effectively, **KEEP IT CLEAN.**

The following maintenance precautions are advised:

- Control access to field
- **Keep your surface free of litter, mud and debris.**  
Provide ample garbage receptacles.
- Post signs prohibiting smoking and carrying food or drink onto the field.
- Properly monitor the use of motorized vehicles on your surface.
- **Repair minor damage promptly.**
- **Follow suggested maintenance and cleaning procedures.**
- **Budget approximately one hour of inspection and maintenance for every 10 hours of playing time.**

### General Cleaning and Stain Removal

For outdoor surfaces, rain is your best cleanser. Rainfall gently cleans the fibers of dust, pollen and airborne pollutants in a way that is difficult to duplicate. In areas where rainfall is scarce – or during prolonged periods of drought – an occasional watering is beneficial to cleanse the synthetic surface. Listed below are the suggested precautionary maintenance practices:

- Keep trash and litter containers on site.
- Route fields access traffic in such a way to minimize mud/dirt tracking on the field.
- Set up drinks for athletes during practice breaks off the synthetic surface if possible.
- Enforce a smoke free environment and discourage the use of chewing tobacco, gum and sunflower seeds.

### Dailycare

Daily Care is truly on going care, it does not necessarily mean care each and every day. The amount and frequency of daily care is dependent on not only on the surface selected, but also by the volume of use and the type of use. Act Global recommends that every Act Global sports surfacing system be periodically vacuumed to remove litter and dust etc...

### Litter Removal

For Non-Infilled Systems, Light trash (paper, peanut shells, sunflower seeds, athletic tape etc.) and airborne dust can be removed easily with a lawn sweeper, maintenance sweeper or a motorized vacuum.

### For Infilled Systems

Light trash (paper, peanut shells, sunflower seeds, athletic tape, etc) can be removed most easily by gently using a shop vacuum and angling the hose so not to vacuum up the infilled material.

### WHEN USING MACHINES, SEVERAL POINTS SHOULD BE OBSERVED

#### Sweepers

The sweeper should have synthetic fiber bristles such as nylon or polypropylene. The minimum brush length should be 2.5". The maximum bristle diameter should be .030". The brush must contain no metal or wire! Metal fibers can fall out and cause injuries to players and can also damage the surface.

#### Brush Setting

The brush setting should be monitored. The actual setting will of course depend on the model and type of sweeper. The sweeper will work best, however, when the brush is set so that it barely touches the tips of the turf fibers.

**DO NOT SET THE BRUSH SO LOW THAT IT DIGS INTO THE TURF FIBER PILE OR BACKING.** Too low a setting can damage the turf. Vacuum cleaners are not recommended to remove mud. Contact your local Act Global representative if you have any questions about the type of machine to use or brush settings.

#### Temperature Limitations

Never use a motorized vacuum sweeper during the heat of the day if the ambient temperature exceeds 90 degrees F.

#### Turf Loading

Limitations Brushing and brush cleaning may require several trips over the field to finish the operation. Any sweeper that weighs more than 300 lbs. should have

pneumatic tires with a maximum tire pressure of 35 pounds per square inch (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.

#### Exhaust Fumes

For indoor use we recommend either electric or propane. The type of fuel or power used by a sweeper is of no major importance for outdoor use. However, if the sweeper has an internal combustion engine, make certain that the hot engine exhaust is not discharged down toward the playing surface. Hot objects can damage the field and engine exhaust may soil it. Check to make sure that the sweeper is designed in such a way that a hot muffler or exhaust pipe cannot drop directly onto the surface.

#### Oil Spillage, etc.

Care should be taken to prevent lubricating oil, gasoline, grease, transmission fluids, battery acid, brake fluid, etc. From dripping, leaking or spilling on the turf surface during sweepings. Such spills can discolor the turf and damage the fibers and turf backing. Proper care and maintenance procedures should be observed in this regard. Battery acid and other fluids should not be allowed on the surface. Never change or add fluids to maintenance equipment while on the surface.

#### CAUTION

Because electrically powered units may not be properly grounded, do not use them on wet or damp surfaces.

### Frequency

The removal of loose rubbish and surface dust should be performed on an as needed basis, generally about once a week depending on usage.

### Do

It is good business to protect the investment in your Act Global Sports Surfacing System. To do this most effectively, Keep it Clean. Act Global sports surfacing systems are designed to resist both wear and exposure to the elements. The effectiveness of their materials, design and construction is demonstrated by the long life of fields under heavy use in many climates - north and south, wet and dry, hot and humid / cold and dry. The following are the most obvious precautions:

- Control Access to your Act Global sports surfacing system.
- Keep your Act Global sports surfacing system and close adjacent areas clean and free of litter, mud and debris.
- Post signs prohibiting smoking and carrying food or drink onto your Act Global sports surfacing system.
- Observe load limits for static and rolling loads, especially when surface is wet.
- Repair minor damage promptly.
- Follow suggested care and maintenance procedures.
- Contact your local Act Global representative for assistance with repairs, renovation work, or any further technical details.

### Don't

#### DO NOT ABUSE YOUR ACT GLOBAL SPORTS SURFACING SYSTEM WITH:

- Vehicle traffic
- Heavy static loads
- Fireworks
- Storage of materials such as drums, lumber, equipment, etc.
- Unnecessary vehicle traffic
- Golfing, shot putting, javelin or discus throwing, and the use of long spike track or steel/rubber cleated shoes.
- Open flames, Welding, etc.
- Use of wire brush in any form
- Use of cleaning equipment, materials, and methods not authorized by Act Global.
- High-pressure water sprays exceeding 500 PSI.
- Vehicles with non-pneumatic tires
- Introduction of infills or impregnated layers other than supplied or authorized by Act Global.
- Do not allow the use of bikes, skateboards, lawn mowers, etc.
- Do not allow any unauthorized use
- Improper storage, in the case of an Act Global removable sports surfacing system.

### GROOMING OF INFILLED TURF

Act Global recommends that every Act Global sports surfacing system have routine brushing every 80 to 200 hours of usage. Routine brushing is accomplished with a “drag broom” suitable for brushing the surface. If you do not have a “drag broom” please contact your local Act Global representative to purchase one.

Infilled surfaces do require grooming. Additional Grooming may be necessary only when and if the Infill has become displaced due to excessive use in certain areas of the surface such as a goal and heavy traffic areas.

#### Routine Brushing

Routine brushing keeps the surface free from debris, but also maintains your Act Global sports surfacing system at its optimum performance. Routine Brushing simultaneously achieves three objectives:

1. Keeps impregnated layer uniform in its distribution
2. Ensures that the exposed part of the fiber is uniform in its direction and stays erect
3. Helps remove litter, leaves, dirt, etc

The realized benefits from routine brushing are:

1. Consistent footing and ball bounce throughout the surface
2. Maximum aesthetic appeal
3. Lengthened life expectancy

#### Frequencies

In general, the frequency will be related to the intensity of use; however, excessive brushing can cause fiber damage which over time will compromise the field’s performance characteristics and longevity. (See *maintenance schedule on following page.*)

#### MAINTENANCE ACTIVITY LOG

Keep a maintenance activity log containing the following information:

- Type of activity that takes place on the field
- Estimated number of hours the field is used per week
- Average number of participants per hour
- Type of maintenance activity performed
- Remarks/Notes
- Signature of maintenance supervisor

#### SEMI-ANNUAL, ANNUAL & AS NEEDED

#### Situations Requiring Comprehensive Maintenance

Over time, the following situations may arise which will require the need for more comprehensive maintenance:

- Grass fibers become significantly bent, creased and flat.
- The playing surface becomes hard and compacted. While common to infilled systems, this impacts the players and also can create drainage issues.
- Dirt, debris and metal accumulate on or within the system despite routine maintenance.
- Seams become loose or panels shift creating a safety hazard.
- Infill levels become uneven, particularly in high wear areas, such as in front of soccer goals.



Suggested Maintenance	Playing hours per week:				Reason:
	< 10 hrs	10-20 hrs	20-30 hrs	30-80 hrs	
Litter removal	daily	daily	daily	daily	Avoid damage by paper, bottles, chewing gum, athletic tape and such.
Refilling heavily used areas	weekly	weekly	daily	daily	Keep infill even and at the right level.
Brushing heavily used areas	weekly	weekly	weekly	daily	Keep fibres in the optimum upright position.
Total surface brushing	every 2 weeks	every 2 weeks	weekly	weekly	Keep surface in perfect condition.
Leaves, twigs, moss, weed removal	weekly	weekly	weekly	weekly	Avoid pollution and beginning compaction.
Seams inspection	monthly	monthly	monthly	monthly	Avoid field damage by faulty seams.
Specialist maintenance (or as needed)	yearly	yearly	every 6 months	every 6 months	Maintain playing properties and performance.

The above maintenance schedule is meant to assist in clarifying how the number of playing hours influences maintenance needs.



### COMPREHENSIVE MAINTENANCE

Comprehensive maintenance may include the use of specialty maintenance equipment by trained professionals.

Depending upon the situation, the following actions may be performed:

#### Professional Field Inspection & Corrective Action

Assess the field surface, identify weak or loose seams and inlays, and repair the damage. Sport performance testing may also be desirable.

#### De-compaction Of Infill

Infill de-compaction is important for improving shock absorption and synthetic turf drainage. Use only equipment specially designed for this purpose.

#### Restore Infill levels

Infill levels may decrease due to a variety of reasons—wind, storms, or may leave the field on players clothing or shoes—and over time the levels may need to be replenished. Replacement infill should meet the field's specifications.

#### Metal Removal

Use a magnet attached to your maintenance equipment to remove ferrous metal objects from the field.

#### Weed & Pest Treatment

Treat with herbicides or pesticides, as required.

### Field Rejuvenation

Field rejuvenation is a deep compaction and deep cleaning of your field's infill, and should be performed on an as needed basis. As fields mature, the accumulation of unwanted or foreign contaminants is inevitable, especially deep within the infill layer. Events, such as flooding or dust storms, may introduce extreme levels of contamination.

When a field begins to show signs of deep compaction, such as high g-max readings or significant drainage issues, full field rejuvenation may be desired. These maintenance services are performed using specialized field rejuvenation equipment and personnel and may include:

- Removal of the vast majority of dirty and contaminated infill to get rid of embedded foreign matter that has contaminated the infill system
- Untangling matted and compacted fibers
- A combination of cleaning of the original infill and/or re-installation of new infill
- Removal of dust, debris and application of a disinfectant to treat for bacteria, if the original infill will be processed and cleaned
- Use special equipment that combines mechanical brushing, suction, and an infill return system to remove surface debris and embedded contaminants.

### STAIN REMOVAL

#### General Instructions

Act Global fibers are among the most stain resistant in the industry. Most “stains” are not true “stains” but rather residue of foreign matter that must be promptly and thoroughly removed.

**The first rule in spot removal is promptness.** It is always easier to clean up a fresh spill than one that has dried and hardened. Remove any solid or paste-like deposit with a spatula or table knife. Blot up excess liquids with a thick stack of paper towels or a dry absorbent such as “kitty litter” or Fullers Earth. Dry absorbents can then be swept or vacuumed up.

Act Global surfaces have good resistance to staining. However, it is important to realize they are only one part of a sophisticated system of various components designed for overall field performance. Some cleaning agents that are safe for the fiber can be harmful to other components of the system.

#### Nylon Fibers

Cleaning agents are grouped into two sets, one of which can be used in liberal amounts directly on the turf surface, and the second of which should only be applied by rubbing a cloth soaked in the cleaner, in order to minimize penetration of possibly harmful agents below the turf fibers.

#### REMOVAL OF

### Foreign Objects & Contaminants

Chewing gum can best be removed by using either ice or an aerosol to freeze the gum, which can then be chipped or broken off the turf fibers. If gum has been smeared across fibers, peanut butter will soften the gum so that it can be wiped off.



Sunflower seeds, peanut shells, pistachio shells, etc. should be removed by using a hand held or back pack blower. To minimize the movement of infill, do not point nozzle directly into the turf. Use minimal throttle to decrease the volume of air.



Metal objects should be picked up by a magnet that is attached to grooming and brushing equipment.



**Moss, mold, or algae may appear in underutilized areas of the synthetic turf, particularly if it is in shade and damp. Specialty products are available. Weeds are easily removed by hand if the infestation has not become too excessive. Treatments are also available.**

In the first group of cleaners, which generally can be applied to Non Infilled Systems without any special precautions, are the following:

1) A warm, mild solution of granular household detergent such as Tide or ALL in water, or any neutral low sudsing detergent that is recommended for fine fabrics. Use approximately one teaspoon to one pint of water. This will handle most stains, as the list below indicates.

Beer	Cola	Ice Cream	Mustard
Blood	Cocoa	Ketchup	Tea
Butter	Food Coloring	Margarine	Energy Drinks
Coffee	Grape Juice	Milk	Tomato Juice

2) A three percent solution of ammonia in water for more severe cleaning problems. (**NOTE:** household ammonia is three percent. Industrial aqua ammonia is 33%. Dilute nine parts water to one part industrial ammonia, or the available supply as appropriate.) *Thoroughly flush the surface, rinse with an ample amount of cold water afterwards.*

3) Clean, dry absorbents such as paper towels or commercial “kitty litter” can be used for applicable stains.

In the second group of cleaners, where agents must be applied sparingly, care must be taken to avoid penetration beneath the turf fibers. Cleaners will eat away at the turf backing.

1) Sponge with Perchloroethylene (Dry Cleaning solution). Blot with absorbent towels. Mineral spirits or a grease spot – remover will also work. In general cleaners in this category should qualify as suitable for use on nylon carpets. This will be effective with stains listed below:

Asphalt	Floor Wax	Rubber Cleat Mark's
Ball-point Ink	Lipstick	Shoe Polish
Crayon	Motor Grease	Suntan Oil
Cooking Oil	Motor oil	
Chewing Gum*	Paraffin wax	

\*Chewing gum is a common hazard and can be removed by freezing. Spray with refrigerant aerosol and scrape to remove residue. Aerosol packs of refrigerant are available from carpet cleaning suppliers for this purpose.

2) A mixture of white distilled vinegar in an equal amount of water, to neutralize animal waste. Flush thoroughly with water after application.

3) A one- percent solution of hydrogen peroxide in water, to treat fungus or mold spots. Apply with a sponge, flush thoroughly with water after application.

4) Sponge with acetone to remove nail polish.

5) To remove oil paints, blot immediately. Sponge with turpentine or paint remover (apply sparingly). Blot with detergent and water. Re-sponge with cold water to remove detergent. Scrape excess. Sponge with Perchloroethylene (dry cleaning solvent). Repeat steps as necessary

### STAIN REMOVAL (CONTINUED)

#### Polypropylene & Polyethylene Fibers

This section is similar to Nylon fiber stain removal. Polypropylene & Polyethylene fibers are among the most stain resistant fibers known to man. Hence, most “stains” on Act Global polypropylene and polyethylene fields are not true stains but rather residues of foreign matter which must be promptly and thoroughly removed. (This is not the case with nylon and other fibers on the market.)

Most “stains” on polypropylene or polyethylene fields can be removed with water or soap and water. The first rule is promptness. It is much easier to clean up a fresh oil spill before it has time to dry and harden. Remove any solid or paste-like deposit promptly using a dull knife or spatula-like tool. Blot up excess liquids with a stack of towels, cloth or paper. Dry absorbent clay based materials, such as cat litter absorbers (“kitty litter”) can be very useful and should be stored on site. Such dry absorbers can be swept or vacuumed up.

#### Procedure for Removing “Stains” and Other Blemishes

Cleaning agents are grouped into two sets, one of which can be used in liberal amounts directly on the turf surface, and the second of which should only be applied by rubbing a cloth soaked in the cleaner, in order to minimize penetration of possibly harmful agents below the turf fibers.

In the first group of cleaners, which generally can be applied to Infilled Systems without any special precautions, are the following:

#### 1) “Water Borne”

Residues Most stains commonly associated with Polypropylene and Polyethylene playing fields can be classified as “water borne” stains. These stains are best removed with a warm mild solution of granular household detergent (non abrasive) and water

#### Typical Water Borne “Stains”

Acid	Cola	Margarine
Alcohol	Dye	Milk
Alkali	Food Coloring	Mustard
Beer	Juice/Sports Drink	Tea
Blood	Glue	Energy Drinks
Butter	Ice Cream	Urine
Chocolate	Ketchup	Water Colors
Coffee	Latex Paint	

1. Brush the residue with a stiff brush.
2. Scrub the area with soap and water.
3. Rinse the area thoroughly with clear water to remove all traces of soap.
4. Dry with absorbent towel(s), if necessary.

A three percent solution of ammonia in water may be used in lieu of household detergent for more stubborn residues or stains.

In the second group of cleaners, where agents must be applied sparingly, care must be taken to avoid penetration into the turf fibers. Cleaners will eat away at the turf backing, are as follows:

1) **Sponge with Perchloroethylene (Dry cleaning solution).**

Blot with absorbent towels. Mineral spirits or a grease spot-remover will also work. This will be effective with stains listed below:

Asphalt	Floor Wax	Rubber Cleat Mark's
Ball-point Ink	Lipstick	Shoe Polish
Crayon	Motor Grease	Suntan Oil
Cooking Oil	Motor oil	
Chewing Gum*	Paraffin wax	

\*Chewing gum is a common hazard and can be removed by freezing. **Spray with refrigerant aerosol and scrape to remove residue. Aerosol packs of refrigerant are available from carpet cleaning suppliers for this purpose.**

2) A mixture of white distilled vinegar in an equal amount of water, to neutralize animal waste. Flush thoroughly with water after application.

3) **A one- percent solution of hydrogen peroxide in water, to treat fungus or mold spots.** Apply with a sponge Flush thoroughly with water after application.

4) Sponge with acetone to remove nail polish.

5) To remove oil paints, blot immediately. Sponge with turpentine or paint remover (apply sparingly). Blot with detergent and water. Re-Sponge with cold water to remove detergent. Scrape excess. Sponge with perchloroethylene (dry cleaning solvent). Repeat steps as necessary.

### Caution

Do not use high-pressure water spray with stream force in excess of 500 psi (pounds per square inch) as this can severely damage the turf or redistribute the infill and create a safety hazard for players. Mineral Spirits and other petroleum-based solvents are flammable, therefore do not smoke or permit open flames near where these are being used. Be sure the area is well ventilated where solvent cleaners are used. For more difficult stains, it may be necessary to clean with both the detergent solution and the dry-cleaning fluid. For such stains as paint, shoe dye and model airplane glue – a commercial carpet cleaner should be consulted.

Avoid the use of any solution containing bleach, highly caustic detergent cleaners (pH above 9), high acid cleaners (pH below 5) on any Act Global surface, as they can cause damage or discoloration to its components.

### Important Reminder

When trying any type of cleaning solution on your surface always try it on a scrap piece of turf or a small area on the outside of the field, not a highly visible area. Let the cleaner sit for a day to make certain that it doesn't damage the surface.

### FIELD MARKING, LOGO'S, ADVERTISING AND DECORATION

#### PAINTED LINE AND MARKING SYSTEM

#### Note

Inlaid Line and Marking System are preferred for optimum performance. Inlaid Line and Marking Systems are constructed utilizing the same material specifications, and are to be inset in such a manner to ensure a good bond, an even finished surface and physical strength equal to the material prior to introduction of the line and marking system. Permanent inlaid line and marking systems are more attractive than painted systems because of the reduction in maintenance and quality of image.

Alternative painting of line and marking systems and their care is explained below.

Many facility owners like to use elaborate line and marking systems, including facility logos, league logos, sponsor logos, mid-field and end-zone designs in assorted colors. Others prefer the simpler approach of sharp, well-defined game markings with no extraneous markings. In either instance, the materials and techniques used in applying paints will determine the life of the markings and the ease of removal when these need to be changed. In marking, do not apply paint too heavily. Light applications give good visibility and adequate life and are less abrasive than excessive layers of caked-on paint.

#### Dry Markings

Temporary markings can be applied by using the same chalk dust used for natural turf fields. In some uses, the chalk dust is slurred with water for wet application. Chalk dust markings, however, tend to be picked up and spread by the feet of players on the field, leaving tracks in unmarked areas.

Chalk markings are easily washed away or spread by water. They may be obliterated by a hard rain-shower. The only advantage for chalk markings is low cost. **Chalk markings are not recommended for infilled systems!**

#### Paints

Regardless of the type of paint used and design required, best results will be obtained when paint is applied to a clean, dry, dust-and-grease-free base. It is extremely important that old, degraded paint and dirt be washed off any area that is to be repainted if the best appearance and traffic resistance are to be obtained.

Your local Act Global representative has special developed tools and methods for painting, paint removal and cleaning of synthetic surfaces. If your field needs this type of attention, contact an Act Global certified representative for quotations and scheduling. If, however, you elect to perform these operations yourself, the following guidelines will assist you.

### Temporary Paint

The recommended paints in this category are designed to be easily removable after usage in a limited number of sports events. Usually, the removal can be achieved by brushing the painted area with a solution of mild detergent and flushing thoroughly with water afterwards.

Top quality acrylic latex water-based exterior paint such as Sherwin Williams White and Yellow paint. One day curing of these paints, at moderate temperature, is sufficient. Prolonged curing has no major effect on durability. The above-mentioned paint should be diluted in the ratio of one gallon of paint to one gallon of water prior to use.

### Top Quality Resin Based Permanent Paint

Resin based permanent paint is highly durable, once applied and cured, this paint is more difficult to remove than temporary paint and thus it is imperative that use be restricted to carefully chosen areas. For each of the above paints, it is recommended that 24-48 hours be allowed for complete cure. Paint should always be applied to dry turf at moderate temperatures

### Striping and Painting

The application procedure for applying temporary & permanent paint is as follows.

Remove excess paint existing on field. Test application procedure before going on the field. (Use a scrap of turf fastened to asphalt, plywood or use a corner of the field.) Use no more paint than absolutely necessary.

Keep on hand and readily available 8% solution of ammonia to clean up spills before they solidify. Directions for preparing this ammonia solution are given later in the section that covers paint removal.

The paint should be applied lightly to the tips of the turf fibers – not the entire length of every fiber. Applying the paint too heavily makes for a very rough, abrasive surface and will make the removal job very difficult.

An air-spray system is recommended over an airless one because it gives closer control, especially if intricate designs are involved.

Approved Air-spray guns include the following:

- DeVilbiss with 505E fluid tip, an ES needle and a #53 air cap.
- A Grayco assembly with 161-188 fluid tip, a 164-870 needle and a 161-192 air cap.

When applying paint, use large templates and cardboard or wood windshields to minimize paint over-spray.

For logos and other markings, always use a guide such as templates or straight edges. Do not lay out emblems whose design encourages double coverage. For example, for red letters with a white border, do not paint a solid white letter and then paint a small red letter on top. Instead, paint the red letter and then add a narrow white border. Double coverage's are unnecessary as well as difficult to remove.



Painting an Act Global surfacing systems with brushes or rollers is not recommended. Spraying equipment is recommended for the following four reasons:

1. Spraying can make a more uniform paint application.
2. A more intricate template can be used if the paint is sprayed.
3. Paint can be applied more rapidly with spray techniques.
4. Paint can be removed more easily from areas that have been correctly sprayed than from areas on which the paint has been rolled.

### Paint removal

The main key to efficient removal of temporary paint from surfaces is the initial control in the application. The use of excessive amounts of paints is wasteful, presents abrasion hazards to players and requires extra work in removal.

### Equipment needed for Paint Removal

Use a street broom, deck brush, small sprayer or watering can, water hose, medium sized tank or bucket for mixing, and a couple of wet vacuums.

### Materials Needed

Paint removal method requires the use of 8% ammonia. The solution should be prepared in advance and access to water outlets provided. The 8% ammonia solution is prepared from aqua ammonia (33% ammonia) by diluting with three parts water to one part aqua ammonia.

### Caution

Aqua ammonia is a strong chemical. Follow the seller's instruction for handling – including eye protection, avoiding skin contact, etc. Ammonia is very corrosive to copper alloys do not use brass nozzles or fittings. For mixing, use galvanized watering cans and a sprayer tank at all times.

### Procedures

Hose down the painted area with water until the surface is saturated. Using a sprayer or a watering can, apply the ammonia solution on the painted area. It is important that the ammonia solution be metered out uniformly at the rate of one gallon per 45 to 50 square feet. Scrub the wet area with a street broom until the ammonia solution turns to foam. A sweeping motion similar to sweeping a floor is sufficient. During this step, the paint will start to loosen and the pigment will begin to run. However, do not shorten the sweeping at this point.

Wait about 10 minutes to allow the foamed ammonia to work. Apply the same amount of ammonia solution on the area a second time. Thoroughly scrub the area with a street broom. This scrubbing is not intended to be a light scrub, scrub vigorously.

Hose down the area with water and simultaneously pick up the water and dislodged paint residue with the wet vacuum. Do not let the water and paint residue seep across the field. If the residue and water start to spread, stop the hosing and let the wet vacuum catch up. Repeat the process if necessary. However, if the paint was applied lightly and uniformly, repeating the process should not be necessary.

If the paint stubbornly adheres to the turf, take the following additional steps:

Repeat steps as above. Blast or fracture the paint loose with hot water from an industrial high pressure hot water sprayer. Set the water temperature at 150 degrees F. Do not spray the water at “point blank” range – keep the wand at least 30cm from the turf. Use 10 gallons of hot water per minute and a water pressure of no more than 21 kg/cm squared. No solvent is required.

Wet vacuum the residue and water or immediately flood the field.

Rinse the area thoroughly with lots of water and pick up rinse water rapidly to avoid unsightly spots or paint residue.

## LOAD LIMITS

If proper steps are taken, almost any requirement can be accommodated, but certain precautions are necessary. Protection of the shock-absorbing underpad of the playing surface is especially important. Underpads are composite materials that contain nitrogen gas in numerous closed cells. Over extended periods of excessive compression, some of the nitrogen can diffuse through the cell walls, resulting in a marginal loss of volume. The cell walls themselves are not affected unless the overload is severe enough to cause separation or rupture.

As a general rule, no long term static load of more than 3 psi (300 lbs./sq.ft), nor any transient rolling load of more than 30 psi be applied to any Act Global surface (foam pad or elastic layer underpad). Rolling loads of up to 30 psi are acceptable on an occasional basis. (The loading of a pneumatic-tired vehicle is approximately equal to the air pressure in its tires.)

It is good practice to eliminate any unnecessary long-term static loads. Sheets of ¾ inch exterior plywood or pieces of 2 x 10 lumber may be used to spread major static loads and thus minimize the risk of damage to the turf system. NOTE: Under static loads, the surface should first be covered with a load spreader such as polyethylene sheeting to keep it clean. New plywood may contain materials that will leach out and stain the turf if it is exposed to water therefore a polypropylene barrier should be used under the plywood to prevent this from happening.

### SNOW AND ICE MANAGEMENT

Snow and ice are not harmful to Act Global sports surfacing systems and can generally be left to melt and run off on their own accord. Sometimes, however, it becomes essential to clear away snow and ice to permit scheduled use of the surface. When this happens, the working principle for snow is to leave it in place until as near to time of use as possible. Doing so will minimize the risk of ice build up from cold wind blowing across a damp snow-cleared surface. Ice removal is more difficult, especially if a heavy layer has built up following freezing rains (see below). Two methods are used for snow removal:

#### Snow Blowers

If the snow is dry and powdery, it can be swept or blown from the field using a rotary brush or snow blower. Be sure that any machinery used is set so as not to dig into the turf or gouge the surface.

##### If using a blower:

1. The first pass of the blower should be down the center of the field.
2. 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.
3. The blower continues down one side and up the other accompanied by the truck.
4. Clean off remaining snow with a mechanical broom.

#### Snow Plows

Snow that is wet and sticky may be more easily pushed off the field by using a snow blade with a 4 to 6 inch wide rubber tip mounted on a Jeep or light tractor. If such a blade is used, extreme care should be taken to avoid digging into the surface. The best blade setting is one that barely “kisses” the top of the surface and rolls the snow ahead of the blade. In this procedure, the snow itself will maintain contact with the surface. Wood, metal or other rigid surface blades should not be used. Adjust the blade to proper height taking care that it will not gouge or dig into the surface. Act Global recommends wheels on each side of the blade to ensure the blade cannot possibly dig into the surface.

##### If using a Plow:

1. Push snow into piles.
2. Scoop into truck using front-end-loader., also with rubber tipped blade. Use extreme caution.
3. Use a rotary mechanical broom to clean off the remaining snow.

Severe cases of ice can be removed by using a small lawn roller to break up the ice and then proceed as above. It is recommended that all of the equipment used as described above be moved on pneumatic tires. **LUGS, STUDS AND CHAINS ARE DAMAGING AND SHOULD NOT BE USED.** Snow removal equipment may be stopped momentarily on the surface, but **DO NOT PARK SUCH EQUIPMENT ON THE FIELD OVERNIGHT OR FOR SEVERAL HOURS.** Tire pressure should be below 35 psi.

### Important

Keep tarps or field covers off the field in freezing weather. They are difficult to remove when frozen to the surface. Avoid using a tarp on the field during freezing weather. Tarps can freeze to the turf by means of condensation and thus can be very difficult to remove for a scheduled event.

### ICE REMOVAL

In some cases it will be desirable to go over the surface with a lawn roller or rotary street broom to break up and sweep away frost or ice. If the day is sunny and the frost or ice not excessive, it tends to melt readily over synthetic surfaces, especially with player foot traffic to aid in the process.

In the event of extreme cold weather and a heavy layer of ice, there is little choice but to use chemicals to assist in getting rid of it. It should be remembered that any ice-melting chemical put on the field will leave residues, which may leave the surface slippery or sticky. Such residues should be washed off the turf as soon as weather permits.

Many chemicals commonly used for ice melting are irritating to human skin, corrosive to equipment and/or harmful to your Act Global sports surfacing system. Among these are such old standbys as rock salt, ammonium nitrate and calcium chloride. These chemicals should NOT be used on Act Global sports surfacing systems because they might irritate players' skin, corrode equipment or damage the surface. The only ice melter found to date that is safe, inexpensive and non-corrosive is fertilizer grade urea.

When a surface has been subjected to a freezing rain or is heavily frost-coated, thawing can be hastened by broadcast application of prilled, fertilizer grade urea. The spread rate will be determined in some measure by the amount of ice present, but 100 pounds per 3000 square feet is a good starting point. After spreading, the urea should be allowed to remain in place for half an hour or more to melt the ice. It should then be removed from the field (along with the water it has picked up) with a squeegee. Urea will be less effective as the temperature drops below 10 degrees to 12 degrees Fahrenheit. (-9 degrees to -11 degrees C) and it is ineffective below 0 degrees Fahrenheit (18 degrees C).

A thick residue of urea will be left behind after the field is squeegeed or swept. In wet weather this film will make the field somewhat slippery. As soon as danger of a hard freeze is past, the field should be washed down with liberal amounts of water to remove traces of the urea.

### Warning

**DO NOT USE COMMON SALT, ROCK SALT, CALCIUM CHLORIDE, AMMONIUM NITRATE** or other corrosive or irritating chemicals to melt ice on your Act Global sports surfacing system. Their presence can damage equipment, be harmful to Personnel and your Act Global sports surfacing system itself.

Urea may be a mild eye irritant. If it gets into a player's eyes, it should be washed out with liberal amounts of water.

### Warning

**Act Global does not recommend snow removal from any surface that utilize an impregnated layer. Snow removal is strictly at the owner's risk.**

### WATERING OUTDOOR SYNTHETIC TURF SURFACES

Some owners have found it desirable to deliberately wet their synthetic turf surfaces, especially in periods of very hot weather.

Wetting the surface provides moisture for cooling the field before evaporation takes place. It also acts as a lubricant to the turf but it must be noted it may also lower traction to a slight degree. On a hot sunny day outdoor playing surfaces can receive enough radian energy to evaporate about a quart of water per square yard per hour. As the moisture evaporates the temperature of the synthetic turf will match that of natural grass in the same area.

A full sized soccer, hockey or football field may evaporate up to 1,200 gallons of water per hour in extremely hot weather. If you decide to water your field, be careful to distribute the water evenly. If water is put on the field, it should not be from a polluted supply.

### SPECIAL EVENTS ON NON-REMOVABLE SPORTS SURFACING SYSTEMS

Facilities with synthetic surfaces are often used for graduation ceremonies at many Colleges and Universities. The basic precaution is to keep long-term static loads below 300 pounds per square foot by the use of plywood or other load spreaders. Normally, 4'x 8' foot sheets of ¾ inch plywood do a good job of load spreading, provided the load is not applied too near the edges of each panel. Polyethylene film should be laid over the turf under the load spreaders to avoid staining or spoilage of the turf.

Any chairs placed directly on the playing field surface

should be inspected to be sure that the tips of the legs couldn't damage the turf. Metal chair legs should be protected with rubber tips. The legs of wooden chairs should be free of any sharp edges that may tear the turf or damage the underpad. It is strongly advised to not use chairs with peg legs but rather sled bases to assist in spreading the load.

**WE STRONGLY CAUTION AGAINST PLACING CHAIRS DIRECTLY ON SURFACES WITH ELASTIC LAYER UNDERPAD.**

### SPECIAL CONSIDERATIONS

#### Heavy Rain

If significant ponding occurs after heavy rainfall, it may be an indication of a variety of factors, such as clogged or damaged underground drain pipes or discharge outlets, base unevenness, debris in the infill, or infill surface tension. For infill surface tension, a surfactant or laundry fabric softener can be used to break the surface tension allowing the turf to drain.

#### Static Electricity

Surfactants like liquid laundry fabric softeners can reduce static electricity. Static Electricity Surfactants like liquid laundry fabric softeners can reduce static electricity.

#### Helicopter Landings

Helicopter landings may be necessary to remove an injured player, for example and the rotor wash will likely cause infill to be displaced. As soon as possible evaluate the area and groom or brush as needed.

### Protecting During Renovations

Protect the synthetic turf as needed with approved tarps when nearby renovations, e.g., running track re-coats or installations, cleaning or painting of bleachers, construction or repairs to lighting, renovations of adjacent natural turf fields, etc., may cause harm to the synthetic turf. Contact the field builder for a protection recommendation. Improper plastic protection will cause heat damage.

### SHOWS & CIRCUSES ON NON-REMOVABLE SPORTS SURFACING SYSTEMS

Events such as equestrian shows and circuses fall outside the recommended lists of designed activities for synthetic surfaces, although a number of them have been held successfully without incident. If events of this nature are to be held, precautions regarding static loads are especially important. Provisions should also be made for the prompt removal of animal waste. Activities involving an open flame on the playing surface should be strictly prohibited.

Rock Shows and Concerts “Rock and Roll” concerts have become popular events in recent years. These events also fall outside the recommended list of designed uses for most surface installations. The problem of surface loading to support stages and show equipment is obvious, but can generally be overcome with proper load spreaders. Unfortunately, a much more serious problem is control of crowd behavior. **In the case of all non-designed uses for Act Global synthetic turf systems, the Owner should be aware that any resulting damage to the turf is not covered by Act Global warranties.** The above-mentioned three categories all fall under this listing of non-designed uses.

### MINOR REPAIRS TO ACT GLOBAL SURFACES

Your playing surface has been carefully engineered to provide many years of service. In the case of vandalism or unusual abuse, limit your maintenance staff to performing minor repair. For more serious problems, consult your local Act Global representative.

### When to Repair

To properly maintain a synthetic playing field: be aware of the day to day activities, usage and condition of the facility. It is very important that any minor damage be repaired immediately because a small problem may eventually grow into a major repair. In addition to routine awareness of field conditions, once or twice a year each field should be given a careful and thorough inspection, preferably in the spring with a follow-up in early fall. All seams should be inspected and any loose areas noted and repaired. Go over the body of each panel of fabric and note any rips and/or tears. Assess the status of the under-padding and the condition of the surface. In the case of an older and/or heavily used field, inspections should be made more frequently.

### Why a Spring Inspection?

Fields endure their heaviest scheduled activity during the fall months. Once your inspection has been completed you may require the assistance of a professional Act Global crew. Your local Act Global representative is always available to assist in the case of an emergency, but planned visits permit more efficient and cost effective service. If repairs are required they are easier to make in warm, dry weather. **Adhesives will hold better and cure faster when there is more opportunity to leave the repaired area undisturbed. Gluing repairs should not be attempted if the field is wet.**

### What Are “Minor Repairs?”

A Minor Repair would be an open spot in a sewn or glued seam, where the loose area in the seam extends from a few inches to one or two feet (along a glued seam line where at least one of the turf edges is still attached to the seam tape). Cuts, rips or tears in the surface fabric that are less than six inches or so in length do not generally require a special trip by our service staff and can be repaired by the owner without much effort. These can also be regarded as minor unless allowed to become larger. All of these problems can be handled by sewing or adhering the repairs.

To repair minor seam openings or loose seam areas:

1. For infilled systems vacuum sand or rubber from the turf to be repaired.
2. Be sure that the fabrics to be adhered are dry, free from loose sand, dirt, old adhesive and other foreign matter.
3. Clean the area to be repaired and wipe the opening with methyl-ethylketone (MEK), toluene, or if neither is available, with mineral spirits.
4. Position the fabric to check for satisfactory final placement.
5. Be sure the seaming tape to which the fabric will be adhered is itself adhered to the underlying pad. (If system uses an underlying pad)
6. Trowel a small amount of adhesive from an adhesive bottle on to the seaming tape. Avoid excessive adhesive to reduce the possibility of bleed through or bleed out.
7. Spread the adhesive with a trowel and trowel so that the entire fabric is coated lightly and evenly.
8. Press the fabric into the adhesive bed uniformly.
9. Weight down the area and allow to cure at least 24 hours.
10. For in-filled systems, Spread appropriate rubber or sand on the repaired area and brush into the turf thoroughly until even with surrounding playing areas.

### Warning

MEK, (methylbenzene) toluene and mineral spirits are highly flammable and vapors can be harmful. Use in an open, ventilated area.

**DO NOT** use near an open flame or any other sources of ignition. **SMOKING SHOULD BE STRICTLY PROHIBITED IN THIS AREA!**

### Cigarette Burns

A lit cigarette can damage any turf system. On nylon surfaces, the cigarette may scorch and blacken the turf. Use a hand held metal brush (such as is used to remove paint) and brush the spot vigorously to separate the fibers. If brushing the turf does not remove the damage, take a razor knife and cut the fused area away.

### “Hollow” Spots in Infilled Systems

These are areas in the turf where the level of infill (sand/ rubber) may be slightly lower than on the surface overall. They are generally discovered several weeks after the initial placement of the infill in the turf. These areas generally cannot be seen but can be “felt” when walking on the turf – they feel like depressions or low spots on the surface.

### To Correct These Areas

Take a bucket of matching infill (sand/rubber), locate the spot and apply several thin layers of infill to the area and brush into the fibers with a stiff street broom or small hand held fiber scrub brush (such as is used to hand scrub floors.) Brush in several Directions. Cross brush the entire field again, to finish.

### MAINTENANCE OF REMOVABLE SPORTS SURFACING SYSTEMS

Removable sports surfacing systems require special care and attention. Following is the proper procedure for installation, removal and storage, do's and don'ts for the use of a removable surface.

### Procedures

Act Global removable sports surfacing systems require special care and procedures to ensure its longevity and continued proper use. For maximum performance and longevity of investment, Act Global sports surfacing systems should always be installed over an approved subfloor.

### Initial Installation Procedures

The Initial Installation of your Act Global sports surfacing system will be performed by a certified Act Global crew. During this initial installation Act Global will determine the alignment and set the installation pattern for the surface. Your facilities staff will be required to work with a Certified Installer of Act Global to perform the initial installation. All future installations and the procedures for aligning the surface will be determined during this initial installation. Once the surface is aligned and subsequently laid to cover the entire playing surface. A Certified Act Global

Installation Crew will trim the perimeter of the playing surface to ensure a professional fit. At the completion of the initial installation, of your Act Global sports surfacing system, the following things will occur:

1. The owner and facility representative will walk the entire surface with your local Act Global Certified Installation Superintendent to ensure the installation is complete and to the satisfaction of all involved.
2. The owner or a representative for the owner will sign the **WORKMANSHIP SATISFACTORY COMPLETION FORM**, which will signify that your Act Global sports surfacing system has been installed to the owners satisfaction and requesting on behalf of the owner that his warranty be put into effect.
3. The local Act Global Certified Installation Superintendent will conduct an on site surface maintenance seminar. This seminar will cover all relevant aspects of your Act Global sports surfacing system. It will encompass in detail the proper procedure and methods to care for the surface.

Following the proper methods and procedures for the care of your Act Global sports surfacing system is crucial to the surfaces longevity, appearance and above all player safety.



### Recommended Installation Procedures

Since removable systems spend over 90% of the surfaces life rolled up and in storage it is imperative that proper storage procedures and methods be followed. For more information on storage, see the section on Storage below.

Act Global makes every effort to construct your surface for storage and use. Surfaces will require time to breath and relax before attachment of the Velcro system. The following procedures should be followed to ensure the proper re-installation of the Act Global sports surfacing system:

1. Starting at the furthest entrance from the playing surface the rolls should be placed and unrolled.
2. As the rolls are placed they should be rolled out independently, then floated onto the previous roll. Each roll should overlap the previous roll by just less than 50% of the rolls width.
3. 3. Once all the rolls are placed to breath, the surface should be allowed to breath for a minimum of 4 hours.
4. At the completion of the breathing period the last roll to be placed should be floated back to the first position in front of the playing surfaces entrance. All equipment should be off the playing surface area prior to starting this procedure.
5. All green ad panel blanks should be removed as the rolls are placed into there final position. The green ad panels can then be stored, until the surfaces use is complete, and then reinserted for storage again.
6. Each seam as it is attached should be checked for a professional fit to ensure proper appearance and above all player safety.
7. Once the entire surface has been fit into place the ad panels should be inserted properly. Each custom Ad Panel should be checked for proper fit and to above all ensure player safety.
8. The installation of your Act Global removable surfacing system is now complete.
9. The facility staff should now trouble shoot the playing surface to ensure player safety.
10. Troubleshooting: Any ripples, echo ripples, or deviations should have applied and sustained pressure to force the playing surface level. These types of deviations in playing surface level, are caused by improper storage methods, and or improper surface removal from the previous use.

### Note

Player safety is the ultimate requirement of the facilities installation staff. Playing conditions of any sports surface is the number one priority. If your facilities staff has any questions or experiences any concerns they should contact your local Act Global representative immediately for assistance.

### Recommended Removal Procedures

The removal of the surface is typically taken for granted; it is the removal however that determines not only the life of the surface, but more importantly the condition of the playing surfaces next use. The key elements of a successful removal are, proper separation of the Velcro, rolling the surface up tight and consistently, and then proper storage. The following procedures should be followed to ensure a proper surface removal for storage.

1. Prior to removal ensure the entire surface is clean and free of debris.
2. Removal all custom ad panels and replace with green blanks for storage. Removed Ad Panels should be stored flat, in a temperature and moisture controlled environment.
3. Start at the opening to the playing surface and with the appropriate number of attendants, separate the Velcro seam. This needs to be carefully done and by sliding your hand along the seam and careful and gently separating the contact. Facilities can purchase Cordura strips to be inserted between the two panels to keep them separated.
4. Once the Velcro seam has been separated and the Cordura strip inserted the panel can be floated apart.
5. Once separated the panels should be rolled up using approved cores. While rolling up the panels, it is imperative to ensure the roll is tight, rolled consistently, and straight. If not rolled straight, the edges will not line up and this will cause potential damage during storage.
6. Carefully remove the rolled up panel from the floor using a forklift with a carpet boom, and place into its storage position. It is important to not stack rolls during storage as this will create echo ripples and

make the surface unsafe for play.

7. For more information on Storage refer to the section below, or consult your local Act Global representative

### Storage Of Act Global Removable Sports Surfacing Systems

Storage is the key to maintaining your Act Global removable surfacing system in a safe and professional condition. Since the surface spends over 90% of its life in storage, this is the crucial element of care. Please follow the guidelines below to ensure proper storage:

1. Always store the surface in a temperature and humidity controlled environment.
2. The storage environment should have proper protection from weather, and a temperature above 55 Degrees Fahrenheit should be maintained.
3. The Act Global removable sports surfacing system should be rolled unto approved cores.
4. The surface should be rolled tight, consistent and straight.
5. The rolls should be stored on a finished floor, or Act Global rounded storage carts. The panels should never be stacked onto each other. For creative storage solutions contact your local Act Global representative.
6. Custom ad panels should be stacked onto each other, on an appropriately sized Ad Panel skid. Ad Panels should always be stored flat.
7. Cores that are damaged should be replaced immediately.

Storing your surface properly will ensure player safety and the surfaces long life.

### Do

It is good business to protect the investment in your Act Global removable sports surfacing system. To do this most effectively, Keep it Clean. The following are the most obvious precautions:

- Control Access to your Act Global sports surfacing system.
- Keep your Act Global sports surfacing system and close adjacent areas clean and free of litter, mud and debris.
- Post signs prohibiting smoking and carrying food or drink onto your Act Global sports surfacing system.
- Observe load limits for static and rolling loads, especially when the surface is wet.
- Repair minor damage promptly.
- Maintain surface at all times at a temperature not less than 55 Degrees Fahrenheit and not more than 90 Degrees Fahrenheit.
- Keep the surface dry. Moisture will breakdown the surfaces adhesive layer.
- Follow suggested care and maintenance procedures.
- Contact your local Act Global representative for assistance with repairs, renovation work, or any further technical details.
- Separate Velcro gently, and use proper procedures and methods.
- Always follow proper storage procedures and methods.

Act Global removable surfacing system is designed to resist both wear and perform professionally under proper conditions. The effectiveness of their materials, design and construction is demonstrated by the long life of fields under heavy use in many applications. Use it and take care of it.

### Don't

Do not abuse your Act Global removable surfacing system with:

- Use of the surface for anything other than its intended use at time of purchase.
- Vehicle traffic
- Storing the surface improperly
- Heavy static loads
- Tugging the Velcro or panels apart. Always use proper separation methods as detailed in this document. Contact your Act Global representative with any questions. This procedure is very important to the long life of the field.
- Fireworks
- Storage of materials such as drums, lumber, equipment, etc. on surface
- Unnecessary vehicle traffic
- Golfing, shot putting, javelin or discus throwing, and the use of long spike track or steel/rubber cleated shoes.
- Open flames, Welding, etc.
- Use of wire brush in any form
- Use of cleaning equipment, materials, and methods not authorized by Act Global.
- High-pressure water sprays exceeding 1000 PSI.
- Vehicles with non-pneumatic tires Introduction of in fills or impregnated layers other than supplied or authorized by Act Global.
- Allowing the use of bikes, skateboards, lawn mowers, etc.
- Repairing or maintaining the surface with anything other than materials approved or supplied by Act Global.
- Allowing any unauthorized use
- Improper storage methods when storing your Act Global removable surfacing system

### BEST PRACTICE – INFILL

#### Initial Installation

The initial installation should be performed with the lowest sand level considered. In this instance 70% Rubber – 30% Sand would be the initial infill ratio during installation. The intent is that we build the field, let it go through its break in period, then assess the performance and add any sand necessary should the field not be the desired firmness. The premise is adding sand to adjust the firmness is relatively easy, removing sand after the fact is extremely difficult. The key is to start at the lower threshold and slowly adjust the mix to firm up the field if necessary. This process must be done with direct feedback from the user groups and other various constituents. It will be important to determine who will manage the internal user groups and filter their information to determine direction to Act Global.

#### Break In Period

The period of time required for a synthetic turf playing surface to obtain its optimum performance level, both in terms of athletic performance and player safety is often referred to as the Break-In Period. The Break-In Period is best memorialized in number of hour so use. It will not take less than 200 hours of use and is not expected to take longer than 500 hours of use. The synthetic turf sports field transitions through the break-in period as the infill settles and compacts into the depths of the grass zone fiber. Modern day synthetic turf system providers utilize both mechanical and manual means in an effort to impregnate the infill deep into the grass zone fibers. Many of the methods utilized to impregnate the infill into synthetic turf sports field surface cause the grass zone fibers to become electrostatically charged. This static charge impedes the process of impregnating the infill into

the grass zone fiber. The static charge will dissipate over time with use and rain. The break-in period concludes once the infill fiber has settled and compacted within the grass zone fiber

#### Narrative

The break-in period for a synthetic turf sports field varies. The variables include but are not limited to; climate, humidity, rain, surface type, face weight, type of fiber, infill material, mixture if applicable, and significantly the amount and type of use the surface experiences. The length of the break-in period is best stated in the number of hours of use.

**WATER:** It should be specifically acknowledged that rain (amount and frequency) is a significant accelerator that contributes to reduction in the amount of time required for the synthetic turf surface to obtain its optimum performance level. The synthetic turf sports field can be artificially watered through manual and/or automated means to accelerate the break-in period, it should be noted however that natural rain works best due to the amount of water afforded the field and the overall consistency of the water application across the entire surface.

**USE:** The type and amount of use for each sport will impact the time required for the synthetic turf sport field to transition through the break-in period. Special attention should be give to ensure the traffic be uniformly spread evenly throughout the entire surface. If the foot and sports use traffic is concentrated in a specific area rather than spread over the entire surface evenly the field will experience various levels of compaction. If the field utilization is not consistent over the entire surface the playability of the surface can become inconsistent and result in less than optimum playing conditions.

### Requirement

The amount of time required for the synthetic turf sports field to complete the break-in period as outlined in the narrative above. As a general rule of thumb the break in period will not be less than 200 hours of use, and should not extend beyond 500 hours of use.

### FOLLOW-UP PERFORMANCE ADJUSTMENT

Once the Break-In Period has concluded, it will be necessary to involve the user groups and various constituents to determine what if any adjustments need to be made. The various sports might have differing opinions of the remediation or enhanced firmness that is required. It will be necessary at this point for a representative from the facility and Act Global to work together to determine the direction for the follow-up adjustment.

**Please contact the Act Global Quality Assurance Team for further direction, +1-512-733-5300.**

## APPENDIX: FIELD MAINTENANCE USE

<b>Initial Grooming</b>	Break In Period
<b>On-Going Grooming</b>	Every 80 hours of use (more frequently if heavier use, such as with American football or rugby; less frequently for lighter use, such as for soccer) Level in-fill as needed Add in-fill as needed
<b>Cleaning</b>	<p>Sweep/vacuum to remove surface litter such as leaves, paper, shells, etc.</p> <ul style="list-style-type: none"> <li>• Use a knife blade/spatula to remove any solid paste-like material</li> <li>• Use refrigerant to freeze gum-like substances and remove by breaking up and vacuuming/sweeping</li> <li>• Stains can be removed by the following methods</li> </ul> <ol style="list-style-type: none"> <li>1. Minor stains/residue can be washed away using potable water from adjacent maintenance valves</li> <li>2. For typical liquid/food substances, use a warm mild solution of granular household detergent (such as Tide, All, etc) in water or any neutral low sudsing detergent that is recommended for fine fabrics. See list of typical items in Act Global Maintenance Manual.</li> <li>3. A 3% solution of ammonia in water can be used for severe cleaning problems</li> <li>4. Clean, dry absorbents, such as paper towels or commercial “kitty litter” can be used for appropriate stains</li> <li>5. Harsher cleaning agents may be needed but care must be taken to keep them as close to the surface and away from backings and shock pads:             <ol style="list-style-type: none"> <li>a. Perchlorethylene (dry cleaning solution)</li> <li>b. Mineral Spirits</li> <li>c. Grease Spot remover</li> </ol> </li> <li>6. A mixture of white distilled vinegar in an equal amount of water can be used to neutralize animal waste, followed by thoroughly flushing with water</li> <li>7. Use a 1% solution of hydrogen peroxide in water to treat fungus or mold spots.</li> <li>8. Sponge with acetone to remove nail polish</li> <li>9. To remove oil paints, blot immediately, sponge with turpentine or paint remover (apply sparingly), blot with detergent and water, re-sponge with cold water to remove detergent, scrape excess and sponge with Perchlorethylene as needed</li> </ol>
<b>Repairs</b>	
<b>Equipment</b>	Groomers-non-metallic bristles only, with spring-actuated metal tines to loosen sand/rubber in-fill, adjustable height setting Sweepers (mechanical and powered) Magnets-towed behind small tractor/gator/utility vehicle Spreaders (in-fill)-powered or towed
<b>Alternate Uses</b>	Allowed: graduations, practices (band, etc.), minor fairs/events Not Allowed/Recommended: circuses, equestrian events, dog shows, Rock shows/concerts
<b>Protection</b>	Protect the surface with a polyethylene sheeting and a structure component such as plywood or temporary plastic flooring (Matrax)
<b>Temporary Markings</b>	<p>Dry Markings: Chalk or Chalk in water, apply in the same manner as on a natural turf field Paints: apply to a clean, dry, dust/grease free surface; remove all old paint prior to placement of new; Use only paints/applicators specifically designed for use on artificial turf surfaces</p> <ul style="list-style-type: none"> <li>• Temporary Paint: acrylic latex water based exterior paint, mixed 1-1 with water, applied in moderate temperatures, allowed to cure for one day</li> <li>• Top quality resin based permanent paint, applied in moderate temperatures, allowed to cure for 1-2 days</li> </ul>