

SYNTHETIC TURF Maintenance

The American Sports Builders Association (ASBA) is a professional resource for designers, builders, and suppliers for sports facilities, as well as for owners and operators of these facilities. ASBA has more than 350 member companies who are committed to quality construction, and the organization is recognized as a central source for technical information. Please see www.sportsbuilders.org for publications, including the "Buyer's Guide for Synthetic Turf Field Construction," (free of charge), membership information, and a searchable member database.

Here we reprint portions of Chapter V of ASBA's new publication, *Synthetic Turf Sports Fields: A Construction and Maintenance Manual*.

A well-constructed and well-maintained synthetic turf field will offer years of play. However, synthetic turf is not, as some have claimed, maintenance free. To maximize the useful life of the field, the owner should develop and implement a regular schedule of maintenance. The goal of the maintenance program is to insure a consistent and attractive playing surface, to promote player safety and to protect the turf system. Regular maintenance is more cost effective than allowing the field to deteriorate to the point where it requires major work. A maintenance plan will include routine cleaning and grooming, as well as periodic inspection, repair of minor irregularities, testing, and topdressing.

These recommendations describe typical regimens. However, most manufacturers will provide a detailed operations and maintenance man-

ual. In fact, some maintenance services may be included or may be provided by the manufacturer or installer as an option. Failure to follow procedures recommended by the manufacturer may void your warranty.

Cleaning

The most important step in maintaining a synthetic turf field is to keep it clean. Begin by practicing preventive maintenance. Prohibit food and beverages on the field. Even water stations should be placed off the turf to minimize contamination by spit. Prohibit smoking on or near the field. Not only are burns difficult to repair, but cigarette ash and butts must be removed.

If possible, ban chewing gum, chewing tobacco and sunflower seeds on or near the field. Removing chewing gum, though not difficult, is time consuming. Maintenance personnel should first chill the gum with ice or aerosol spray to make it brittle and, then, gently break it up to remove it.

Remove debris immediately. This will include trash – food wrappers, pompom shreds, tape – dust and dirt, and environmental debris such as leaves, pine cones, needles, pollen, bird droppings. If left in place, organic material will quickly decay and filter into the infill, where it will impede drainage and serve as a medium for the growth of bacteria, algae, and fungi.

Cleaning will require at least some hand labor. A soft broom or rubber-tined rake may be used for removing surface debris. A mechanical leaf blower or sweeper or a vacuum, specially designed for this purpose, if approved by the manufacturer, is especially efficient. A soft-

FACILITY & OPERATIONS

bristled broom pulled behind a golf cart or Gator also may be used. The goal is to remove the debris without picking up any of the rubber infill. This may take care. Both manual and mechanical cleaning equipment will tend to remove some infill during the first few months. As the infill settles and the fibers fibrillate, this will cease to be a problem. In the first year, litter removal also may include some loose fibers.

The amount of maintenance required by a particular synthetic turf facility will vary depending upon the geographic location, the amount and type of use, player conduct and alternative use, if any.

With light use, monthly full cleaning, coupled with occasional spot pickup, may be sufficient. With heavy use, cleaning may be required bi-weekly or more. Mechanical sweeping should include 5-6 passes in opposite directions, sometimes longwise, sometimes across the field, and may take 2-3 hours.

The owner should develop an appropriate maintenance plan, ensure that maintenance is performed correctly to avoid damaging the surface and keep records of maintenance procedures and problems noted. The need for excessive maintenance may be an indicator of more serious problems.

Spot clean spills as soon as they occur. Because the rubber infill holds heat, most liquids dry quickly. Removing them while still wet is recommended. For that reason, careful post-game inspection and cleaning is optimum.

Most spills are easily removed with hot (not boiling) water and a mild soap, such as liquid dishwashing detergent. Oily marks may require a small amount of mineral spirits, if approved by the manufacturer, but in general solvent cleaners should not be used. Once the spill is loosened, rinse the area thoroughly as any residue remaining may serve as a growth medium for bacteria, algae and/or mold.

Blood, vomit, urine, sweat and spit

Grass fields contain billions of naturally occurring beneficial organisms which break down organic contaminants including blood, vomit, urine, sweat and spit, as well as insect, bird and animal droppings. Synthetic turf fields contain few if any such beneficial bacteria. For that reason, organic contaminants must be cleaned and the fiber and infill must be disinfected.

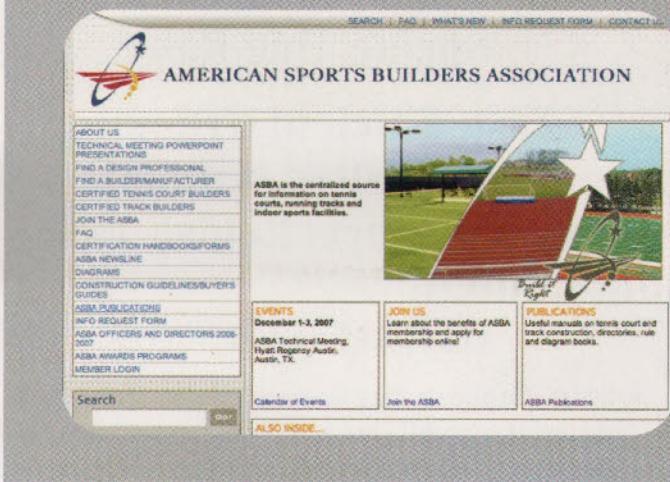
First, pick up any solid material that can be removed. To remove any remaining material and disinfect the field, apply an organic or enzymatic cleaning agent or one of the proprietary products now being developed specifically for this purpose. Mix up a fresh batch of cleaner according to the manufacturers' instructions for each cleaning. Apply the solution with a low-pressure sprayer to thoroughly wet the surface. Allow the surface to remain wet for at least 10 minutes and rinse thoroughly. The goal is to wash the contaminant and the cleaning solution all the way through the surface.

Just as wrestling programs regularly disinfect their mats, some synthetic turf owners are beginning to disinfect their fields on a regular schedule, as often as twice a month. Some programs also are disinfecting the sideline areas, where contamination concentrates, more often, even after each use.

Metal objects in the field are hazardous. Part of the grooming routine should include regularly dragging a magnet over the field to remove such objects.

Buy it

Synthetic Turf Sports Fields: A Construction and Maintenance Manual is available for \$44.95 plus shipping from the American Sports Builders Association. Go to www.sportsbuilders.org and click on "ASBA Publications" on the left side.



Health and hygiene

Those responsible for athletic facilities and programs should be sensitive to the general societal concern regarding transmission of infections, some of which are resistant to antibiotics and very difficult to treat. Such infections are being seen more frequently in a wide variety of settings, including hospitals, nursing homes and athletic facilities, and in other circumstances where the source of exposure cannot be identified. Infections may be spread in athletic programs by skin to skin contact; by sharing of uniforms, towels, pads and equipment; or by contact with a contaminated surface.

While modern synthetic turf products are only half as abrasive as older versions, it appears that players still suffer more abrasions on synthetic turf than when playing on well-maintained natural grass. A greater number of abrasions provide more avenues for entry of infectious organisms. Additionally, as previously mentioned, these fields must be disinfected because they lack the beneficial bacteria found in natural grass fields; those bacteria break down organic contaminants, which might provide a growth medium for infectious agents.

Experts say that good hygiene throughout the athletic program is the key to preventing the spread of infections. In addition to field hygiene, experts recommend that players and coaches in all athletic programs thoroughly wash and disinfect any open wounds or abrasions, no matter how minor, as they occur and keep all wounds covered until they heal. Proper cleaning and maintenance of locker rooms, whirlpools, and other facilities used by the athletes is necessary. Additionally, players should shower thoroughly after every practice and game, and should avoid sharing uniforms, towels, or personal equipment, including soap and razors. Any athlete with a skin wound that leads to fever, muscle pain, fatigue, or develops a blister, boil, redness or swelling should seek prompt medical attention.

FACILITY & OPERATIONS

Moss, mold, and algae

Clean synthetic turf fibers and infill will not support the growth of moss or algae. However, over time, if organic material (including food spills) filter into the infill and, if conditions are right (dampness, shade) moss, mold, or algae may appear. Generally, such growth will be limited to less used areas of the field.

Many manufacturers can supply appropriate products to remove such growth. Any product that is not oil-based may be used. Moss, mold and algae should be treated immediately. If allowed to become established, removing such growth can be very difficult. Even if all the living organisms are killed and removed, spores will remain. Therefore, successful treatment may require several applications. In the worst case, eradication may necessitate removal of the infill, sterilization and replacement.

While a clean synthetic turf field will not support the growth of grass or weeds, seeds which fall or blow onto the field may germinate, especially if the field is regularly irrigated. Small numbers of weeds can be removed by hand without damaging the surface. Care should be taken to remove the full root. If weeds are deeply rooted, such that they cannot be pulled by hand, commercially available weed killer may be used, as long as it is not oil-based.

Problems may develop where synthetic turf fields abut natural grass areas. Grass and/or weeds may invade the edge of the synthetic turf,

especially when the grass is reseeded. Fertilizer, pesticide, and other chemical overspray may contaminate the turf. In fact, the synthetic turf may look so much like grass that inexperienced grounds personnel may even attempt to mow or trim it. A divider strip of pea stone, mulch or other material between synthetic turf and natural grass will help to delineate the boundary.

Grooming

While an ungroomed surface may be usable, regular grooming can prolong the useful life of the surface and keep it looking fresh and inviting. The recommended frequency of grooming depends on the schedule specified by the manufacturer and often on the amount of use the field receives and its location. It may be advisable to groom more frequently if the field is heavily used, shaded or subject to pollution.

Regular grooming helps to maintain the performance characteristics of a synthetic turf surface as well as the appearance of the field. On the other hand, overly frequent or overly aggressive grooming may cause excessive wear. For that reason, each owner should carefully track grooming practice, observe the results and establish an appropriate grooming regimen. Failure to follow your manufacturer's guidelines regarding grooming may void your warranty.

Grooming serves a number of purposes, including preventing and/or breaking up compaction, redistributing and re-leveling infill, and,

It's Not Slow Release, It's Better



"We use UMAXX® to keep constant growth, so we don't get that initial surge. It keeps our nitrogen there. We don't have to go in every week and put an application down."

Bart Prather
Sports Turf Manager
Mississippi State University

You want consistency when it comes to your nitrogen. With the **Stabilized Nitrogen™** Technology (SNT) of UMAXX, more available nitrogen stays in the soil for results that lasts for weeks.

Insist on SNT for:

- Consistent turf appearance
- Uniform playability



Insist on it.

www.stabilizednitrogen.com

UMAXX and *Stabilized Nitrogen* are trademarks of AGROTAIN International, LLC.

Fill in 119 on reader service form or visit <http://oners.hotims.com/12050-119>

FACILITY & OPERATIONS

Home | **About Us** | **Guidelines** | **Membership** | **Certification Program**
Classification | **Levels** | **Application** | **Current Members**

STC
Synthetic Turf Council

"The Source You Can Trust"

Synthetic Turf Council guidelines coming soon

The Synthetic Turf Council (STC) was expecting final approval from its membership to publish its *Suggested Guidelines for the Maintenance of Infilled Synthetic Turf Surfaces* at its Member Meeting late last month.

When approved, the Suggested Maintenance Guidelines will be published and posted to their website (www.syntheticturf council.org) says STC president Rick Doyle.

importantly, restoring fibers to vertical. Fibers in synthetic turf have a tendency to lay over in use, especially with repetitive traffic. Fiber lay-over may lead to poor footing, decreased drainage, compaction and poor appearance. Once the fibers are bent all the way over, it may be difficult to get them to stand up again.

One form of grooming is dragging, in which a piece of synthetic turf or soft brush is dragged behind a small tractor, golf cart or utility vehicle. Dragging, if recommended by the manufacturer, can be used to redistribute infill, reduce static electricity and give the surface an attractive striped effect like new mown grass.

Brushes that have a rotary action, mounted in front of a power unit, are effective for standing up the pile. The bristles should be hard enough to lift the fibers, but soft enough not to cause excess fibrillation. If fibers in the turf are completely laid over, power brooming may be necessary; however, all brooming causes some fibrillation. Wetting down the

You're Always Ahead of the Game with a COVERMASTER® Raincover...

"Excellent Quality..., Competitive Prices..."

wrote **Johnson Bowie**, Associate AD,
Drexel University, Philadelphia, PA

Johnson's comments confirm what we hear from the many groundskeepers who use a COVERMASTER® raincover to keep their fields dry and ready for play.

Call us and we'll gladly tell you more.

The COVERMASTER® Advantage...

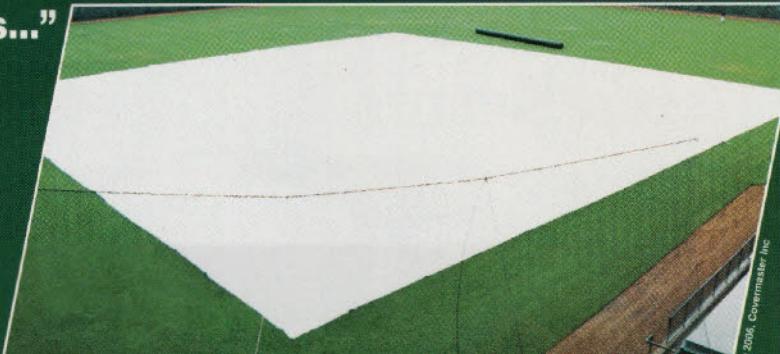
- Superior in strength and UV resistance
- Outstanding heat reflective properties
- Light weight - easy to handle
- Widest materials for least number of seams
- Largest choice of weights and colors
- Backed by truly dependable warranties

TARP MACHINE VIDEO!

Call, fax or e-mail for a free video, material samples and a brochure.

COVERMASTER™
COVERMASTER™
COVERMASTER™

MASTERS IN THE ART OF SPORTS SURFACE COVERS



Covers for football and soccer fields are also readily available.



TARP MACHINE™ lets you roll the cover on and off in minutes.



TARPMASTER™ roller comes in lengths with safety end caps.



CALL TOLL FREE
1-800-387-5808

COVERMASTER INC., 100 WESTMORE DR. 11-D, REXDALE, ON, M9V 5C3 TEL 416-745-1811 FAX 416-742-6837

covermaster.com

E-MAIL: info@covermaster.com

Fill in 120 on reader service form or visit <http://oners.hotims.com/12050-120>

FACILITY & OPERATIONS

surface prior to brooming may help to protect it from excessive wear.

Another form of grooming is scarification to prevent and/or remediate compaction. Increased compaction in the field will lead to poor ball bounce, decreased drainage, poor footing and possibly a greater incidence of player injury. Testing has shown that scarification reduces G-max considerably and improves traction. Generally, a sweeper or greens groomer is used for scarifying synthetic turf fields. It is important to minimize compaction from the outset by keeping the field clean so that dirt and other contaminants do not filter into the infill, filling up the voids. Preventive maintenance also should include protecting the field from vehicles not designed for athletic fields such as pick-up trucks, loaders and concert cranes.

Maintenance equipment

As these fields become more popular, turf managers are discovering new and better

practices and manufacturers are creating specialized equipment for field maintenance. A number of manufacturers make cleaning equipment specifically for use on synthetic turf. These machines may perform one or more cleaning operations and vary in their aggressiveness. It is important to consult the manufacturer of the surfacing system regarding appropriate maintenance equipment.

Machinery used on or near the turf must be well maintained so that it does not leak oil or other fluids onto the surface. It should feature wide soft tires, sometimes called "turf tires," and should be kept moving slowly, making wide turns, so as not to move the aggregate base. Heavy equipment should be prohibited. Bobcats, skid-steers, backhoes and other heavy-duty machinery may cause ruts in the sub-base that will be reflected and visible in the turf. Additionally, this type of machinery may break the glue bond between the turf and an e layer, where present. Maintenance equipment should be stopped or parked off the turf surface.

Heavy equipment should be prohibited. Therefore, when the field is used for alternative events requiring staging or seating on field, set up cranes must work from off field and chairs should be set on plywood, mats or plastic tiles to distribute weight and prevent divots. If they occur, divots must be repaired by cutting out the turf, adding or redistributing base material and replacing the turf. Simply adding additional infill to bring up the level will create a soft spot which players cannot see, constituting a hazard.

At the end of the playing season, inspect all field equipment and order any replacement parts so that the equipment can be repaired during the off season. If new equipment is needed, the end of the season may be a good time to shop for bargains.

Seam failures and tears

Seams, whether in the field or in permanent markings, should be checked regularly to insure that they remain secure. It is recommended that seam failures be called to the



To earn and retain more profit, remember that a synthetic turf playground, landscape, putting green or athletic field surface is only as good as its adhesive-bonded seams. Hence, it pays to use NORDOT® One-Part Seam Adhesives. They're

WANT THE FACTS? - Write, Call or Visit our Website:



P.O. Box 241
Scotch Plains, NJ 07076 U.S.A.
Tel: (908) 233-6803
Fax: (908) 233-6844
E-mail: info@nordot.com
Web: www.nordot.com

◀ CHOICES ▶

NORDOT® Adhesive #34N-2: high grab seam, repair and total gluedown adhesive for bonding *smooth* backed synthetic turf surfaces.

NORDOT® Adhesive #34G: high grab thixotropic seam, repair and total gluedown adhesive for bonding *rough* backed artificial turf surfaces.

NORDOT® Adhesive #34S-3(Plus): excellent for airless spray bonding of long landscaping artificial turf seams.

NORDOT® Adhesive #49P: booster for "must do" seams in harsh cold and/or low humidity weather.

NORDOT® Adhesive #113D & #116F: New type for low ventilation indoor synthetic turf seaming and selected outdoor uses.

attention of the installer for repair. However, if the warranty has expired, a number of specialty companies offer seam repair services.

Irrigation systems

While synthetic turf fields do not require irrigation, they benefit from watering in several ways. Watering helps to settle the infill, control static electricity, and increase the consistency of ball roll and bounce. Players have stated a preference for fields that have been watered prior to play because they feel it makes the surface slightly firmer. During hot weather, irrigation can help to cool synthetic turf fields, though the effect is temporary.

Ideally, an irrigation system should be included in the field design. Water pressure, water volume, sprinkler radius, friction loss, prevailing winds and other environmental conditions will affect the design of a suitable layout for an irrigation system and the type or types of sprinkler heads to be used, though most commonly large radius sprinkler heads are chosen.

Water lines must supply sufficient volume to each sprinkler head to provide adequate coverage. Galvanized steel, copper, polyethylene or PVC pipe can be used for water lines. In designing any irrigation system, caution should be exercised in determining the location, elevation and type(s) of sprinkler heads to minimize any potential hazard to players.

Irrigation systems can be connected to timers that automatically turn the sprinklers on and off.

Where irrigation has not been included in the field design, water cannons are an option. Six cannons, placed at midfield and at the 30-yard line on each side, will water an entire field. The amount of water required for optimum benefit will vary from field to field.

Marking

On synthetic turf, field markings can be permanent or temporary. Permanent markings are either tufted in at the factory or cut and inlaid during installation. Where the field will

be used most of the time for a single sport, permanent lines are generally used and represent one of the most obvious benefits, since marking natural grass fields each time they are used is time consuming.

If the field is to be used for multiple sports, permanent lines can be painted over and obscured and/or temporary lines painted on. Typically in high schools, football and soccer markings are permanently tufted or inlaid, while markings for lacrosse are painted on after the final football game in the fall for spring use. Because the markings for boys and girls lacrosse are different, two different colors will be used, often red and blue.

Historically, paints used for this purpose have been difficult to remove. They have stained fibers and infill, and left "ghost" images after cleanup. Paint residue also can cause compaction and increase G-max. Repeated scrubbing is necessary to remove temporary markings has caused increased wear of fibers in those areas. Now however,

MAINTAIN THE DREAM

with **Kromer!**

A revolutionary Synthetic Field Maintenance System that answers today's synthetic field needs by offering a riding self propelled - multi purpose unit that removes field markings, grooms your field, and sprays chemicals like disinfectants for player safety.

All riding units now available with ULTRA PRESSURE painting

SFM™

EZY Liner™

Stripes athletic & track fields, parking lots and curbs. Battery powered, twin paint nozzles, NO spray cans, CO₂ bottles or engines.

Buy Direct from the Manufacturer and SAVE!

1-800-373-0337

kromerco.com

CALL OR VISIT OUR WEBSITE TO REQUEST YOUR FREE PRODUCT INFORMATION PACK WITH CD!

Our Field is Preparing Your Field

Baseball - Football - Softball - Soccer
Rugby - Lacrosse - Track & Field

ST1000

Fill in 123 on reader service form or visit <http://oners.hotimis.com/12050-123>

FACILITY & OPERATIONS

special paints are being developed for this purpose; these new paints break down over time, are easily cleaned and leave no residue.

While field marking should be in accordance with the manufacturer's guidelines, general recommendations for minimizing problems with paint include:

- Choose the right paint for the job. Ask for a recommendation from the manufacturer of your synthetic turf system.
- Use a paint machine that allows for as low a psi as possible.
- Do not drive paint into the infill.
- Prior to cleaning, lightly brush the area so that the fibers are vertical and the infill is loosened.
- When possible, use more water and cleaning agent, less scrubbing.
- Extracting paint and cleaning solutions with a water hog or other extractor will help to minimize paint residue left behind. Chalk lines are sometimes used, but tend to leave a lasting powder spread and are not

recommended. Marking compounds for natural grass should not be used.

Permanent lines require no special attention except that, if cut in as seams, they should be checked regularly.

Inspection

Where fields are used seasonally, a comprehensive pre- and post-season inspection is recommended. Where fields are used heavily year round, regular inspections at an appropriate interval should be scheduled.

A thorough inspection should include at a minimum:

- **Seams.** Insure that all seams, whether in the field or in logos or markings, are tight. Every place where one color of turf is inlaid into another area is an opportunity for failure. Loose seams can be a tripping hazard and will continue to deteriorate until corrected.
- **Infill.** Check rubber depth, especially in areas of wear such as a corner kick areas, lacrosse goals, midfield between the hash marks.

Redistribute infill or topdress as necessary.

- **Patterns of wear.** Wherever possible, the cause of wear should be determined. Is wear caused by inadequate maintenance, infill moving or compaction? Before the problem can be corrected, the cause must be determined.
- **Border systems.** Depending on the system, border systems can move, crack, heave or simply fail.
- **Drainage systems.** Perimeter drains, catch basins and retention ponds only function if the water moves. They can become clogged and should be checked.
- **Line movement.** In training areas or in areas where band practice results in repeated movement in the same direction, lines may move.

Removing snow and ice

Snow and ice are not harmful and can be permitted to melt through the surface. In fact, if possible, snow removal should be avoided. If

**SUPERIOR
PRODUCTS
FOR
ARTIFICIAL
TURF.**

WIN WITH WIEDENMANN, Before and After the Game.



TERRA CLEAN



TERRA BRUSH

**Wiedenmann
North America, LLC
Savannah, GA**



Wiedenmann
www.terraspike.com

**Phone (912) 790-3004
Toll free (866) 790-3004
Fax (912) 790-3005**

Fill in 124 on reader service form or visit <http://oners.hotims.com/12050-124>

FACILITY & OPERATIONS

snow or ice must be removed for scheduled play, consult the manufacturer of your turf system for approved procedures.

Brushes, wooden, rubber or plastic scrapers are sometimes used. Metal shovels or scrapers should not be used, nor should rock salt. Some manufacturers claim that calcium chloride, urea and other chemical ice-melting products are safe for the turf. However, they may be retained in the turf surface and until they rinse away, will burn players who are exposed to them.

For power snow removal, use a rubber tipped blade set above the turf, a rolled blade or a blade covered by a piece of split PVC pipe on a small Gator-type utility vehicle with turf tires. Do not use ordinary snow removal equipment. It is not necessary to remove all the snow. A layer 1/2" - 1" thick will quickly melt in sunlight.

During freezing rain or freezing temperatures following rain, water within the infill may freeze. The field may be used when frozen, as long as it is not slippery and footing

Daily	Weekly	Monthly	Annually
Remove leaves and trash.	Check seams and inlaid markings and report any failures to installer.	Treat weed infestation, moss, mold or algae.	Treat moss, mold and algae.
Hand pull weeds.			Topdress with infill, as required by O&M manual.
Spot clean spills.	Brush the surface to redistribute infill and maintain vertical fibers.	Check for over-compaction and groom as necessary. Inspect, test.	
Set up events – marking, moving benches. Setting up goals.			

Tennis & Multi-Sport Surfaces | Field Marking Paints | Custom Field Stencils | Accessories for All

ALL SPORTS.



ALL SURFACES.

ALL WORLD CLASS.

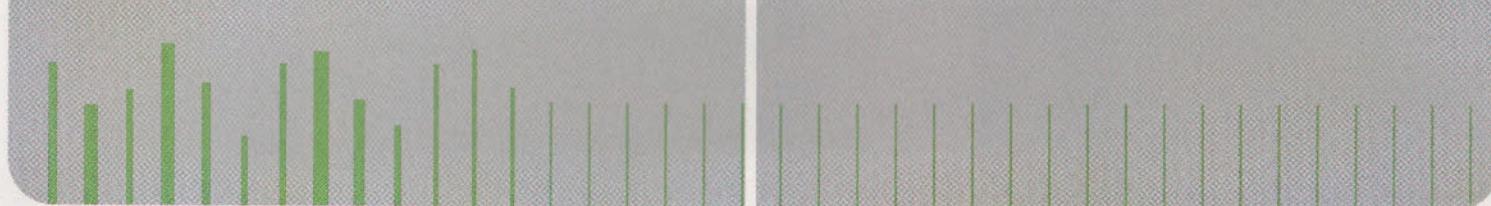
www.worldclasspaints.com | 1-800-748-9649

**WORLD
CLASS**
athleticsurfaces

Fill in 125 on reader service form or visit <http://oners.hotims.com/12050-125>

FACILITY & OPERATIONS

March	Inspect field. Sweep. Groom.	August	Inspect. Brush lightly. Sweep. Paint for fall sports if not sewn in.
April	Brush lightly. Sweep. Paint for spring sports if not sewn in.	September	Brush lightly. Sweep.
May	Brush lightly. Sweep.	October	Brush lightly. Sweep.
June	Brush heavily. Sweep. Groom.	November	Brush heavily. Sweep. Groom.
July	Sweep. Test.	December	Inspect field.



GET GREEN!

Water where you need it.



Create optimal playing conditions with a Kifco Water-Reel®—the industry-standard for athletic turf irrigation. Ideal for football fields, baseball and softball diamonds, and soccer fields. Easy-to-use and self-retracting, our Water-Reel simply rolls to where you need water. Just turn it on and leave—it shuts off automatically! Also rinses, cools, and conditions synthetic turf!

Portable | Reliable | Easy to use | Economical



For information, call 1-800-452-7017 or visit www.kifco.com.

Fill in 145 on reader service form or visit <http://oners.hotims.com/12050-145>

THE GAME MUST GO ON.



Fill in 146 on reader service form or visit <http://oners.hotims.com/12050-146>

An Airfield is the ultimate sports turf drainage system whether you are playing on natural or artificial turf.

Artificial Turf Benefits:

- Drains remarkably faster
- Reduces installation time
- Reduces G-Max
- Eliminates rubber migration
- Eliminates standing water
- Strong enough for vehicles
- Below entire playing surface
- Air void for heating and cooling
- Allows flushing and sanitizing
- Maintains level playing surface

Natural Turf Benefits:

- Drains remarkably faster
- Reduces installation time
- Reduces irrigation requirements
- Extends playing season
- Eliminates standing water
- Reduces maintenance costs
- Below entire playing surface
- Superior perched water table
- Greater root mass
- Gas circulation through soil

is adequate; however, care should be exercised as the fibers will be brittle and more subject to damage and the shock absorption of the surface will be reduced. Player safety should be the primary concern.

A synthetic turf field can be prevented from freezing or from accumulating snow with a subsurface heating system, composed of miles of tubing filled with water and glycol. While a significant cost, the inclusion of a heating system may significantly increase the number of days the field can be used in extreme climates and may reduce maintenance and extend the life of the field.

What to expect of a new surface

It may take up to twelve months for the infill to settle completely into the fiber of the synthetic turf surface. Regular grooming will assist with settlement. New rubber will generate static electricity. Rubber will stick to players' skin (sweat attracts crumb rubber), clothing, even mouth guards, and will collect in their shoes. Over time, rain generally solves the problem and pre-game watering helps, but turf manufacturers recommend anti-static products to minimize loss of rubber and the inconvenience. Many grounds managers spray their new fields with diluted fabric softener prior to play but not right before a game as the wet solution may make the surface slippery. Please note that this is outside the product's labeled and intended use, though it appears to be effective. Crumb rubber is an eye irritant, as well. Trainers should keep a first aid kit including eyewash on hand.

Until the field settles and the fibers fibrillate, expect some movement of infill. Rubber particles may accumulate in corners or the bleachers or any other area that traps them.

Topdressing

The owner's maintenance guidelines may suggest topdressing the surface with additional infill during its lifetime to retain performance characteristics and to extend the life of the field. Over time, infill will move, settle and leave the field on shoes, uniforms and maintenance equipment. Restoring lost infill will help to maintain the G-max rating, along with consistent ball roll, bounce and other performance characteristics.

Approximately 20 tons of crumb rubber

Artificial Intelligence

A new range of professional artificial turf care machines have been developed by Redexim Charterhouse. Known worldwide for their reliable and effective range of natural turf care equipment such as the Verti-Drain®, Redexim Charterhouse has produced a complete range of equipment to meet the challenging needs of the artificial turf market.



Verti-Brush

The Verti-Brush quickly and effectively levels and distributes applied or existing infill with powerful hydraulic brushes.



Verti-Top

The Verti-Top employs a highly effective synthetic rotary brush to remove debris and top layer infill from the turf, then sifts the debris out in a unique vibratory shaker which redistributes the clean infill back on the field.



Verti-Groom

To brush, loosen and decompact the hardest infill, the Verti-Groom is equipped with a variety of interchangeable tools.



Verti-Air

The Verti-Air utilizes a rotary brush and turbine compressed air to lift all material out of the turf, dry and filter the material, sift out the debris and return the clean, dry and decompacted infill back into the turf.



Verti-Broom

For brushing and striping of artificial turf, nothing beats the proven Verti-Broom. The highly effective triangular arrangement of the brushes will straighten and groom each grass blade for an attractive and realistic finish.



BREAKING BARRIERS TO BETTER TURF

Artificial

1-800-597-5664

Fax: 570-602-3060

www.redexim.com



Fill in 126 on reader service form or visit <http://oners.hotims.com/12050-126>

FACILITY & OPERATIONS

will cover the field to a depth of 1/4". Various equipment can be used for this purpose - either topdressing equipment designed for use on natural turf (golf courses may have this equipment) or newer equipment specially made for use on synthetic turf. Once the infill material is spread, it must be brushed into the fibers.

Ideally the identical material, whether rubber or rubber/sand mix, from the same source as used in initial construction should be used for topdressing. Consult your installer to locate infill for topdressing.

Removing and replacing infill

Some manufacturers and/or turf managers suggest that removing and replacing all the infill can significantly prolong the useful life of the field. One question that arises is what to do with the used infill material that is removed. Because of the proliferation of synthetic turf fields at all levels, many companies are working on this problem.

Testing

All fields should be tested when they are installed and at regular intervals of not more than one year during use. Testing should be performed during the season when play actually occurs, not during the off season, if any. Testing should be done by an independent testing laboratory and should include the center of the field, the hashes and the sidelines at a minimum.

Most attention has focused on G-max testing. Industry-wide accepted values for G-max safety call for a newly installed field to yield an average of 100 Gs at an ambient temperature of 70 degrees F and G-max measurements should not exceed 200 Gs at any time during the useful life of the field.

Drainage maintenance

Proper drainage helps to remove water from the surface and redirects water that may flow over or under the turf from surrounding areas. Incorporating proper drainage alone is not

sufficient to prevent problems. Drainage must be maintained.

Swales, French drains and catch basins can become clogged by vegetation and silt. Keeping vegetation properly trimmed, neutralizing roots or using root barriers, and/or occasionally cleaning systems with a pressure hose may help to keep the water flowing. Including cleanouts in system design facilitates regular maintenance.

If clogs cannot be cleared with a hose, it may be necessary to locate them and repair them by excavation. Most obstructions occur where there is a change in direction or elevation. Identifying those areas on a drainage plan will be important should a problem occur.

Fence maintenance

Regularly check the fence fabric for damage. Touch up nicks and scratches in vinyl or other coatings. Ensure that all sharp edges and protruding wires are bent back or removed to pre-

Continued on page 32

MAINTAIN YOUR FIELD



WITH **NEW STRIPE**
INC. EQUIPMENT

STRIPERS: RIDERS • WALK BEHIND • AEROSOL
INFILDS GROOMERS DRAGS & MATS
DRY LINERS & FIELD LAYOUT SYSTEMS
FIELD MARKING & MASCOT STENCILS

CALL TOLL FREE

1-800-624-6706

1700 Jasper St., #F • Aurora, CO 80011

www.newstripe.com

Fill in 127 on reader service form or visit <http://oners.hotims.com/12050-127>

WE'RE ON YOUR TURF.
MAKING LIFE EASIER

THE TD-460, TYCROP'S DEDICATED LARGE AREA TOP DRESSER, WILL
HAVE EVEN THE MOST EXPANSIVE TURF SAFE FOR PLAY IN NO TIME FLAT.

1-800-845-7249 WWW.TYCROPTURF.COM

FINANCING PROVIDED BY



US BANK

COMMERCIAL

BALANCE



Fill in 128 on reader service form or visit <http://oners.hotims.com/12050-128>

FACILITY & OPERATIONS

Continued from page 28

	Existing Soil Field	New Soil Field	New Sand- Based Field	New Synthetic Turf Field
Initial Construction	0	\$20,000 - \$200,000	\$350,000 - \$1,000,000	\$600,000 - \$900,000
Annual Maintenance Cost	\$15,000*- \$50,000	\$15,000 - \$50,000	\$15,000 - \$50,000	\$5,000 - \$15,000
Remedial/ Major Repairs	\$0 - \$50,000	\$0 - \$50,000	\$0 - \$150,000	\$0 - \$10,000
Ten Year Maintenance Cost	\$150,000 - \$550,000	\$150,000 - \$500,000	\$150,000 - \$650,000	\$50,000 - \$160,000
Ten Year Cost	\$150,000 - \$550,000	\$170,000 - \$750,000	\$400,000 - \$1,650,000	\$650,000 - \$1,060,000
Cost per Year	\$15,000 - \$55,000	\$17,000 - \$75,000	\$40,000 - \$165,000	\$65,000 - \$106,000
Events per Year	60 - 120	60 - 120	60-120	200 - 365**
Cost per Event	\$125 - \$916	\$141 - \$1,250	\$345 - \$2,750	\$178 - \$530

**OUR RAKES ARE STRONGER. OUR TAMPS ARE BETTER.
AND OUR SQUEEGEES ARE, WELL, SQUEEGEE-ER.**



With Par Aide, you get more. Because the quality and craftsmanship we've become known for is now available for your diamond, court or field. With rakes, tamps, shovels, brooms, squeegees, cleat brushes and more. Built with pride for the grounds you keep with pride. For a catalog and a dealer near you, visit paraidefieldcare.com or call 1-888-893-2433.



PROFESSIONAL
FIELD CARE™

Par Aide is a registered trademark of Par Aide Products, Inc.

© Par Aide Products Co., 2007

Fill in 131 on reader service form or visit <http://oners.hotims.com/12050-131>

vent player injury. If the fabric is stretched or bulging, it may be possible to re-stretch it or, even to turn it upside down on the framework; however, this is a fairly difficult job requiring heavy equipment, more akin to renovation than to maintenance.

Inspect cable ties and hog rings to insure that they are securely fastened and reattach them to the bottom tension wire as necessary. Check all post caps, hardware and fasteners. Repair or replace missing or damaged items.

Examine gates, hinges and latches. Clean and lubricate them so that gates swing easily and the latches operate smoothly. If the gate is out of plumb, adjust and rehang it.

Observe the base of all fence posts at the footings. Check for deterioration and patch where necessary.

Landscape maintenance

Regularly trim the grass and landscaping around the field for a clean appearance and to ensure proper drainage. Weeds left growing around the perimeter will invade the surface at its edges. A 2 x 5-foot border around the perimeter should be left free of all vegetation to prevent damage.

Tree roots that extend under the field should be neutralized or removed prior to construction. Where removing tree roots and vegetation is not practical, root barriers sometimes are used. Even when nearby roots are removed prior to construction, they can travel great distances, especially where fields are regularly watered. Some tree species are more likely to be troublesome than others; white pines are especially difficult.

Where new landscape materials are used on site, use native plants if possible, and choose additional plants which are drought resistant, low maintenance, disease and pest resistant and hardy. Avoid invasive species.

Use mulch on plantings to conserve soil moisture, minimize growth of weeds, reduce maintenance, restore fertility and reduce the need for fertilizers. If possible, compost grass clippings, plant debris and fallen leaves for use as a soil amendment in place of inorganic fertilizers or peat moss (a non-renewable resource).

Rental fees

One argument often used to support the installation of synthetic turf fields is that because the field can be used for many more events each

year, it can be rented out and rental fees will offset the cost of installation. When calculating the potential income from rental fees, be certain to offset that income with the cost of set up and clean-up, painting and cleaning markings, security, staffing, and use of lights and similar costs for a realistic picture of the net benefit of renting. Be certain to read your warranty, carefully, as well. Warranties may have limitations based on specific use, amount of use or other considerations.

Maintenance costs

The chart on the page 32 presents typical cost ranges. Because of the number of variables, a prospective owner should compare costs based on actual and intended use and maintenance practice. This chart does not consider the cost of irrigation.

*According to professional turf managers, the cost to maintain a natural grass field in optimal condition is approximately \$50,000 per year. However, most high schools spend

more in the range of \$15,000 per year; many spend much less.

** While theoretically, a synthetic turf field has unlimited use, it is unlikely that it will host more than 365 events per year and, likely, it will host many fewer events. Fewer events will increase the cost per event, while a greater number will increase maintenance costs and, therefore, cost per event.

Typical maintenance schedules

The schedules on page 25 and 26 are presented only for information as typical examples. Maintenance schedules depend on system, climate, use and other factors. Failure to follow your manufacturer's guidelines may void your warranty. ■

Reprinted with permission of the American Sports Builders Association, 8480 Baltimore National Pike, #307, Ellicott City, MD 21043. Copyright 2006. All rights reserved.

AerWay® venting tines can be used all season to keep the soil surface open. Water and nutrient applications are more efficient because they are absorbed immediately into the soil profile.

AerWay® saves water, nutrient and chemical costs



for more information call

1-800-457-8310

Advanced Aeration Systems

www.aerway.com email: aerway@aerway.com

Fill in 132 on reader service form or visit <http://oners.hotims.com/12050-132>