

OPERATION & MAINTENANCE MANUAL



AstroTurf Corporation

THE WORLD LEADER IN SPORTS & RECREATION SURFACES

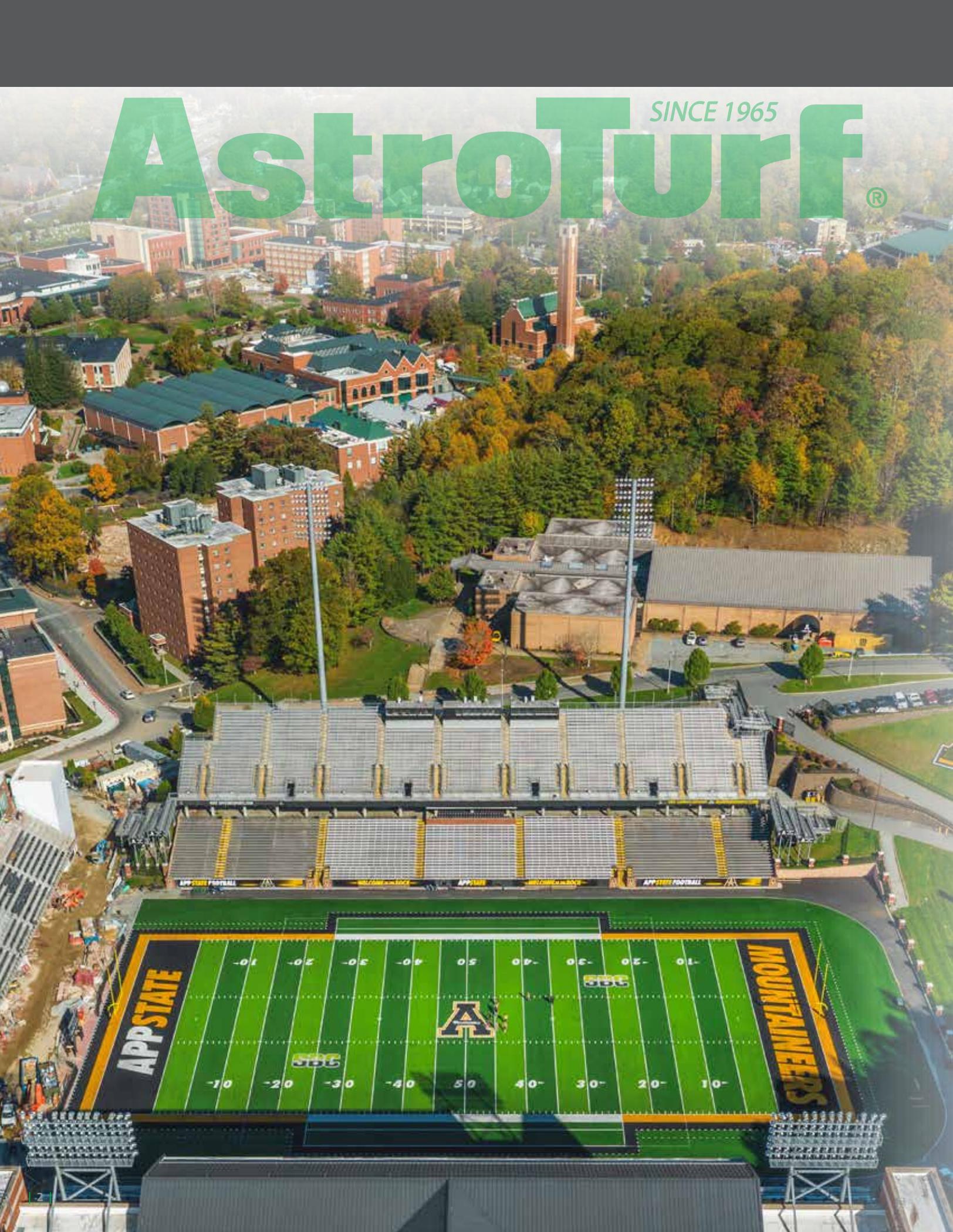
AstroTurf
FIELDS

Rekortan
TRACKS

Laykold
COURTS

AstroTurf®

SINCE 1965



ASTROTURF

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PLEASE VISIT [ASTROTURF.COM/OWNERSBOX](https://www.astroturf.com/ownersbox) TO CLAIM YOUR FIELD! INSIDE THE OWNER'S BOX, YOU'LL BE ABLE TO LOG YOUR MAINTENANCE, REQUEST PROFESSIONAL SERVICES, REQUEST REPAIRS, VIEW AND DOWNLOAD CLOSE-OUT DOCUMENTS, AND MORE.

Thank you for selecting AstroTurf® Corporation as your synthetic turf provider!

This manual will educate you on the proper care and maintenance of your new synthetic turf field so that it will remain in top-performing shape for the life of your warranty and beyond.

AstroTurf strives to manufacture the highest quality synthetic turf products in the world. However, to keep your field performing at the highest level, routine care and maintenance *must* be followed. As with any item requiring long-term, continual upkeep, maintenance logs must be used to record each occasion and type of maintenance undertaken.

Please visit:
astroturf.com/ownersbox
to claim your field!



MAINTENANCE AND WARRANTY

Your synthetic turf field comes with an AstroTurf Warranty. The Warranty itself is directly related to the maintenance performed on your field. The Warranty can be voided if your field is improperly maintained, abused, over-used, or neglected.

If you have further questions, contact AstroTurf Corporation at maintenance@astroturf.com or call Turf Help at 866-951-8873. AstroTurf Corporation employs seasoned service professionals who are ready to assist you with any problems.

The following are keys to preserving your AstroTurf System:

- ◆ Keep it clean of all foreign objects
- ◆ Control access to the field
- ◆ Keep adjacent areas free of litter, debris, mud, dirt and oil spillage
- ◆ Provide trash and litter cans adjacent to field
- ◆ Post signs prohibiting smoking and food or drinks on the field
- ◆ Repair minor damage immediately
- ◆ Observe AstroTurf® maintenance and cleaning procedures

ASTROTURF MAKES NO REPRESENTATIONS, GUARANTEES OR WARRANTIES, EXPRESSED OR IMPLIED, REGARDING THE INFORMATION CONTAINED HEREIN. THIS OWNER'S MANUAL DOES NOT CONTAIN AN EXHAUSTIVE LIST OF MAINTENANCE GUIDELINES AND IS NOT LIMITED BY AND IS SUBJECT TO THE ASTROTURF® WARRANTY PROVIDED WITH YOUR FIELD.

ASTROTURF CORPORATION DOES WARRANT THAT THE PRODUCT WILL PROVIDE A USEFUL PLAYING SURFACE FOR A PERIOD OF 8 YEARS FROM THE DATE OF SHIPMENT WITH A MAXIMUM WEIGHT LOSS OF NOT OVER 60% OF THE FACE FIBER PER SQUARE FOOT.

UConn Baseball Storrs - Connecticut



Princeton University - Princeton, New Jersey



HISTORY

For years, synthetic turf has been described and sold as “maintenance free”. Although synthetic turf does require less maintenance than natural grass, the notion that it is “maintenance free” is wrong.

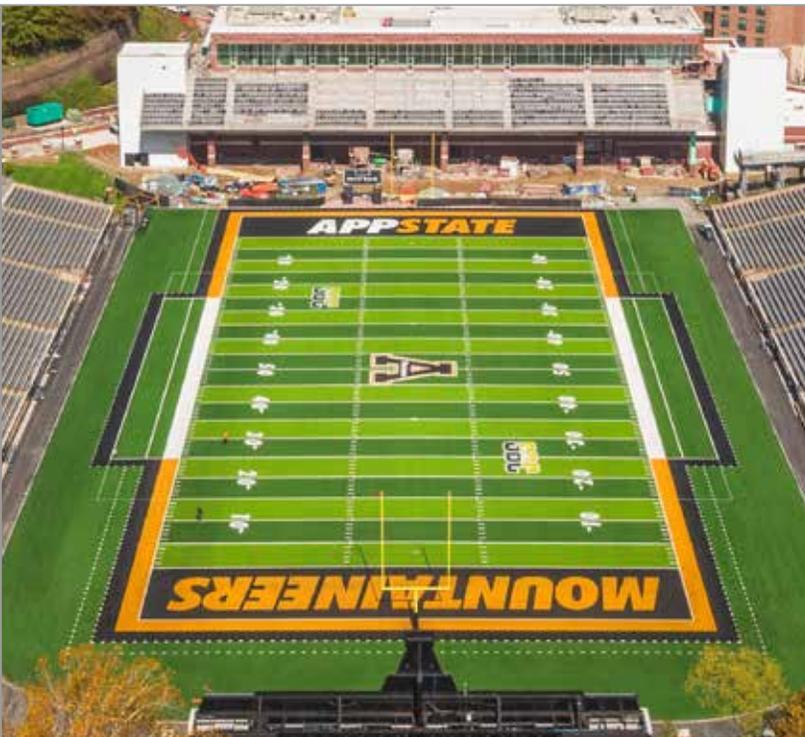
The original AstroTurf was different in construction than the taller in-filled systems today. AstroTurf then was manufactured with 100% nylon face fiber, one of the most durable textile fibers available. Second, the original AstroTurf was a knitted product as compared to the tufted products of today. Finally, because of the knitted construction of the original AstroTurf, the pile of the face fibers was much denser and shorter, like carpet. These factors reduced the need for extensive maintenance on the original synthetic turf. Sweeping and vacuuming was about the extent of maintenance required on the original AstroTurf surfaces.

Today, many synthetic turf systems are more like natural grass. Manufacturers simulate the look and feel of natural grass by using taller, grass-like fibers and fill the fiber matrix with infill like sand, rubber and/or other materials. Today's finished product requires specialized, consistent maintenance to remain uniform, predictable and high-performing, especially in terms of shock

attenuation, traction and ball response. Along with these advancements in fabric design and construction, advancements in maintenance equipment technology, grooming procedures, techniques and equipment have contributed to greater durability and longevity in today's synthetic turf. The taller, softer fibers need brushing to “fluff” back up after use. The infill needs grooming and brushing to remain uniform and to minimize compaction. Usage logs should be kept to monitor high wear areas and determine special maintenance requirements. In the same way that your vehicle needs routine, documented maintenance, your synthetic turf field requires dedicated attention.

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

Appalachian State University Football - Boone, NC



University of Virginia - Charlottesville, VA



INITIAL REQUIREMENTS

After the initial installation, AstroTurf® systems require a minimum two (2) week curing and fiber stabilization period. This is the case with all synthetic turf systems. Athletic events may be held during this period, but we recommend that all heavy equipment and unnecessary vehicle traffic be kept off the field. Also, during this period, sweeping should be kept to a minimum and should never be performed during the heat of the day.

In addition, infilled systems require many weeks of use and weathering to reach optimal playing condition. This period of time not only allows a degree of fiber fibrillation in some systems, but also allows the granular fill to settle properly for ideal comfort, playability and longevity. This period of time varies, depending on local conditions, use and system specifications.

CLEANING & STAIN REMOVAL

GENERAL

Rain is your best cleanser. Rainfall gently cleans the turf fibers of dust, pollen and airborne pollutants in a way that is difficult to duplicate in any other fashion. However, you will need to remove litter and debris deposited by users and spectators at events held on the field. Good housekeeping practices will minimize these problems.

Always:

- ◆ Keep trash and litter containers on site—make sure there are enough containers to reduce receptacle overflow
- ◆ Route field access traffic in such a way as to minimize mud and dirt tracking onto the field
- ◆ Set up drinks for athletes during practice breaks off the field itself, if possible
- ◆ Enforce a smoke-free environment and discourage the use of smokeless tobacco products such as chewing tobacco
- ◆ Ban or minimize the consumption of sunflower seeds in the facility

LITTER REMOVAL

Paper, peanut shells, sunflower seeds, athletic tape, paper, etc., should and can be removed most easily with a sweeper immediately following any event.

A. Oil Spillage, etc.

Care should be taken to prevent lubricating oil, grease, transmission fluids, etc., from dripping or spilling on your turf surface during maintenance. Such spills can discolor the turf. Proper maintenance procedures should be observed in this regard. Battery acid and other fluids should not be allowed on the turf. Never change or add fluids to maintenance equipment while on the turf surface.



B. Frequency

The removal of loose debris should be performed on an as needed basis, generally about twice monthly during heavy use periods and before major events.

STAIN REMOVAL

Polyethylene fibers are among the most stain resistant fibers known to man because most stains are moisture-borne and polyethylene tends not to absorb moisture. Hence, most “stains” on AstroTurf® fields are not true stains but rather residues of foreign matter, which should be promptly and thoroughly removed.

Most “stains” on 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 spill before it has time to dry and harden. Remove any solid or putty-like deposits promptly using a spatula-like tool. Blot up excess liquids with a stack of towels, cloth or paper. A water flush on spills is always recommended.

Procedure for Removing Residues and Blemishes:

A. “Water-Borne” Residues

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

Typical Water-Borne Stains

Acid, Alcohol, Alkali, Beer, Blood, Chocolate / Cocoa, Coffee, Cola, Dye, Food Coloring, Fruit Juice / Gatorade, Glue, Ice Cream, Latex Paint, Milk, Mustard, Ketchup, Tea, Urine, Water Colors.

To remove water-borne stains:

1. Brush the residue with a stiff fiber brush (not wire).
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, if necessary.

A three percent (3%) solution of ammonia in water may be used in lieu of household detergent for more stubborn residues or stains.



B. Persistent Oil Based Stains

Follow directions below:	
Crayon, furniture stain, lipstick, metal polish, cooking oil, rubber cleat marks, shoe polish, suntan oil, sunscreen, ballpoint pen ink.	Sponge with perchloroethylene (dry cleaning solution). Blot with absorbent towels.
Oil paints (do not use for field markings).	Blot immediately. Sponge with turpentine or paint remover (apply sparingly). Re-sponge with cold water to remove detergent.
Nail polish	Sponge with acetone.
Paraffin wax	Scrape excess. Sponge with perchloroethylene (dry cleaning solution).
Tar and asphalt	Scrape excess. Sponge with perchloroethylene (dry cleaning solution).

CAUTION! Mineral Spirits, methyl-ethyl-ketone (MEK) and other petroleum-based solvents are highly flammable. Do not smoke or permit open flames near containers or near solution when in use. Be sure the area is well ventilated.

C. Animal Waste

Neutralize with mixture of white distilled vinegar in an equal amount of water. Flush thoroughly with water after application.

D. Chewing Gum

Spray with Freon and scrape to remove residue (available in aerosol packs from carpet cleaning suppliers—or use dry ice and scrape).

E. Fungus and Mold Spots

Use exterior bleach (available at home improvement stores). Mix the bleach at a 50/50 ratio with water. A one-percent solution of hydrogen peroxide in water can also be used. Sponge on. Flush thoroughly with water after application.

F. Removing Weeds

You may use Roundup. Another option is to mix one (1) gallon vinegar, two (2) cups Epsom salt, and one-fourth (1/4) cup of dish detergent. Flush with water.

CAUTION! Do not use high-pressure water spray with stream force in excess of 300 psi as this can severely damage the turf.

Contact: ASTROTURF CORPORATION TURF HELP at 866-951-8873 or maintenance@astroturf.com for assistance in removing stubborn stains.

USAGE GUIDELINES

GENERAL

The AstroTurf® Warranty and all specifications list “designated uses” for the turf installation. While these lists are not comprehensive, they give a good indication of the components we have selected to incorporate in our turf systems. This list should be consulted to set up your guidelines for the field’s use.

FIELD MARKINGS

Infilled turf retains paint for markings relatively well and we recommend painted in-filled fields when you do not have lines already tufted into your system.

The key point to remember is that paint should be applied lightly and evenly to reduce the likelihood of paint buildup. Light applications give good aesthetics, adequate life and are less abrasive than heavy layers of paint. If paint is applied incorrectly in excessive amounts it can create an abrasive and much harder surface.



Dry cleaning fluid



Litter Removal



Water-Borne Spill



Mix Soap and Water



Scrub the Residue and Rinse



Graco Sprayer

Contact ASTROTURF CORPORATION TURF HELP at 866-951-8873 or maintenance@astroturf.com for assistance in choosing paint for field markings.

Painting

For best results, apply paint to a dry, clean surface. The turf must be grease-free. Any old, degraded paint and dirt must be removed from the turf to be painted for the best appearance and resistance to foot traffic.

Initially, AstroTurf® fields will retain paint less easily because the fibers are coated with a finishing solution during the manufacturing process. As time progresses, AstroTurf® fields will hold paint better because the coating washes off the turf fibers. This finishing solution may give the fiber a slick or slippery feel when first installed, however this will naturally dissipate in a short time.

Permanent Paints

Remember that no paint is truly “permanent”. Paint application on a new field should last about two weeks. (You may need 2-3 separate applications to complete the first season).

During the second season and beyond, one application often suffices for a full season. However, fields and environmental factors differ, so two applications may still be required to achieve the desired level of visibility.

Painting Procedures

The following procedures refer to the application of the products noted on the preceding page.

General Rules

1. Apply the paint on a clean, dry field.
2. Apply with conventional striping methods, including air or airless spray equipment and wheel transfer line marker, at temperatures between 45°F (7°C) and 95°F (35°C). Tip size of 317 or 319 are recommended for 4” lines.
3. The field should be as clean as possible.
4. Thickness of the paint on the turf is important. Very thick layers should be avoided. Some paint manufacturers offer formulations that require dilution; others do not. Consult the manufacturer of your specific paint.

5. Curing time is crucial. Allow a minimum cure time of 48 hours after striping before field is put into service.
6. Be sure to cross reference any instructions that accompany the specific product you select with the instructions in this manual. Contact ASTROTURF CORPORATION TURF HELP at 866-951-8873 or maintenance@astroturf.com for clarification prior to applying paint to your field.

Field Striping and Painting

AstroTurf technicians should be engaged to lay out and stripe the field initially. Generally, this service can be worked into the contract with the owner paying only for materials and labor if desired.

1. Remove excess paint existing on field.
2. Test application procedure before going on the field. (Use a scrap of turf nailed to asphalt or plywood.)
3. Use no more paint than is absolutely necessary.
4. Keep on hand and readily available an 8% solution of ammonia to clean up spills before they solidify.
5. Paint should be applied lightly to the tips of the grass blades—not the entire length of every blade. Applying the paint too heavily makes for a very rough, abrasive surface and will make the removal job very difficult (if removable paint).
6. While working with an airless system, use a .015” orifice tip with a 10” wide fan. The manufacturer’s recommended equipment has shown that with a 26:1 ratio airless pump, a supply pressure of approximately 40 psi should be used. Plan the work ahead and mix no more paint than necessary because of its fast-drying times. With an airless spray system, coverages of no less than 180 square feet per gallon should suffice. Paint applied may also affect ball roll and bounce as well as footing.
7. When painting stripes, utilize two pieces of plywood or aluminum flashing 4” apart to mask the turf and ensure clean lines.
8. For logos and other decorations, always use a guide, template, or straight edge. 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 then paint a smaller red letter on top. Instead, paint the red letter and then add a narrow white border. Double coverages are unnecessary and difficult to remove).

ASTROTURF CORPORATION does not recommend painting fields with brushes or rollers.



ECO Templine

LOAD LIMITS

ASTROTURF CORPORATION RECOMMENDS THAT NO LONG-TERM STATIC LOAD OF MORE THAN 2 PSI (432 LBS. /SQ.FT.), NOR ANY TRANSIENT OR DYNAMIC LOAD OF MORE THAN 35 PSI BE ALLOWED ON THE SURFACE. NOTE: THE LOADING OF A PNEUMATIC-TIRED VEHICLE IS APPROXIMATELY EQUAL TO THE AIR PRESSURE IN ITS TIRES.



Spread Static Loads with Polyethylene Sheets and Plywood

It is good practice to eliminate any unnecessary long-term parking and loading and to keep the loads as small and brief as possible. Remember that chairs and high heels create high psi levels on the turf so even non-athletic events such as convocations and prayer assemblies can put the turf system at risk. Sheets of 3/4" thick plywood, exterior grade, are ideal to spread loads. Cover the turf with plastic prior to placing the load spreaders to keep the turf clean, because some kinds of plywood contain fillers that can leach out and discolor or damage the turf. The turf must be fully protected for concerts, truck pulls and other extreme events. A call should be made to AstroTurf prior to scheduling any such event.

SNOW AND ICE REMOVAL



Removing Snow

SNOW AND ICE ARE NOT HARMFUL TO AstroTurf® products and generally should be left to melt and drain off the system without assistance. At times, however, it is necessary to remove snow or ice to make the field playable for a scheduled event.

The working principle of removing snow is to do so as near to game time as possible. This reduces the likelihood of new snow buildup and will reduce the risks of ice from cold winds whipping across a damp, newly cleared surface. Because ice removal is more difficult, the prevention of ice buildup is important.

Snow Removal Using a PVC-Covered Snow Plow

Wet, sticky snow is more easily removed if pushed off the field using a snowplow covered with a half-round PVC pipe, secured to the blade with straps. Extreme care must be taken to avoid digging any blade into the surface! Even rubber-tipped snowplows may dig in. The PVC-covered blade may be mounted on a light tractor. The best blade configuration is one that sets the blade above the surface. This results in the blade "kissing" the surface and rolling the snow ahead of the blade. The snow itself will maintain contact with the surface. Avoid creating large snow piles. Leave 1/2" of snow on the field to melt on its own if at all possible.

Wood, metal or other rigid surface blades should not be allowed.



Snow Removal with PVC-Covered Snow Plow

If using a snow plow:

- ◆ Cover blade with PVC pipe.
- ◆ Remove the snow in layers.
- ◆ Adjust the blade to proper height taking care that it does not make contact with the surface.
- ◆ Push the snow into small piles. Large piles should be avoided, as tires can burn up the turf by spinning when pushing a large pile.
- ◆ Scoop the snow into trucks using small front end loaders, preferably off the turf surface
- ◆ 1/2" of snow should be left to melt away on its own if at all possible.
- ◆ Break up any ice using a small weighted lawn roller and then proceed with procedure above.

NOTE: Use only pneumatic tires on equipment used in the removal of snow and ice. Lugs, chains and studs are damaging to the surface and should never be used on the field. Do not park equipment on the field overnight or for extended periods of time as this can damage the system. (Note that the equipment should not create dynamic loads that exceed 35 psi or static loads that exceed 2 psi.) If the turf begins to stretch more with this process, discontinue the procedure.

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 Prevention

ZCAP (Zeolite clinoptilolite) is used on outdoor fields to prevent the field from freezing. Contact AstroTurf AfterCare at maintenance@astroturf.com or 866-951-8873 for application rates and methods specific to your field.

Ice Removal

As mentioned above, in some cases it may be necessary to route a lightly weighted lawn roller over the field to break up ice. The broken ice can then be swept off the field. Generally, if the sun is out and the ice or frost is not excessive, it tends to melt rapidly, especially if players use the field. In the event of excessive ice, there are two options - adding Zeolite or Urea. Remember that any chemical placed on the field will result in residue, which may leave the field sticky or slippery. Flush the residue off the field as soon as weather permits.

Urea

If the surface is heavily frosted or iced over, broadcast pile, fertilizer-grade urea at a rate of approximately 100 lbs. per 3,000 square feet. (The amount required will vary according to the thickness of the ice and the ambient temperature, but this amount is a good rule of thumb). After spreading, the urea should remain in place for at least 1/2 hour to melt the ice. It should then be removed from the field with a water removal machine, squeegee, sweeper or other suitable apparatus. Urea will be less effective at 10°F (-12°C) and will not melt ice at 0°F (-18°C). A thin residue of the urea will remain on the field and should be washed off as soon as weather permits.

CAUTION! Urea may be mildly irritating to eyes. If it gets into a player's eye, immediately flush with large amounts of water.

DO NOT USE COMMON SALT, ROCK SALT, CALCIUM CHLORIDE, AMMONIUM NITRATE OR OTHER CORROSIVE TOXIC CHEMICALS TO MELT ICE ON ASTROTURF® SURFACES. THEIR PRESENCE CAN BE HARMFUL TO PLAYERS AND PERSONNEL AND CAN DAMAGE EQUIPMENT AND THE TURF ITSELF.

EVENT PREPARATION

AstroTurf® fields are designed to be multi-purpose; and as such, they host numerous non-athletic events such as graduation exercises, assemblies, convocations, shows, concerts, circuses, etc.

Generally, two areas of concern should be recognized:

1. These events can create loads on the turf that exceed the surface load limit set forth in the Warranty and in the load limits outlined in this Manual.
2. Large crowds and acts on the turf generally fall outside the "designated uses" for the system and damage of the turf can occur unless it is fully protected.

PROTECT THE TURF

1. Ban Open Flames!

No such acts should be allowed on the turf for obvious reasons.

2. Clean Up Immediately!

Animal waste should be removed and the area flushed thoroughly. The field should be inspected for damage so that small problems do not become major repair cases.

3. Ban Smoking!

Cigarettes cannot ignite the turf but they can damage the turf. If large crowds are expected, a cigarette ban should be enforced. However, in these cases, even if heavy loads will not be present on the turf, the turf should be covered.

Prohibited Activities to Help Protect Your Turf

- ◆ Storage of materials such as drums, lumber, equipment, etc.
- ◆ Unnecessary vehicular traffic
- ◆ Golf, shot put, javelin or discus throwing, and the use of long spike track shoes associated with cinder tracks
- ◆ Open flames, fireworks, welding, etc.
- ◆ Use of wire brushes, unless specified in the repair instructions found in this manual
- ◆ Heavy loads exceeding 2 psi (static) or 35 psi (dynamic)
- ◆ Use of cleaning equipment, methods or materials not authorized (if in doubt, CALL FIRST).
- ◆ High pressure water sprays exceeding 300 psi
- ◆ Vehicles with non-pneumatic tires
- ◆ NO Fireworks

As always, should you have any event or situation in question, do not hesitate to call ASTROTURF CORPORATION TURF HELP toll-free at 866-951-8873 or email maintenance@astroturf.com for suggestions on ways to minimize the risk of damage to the turf.

IN THE CASE OF ALL NON-DESIGNATED USES FOR ASTROTURF® SYSTEMS, THE OWNER SHOULD BE AWARE THAT DAMAGE TO THE TURF OR PAD IS NOT COVERED BY THE WARRANTY.



APPROVED & RECOMMENDED MAINTENANCE EQUIPMENT

NOTE: *This section applies only to fields with infill. Non-filled fields should refer to Part VI.*

Most fields bought today include infill particles embedded within a 1.25" - 2.0" tall fiber matrix. These fields offer distinct benefits, including a non-abrasive surface and an earth-like feel underfoot. And while they demand significantly less maintenance than natural grass fields, they do still require dedicated maintenance to remain safe, uniform and playable for as long as possible. This section deals with the equipment, sweeping and grooming required to maintain infilled fields.

AstroTurf Corporation has partnered with SMG, the world's leading provider of synthetic turf maintenance equipment, to develop equipment specifically for AstroTurf clients.

SWEEPING & GROOMING INFILLED SYSTEMS

Regular and consistent use of the maintenance equipment issued with your field is the key to keeping the field in the best condition. Improper maintenance methods and/or equipment, abuse, over-usage in excess of 3,000 hours per year, and/or neglect may void your warranty. Excessive use, especially if combined with insufficient and/or undocumented maintenance practices, may void the warranty.

PLEASE VISIT ASTROTURF.COM/OWNERSBOX TO CLAIM YOUR FIELD. INSIDE THE OWNER'S BOX, YOU'LL BE ABLE TO LOG YOUR MAINTENANCE, REQUEST PROFESSIONAL SERVICES, REQUEST REPAIRS, VIEW AND DOWNLOAD CLOSE-OUT DOCUMENTS, AND MORE.

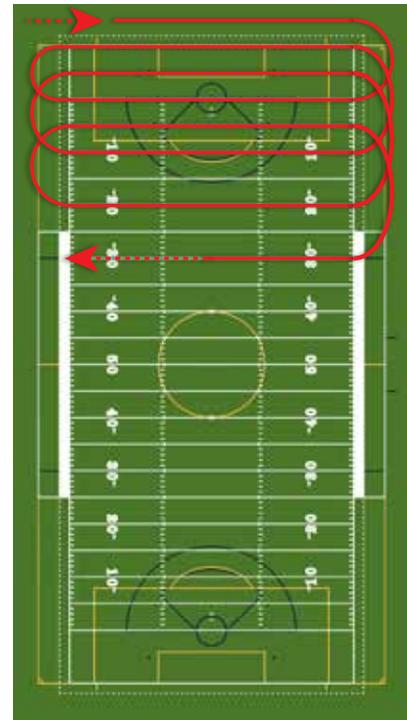
Usage Dictates Maintenance Requirements:

Sweeping and Grooming frequency is dictated by the amount of use a field receives. Heavily used fields require more maintenance. Use this chart to guide how frequently you sweep and groom. For heavy and extreme usage, it is highly recommended that you contact AstroTurf to arrange periodic professional maintenance services (see Part VIII for more information).

Maintenance Frequency Chart	Light Use	Moderate Use	Heavy Use	Extreme Use
Hours Used Per Year	<750	750-1500	1500-2000	2000-3000
Hours Used Per Day	<2	2 - 4	4 - 5	5 - 8
Sweep	As needed	Weekly	Weekly	Weekly
Groom	Prior to events, as needed	Monthly	1 - 2 times per month	2 times per month
Professional Cleaning	1 - 2 times during the life of the warranty	Once per year	1 - 2 times per year	2 times per year



Palestine TX



Sweeping and Grooming Pattern

SWEEPING

All fields should be swept as needed. Sweeping is the process of using approved maintenance equipment to remove debris from the field. This includes trash, leaves, sunflower seeds and other small bits of litter. A magnet can be attached to collect ferrous materials like cleats, hairpins, etc.



Sweeping barely clips the top of the infill

Equipment:

AstroTurf recommends use of the TCA1400 or TurfScout for sweeping the field of debris.

Method:

An AstroTurf representative will provide an in-person training session to instruct you how to use each piece of maintenance equipment. When sweeping, the brushes of the maintenance equipment should be set at a height that barely clips the infill (for filled fields). Sweeping should be done when the field is dry.

1. Attach the sweeper to a motorized maintenance vehicle (e.g., Gator).
2. **Adjust the bristles so that they barely clip the infill layer.**
3. Start at one corner of the field and drive toward the other end of the field (drive sideline to sideline).
4. Make a wide turn near the limits of the turf, and turn again at the Goal Line to travel back to the side of the field where you began. (Use an equivalent distance on fields without American football lines).
5. Turn right again to travel along the sideline until you reach the inside edge of your initial pass.
6. Turn right again and travel to the opposite side of the field. Make another wide turn, this time turning back along the 10 Yard Line.
7. Continue with these wide, overlapping circles until you cover the entire field.
8. Empty the debris collector as needed.

GROOMING

Your field must be groomed regularly. The importance of grooming cannot be overstated. Grooming is the maintenance practice that “fluffs” the fibers and evenly distributes the infill to restore a uniform level.



Grooming penetrates the infill by no more than 1/4”.

Equipment:

AstroTurf recommends use of the TurfCare TCA1400, the Triangle Brush, or the TurfTuner. Consult AstroTurf before using other maintenance equipment. Do NOT use any equipment with metal bristles.

Method:

An AstroTurf representative will provide an in-person training session to instruct you how to use each piece of maintenance equipment.

1. Attach the groomer to a motorized maintenance vehicle (e.g., Gator).
2. **Adjust the bristles so that they penetrate the infill level by no more than 1/4”.** Setting the groomer too deep can cause undue damage to the fiber. If you are unsure how deep to set your groomer, do not proceed. Contact AstroTurf Corporation for help.
3. Start at one corner of the field and drive toward the other end of the field (drive sideline to sideline).
4. Make a wide turn near the limits of the turf, and turn again at the Goal Line to travel back to the side of the field where you began. (Use an equivalent distance on fields without American football lines).
5. Turn right again to travel along the sideline until you reach the inside edge of your initial pass.
6. Turn right again and travel to the opposite side of the field. Make another wide turn, this time turning back along the 10 Yard Line.
7. Continue with these wide, overlapping circles until you cover the entire field.

TINES AND INFILL DECOMPACTION:

Tines are sometimes used to loosen an infill matrix that has become overly compacted and hard. Regular grooming should prevent infill compaction. Heavy use of tines can damage the fibers of the field.

Therefore, AstroTurf recommends that tining be performed sparingly by professional, approved turf maintenance crews only.

If you have concerns about infill compaction, please contact us to inspect your field and advise as to next steps if required. (Note: Some organic infill selections may require more tining than resilient/SBR infill. Refer to Part V for more information).



Work infill in with a rake



Add infill

HOT SPOTS

Infill moves with play and weather, getting kicked out from high use areas to less frequently used areas. Because most AstroTurf fields utilize infill particles to provide shock absorption during play, it is critical for players' safety to maintain a level, adequately filled turf matrix that is uniform in depth throughout the field. A uniform infill layer will also directly impact the lifespan of the field. (Fields that have uneven infill levels experience higher UV exposure in high wear areas, which leads to premature wear and degradation).

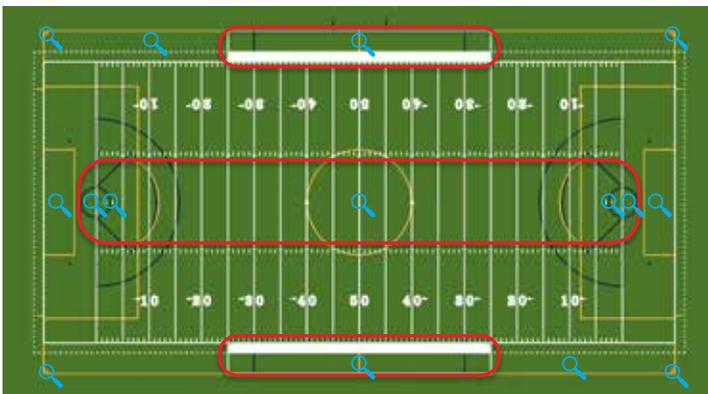
Special attention must be paid to high use areas such as:

- ◆ **Goal mouths**
- ◆ **Teams' areas**
- ◆ **Corner kick areas**
- ◆ **Extra point areas**
- ◆ **Area between the hashes on a football field**
- ◆ **8 meter fan in women's lacrosse**

You should periodically inspect these areas for fill displacement/thickness and make suitable corrections. High use areas with low spots of displaced infill can be remediated by carrying out the routine maintenance procedures described in this Section. In some instances, however, additional infill rubber may need to be added to low spots. If you discover fill displacement in any area, add additional infill to the low spot from your Attic Stock.

Apply several thin layers of infill to the area and brush each layer into the fibers with a rake, stiff street broom, or small hand-held fiber scrub brush (such as is used to hand scrub floors). Brush against the grain of the turf.

By diligently monitoring the hot spots, you may discover that the entire field need not be groomed at every maintenance session. Sometimes only the end zones, midfield and lacrosse creases need hand work. As with any area in question, please use the contact information provided herein to call AstroTurf's Customer Service Department so any questions can be answered and/or proper assistance can be provided.



Hot Spots to Watch

MINOR REPAIRS

Because most AstroTurf® fields are used heavily in the fall and winter months, a good maintenance practice is to thoroughly inspect the field in early spring and make repairs to the surface in the spring. If a service visit must be scheduled, we ask that such a request be made as soon as possible in the spring so that the visit may coincide with a scheduled service trip to other fields in your area or in conjunction with the installation of a new field in your area.

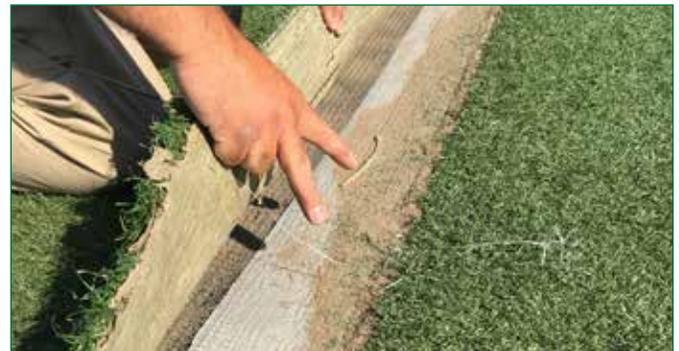
All seams should be inspected carefully for looseness. All panels of turf should be inspected for damage (rips, tears, burns, etc.). Make a sketch of the field and note on the sketch each area that needs attention.

Whether performed by ASTROTURF CORPORATION or by the Owner, all repairs must be made in warm, dry weather. Gluing seams and filling the turf should not take place if the field is wet or even damp.

"Minor" vs. "Major" Repairs



Minor repairs



Major repairs required - call AstroTurf for help

Experience has taught us that most field repairs are minor in nature. However, minor problems can become major problems quickly if not corrected. Small loose spots on glued seams extending a few inches to a foot or two are possible with these systems and are not unusual or cause for great concern; these small areas can generally be repaired by the Owner's maintenance staff.

Cuts, rips and tears in the surface that do not exceed six inches in length do not generally require a special trip by our service staff and can also be easily repaired by the Owner. These problems should be regarded as minor unless allowed to grow.

Seam Repairs

Your AstroTurf field is supplied with an AstroFusion Pro Repair Kit for minor seam repairs.

Your kit contains:

- ◆ Five (5) 100ml ProPak Pouches for small repairs
- ◆ Two (2) 600ml Cartridges and Static Mix Tubes for small-medium repairs

AstroFusion PRO SR is a temperature sensitive industrial adhesive. Work time is directly dependent on the temperature of the material before mixing. Gel time and cure time is directly dependent on ambient temperature and the substrate temperature.

Usable work time is between 1 min 30 sec to 2 min 30 sec at 70°F to 80°F. If exposed to temperatures over 90°F the open time will decrease to less than 30 seconds. Below 60°F the material becomes thicker and will be difficult to mix, working time will increase and the total cure time may lengthen considerably.

Store AstroFusion PRO SR in a temperature-controlled environment of 70°F to 80°F for best results. Consult your technical representative for further information and also refer to the AstroFusion PRO SR Technical Data Bulletin and Safety Data Sheet for further information.

Follow these instructions to repair small to medium-sized seam openings or loose inlay areas with the Static Mix Tube and Cartridge:

1. Clean/Dry repair area. Remove as much infill as possible. Be sure fabrics to be glued are free from loose rubber, dirt, old adhesive and other foreign matter, and are dry.
2. Install AstroFusion Pro cartridge into dispensing gun.
3. Remove plug from tip of AstroFusion Pro Cartridge.
4. Install static mix tube onto AstroFusion Pro Cartridge.
5. Squeeze handle slowly to begin dispensing adhesive, making sure both tubes dispense evenly.
6. Dispense promptly and evenly, in a zig zag manner, maintaining a roughly 1/4" bead width.
7. Reaffix displaced material, taking care not to trap fibers.
8. Apply firm, even pressure to ensure proper adhesion.
9. Replace the infill, being sure to work it into the area and creating an even level.

OTHER TYPICAL REPAIRS

Cigarette Burns

Cigarettes should be banned from being on or around the turf. However, in the event that a cigarette burn occurs, generally, a cigarette will fuse the tips of the fibers. A hard spot, comprised of fused fibers, will result. Use a metal brush (such as is used to remove paint) and brush the spot vigorously to separate fibers. If brushing the turf does not break the fibers apart, take a razor knife and cut the fused area into smaller sections and then brush again.

ANY DAMAGE TO THE TURF SYSTEM, UNDUE LOSS OF RUBBER, VANDALIZED AREAS OR DISCOLORATIONS SHOULD BE REPORTED IMMEDIATELY TO ASTROTURF CORPORATION TURF HELP AT 866-951-8873 OR BY EMAIL AT MAINTENANCE@ASTROTURF.COM.



Remove infill



Install static mix tube



Apply adhesive with 1/4" bead width



Reaffix turf, hold, and replace infill

Approved Maintenance Providers:

AstroTurf fields must be maintained by Owners using the procedures and equipment detailed herein. Upon completion of the initial installation of an AstroTurf field, AstroTurf technicians will train those who are to maintain the field. In particular, training will focus on the proper methods and equipment to groom and sweep a synthetic field, as these are the most important functions to keep the field in good condition.

In addition, AstroTurf highly recommends that Owners purchase one of AstroTurf's Maintain the Game packages for annual or bi-annual professional care and deep cleaning. The benefits of deep grooming and cleaning with specialized equipment are appreciable. The Maintain the Game programs are performed by certified crews trained in the latest methods of field deep cleaning.

Any maintenance program performed by non-approved maintenance providers without the prior approval of AstroTurf may void the AstroTurf warranty.

IF YOU HAVE FURTHER QUESTIONS, CONTACT ASTROTURF AT MAINTENANCE@ASTROTURF.COM OR CALL TURF HELP AT 866-951-8873. ASTROTURF CORPORATION EMPLOYS SEASONED SERVICE PROFESSIONALS TO ASSIST YOU WITH ANY PROBLEMS.



AstroTurf's Maintain the Game Service Packages use sophisticated equipment to ensure fields perform longer.

DIAMOND SERIES BASEBALL / SOFTBALL SYSTEMS

AstroTurf Diamond Series synthetic turf systems have earned a high reputation for natural playability in the baseball and softball worlds.

To keep your field in top condition for as long as possible, we recommend that you refer to Part III (Care of Infilled Fields). This section supplements Part III, with instructions designed to help you combat the unique wear and tear exerted on baseball and softball fields.

BEST PRACTICES FOR BASEBALL AND SOFTBALL FIELDS

- ◆ A hitting mat should be used in the batters' and catcher's boxes during batting practice and all non-game/scrimmage situations.
- ◆ Protective matting should be used in the catcher's area of bull pens.
- ◆ A pitching platform should be used by the pitcher during batting practice.
- ◆ Protective matting is to be used by fungo hitters.
- ◆ You should mandate plastic or molded spikes during summer showcase tournaments.
- ◆ Rotate and flip the batters' boxes frequently to spread use. (See below for further information).
- ◆ **The infill level in each batter's box, particularly where the back foot is planted, should be checked after every game and infill should be redistributed or added from Attic Stock.**
- ◆ **The infill level around First Base, particularly where the first baseman plants the right foot while holding a runner, should be checked after every game and infill should be redistributed or added.**
- ◆ If you have a natural clay mound or infield, special attention should be paid to preventing buildup of clay in the surrounding turf.

HOT SPOTS TO WATCH

Refer to the diagrams to the right for a survey of the most common "high wear areas" of baseball and softball fields. These areas experience the most use, which leads to infill displacement and excessive mechanical wear imparted to the fiber. The most important thing you can do to maximize your field's lifespan and maintain its performance over time is ensure that you maintain adequate infill levels in these areas. Without adequate infill levels you will see exponential degradation, as the fibers receive higher UV and cleat exposure.

Check these areas after every game and either redistribute infill or replace infill from your Attic Stock supply of 14-30 rubber. Use a Grandi Brush (available on Amazon or through big box retailers) to work infill into the turf.

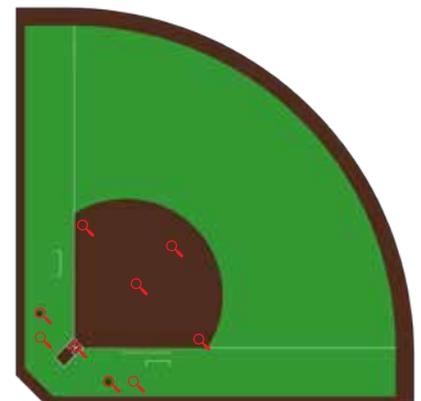
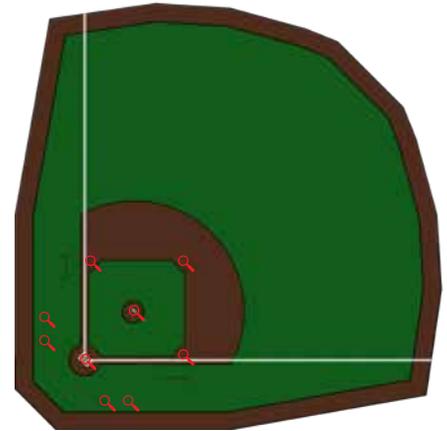
BATTERS' BOXES DIY REPLACEMENT INSTRUCTIONS

Your field comes with eight sets of pre-assembled batters' and catcher's boxes. Rotate and flip the batters' boxes frequently to spread use. As soon as you start to see a larger degree of wear appear in the right-handed batter's box, move it to the left-handed batter's box and rotate it 180°.

Move the left-handed batter's box to the right-handed area and rotate it 180° as well. Repeat this process until the batters' and catcher's boxes need to be replaced with a new set. This process will help to slow the degradation of these high-wear areas.

When replacing a batter's box or catcher's box:

1. Vacuum the infill as much as possible from the turf. Pull the corner of the box up to separate the hook-and-loop seam.
2. Peel the box out.
3. Fully vacuum the hook-and-loop seam. Any infill particles or debris that remain will compromise the integrity of the hook-and-loop seam once the new box is reinstalled.
4. Replace with new box.
5. Replace infill with your Attic Stock supply of 14-30 rubber.



Removable panels



Clay mound that has not been maintained.

MOUNDS AND SYNTHETIC TURF

Clay Mounds:

Special attention should be paid to clay mounds on a synthetic turf field. Be sure to prevent buildup of clay in the turf surrounding the mound. This will require daily attention. Cover the mound with a tarp as needed. To remove clay from the turf:

1. Vacuum the clay from the turf.
2. A stiff bristled brush can be used to clean the turf. Do not use a power-washer.
3. Replace rubber infill from Attic Stock.

Synthetic Mounds:

Your field comes with eight replacement sections for your mound, preassembled with hook-and-loop seam. Be sure to maintain adequate infill levels, especially in the push-off and landing areas. When it is time to replace the turf on the mound:

1. Vacuum the infill as much as possible from the turf.
2. Pull the corner of the turf up to separate the hook-and-loop seam.
3. Peel the turf out.
4. Fully vacuum the hook-and-loop seam. Any infill particles or debris that remain will compromise the integrity of the hook-and-loop seam once the new box is reinstalled.
5. Replace with new turf.
6. Replace infill with your Attic Stock supply of 14-30 rubber.

GROOMING PROTOCOLS

Please refer to Part III for general grooming information. This section of your manual provides maintenance guidelines specific to the unique needs of baseball and softball fields.

BASEBALL FIELD GROOMING

Settings and Methods:

On baseball fields, the turf areas that replicate grass areas have different pile heights than those areas that replicate clay. Therefore, you should groom the grass areas at one time, and then change the setting of the groomer to accommodate the clay area. The tips of the bristles should penetrate the infill by no more than 1/8" to 1/4". **Setting the groomer too deep can cause undue damage to the fibers.** If you are unsure how deep to set your groomer, do not proceed.

CONTACT ASTROTURF CORPORATION FOR HELP. ALSO, DO NOT MAKE TIGHT TURNS WHILE GROOMING, AS THAT MAY CAUSE WRINKLES IN THE TURF (ESPECIALLY IF THE GROOMER IS SET TOO LOW).

Grooming Patterns:

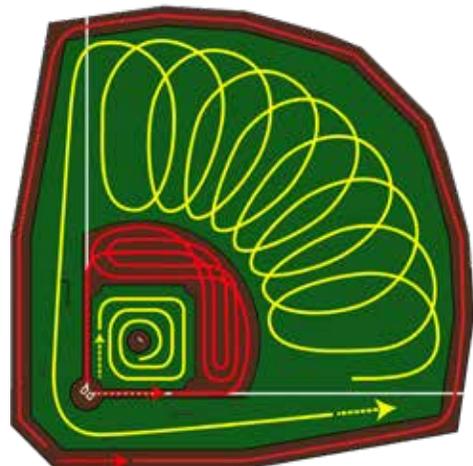
Vary the grooming patterns each time you maintain the field. This will help to brush the fibers in different directions to help them stand upright over time. For example, if you begin your first grooming session on the first baseline, you should begin along the third base line during the second grooming.

1. Begin with the clay areas:

- a. Start on the first baseline outside of the home plate circle and move toward the infield skinned area.
- b. Drag the groomer in a "Figure 8" pattern over the arc of the infield skinned area from first base to third base. Use enough passes to provide coverage to the entire area.
- c. Drag the groomer back along the third baseline toward Home, stopping at the home plate circle. Do not use your professional grooming equipment in the home plate circle. (Instead, use only a stiff bristled brush to maintain infill levels in this area).
- d. Drive one direction around the entire warning track.

2. Groom the grass areas:

- a. *Outfield:*
 - i. Start the outfield just off of first base. Move outward along the foul line toward the warning track.
 - ii. Make a wide turn (about 10 yards) and head back toward the infield.
 - iii. Just before the infield, make another wide turn back toward the right field foul line and continue back toward the outfield fence one groomer's width out.
 - iv. Continue these wide overlapping circles across the entire outfield.
- b. *Infield Grass:*
 - i. Begin just above the home plate circle and make concentric circles spiraling inward toward the Pitcher's Mound, passing the groomer over the next ungroomed swath during each turn. Driving quickly, making sharp turns, or setting the groomer too low can damage the turf's seams.
- c. *Foul Territories:*
 - i. Make passes through the foul territory.



SOFTBALL FIELD GROOMING

Settings and Methods:

On softball fields, the turf areas that replicate grass areas have different pile heights than those areas that replicate clay. Therefore, you should groom the infield at one time, and then change the setting of the groomer to accommodate the outfield and foul areas. The tips of the bristles should penetrate the infill by no more than 1/8" to 1/4". **Setting the groomer too deep can cause undue damage to the fibers.** If you are unsure how deep to set your groomer, do not proceed. Contact AstroTurf Corporation for help. Also, do not make tight turns while grooming, as that may cause wrinkles in the turf (especially if the groomer is set too low).

If you have a traditional clay infield, you should maintain that in the traditional manner. Be sure to monitor the edge of the outfield turf to prevent clay buildup in this area. It can be very difficult to clean the clay out of the turf if allowed to build up.

TO CLEAN CLAY OUT OF THE TURF:

1. Vacuum the clay from the turf.
2. A stiff bristled brush can be used to clean the turf. Do not use a power-washer.
3. Replace rubber infill from Attic Stock.

Grooming Patterns:

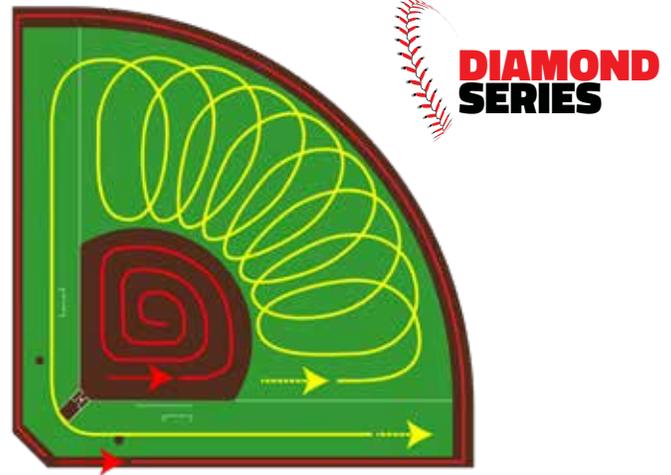
Vary the grooming patterns each time you maintain the field. This will help to brush the fibers in different directions to help them stand upright over time. For example, if you use clockwise circles on the infield during your first grooming session, you should make counterclockwise circles during the second grooming.

1. Begin with the infield:

- a. Set groomer depth to penetrate no more than 1/8" - 1/4" into the infill layer. Begin just above the Home Plate Area and make concentric circles, spiraling inward toward the Pitching Circle, passing the groomer over the next ungroomed swath during each turn. Driving quickly, making sharp turns, or setting the groomer too low can damage the turf's seams.
- b. Stop when you reach the Pitching Circle. Do not use professional grooming equipment on the Pitching Circle.
- c. Drive one direction around the entire warning track.

2. Groom the grass areas:

- a. *Outfield:*
 - i. Start the outfield just off of first base. Move outward along the foul line toward the warning track.
 - ii. Make a wide turn (about 10 yards) and head back toward the infield.
 - iii. Just before the infield, make another wide turn back toward the right field foul line and continue back toward the outfield fence one groomer's width out.
 - iv. Continue these wide overlapping circles across the entire outfield.
- b. *Foul Territories:*
 - i. Make passes through the foul territory.



????????



colby softball



glenville

ORGANIC / MINERAL INFILLED SURFACES



Organic infill



Mendota High School - Mendota, CA



Water reel



Van Nuys Sherman Oaks Park - LA, CA

In recent years organic and mineral infill particles have gained popularity. Options include coconut/cork materials and ZChill zeolite infill. These infill systems often provide a more natural feel underfoot and reduced temperatures due to water evaporation.

These materials do require specialized maintenance techniques in order to keep them in good, playable condition for the life of the warranty. This chapter will outline special requirements for natural (organic and mineral) filled surfaces, over and above the standard practices outlined in Part III (Care of Infilled Fields). If you fail to perform adequate maintenance, you may void your warranty.



ORGANIC INFILLED FIELDS (COCONUT/CORK BLEND)

Any field infilled with organic materials like cork, coconut or a blend thereof, will require top-offs, watering and decompaction.

Top-offs: The organic materials tend to break down over time. Therefore, you should plan on a yearly top-off for budgeting purposes. Weather, climate and usage will dictate actual frequency. Contact AstroTurf to schedule a yearly inspection to determine whether a top-off is needed.

Watering: Organic infills need to be kept damp in order to remain viable. (If allowed to become too dry, the infill can cake, harden and break down). You should aim to maintain a 20% moisture level in the infill. Arid climates and high temperatures will require more water than cool, damp climates. As such, a Kifko water reel or automated irrigation system may be required.

Decompaction: Please refer to Part III for general grooming information. Please note that the organic infills may compact over time and may require periodic decompaction using a TCA1400 groomer with a tine attachment.



CORK INFILLED FIELDS

Some fields use a top layer or full depth level of cork materials as infill. These fields also require specialized maintenance.

Top-offs: Cork infill is very lightweight and may blow or float away with weather and usage. Therefore, you should plan on a yearly top-off for budgeting purposes. Weather, climate and usage will dictate actual frequency. Contact AstroTurf to schedule a yearly inspection to determine whether a top-off is needed.

Watering: Cork infills may be watered but do not require water to remain viable like organic infill. Watering is recommended to reduce static during warm months. A Kifko water reel or automated irrigation system may be used.

Decompaction: Please refer to Part III for general grooming information. Please note that the cork infills may compact over time and may require periodic decompaction using a TCA1400 groomer with a tine attachment.



ZCHILL (ZEOLITE) INFILLED FIELDS

Fields that utilize ZChill zeolite infill typically require less maintenance than organic infills because they do not require water for system viability.

Top-offs: Budget one top-off per warranty period. Monitor the field and schedule a site visit from AstroTurf maintenance professionals if you think you might need one.

Watering: Unlike organic infills, ZChill does not require water to remain viable. It does absorb and slowly release water to cool the field. As such, a water reel or automated irrigation system may be desired but is not required.

NOTE: Other "alternative" infills, including Nike Grind, TPE, EPDM, and SuperNatural Hemp EPDM do not require maintenance that is substantially different from maintenance performed on traditional SBR fields. Therefore, please refer to Part III.

FIELD HOCKEY SYSTEMS

AstroTurf has earned a world-renowned reputation for quality field hockey pitches. The non-filled nature of field hockey fields and these pitches' tight tolerances are perfect for the game. They lend themselves to a fast speed of play and enhance skill development. These pitches are unique and therefore special guidelines should be followed. **For this reason, do NOT follow instructions in Part III if you have a non-filled hockey field.** Those instructions apply only to filled surfaces. Instead refer to this chapter ONLY to keep your non-filled field hockey pitch (either AstroTurf® or Poligras® branded) in top condition..



East Pennsboro HS - Enola, PA

LOAD LIMITS

Certain precautions under heavy loads are necessary. Protection of the shock-absorbing pad underneath the turf is especially important. PVC under-pads are composite materials that contain nitrogen, which can diffuse through the cell walls resulting in marginal loss of volume and pad thickness, and decreased shock-absorbing capability. The cell walls themselves are not affected unless the overload is severe enough to cause separation or rupture.

Elastic-layer (E-Layer®) systems have somewhat higher resistance to loads and are able to recover quickly once a vehicle, stage, or equipment item has been removed from the field surface. However, due to slightly weaker adhesive bond between the turf and the E-Layer, load limits for AstroTurf fields with elastic layers are similar to those with PVC pads.

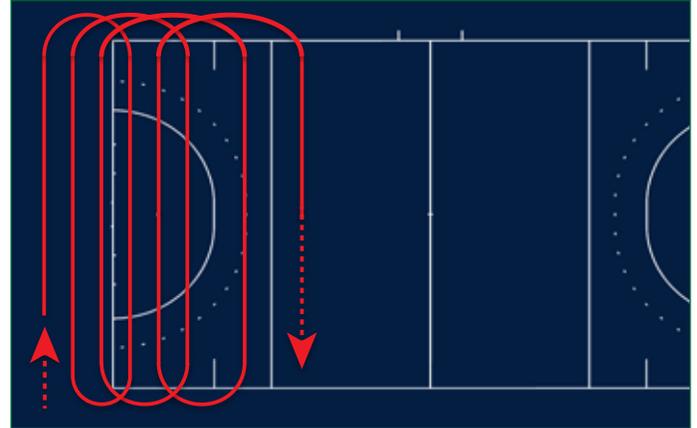
As a general rule, AstroTurf recommends that no long term static load of more than 2 psi (300lb. / sq. ft.) nor any transient rolling load of more than 35 psi, be applied to the AstroTurf surface. The loading of a pneumatic tired vehicle is approximately equal to the air pressure in the tires. It is good practice to restrict any long term static loading on the field; if you must have static loads, keep the weight to a minimum and time on the surface as brief as possible. Sheets of 3/4" exterior grade plywood or sections of 2" x 10" lumber may be placed on the field surface to spread heavy static loads and minimize the risk of damage to the turf system. When using any type of wood spreader, place a clean tarp or polyethylene sheeting on the turf surface to protect it and keep it clean. Some wood products contain preservatives that can leach out and stain or damage the turf system.

REGULAR CARE

The only regular care that non-filled field owners should undertake is regular sweeping to pick up debris, as well as cleaning/stain removal as needed. **DO NOT USE MAINTENANCE EQUIPMENT THAT PENETRATES OR SCRAPES THE SURFACE.**

Only brushes that are set to barely clip the tops of the fibers should be used. Never scrape or dig into the surface, as this can damage your field.

GROOMING AND SWEEPING PROTOCOLS:



Field Hockey Sweeping Pattern

Sweeping:

All fields should be swept as needed. Sweeping is the process of using approved maintenance equipment to remove debris from the field. This includes trash, leaves, sunflower seeds and other small bits of litter. A magnet can be attached to collect ferrous materials like cleats, hairpins, etc.

Equipment:

AstroTurf recommends the use of an SMG TurfScout field sweeper. The TurfScout features a wheel drive that operates independently from any hydraulic or power shaft drives. Therefore, the TurfScout can be pulled by various vehicles such as small compact tractors or quads. The working depth can be precisely set and locked via two adjusting bolts. Alternatively, you can purchase a tow-behind lawn sweeper by John Deere or AgriFab from most lawn-care retailers.

Method:

An AstroTurf representative will provide an in-person training session to instruct you how to use your maintenance equipment. When sweeping, the brushes of the maintenance equipment should be set at a height that barely clips the tips of the fibers (for non-filled fields). Sweeping should be done when the field is dry.

1. Attach the sweeper to a motorized maintenance vehicle (e.g., Gator).
2. **Adjust the bristles so that they barely clip the fibers.**
3. Make slow, careful passes from sideline to sideline in overlapping circles, ensuring that the sweeper makes one pass over each area of the field.
4. Empty the debris collector as needed.



AgriFab, available from lawn-care retailers.

Sweeping Pattern:

Make passes from sideline to sideline in overlapping circles, ensuring that the sweeper makes one pass over each area of the field.

Grooming:

Non-filled hockey fields should not be groomed by owners. Typically grooming is required for filled surfaces to even out the levels of the infill. Since non-filled fields do not have infill, they do not require regular “grooming”. Do not penetrate the field with maintenance equipment, as it can cause damage to the surface.

CLEANING AND STAIN REMOVAL

GENERAL INSTRUCTIONS - 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 residue with a spatula or paint scraper, and blot up any excess liquids with paper towels or a dry absorbent such as Kitty Litter or Fuller’s Earth. Dry absorbents can then be swept or vacuumed up.

PROCEDURES - AstroTurf® nylon surfaces have good resistance to staining. However, the turf surface is just one part of a system of components designed for overall field performance. Some cleaning agents that are safe for use on nylon may be harmful to other components of the system. Therefore, cleaning agents are grouped into two classes: (1) those that can be applied in liberal amounts directly onto the turf surface and, (2) those which must be applied carefully - normally by rubbing a cloth soaked with the cleaning product to minimize penetration of potentially harmful agents that could migrate below the turf surface and cause damage.

DETERGENT SOLUTIONS

The first group of cleaners, which can generally be applied without special precautions, are the following:

A warm, mild solution of household detergent in water (e.g., Tide, ALL, or any detergent recommended for fine fabrics). Use a mixture of approximately five ounces of detergent per one gallon of water. This solution should be used to remove the following stains plus others of a similar type.

Stains removed with detergent solutions

Coffee • Tea • Juice • Soft Drinks • Cocoa • Water Color • Milk • Ice Cream • Ketchup • Mustard • Beer • Margarine • Butter • Food Coloring

If you are unable to completely clean the stains listed above with detergent and water, a three percent solution of household ammonia in water (as described above) is normally effective.

After cleaning with the ammonia and water solution, thoroughly flush the surface with clean, cold water.

MINERAL SPIRITS / DRY CLEANING FLUID

The second group of cleaners, which must be applied sparingly and with care to avoid penetration below the turf surface, include mineral spirits or a grease spot remover such as perchloroethylene (dry-cleaning fluid). In general, cleaners of this type are suitable for cleaning nylon carpets, but carefully read the instructions on the container for specific information and precautions prior to using any product.

Cleaning products in this category are normally effective with the following stains:

Stains removed with mineral spirits or dry-cleaning fluid

Asphalt • Ballpoint Ink • Shoe Polish • Cooking Oil • Crayons • Lipstick • Motor Oil & Grease • Rubber Cleat Marks

CAUTION: Mineral spirits and other petroleum-based solvents are flammable. Do not smoke or allow open flames near areas that are being cleaned, and be sure that the area is well-ventilated. In addition, excessive use of petrochemicals may damage underlayment materials such as asphalt or E-Layer® so care should be taken not to flood the area under repair. Use sparingly.

Blood, vomit, animal waste and other contaminants must be removed from the field surface with paper towels or a dry absorbent, and the area treated with a disinfectant or enzymatic cleaning agent. Mix the cleaner according to the manufacturer’s instructions and apply to the surface with a low-pressure sprayer until thoroughly wet. Allow the surface to remain wet for at least 10 minutes before rinsing thoroughly with clean water.

Mildew, fungus or mold spots can be removed with a solution of one-percent hydrogen peroxide and water. Once discovered, mold and algae spots should be treated promptly; if allowed to become established, removing such growth can be very difficult. Thoroughly flush the area with water after application.

Avoid the use of Clorox, any solution containing bleach, highly caustic detergent cleaners (with pH above 9), and highly acidic cleaners (with pH below 4) on any AstroTurf® surface, as damage and discoloration to the turf and other components of the system may occur.

FOR MORE DIFFICULT STAINS, IT MAY BE NECESSARY TO CLEAN WITH BOTH A DETERGENT SOLUTION AND DRY-CLEANING FLUID. FOR EXTREMELY DIFFICULT STAINS SUCH AS PAINT, SHOE DYE, ADHESIVE, ETC., IT IS RECOMMENDED THAT YOU CALL ASTROTURF AT 800-951-8873 OR EMAIL US AT: MAINTENANCE@ASTROTURF.COM.

WASHING THE FIELD (UNFILLED SYSTEMS)

It is a good practice to wash your field annually. This will remove soil and pollution from the field and keep it in top condition. We recommend that an annual deep cleaning be performed only by professionals. Flooding the field or utilizing a high pressure hose may damage the underlayment or sub-base. As such, please contact AstroTurf at 866-951-8873 or maintenance@astroturf.com to schedule a certified AstroTurf Crew to perform a deep cleaning.

SNOW AND ICE MANAGEMENT

Please refer to Part II for information on snow and ice removal. **Please take great care not to drag the surface with heavy plows or dig into the field in any way.**

REPAIRS

If a non-filled hockey field is damaged and needs repair, please contact AstroTurf Corporation to schedule an inspection and repair.

Non-filled field owners should never attempt to repair their own fields.

If repairs are made to non-filled fields by anyone other than a professional, they may create more damage and disruption to the planarity required of a non-filled field.

All seams should be regularly inspected carefully for looseness. All panels of turf should be inspected for damage (rips, tears, burns, etc.). Make a sketch of the field and note on the sketch each area that needs attention.

Because most AstroTurf® fields are used heavily in the fall and winter months, a good maintenance practice is to thoroughly inspect the field in early spring and make repairs to the surface in the spring. If a service visit must be scheduled, we ask that such a request be made as soon as possible in the spring so that the visit may coincide with a scheduled service trip to other fields in your area or in conjunction with the installation of a new field in your area.



Professional washing the field



Professional maintenance



2016 Olympics - Rio de Janeiro, Brazil



College of the Holy Cross - Worcester, MA

INDOOR FIELDS

Synthetic turf is most often the only feasible solution for indoor applications. Due to the lack of rain and sunlight, as well as concentrated use, some special considerations should be paid.

STAIN REMOVAL

A. "Water-Borne" Residues

Most "stains" commonly associated with playing fields can be classified as "water-borne" stains. These stains are best removed using a warm, mild solution of granular household detergent (non-abrasive).

Typical Water-Borne Stains

Acid • Alcohol • Alkali • Beer • Blood Chocolate • Cocoa • Coffee • Cola • Dye • Food Coloring • Fruit Juice • Gatorade Glue • Ice Cream • Latex Paint • Milk • Mustard • Ketchup • Tea • Urine • Water Colors

To remove water-borne stains:

1. Brush the residue with a stiff fiber brush (not wire).
2. Scrub the area with a small amount of soap and water. A three percent (3%) solution of ammonia in water may be used in lieu of household detergent for more stubborn residues or stains.
3. Dry with absorbent towel, if necessary. If too much water is accidentally used, you may use a wet-dry vacuum to suction excess water. Be sure to replace any removed infill with Attic Stock (if applicable).

B. Persistent Oil Based Stains: Follow directions below.

CAUTION! MINERAL SPIRITS, METHYL-ETHYL-KETONE (MEK) AND OTHER PETROLEUM-BASED SOLVENTS ARE HIGHLY FLAMMABLE. DO NOT SMOKE OR PERMIT OPEN FLAMES NEAR CONTAINERS OR NEAR SOLUTION WHEN IN USE.

C. Chewing Gum

Spray with Freon and scrape to remove residue (available in aerosol packs from carpet cleaning suppliers—or use dry ice and scrape).

Crayon, furniture stain, lipstick, metal polish, cooking oil, rubber cleat marks, shoe polish, suntan oil, sunscreen, ballpoint pen ink.	Sponge with perchloroethylene (dry cleaning solution). Blot with absorbent towels.
Oil paints (do not use for field markings).	Blot immediately. Sponge with turpentine or paint remover (apply sparingly). Re-sponge with cold water to remove detergent.
Nail polish.	Sponge with acetone.
Paraffin wax.	Scrape excess. Sponge with perchloroethylene (dry cleaning solution).
Tar and asphalt.	Scrape excess. Sponge with perchloroethylene (dry cleaning solution).

D. Fungus and Mold Spots

A one-percent solution of hydrogen peroxide in water can be used. Sponge on. Use as sparingly as possible and rinse with water. Do not oversaturate if possible. A wet-dry vacuum may be used to suction excess water. Be sure to replace any removed infill with Attic Stock (if applicable).

CAUTION! DO NOT USE HIGH-PRESSURE WATER SPRAY WITH STREAM FORCE IN EXCESS OF 300 PSI AS THIS CAN SEVERELY DAMAGE THE TURF.

ANTIMICROBIAL PROTECTION

Because indoor fields are not exposed to sunlight or rain, we recommend professional application of AstroShield® antimicrobial agents on the field.

CONTACT ASTROTURF'S AFTERCARE TEAM TO SCHEDULE AN EVALUATION AND LEARN ABOUT YOUR MAINTENANCE OPTIONS. EMAIL MAINTENANCE@ASTROTURF.COM OR CALL 866-951-8873.

PAINTING

AstroTurf recommends preinstalled lines for indoor applications. Removing paint on indoor applications can be more difficult due to the lack of drainage inside.

If paint is necessary, the following guidelines apply:

- Do not use permanent paints or thick layers. These are more difficult to remove.
- Dilute the removable paint with four (4) ounces of dish soap per gallon of paint before application. This will make removal easier later.
- To remove, use small amounts of water and scrub with a stiff bristled (not wire) brush.
- If necessary, use a wet-dry vacuum to suction water from the turf. (If your field uses infill, be sure to replace any infill that has been removed with Attic Stock).



Colorado Rapids Youth Soccer Club - Aurora, CO

SWEEPING & GROOMING

Sweeping and grooming protocols will differ between infilled and non-filled systems.

INDOOR INFILLED SYSTEMS

Sweeping and grooming protocols are identical to those described for outdoor fields in Part III. See pages 14-17.

NOTE! Oftentimes athletes use the same door or path to enter and exit indoor fields over and over. Every effort should be made to vary traffic patterns on to and off of the field. Regardless, high wear areas should be treated like Hot Spots described in Part III.

INDOOR NON-FILLED SYSTEMS

If your system does not utilize infill, it has a shock absorbing pad underneath the turf. Your grooming and sweeping protocols will therefore focus on picking up debris and brushing/fluffing up the fibers rather than redistributing infill. All fields should be swept as needed. Sweeping is the process of using approved maintenance equipment to remove debris from the field. This includes trash, leaves, sunflower seeds and other small bits of litter. A magnet can be attached to collect ferrous materials like cleats, hairpins, etc.

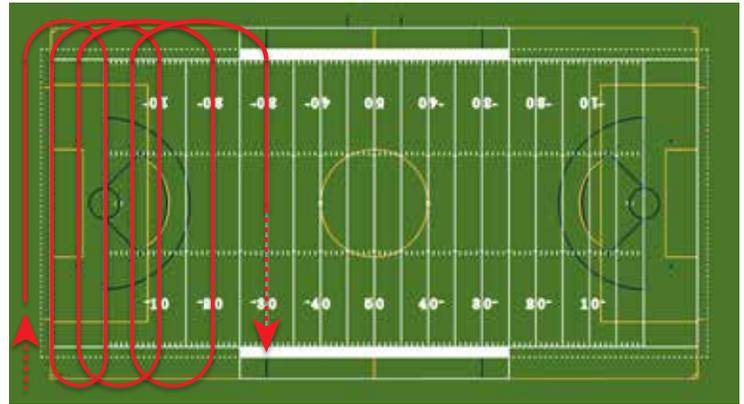
Equipment:

AstroTurf recommends use of the TCA1400 or TurfScout for sweeping the field of debris.

Method:

An AstroTurf representative will provide an in-person training session to instruct you how to use each piece of maintenance equipment. When sweeping, the brushes of the maintenance equipment should be set at a height that penetrates the fiber matrix by approximately 1/8".

1. Attach the sweeper to a motorized maintenance vehicle (e.g., Gator).
2. **Adjust the bristles so that they penetrate the fiber matrix by approximately 1/8".**
3. Close the sieve to prevent debris from falling back into the turf.
4. Start at one corner of the field and drive toward the other end of the field (drive sideline to sideline).
5. Make a wide turn near the limits of the turf, and turn again at the Goal Line to travel back to the side of the field where you began. (Use an equivalent distance on fields without American football lines).
6. Turn right again to travel along the sideline until you reach the inside edge of your initial pass.
7. Turn right again and travel to the opposite side of the field. Make another wide turn, this time turning back along the 10 Yard Line.
8. Continue with these wide, overlapping circles until you cover the entire field.
9. Empty the debris collector as needed.



Sweeping and Grooming Pattern



Auburn University - Auburn, AL



Flagg Rochelle Recreation Center - Rochelle, IL

MAINTAIN THE GAME AFTERCARE SERVICE PROGRAM

The inventor and leader of the synthetic turf market is proud to offer the industry's leading turf care program.

Our turf care team has developed two levels of care. Maintain the Game Aftercare is available in the Rhino and Rhino Pro packages to better meet the needs of each individual customer. Each are Certified packages performed under the direct supervision of an AstroTurf Field Maintenance Technician to ensure the desired results and customer satisfaction. Specialized equipment rejuvenates your field to improve playability, prolong the life of your field and deliver customized maintenance results.

ADDITIONAL MAINTENANCE SERVICES

- ◆ **Two Year Antimicrobial Protection**
Two year manufacturer guarantee for a bacteria-free field.
- ◆ **Field Hockey Cleaning / Maintenance**
Specially customized for field hockey surfaces.
- ◆ **Infill Removal**
Remove and dispose of existing infill from your sports surface to achieve proper infill depth.
- ◆ **Infill Top Off**
Add infill to your field to safely restore proper infill depth.
- ◆ **Baseball Mound Cleaning**
Remove dirt and debris surrounding your baseball mound.
- ◆ **Replacement of High Traffic Areas**
Removal of worn areas and reinstallation of turf and infill.

"We've been using Jimmy and his crew annually for probably ten years now. Our fields are now in their 13th year of use - and they still look great! We do the typical seam repair, infill redistribution and anti-bacteria treatment and it's well worth it! Jimmy's crew is always on time, efficient, polite and they usually finish ahead of schedule."

Debbie Shierling

K & L Arena - Quincy III Field - Quincy, IL

RHINO PACKAGE

Performed over the course of a full day by certified technicians, the Rhino Package is an excellent complement to regular maintenance. Experts will assess, groom and clean your surface using the latest equipment and techniques to protect your investment.

- ◆ **One full day of service**
- ◆ Inspection of the field to assess the condition of turf and infill and identify any problem areas.
- ◆ Multi-Level Field Vacuuming of the entire field, using the SMG Sport Champ, to perform extensive cleaning across the entire playing surface. This process is designed to pull debris and other unwanted material out of the top layer of infill.
- ◆ Grooming of the entire field, using AstroTurf approved equipment, to perform extensive fiber brushing.
- ◆ Magnetic Metal Collecting to remove foreign objects (ferrous materials) that can cause unsafe conditions.
- ◆ Professional Cleaning and removal of all unwanted materials and debris from the field area.
- ◆ Disinfectant Application of approved disinfectant to comply with your warranty.
- ◆ Review Maintenance Procedures to be performed by owner's personnel and make recommendations.
- ◆ Owner Sign Off will be obtained by AstroTurf Senior Field Maintenance Technician to ensure the owner is pleased with all the work performed during their Rhino package.

RHINO PRO PACKAGE

The Rhino Pro Package provides more intensive maintenance than the standard program. After assessing field condition, experts will perform a complete cleaning, de-compaction and grooming service to the entire field. Rhino Pro packages are performed over the course of two full days. This program is especially suitable for high use fields.

- ◆ **Two full days of service**
- ◆ Inspection of the field to assess the condition of turf and infill and identify any problem areas.
- ◆ Multi-Level Field Vacuuming of the entire field, using the SMG Sport Champ, to perform extensive cleaning across the entire playing surface. This process is designed to pull debris and other unwanted material out of the top layer of infill.
- ◆ Multi-Level De-Compaction of the infill with the SMG Sport Champ to help assure safe playability and improve G-MAX performance.
- ◆ Extensive Grooming using the SMG Sport Champ to help lift fibers and level out the infill depth across the entire playing surface.
- ◆ Magnetic Metal Collecting to remove foreign objects (ferrous materials) that can cause unsafe conditions.
- ◆ Disinfectant Application of approved disinfectant to comply with your warranty.
- ◆ Review Maintenance Procedures to be performed by owner's personnel and make recommendations.
- ◆ Owner Sign Off will be obtained to ensure the owner is pleased with all the work performed during their Rhino Pro package.



Specialized and Professional SportChamp Equipment



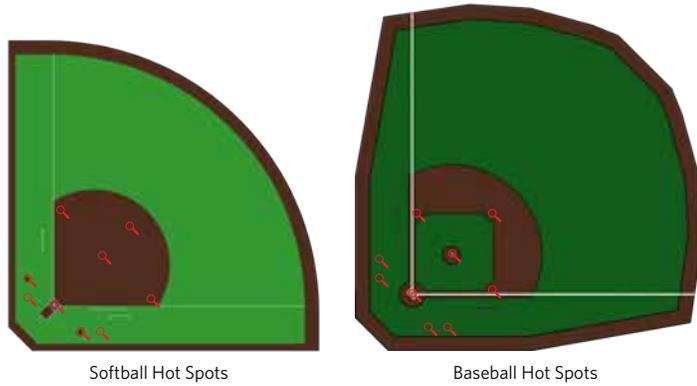
Crandall HS - Crandall, TX



Specialized and Professional SportChamp Equipment

HOT SPOTS AT A GLANCE

Infill moves with play and weather, getting kicked out from high use areas to less frequently used areas. Because most AstroTurf fields utilize infill particles to provide shock absorption during play, it is critical for players' safety to maintain a level, adequately filled turf matrix that is uniform in depth throughout the field. A uniform infill layer will also directly impact the lifespan of the field. (Fields that have uneven infill levels experience higher UV exposure in high wear areas, which leads to premature wear and degradation).

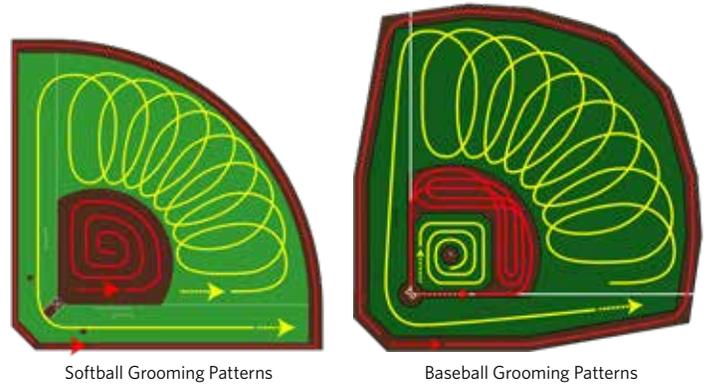


Softball Hot Spots

Baseball Hot Spots

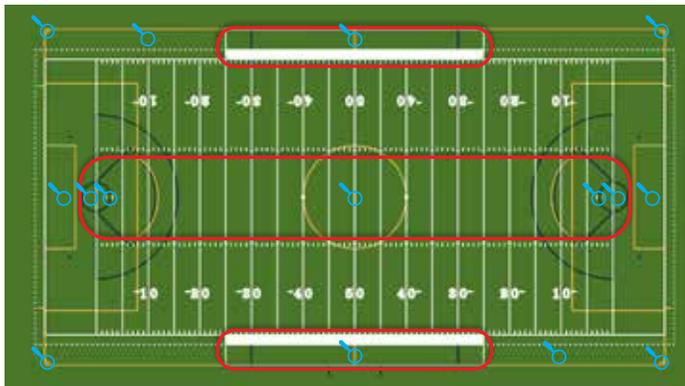
GROOMING/SWEEPING PROTOCOLS

Vary the grooming/sweeping patterns each time you maintain the field. This will help to brush the fibers in different directions to help them stand upright over time. For example, if you begin your first grooming session on the first baseline, you should begin along the third base line during the second grooming.

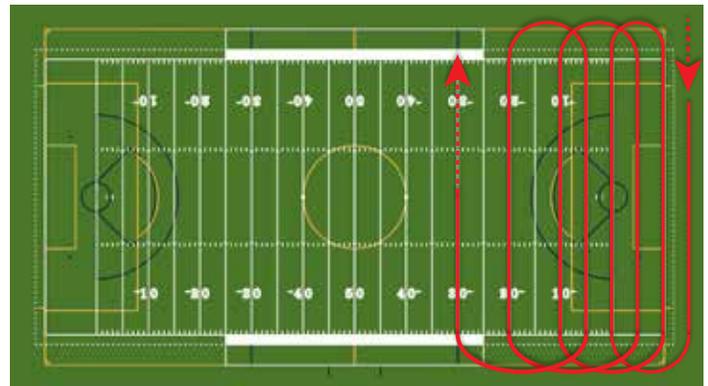


Softball Grooming Patterns

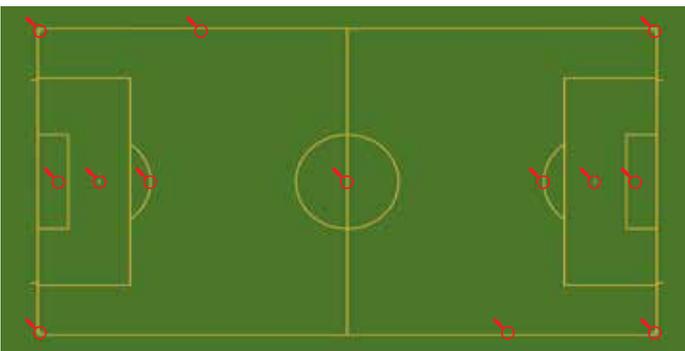
Baseball Grooming Patterns



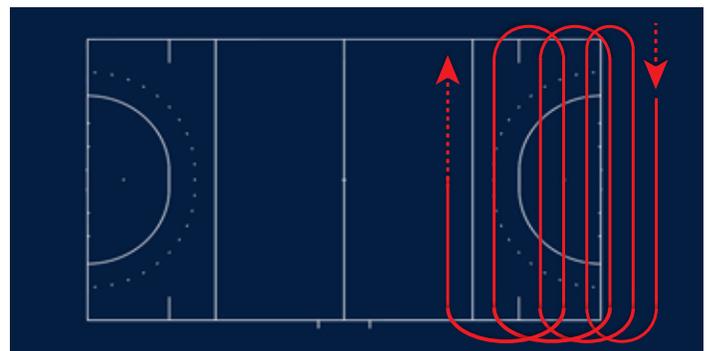
Multipurpose Hot Spots



Multipurpose Sweeping Patterns



Soccer Hot Spots



Field Hockey Sweeping Pattern

PLEASE VISIT:
ASTROTURF.COM/OWNERSBOX

TO CLAIM YOUR FIELD! INSIDE THE OWNER'S BOX, YOU'LL BE ABLE TO LOG YOUR MAINTENANCE, REQUEST PROFESSIONAL SERVICES, REQUEST REPAIRS, VIEW AND DOWNLOAD CLOSE-OUT DOCUMENTS, AND MORE.



INTRODUCTION

Maintenance of your athletic track surface is essential to ensure quality performance for athletes, minimize potential for injury while maintaining appearance and long-term durability. Establishing and executing an appropriate and timely maintenance regime will help to ensure your running track is kept in top condition.

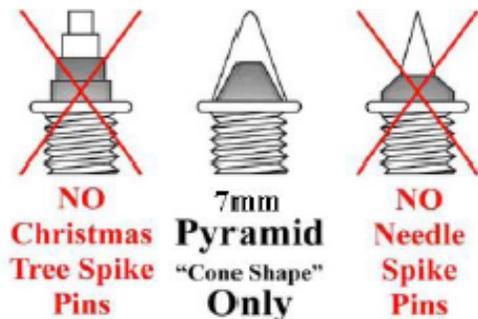
This manual will assist you in getting the maximum value from your Rekortan® surface Installed by Rekortan. You will achieve the expected performance and longevity of the surface by:

1. Preventing unsuitable on or around the track surface
2. Not allowing heavy vehicles to drive on or across the surface
3. Leaving excessive loads on the track for extended periods
4. Allowing athletes to undertake in appropriate activity or utilize unsuitable equipment
5. Repairing any damage at the earliest possible opportunity
6. Contact Rekortan should any uncertainty exists on a proposed activity that could raise concern cause damage

We expect that many of the commonly asked questions will be answered in this manual. Should you require further information, please contact our head office for assistance.

SPIKE USE

Rekortan only permits the use of 'Pyramid' spikes (also called compression tiered spikes) to be used on the track for athletic activity.



These spikes will provide ideal performance for athletes on the Rekortan® surface and result in less damage due to flatter profile and therefore lower point load. They are designed to compress the surface rather than dig in, providing energy restitution to the athlete, especially for sprinting events. Waffle type soles, cleats or hard soled shoes should not be used in competition on the track.

NOTE: 'Needle' or 'Pin' spikes are strictly not allowed, and usage of these spikes will affect your warranty.

Maximum length spikes are essential to performance and track longevity.

- Running activity maximum of 1/4"
- Throw and Jump activity maximum of 3/8"

Supervision and attention of activity at start locations is strongly recommended to ensure minimization of damage from starting blocks. Rekortan offers specific recommendations due to the variety of track systems and footwear available. Any spikes worn should be of the above nature and we strongly encourage you to advise all athletes, coaches and facility users of our recommendation.

Start locations for sprinting activity are subjected to high wear and as such will require some rectification work prior to full resurfacing of the track. Control of the activity in these locations and lateral thinking by moving regular 'sprint start training activity' to less used areas of the track (rear straight, behind marshalling area at 100m hurdle start, etc.) will reduce the need for expensive part-resurfacing works during the mid-stages of the track life.

USTAF SPIKE STANDARD

Athletes may only use pyramid, one or compression spikes that are no larger than 7mm (1/4") in length. High jumpers and javelin throwers may use a 9 mm or shorter spikes. Spikes will be checked in Athlete Control and those not meeting the regulations must be replaced by the athlete. No Pin or Christmas tree spikes will be allowed on the competition, warm-up or practice tracks. www.ustaf.org

ADDITIONAL TRACK MARKS



Should you require additional markings on the surface, please consult with Rekortan prior to undertaking any painting. An incorrect application could result in unwanted permanent markings, while use of an improper paint could result in damage to the track surface.

MINIMIZE SURFACE DAMAGE

Through regular athletic competition the inside lanes are subjected to more wear than the remainder of the track. To help spread usage across the entire track surface and prevent premature wear of the inner lanes, training access to the 1st and 2nd lanes should be restricted.

This can be done effectively with lockable barriers installed adjacent to the inside of the track. If these cannot be installed, then temporary measures such as traffic cones or movable barriers should be used to regulate track usage during training activity.

Many athletic tracks are installed with additional sprint facilities incorporated on the rear straight. To reduce stress on the main sprint event starting positions, sprint training should be conducted on the rear straight, where possible.

TRAFFIC MOVEMENT & LOADING

Vehicles should not be allowed to be driven on or across the track surface.

Your track surface and warranty will be affected by:

- Oil or fuel spills or drips onto the surface.
- Sudden starting or twisting of wheels under load.
- Excess traffic loading

If a vehicle is needed to cross the track, the vehicle must not allow oil, fuel or other fluid leaks onto the track surface. If such a leak does occur, wash the area immediately with a neutral pH, non-foaming detergent and flush thoroughly with cold water.

With regard to moving vehicles and weight the following applies:

- Use vehicles with pneumatic tires ONLY
- Total weight of the loaded vehicle must NOT exceed 4 ton
- Average load per wheel must NOT exceed 1 ton
- Where any uncertainty exists with a particular vehicle type or loading, dual layers of plywood must be laid in a brick-bond pattern to spread the load and eliminate point loading.
- Vehicle operators must be cautioned against:
 - » Sudden twisting or turning of wheels.
 - » Quick starting or stopping on the surface.
 - » Planks or rails must be used when taking a loaded vehicle across the internal drainage always, to avoid damage to this lightweight structure.
 - » The raised aluminum track curbing is not trafficable and curbing sections must be removed to enable vehicle access across the track, when required.
 - » It is highly recommended an access point and path is determined prior to crossing the track edge.
- Avoid heavy use of your track in temperatures above 86o F/ 30o C
- Use of wheeled vehicles (bicycles, two wheelers, three wheelers, four wheelers, strollers, roller blades, etc.) could damage the track surface and are not recommended on the track surface.
- Provide protection, such as plywood in any area subject to equipment traffic and in area of high pedestrian traffic. Indoor-outdoor carpet serves this purpose in area of light pedestrian traffic, football players, cheerleaders, etc. This is not a permanent solution and if left in place for long periods of time, it may leave stains on the track surface.
- If heavy equipment must access the field, protect the track surface with a combination of 3/4" plywood, plastic and rubber matting. See pictures below.
- Do not permit sharp, hard objects such as bicycle stands, bench legs, chairs, stands, etc. to be placed on the track without proper protection.



MAINTENANCE

There are several factors that cause deterioration of the track and create a need for maintenance work. **These would include such items as the following;**

1. Normal wear and tear due to track use
2. Oxidation
3. Heavy use of Lanes One and Two
4. Vehicles crossing the surface for maintenance or service
5. Vandalism
6. Clogged drainage systems
7. High stress on selected areas (i.e., the high jump takeoff area) Pedestrian traffic (athletes, cheerleaders, other activities). Fuel and oil spills



It is important that reasonable protective measure be undertaken to minimize or prevent the effect these factors have on the track. Since some wear and deterioration is normal as the facility ages, it is also necessary to provide certain maintenance procedures to keep the facility in good condition.

Check your track and maintain regularly to avoid any impact on the track performance.

Things to consider when working out how regularly surface maintenance is required are:

- The condition of other nearby natural turf surfaces (grassed areas, internal field, etc.)
- Shaded, tree covered track areas where algae or moss might form around fallen leaves
- Attention to cleaning and clearing beneath the internal aluminum running rail





Always sweep/vacuum any litter, dirt/mud, grass cuttings, leaves or sand off the track surface at the first opportunity. This can be done in the first instance by hand or with leaf blowers, although specialized equipment is also available to undertake this activity on a more thorough basis. Track surface should be swept/vacuumed on a regular basis (monthly).

Routine sweeping to remove grass clippings & vegetation is critical to prevent accumulation of organic material on the track surface. If left unattended, organic material can cause staining and hardening of the track surface.

Remove vegetation that grows through the surface. Do not let running grasses grow over the surface of the track and field event areas. We recommend that the edges of the track and field event areas be treated a minimum of twice annually with a soil sterilant to eliminate vegetation which may encroach into the track or track surface. Do not use a weed eater on the track to eliminate vegetation, as it will destroy the surface. Eradicate insect/ant infestation in the track base or surface.

If the Rekortan® track system is an embedded (traditional) surface, the installation when new will show some initial shedding of the rubber granules. The granules will shed through regular usage of the track and this is a normal feature of this type of track system. The shedding of granules does not indicate premature failure of the system.

Loose rubber granule should be periodically removed from the track surface to prevent collection under the aluminum track curbing, which can impede the drainage performance of the facility.

It is also essential that drainage channels, grates, sumps and the slotted drainage openings around the D-sections are kept clean and free of obstruction to maintain maximum drainage efficiency.



RAISED RAIL

To comply with IAAF requirements, a raised aluminum curb or running rail is installed on the inner edge of your track. This rail is segmented and designed to be removable as part of regular athletics competition and for maintenance purposes (i.e. track cleaning or vehicular access). It is important to note that the aluminum rail is not designed to be trafficable and if vehicle access to the track infield or D-sections is required, then segments of the rail must first be removed to enable vehicle access.

Where sand is blown or tracked onto the track surface (near long and triple jump pits), sweep and clean these areas on a regular basis.

Regularly remove weeds and trim grass at track edge. Those responsible for the regular maintenance activity should be conscious of the track maintenance requirements and ensure that surrounding areas are designed/maintained to ensure that storm water run-off is not restricted by raised surfaces adjacent to the track.

Track curbing and drainage openings should be kept free of obstruction

WINTER USE

Use of a synthetic running track during the winter months while possible, comes with potential risks to the athlete and the longevity of the surface. As the temperature drops, the ability of a synthetic track to provide a resilient surface for athletes may become compromised and lead to premature surface failure.

SNOW REMOVAL

The use of snow removal equipment to clear snow from a track is highly discouraged. Track surfaces lose their elasticity when cold increasing the potential for damage, surface failure and athlete injury. A light dusting of snow may be removed using a hand held blower.

SPIKES

Spikes should never be used during cold weather. It is not recommended for the athlete or the track surface. Rubber sole shoes should be used during cold periods.

CLEANING

Rekortan strongly recommend's a full track pressure cleaning be undertaken as needed and after any event that may cause water inundation or widespread dirt build-up on the track surface. Rekortan provides pressure washing services utilizing state of the art technology.

Should you choose to pressure wash the track with in-house staff, Rekortan should be contacted to ensure clear directions are provided before undertaking the first pressure cleaning. This is to ensure a clear direction on what is required and how to conduct the work is made available.

Ideally the aluminum rail should be cleaned occasionally with liquid detergent on a damp cloth and the rail fixing equipment (pins, mounting brackets and covers) checked.

REPAIRS

Should any accidental damage occur, small bubbles or signs of delamination be detected, or excessive wear appear prematurely; contact Rekortan as soon as possible to arrange for a site visit, repair or immediate temporary instruction. Any repair work should be done by qualified, trained, experienced technicians. Repair kits are available. Please contact us to discuss your situation and hear the options.zz



FAQ'S

Can our track be resurfaced? Yes.

Depending on the surface selected, a track should be resurfaced every 8-15 years. If you have an existing surface that you need to be evaluated, please contact us for a free surface evaluation.

Proper Maintenance Directly Affects the Longevity of the Surface
DO NOT LET UNTRAINED PERSONNEL UNDERTAKE THIS TASK!

By applying the requirements and recommendations of this maintenance manual, your Rekortan[®] track system will provide years of service.

We hope you enjoy your new Rekortan[®] synthetic track surface.



LAYKOLD WANTS YOU TO ENJOY YOUR SURFACE FOR YEARS TO COME, SO WE HAVE PUT TOGETHER SOME GUIDELINES TO HELP MAINTAIN YOUR INVESTMENT AND EXTEND THE LIFE OF YOUR NEW COURT BETWEEN RESURFACING (EVERY 4-7 YEARS).

DO NOT ALLOW THE FOLLOWING ON THE SURFACE

- Vehicles of any kind - including maintenance equipment
- Bicycling, skateboarding, rollerblading, hockey, etc.
- Shovels, snow blowers or plows (wait for snow to melt)
- Bleachers, benches and furniture (unless secured)

MAINTENANCE DURING PLAYING SEASON

- Mowing and other nearby landscaping clippings should be thrown away from the court surface
- Grass edging and connecting surfaces should be kept below surface grade of the courts, catch basins and swales should be free in or around surface to allow for proper drainage. It is important to maintain proper drainage at all times, failure to do so will cause premature delaminating of the surface color coat
- Regular proper cleaning of the surface on a regular basis, as needed
 - * Leaves, pine needles, sticks and other debris should be cleaned off using a leaf blower or a soft bristle broom
 - * Stains, mold/mildew can be removed using a pressure wash only
 - * **Note:** Proper tip size is very important. The wider the tip spray the better. A narrower tip can ruin the surface
- We recommend proper signage of "Court Rules" to be displayed in various locations throughout and near the court surface

MAINTENANCE BEFORE AND DURING OFF-SEASON (FALL/WINTER)

- Ensure your surface is free and clear of all debris before snowfall begins
- Posts and nets should be removed yearly before the winter season
- Post sleeves should be capped so water is not allowed into the sleeves
- Nets should be replaced approximately every five years

These are recommendations that will help to ensure the maximum longevity with your new acrylic surface. We also recommend that you have periodic inspections from a qualified court installer to properly maintain your surface. If you notice cracks or surface peeling, call your surfacing contractor immediately.

COURT CLEANING AND CARE INSTRUCTIONS

Laykold surfaces normally require only minimal maintenance. However, the amount of maintenance required will depend largely on the local atmospheric environment and court usage. Environments subject to heavy airborne pollution, such as dust, leaves, and traffic fumes, are classified as high maintenance areas. Low maintenance areas enjoy low levels of pollution and dust, such as indoor, and are classified accordingly.

1. LOW MAINTENANCE ENVIRONMENT

a) Outdoor

Courts should be swept with broom, air blower, or water broom approximately once per week depending on severity of surface contamination. Foreign debris should be hosed off with clean water, where practical.

b) Indoor

Indoor surfaces should be cleaned once every 2 to 4 weeks depending on court usage with a Tennant T5 walk behind or comparable cleaning machine to remove any dust, dirt, etc. Heavy contamination or staining should be removed using a wet scrubber/vacuum machine comparable to a Tennant T5 walk behind with soft brush attachment as in 2(b). On textured surfaces, foreign debris should be swept and hosed off regularly, if hosing is possible.

2. HIGH MAINTENANCE ENVIRONMENT

Heavy airborne pollution, such as dust, leaves, and vehicle fumes, have a tendency to settle rapidly onto the court surface.

In a heavy maintenance environment, AstroTurf Corporation recommends that foreign debris be hosed off at least once a week to minimize buildup of pollutants. Should the surface become generally dirty or stained, surface can be cleaned with a light duty wet scrubber vacuum machine with a soft brush attachment. A non-residual organic cleaner should also be utilized to aid in the cleaning of the surface. The percentage of cleaner to the percentage of water will largely depend on the degree of surface contamination, and should be used in accordance with the manufacturer's specifications for the particular surface type and stain.

After light scrubbing, hose off with fresh water to remove any residual cleaning agent in outdoor environment, or wet scrub/vacuum with clean fresh water in indoor environment.

Note: Contact your local authority prior to commencement of cleaning to conform to the environment requirements in your area.

3. MOLD GROWTH AND TREE/PLANT CONTAMINATION

It is recommended that overhanging trees/plants be controlled to prevent excessive contamination of the surface, some trees/plants in particular will cause staining and unsightly contamination. Mold may buildup on areas of the surface where plant/leaf contamination occurs or where pooling water occurs after rain. These areas should be cleaned on a regular basis using the following methods:

- Hose off foreign debris with the aid of a stiff bristle broom.
- Saturate the surface with clean water
- Use a dilute solution of sodium hypochlorite (liquid pool chlorine);



dilution rate is dependent on the severity of mold growth.

- d. Broom solution over the mold area and soak for 10-15 minutes. Do not allow to dry.
- e. Hose off surface thoroughly with clean water to remove all residual solution. Keep away from plants, animals, and children and wear protective clothing. Solution is strong bleach.
- f. More heavily contaminated surfaces may require additional treatment or in severe cases, highpressure water blasting and sodium hypochlorite treatment. Other algacides are commercially available.

Test First... Testing of all cleaning methods and their effects on the Laykold surface is recommended before any general use.

Note: Do not use powdered Calcium Hypochlorite solution as this will leave a white residue on the surface after drying.

Note: Contact your local authority prior to commencement of cleaning to conform to the environment requirements in your area.

4. FOOD AND DRINK CONTAMINATION

Immediate washing of the surface is recommended. If staining has occurred, then the same cleaning methods suggested for dirt or mold/plant/tree/bird/wildlife contamination would be recommended. Solvent based products, i.e. solvent thinners and similar products are not to be used on Laykold surfaces. Scouring type products, i.e. Ajax powder or similar are not recommended for use on Laykold surfaces.

5. SPECIFIC CONTAMINATIONS

a. Fruit Bat 'Droppings' and worms

'Droppings' and worms will cause degradation of the Laykold surface. They should be immediately removed by mechanically scraping them off or by high pressure washing. In serve cases, they will cause blistering and peeling, not only of the surface, but also the asphalt underneath to a depth of 3-6 mm. In these cases, the surface should be patched with the recommended Laykold surface materials. This will require specific instructions to be followed and AstroTurf Corporation would recommend that the services of a Laykold Approved Applicator be used for this work.

b. Bird/Wildlife Contamination

This can usually be removed by a non-residual organic cleaner with a stiff bristle brush/broom and hose off with plenty of clean water.

c. Shoe 'Sole' Staining and Rub Marks

AstroTurf Corporation recommends only white soled or non-staining/ marking shoe types be used when playing on the surface. Some 'black' rub marks can get onto the surface by certain types of soles on footwear. These marks can usually be removed with a non-residual

organic cleaner and stiff bristle brush. Some rubber types are difficult to remove when they are fresh, weathering will usually allow these marks to be removed. Shoe sole marking will be more noticeable and prevalent with new surfaces.

d. Chewing Gum

It is very difficult to remove gum from court surfaces. Mechanical scraping of the gum is all that can be recommended.

e. Grease and Oil Stains

Non-residual organic cleaner is recommended. It may require several applications to remove the grease/oil contamination. Thoroughly hose off the surface with clean water after the application of the detergent solution.

Note: Contact your local authority prior to commencement of cleaning to conform to the environment requirements in your area.

6. RACQUET DAMAGE

The Laykold surfaces are highly resistant to damage from normal racquet contact. However, metal racquets heavily impacting the surface at sharp angles can cause slight cuts in the surface. Such damage is usually confined to the top layers and can be readily repaired. Refer to a Laykold Approved Distributor for further information.

7. REPAIRS

Deep cuts into the base layer of cushioned Laykold surfaces may be caused by sharp implements, i.e. metal chair legs, heavy steel wheeled trolleys, stiletto heels, vandalism, etc. Chairs and umpire stands should have wooden bases on the legs to minimize damage to the surface. Contact your Laykold Approved Distributor immediately if any damage occurs to prevent further damage from the ingress of water.

8. DRYING THE COURT SURFACE

Laykold surfaces can quickly be put back into service after a disruption by rain. Simply remove any excess water with a wide sponge roller or squeegee and play can recommence immediately. The surface is slip resistant when damp.

9. GENERAL SURFACE CARE

Wear only white or non-marking flat soled tennis shoes. Wipe shoes before entering court to prevent stones, twigs, or other sharp objects from being ground into the surface.



BASEBALL



St. John's University – Queens, NY



University of Connecticut – Storrs, CT



Vanderbilt University – Nashville, TN



Evansville University – Evansville, IN



University of Pittsburgh – Pittsburgh, PA

FIELD HOCKEY



Dartmouth College – Hanover, NH



University of Maryland – College Park, MD



University of New England – Biddeford, ME



Princeton University – Princeton, NJ



University of Virginia – Charlottesville, VA

FOOTBALL



Eastern Washington University – Cheney, WA



University of Washington – Seattle, Washington,



De La Salle High School – Concord, CA



Fresno State – Fresno, CA



Kansas State University – Manhattan, KS

SOCCER



St. Clair Community College – Marysville, MI



UC Riverside – Riverside, CA



Madison Area Tech, Madison, WI



University of Pittsburgh – Pittsburgh, PA



Princeton University – Princeton, NJ



Alliance High School – Alliance OH



Donovan Middle School – Utica NY



Gordon Ridge Community Housing – Canada



Allegheny College – Meadville, PA



Lake Placid CSD – Lake Placid NY



Lincoln Consolidated Schools – Ypsilanti MI



2020 US Open – BJK Tennis Center, Flushing NY



Forest Glen Country Club – Naples FL



Mifflin County CSD – Lewistown PA



Minoru Track – Richmond BC, Canada



University of Hawaii, HI



Honolulu, HI



Mt. Zion High School – Jonesboro, GA



West Seneca CSD – Williamson NY



Maroon Creek – Aspen CO



Princeton University, Princeton, NJ



Plattsburgh High School – Plattsburgh, NY



Redmond High School – Redmond, WA



US Soccer Foundation Pitch – New York NY



Private Residence – Springfield MD

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Care for Your **Turf**

- **Approved equipment only.**
- **Molded cleats or athletic shoes only.**
- **No sharp objects.**
- **No stakes. No corner flags.**
- **No food. No gum.**
- **No seeds. No tobacco.**
- **No sports drinks - water only.**
- **No pets. No bicycles.**

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