



MONDOTURF HIGH PILE PRODUCTS LINE

MAINTENANCE MANUAL

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2. MAINTENANCE GUIDELINES

2.1 INTRODUCTION

- A. The goal of a maintenance program is to ensure a consistent and attractive playing surface, to promote player's safety and to protect the artificial turf system.
- B. Although artificial turf playing fields need little amount of attention in comparison with natural grass playing fields, they still require care and maintenance in order to avoid the deterioration of the playing surface. Playing fields that are not properly maintained are liable to lose their original quality after a certain time. When establishing the proper maintenance procedure, local climatic and pollution conditions, expected usage, player conduit, alternative use and other factors specific to the field in question shall be taken into consideration.

- C. The following are keys to properly maintain an artificial turf playing field:
- The artificial turf should be maintained free of all contaminants in order to avoid contamination of the infill. Contamination of the infill may lead to hardening of the playing surface, decreased drainage, and growth of bacteria, moss, mold, algae, fungi, grass and weeds.
 - The infill material should be maintained at the prescribed level in order to guarantee a consistent shock absorbency and athletic performance of the field and to protect the synthetic turf fibers.
 - The infill material shall not be allowed to compact in order to avoid the hardening of the playing surface.
 - The synthetic turf fibers shall be maintained in a vertical position. Fiber layover may lead to poor footing, decreased drainage, compaction and poor appearance.
 - The artificial turf should be maintained free of moss, mold, algae and fungi growth.
 - The artificial turf should be maintained free of grass and weeds growth.
 - No smoking shall be allowed on the playing surface.
 - No open flames, fireworks, welding, etc. shall be allowed on the playing surface.
 - Static loads of more than 3psi should never be applied to the playing surface to avoid damage to the artificial turf and to the sub-base.
 - Transit of motorized vehicles which are not equipped with low-pressure turf tires should never be allowed on the playing surface to avoid damage to the artificial turf and to the sub-base.
 - No chemical agents or contaminated water should be applied to the playing surface.
 - Remove snow and ice with extreme care from the playing surface.
 - Repair minor damage immediately.
 - Report major damages to Mondo immediately.

2.2 POST INSTALLATION

- A. After initial installation, artificial turf playing fields require a minimum two (2) weeks curing and fiber stabilization period. 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.
- B. In addition, infill systems require many weeks of use and weathering to reach optimum playing conditions. This time allows the granular fill to settle properly to its best playing level for ideal comfort, playability and longevity of the system. This period of time varies, depending on local conditions, use, and system specifications.

2.3 PREVENTIVE MAINTENANCE

- A. Whenever possible, keep trees a minimum 10' away from the field.
- B. Whenever possible, install a minimum 10' wide divider strip between synthetic turf and natural grass.
- C. Control access to the field.
- D. Prohibit food and beverage on the field.
- E. Prohibit chewing gum and tobacco on the field.
- F. Ban smoking on the field.
- G. Ban open flames, fireworks, welding, etc. on the field.
- H. Keep adjacent areas free of litter, debris, mud, dirt and oil spillage.
- I. Route field access traffic in such a way as to minimize mud and dirt tracking onto the field.
- J. Install trash and litter containers on the field and near the field in a sufficient number as to avoid overflow.
- K. Install water stations off the field to avoid contamination by spit.
- L. Set up drinks for athletes during practice breaks off the field.
- M. Prohibit all unnecessary vehicular traffic. Ban vehicles which are not equipped with low-pressure turf tires.
- N. Prohibit parking vehicles on the field.
- O. Prohibit changing or adding fluids to vehicles and equipment while on the turf surface as to prevent lubricating oil, grease, transmission fluid, etc. from dripping or spilling on the turf.
- P. Prohibit static loads on the field exceeding 3psi.
- Q. Prohibit storage of materials on the field.
- R. Develop and implement a regular schedule of inspection and maintenance.

2.4 LITTER REMOVAL

- A. A lawn sweeper shall be used to remove paper, peanut shells, sunflower seeds, leaves, pinecones and needles, etc. from the field.
- B. The brush shall be equipped with synthetic fiber bristles of a minimum length of 2.5". Never use metal bristles.

- C. The brush shall be set so that it barely touches the tips of the fibers of the turf. Never set the brush so low that it digs into the turf pile or infill material.
- D. Never use a motorised sweeper if the ambient temperature exceeds 90F.
- E. Perform this operation immediately after any event.

2.5 STAIN REMOVAL

- A. Most stains on polyolefin fibers are not true stains, but rather residues of foreign matter.
- B. Prior to applying any chemical to the turf, test it on a small portion of the fabric to make sure that no damage is made to the synthetic turf fibers.
- C. Water-based Residues: brush the residue with a fiber brush, sponge with neutral soap and water, rinse thoroughly.
- D. Oil-based Residues: sponge with perchloroethylene (PERC), rinse thoroughly. Refer to the MSDS supplied by the manufacturer of the PERC for special instructions, personal protective equipment, etc.
- E. Animal Waste: sponge with mixture of white distilled vinegar in an equal amount of water, rinse thoroughly.
- F. Chewing Gum: spray with Freon and scrape to remove residue. Refer to the MSDS supplied by the manufacturer of the Freon for special instructions, personal protective equipment, etc.
- G. Promptness is of the essence: it is easier to remove a fresh spill before it has time to dry and harden.

2.6 MOSS, MOLD, ALGAE AND FUNGI REMOVAL

- A. Clean synthetic turf will not support the growth of moss, mold, algae and fungi.
- B. However, if organic matter, including food spills, leaves, pinecones and needles, is allowed to filter into the infill, moss, mold, algae and fungi may appear.
- C. Shade from trees and frequent irrigation can provide a cool, damp medium for moss, mold, algae and fungi growth.
- D. Appropriate not oil-based chemical products may be used to remove moss, mold, algae and fungi growth. Rinse thoroughly. Refer to the MSDS supplied by the manufacturer of the chemical product for special instructions, personal protective equipment, etc.
- E. Even if living organisms are killed and removed, spores will remain. Therefore, successful treatment may require several applications.
- F. Promptness is of the essence: it is easier to remove moss, mold, algae and fungi growth before it becomes established

2.7 GRASS AND WEEDS REMOVAL

- A. Clean synthetic turf will not support the growth of grass and weeds.
- B. However, if organic matter, including food spills, leaves, pinecones and needles, is allowed to filter into the infill, grass and weeds may appear.
- C. Shade from trees and frequent irrigation can provide a cool, damp medium for grass and weeds growth.
- D. Remove vegetation growth by tearing the plants out manually.
- E. In extreme circumstances, not oil-based weed killer may be used for specific areas. Rinse thoroughly. Refer to the MSDS supplied by the manufacturer of the weed killer for special instructions, personal protective equipment, etc.
- F. Promptness is of the essence: it is easier to remove grass and weeds growth before it becomes established

2.8 SNOW AND ICE REMOVAL

- A. Snow and ice are not harmful to the artificial turf system, and whenever possible should be left to melt and drain off the system without assistance.
- B. The field might be used when frozen, as long as it is not slippery and footing is adequate; however, care should be taken as the fibers will be brittle and more subject to damage, and shock attenuation properties of the playing surface will be reduced.
- C. Dry and powdery snow can be swept from the field using a turf groomer, a rotary brush and/or a snow blower. The machinery shall be set so that it barely touches the tips of the fibers of the turf. Never set the machinery so low that it digs into the turf pile or infill material.
- D. Wet, sticky snow can be removed from the field using a snowplow with a rubber tipped blade. Wood, metal or other rigid blades should not be allowed. Remove the snow in layers. Adjust the blade taking care that it does not make contact with the turf. If the turf begins to stretch or move with this process, discontinue the procedure.
- E. Equipment used in the removal of snow should be equipped with low-pressure turf tires only. Lugs, chains and studs should never be used on the field.
- F. Thin layers of ice can be broken up with a lawn roller and swept from the field using a rotary brush. The machinery shall be set so that it barely touches the tips of the fibers of the turf. Never set the machinery so low that it digs into the turf pile or infill material.
- G. Thick layers of ice can be removed through chemical ice-melting products such as piled, fertilizer-grade urea.

- H. Broadcast piled urea at a rate of approximately 100lbs per 3000sqft, leave it in place for at least 30 minutes to melt the ice, vacuum melted ice from the turf, rinse thoroughly as soon as weather permits.
- I. A thin residue of urea will remain on the field until rinsed away. Urea might be irritating to eyes. If it gets into player's eyes, it should be flushed out with lots of clean water.
- J. Do not use common salt, rock salt, calcium chloride, ammonium nitrate or other corrosive or toxic chemicals to melt the ice.

2.9 BRUSHING

- A. A turf groomer such as the Synthetic Sports Turf Groomer manufactured by Greens Groomer shall be used to maintain the homogeneous distribution of the infill material in the field and to stand up the turf fibers.
- B. Maintaining a homogeneous distribution of the infill material is essential to guarantee a consistent athletic performance of the field and to properly protect the synthetic turf fibers.
- C. It is recommended to drag the field from sideline to sideline and to alternate dragging direction with each grooming.
- D. Follow manufacturer's instructions for details. Adjust the aggressiveness of the groomer to a medium level.
- E. If hollow infill spots are discovered, perform refill in several thin layers and brush infill material into the fibres with a fibre scrub brush.
- F. If high infill spots are discovered, vacuum the excess infill from the turf.
- G. Perform this operation twice monthly during heavy use times of the year and once a month in the off season.

2.10 COMPACTION RELIEVE

- A. A tine rake such as the Greens Slicer Spring Tine Rake manufactured by Greens Groomer shall be used to comb through the infill material in the field.
- B. Combing through the infill material is essential to relieve compaction and to avoid the hardening of the playing surface.
- C. Follow manufacturer's instructions for details. Adjust the aggressiveness of the tines to a medium level.
- D. Never set the machinery so low that it digs into the backing of the carpet.
- E. It is not necessary to use the tine rake each time the turf is groomed. Perform this operation once a year.

2.11 STATIC LOADS

- A. Static loads of more than 3 PSI should never be applied to the playing surface.
- B. If needed, spread the static load on the playing surface through minimum 3/4" thick plywood sheets, exterior grade. Place a polyethylene sheet under the plywood to avoid contamination of the turf.
- C. Remember that setup cranes, portable bleachers, concert stages and sound systems create high PSI levels.
- D. Remember that chairs and high heel shoes create high PSI levels.
- E. Never park vehicles or equipment on the playing surface.

2.12 VEHICULAR TRAFFIC

- A. Transit or dynamic loads of more than 6 PSI should never be allowed on the playing surface.
- B. The loading of a pneumatic-tired vehicle is approximately equal to the air pressure in its tires.
- C. Vehicles with non-pneumatic tires shall never be allowed on the playing surface.
- D. No equipment other than designated maintenance equipment should be allowed on the playing surface.
- E. Maintenance equipment should be equipped with low-pressure pneumatic tires.
- F. Maintenance equipment should be operated avoiding excessive braking, turning, etc. that could damage the synthetic turf fibers and the base underneath. Move slowly, make wide turns.
- G. Hot engine exhaust should never be discharged into the field to prevent the possibility of burning or melting the synthetic turf fibers.
- H. Never leave a parked vehicle idling on the turf, in order to prevent the possibility of burning or melting the synthetic turf fibers due to exhaust or overheating.
- I. Never change or add fluids to equipment while on the turf surface as to prevent lubricating oil, grease, transmission fluid, etc. from dripping or spilling on the turf.

2.13 SPECIAL EVENTS

- A. Remember that setup cranes, portable bleachers, concert stages and sound systems create high PSI levels.
- B. Remember that chairs and high heel shoes create high PSI levels.

- C. Large crowds shall never be allowed on the turf unless it is fully protected through minimum 3/4" thick plywood sheets, exterior grade, mats or plastic tiles. Place a polyethylene sheet under the plywood, mats or plastic tiles to avoid contamination of the turf.

2.14 NON-PERMANENT FIELD MARKINGS

- A. Initially, polyolefin fibers will hold paint less adequately because coated with an adhesion inhibitor during the manufacturing process. As time progresses, the coating washes off the fibers and the fibers will hold paint better.
- B. Dilute, mix and install latex paint in accordance with the manufacturer's instructions. Refer to the MSDS supplied by the manufacturer for special instructions, personal protective equipment, etc.
- C. Use a paint machine that allows for as low as a psi as possible.
- D. Apply paint on a clean and dry field only.
- E. Prior to painting, brush the area so that the fibers are vertical and the infill is loosened.
- F. Avoid applying thick layers of paint.
- G. Avoid driving paint into the infill.
- H. Allow a minimum cure time of 48 hours after striping before field is put in service.
- I. Always avoid buildup of paint. Brush and clean the area with water and cleaning agents to remove excess paint existing on field prior to applying new paint.

2.15 TREES AND OTHER VEGETATION IN ADJACENT AREAS

- A. Tall trees can create a distracting shadow pattern on the field if the sun is behind them during play.
- B. Deciduous trees will drop leaves; evergreen trees will drop pinecones and needles. This organic matter might contaminate the infill.
- C. Shade from trees can provide a cool, damp medium for moss, mold, algae, fungi, grass and weeds growth.
- D. Tree roots may extend under the field. Where removing trees is not practical, root barriers may be installed.
- E. Whenever possible, keep trees a minimum 10' away from the field.
- F. Where synthetic turf abuts natural grass, grass and weeds may invade the edge of the synthetic turf.
- G. Where synthetic turf abuts natural grass, fertilizer, pesticide and other chemical overspray may contaminate the turf.
- H. Whenever possible, install a minimum 10' wide divider strip between synthetic turf and natural grass.

2.16 MINOR REPAIRS

- A. Rips and tears in the surface that do not exceed six inches should be regarded as minor problems unless allowed to grow. They can generally be repaired by the Owner's maintenance staff.
- B. Vacuum the infill material from the portion of turf to be repaired.
- C. Dry-fit the fabric to be glued. It is recommended to have 1/16" gap. Overlapping the seam may lead to lack of transfer of adhesive which might cause seams to open with use.
- D. Prop open the seam and insert approved seaming tape below the fabric to be glued. Allow for minimum six inches of seaming tape on each side of the seam.
- E. Make sure that the fabric to be glued and the seaming tape are perfectly dry and free of loose infill material, dirt, old adhesive and other foreign matter.
- F. Mix and install approved adhesive on seaming tape in accordance with the manufacturer's instructions.
- G. Press the fabric into the adhesive bed uniformly
- H. No fibers shall remain trapped by the adhesive.
- I. Weight down the area and allow adhesive to cure for at least 24 hours
- J. Perform refill in several thin layers and brush infill material into the fibres with a fibre scrub brush.