

## What equipment every synthetic turf manager should have



» THIS 7,200-SQ. FT. SYNTHETIC TURF RESEARCH AREA at the University of Missouri's South Farm will focus on today's infill systems.

A few prominent turf managers who work on synthetic fields shared their lists of what equipment needs to be on hand to properly maintain the next generation infill products:

### JARED HERTZEL, Head Athletic Turf Manager, University of Nebraska

Here is some of the equipment that we use:

- Littercat (pulls behind a utility vehicle)
- Groomer (pulls behind a utility vehicle)
- Irrigation system or other ways to apply water
- Extra turf and crumb rubber
- Vacuum/ShopVac
- Adhesive construction glue
- Gum remover
- Backpack blower
- Utility knife
- Sand for sub-base low spots
- Shovel
- Snowblower
- Tractor
- 2-foot diameter tile drain tube for snow removal

- Needle and thread
- White rock for base
- Tamp
- Rack
- Phone number to Midwest Fieldturf
- Manpower

### DARIAN DAILY, Head Groundskeeper, Paul Brown Stadium

Equipment we use on our synthetic field:

- GreensGroomer (a must have; if you get nothing else to maintain your field, a GreensGroomer is the one thing to get)
- Sweep-N-Fill (a dual rotating brush that evenly distributes rubber; great for synthetic or natural turf)
- Tow-behind magnet
- Buffalo Turbine blower/back pack blower (the use of air to move trash, seeds, and other debris has been a time saver)
- Billy Goat debris vacuum (picks up the trash and debris)
- A good removable paint as well as a paint removing machine (for the markings of the other sports, not inlaid)

### MIKE MCDONALD, CSFM, turf manager, University of Minnesota

Tools needed:

- Sweeper/cleaner of the turf
- Brush/broom for fluffing of the turf
- Tines for decompacting of the turf
- A magnet attached to a piece of grooming equipment
- A sprayer to knock down/static cling of the rubber (some machines have some or all of these with one unit/attachments, some are individuals pieces)
- Backpack blower
- Pull-behind big blower
- Walk painter if lines are not inlaid
- Paint remover machine if painting field
- Sewing/patching glue kit
- If in snow regions: walk snow blower; tractor snow blower; snow pusher; truck with snow blade

### SYNTHETIC TURF MAINTENANCE RECS

From the Sports Turf Managers Association's *A Guide to Synthetic and Natural Turf-grass for Sports Fields*, here are maintenance recommendations.

"All synthetic turf manufacturers have recommended grooming practices. Generally, these include sweeping, dragging, and watering for a clean, uniform appearance. Depending upon use and weather conditions, a sand/rubber mix may need to be added annually to help restore the field's resiliency. The sports turf manager will also need special knowledge in troubleshooting and minor repairs, such as seam repair and snow removal. The installer can provide this information per the manufacturer's guidelines.

"All synthetic turf manufacturers have recommended grooming practices. Generally, these include sweeping, dragging, and watering for a clean, uniform appearance. Depending upon use and weather conditions, a sand/rubber mix may need to be added annually to help restore the field's resiliency.

"Special solvents and cleansers are used to remove tough debris. Proper testing and a good design will usually mean that drainage is not a problem, if the field is constructed correctly. If the field is used for more than one sport, a plan will need to be developed that follows the manufacturer's recommendations for changing markings. Options may include using different paint colors for different sports; painting over existing lines with green paint; or actually removing the lines and repainting.

"The typical cost range to maintain a synthetic field will vary and can range from \$5,000 to \$25,000 per year, including labor, minimal equipment depreciation and water. It is much more expensive to maintain synthetic fields that are highly visible, frequently televised, or when used for multiple sports. The cost can even be higher if field markings must be painted and cleaned often, or if frequent repairs are necessary."

### NON-SPORTS EVENTS & WARRANTIES

For concerts, graduations, truck shows and so on:

"Care must be taken to protect each type of field surface. Typically, a sports turf manager will place a protective covering over the turf and will develop a plan to safeguard the turf during the event. Types of materials that should be considered to protect the field surfaces for staging and roadways are:

- ¾ inch plywood (may require two layers)
- Pre-manufactured road mat; and
- Geo-textile blanket.

Other materials are available for flooring protection under the staging and for the seating areas. These products should be investigated to find the one that best suits the event situation. The use of these additional materials to host such events should be taken into consideration and incorporated into the overall cost to produce the event.

"Concerns from these events include burns from fireworks, cigars and cigarettes; surface contamination (debris); security; and weight of materials (staging) resulting in major damage to the grade, which can be expensive to repair.

"Flooring that is more specialized for seating may be necessary for certain events (graduation and concerts). Warranties should be reviewed before holding events to prevent voiding them."

### DEVELOPING AN EQUIPMENT LIST

"Your sports turf manager will develop a capital budget and replacement schedule, and a utilization schedule to optimize the use of all equipment and accessories. School districts and parks districts often share equipment among different departments. Care should be taken to utilize all equipment per

the manufacturer's instructions.

- Grooming equipment: typically some type of broom, brush or tine that is dragged over the field to stand the synthetic fibers up and to distribute the crumb rubber.

- Utility cart for grooming/cleaning equipment, pushing snow or operating sprayer.

- Spraying equipment: to stop weeds from growing through the synthetic surface, to lessen the static charge from the crumb rubber, and to apply wetting agents.

- Sweepers: to remove trash and other materials from the playing surface.

- Blowers (back pack and 3 pt. hitch): to blow clean the turf of trash.

- Vacuum: to remove small items, such as sunflower shells and peanut shells.

- Topdressing equipment: to periodically redress areas that have lost crumb rubber.

- Sanitation equipment and sprays for the spot removal of bacterial growth from bodily fluids

- Pressure washers or other flushing equipment: to remove unwanted fluids or contaminants.

- Spiking equipment: for de-compaction and/or to help with redistribution of crumb rubber.

- Irrigation system (some manufacturers require irrigation to maintain warranty.)

- Painters for adding additional lines and mechanical scrubbers for cleaning painted lines on the synthetic turf.

- Special rubber blade snowplow"

### SYNTHETIC TURF COUNCIL MAINTENANCE RECS

Here is an excerpt from the maintenance guide published by the Synthetic Turf Council in 2007:

"Maintenance procedures implement the processes available that will help assure continued performance of the system as specified in relation to the declared purpose and use of the synthetic turf surface.

"General surface cleaning. Airborne pollutants such as leaves and other debris should not be allowed to remain on the surface for any length of time. If not removed, they will migrate into the system, forming a drainage inhibition within the surface which can reduce drainage effectiveness.

"A wide soft broom can be used for removing the surface debris. A mechanical leaf sweeper or special vacuum cleaner which does not remove the fill can speed up the operation. Such equipment must be well maintained and carefully operated to avoid contamination or physical damage to the surface.

"Grooming. Proper grooming achieves a freshening of the synthetic turf surface appearance. It is a crucial operation which will help prevent the premature deterioration of

## Synthetic turf field reclamation machine



**THE TURFMUNCHER'S** patent-pending reclamation process allows owners to have their old fields reused or recycled instead of sending them to the landfill. Manufacturer FieldAway says according to industry estimates there are approximately 6,000 third-generation synthetic turf fields containing sand and/or rubber infill in North America alone. Existing synthetic turf fields in Europe probably account for more than twice that number. These fields represent a significant amount of material that ultimately must be removed and disposed of in some manner.

Since most turf manufacturers warrant the useful lives of their products for 8-10 years, it is estimated that as many as 2,500 synthetic fields will be either removed or reclaimed in North America in the next 5 years and up to 1,000 fields will be removed annually over the following 5 years.

The typical installed field area is approximately 80,000 square feet and weighs around 8 pounds per square foot, with the turf weighing .5 lbs./sq. ft. and the sand/rubber infill 7.5 lbs./sq. ft. This means that each field averages 320 tons of material that must be either removed for disposal or reclaimed for recycling. The potential environmental effect of this material working its way to our landfills is disturbing.

After TurfMuncher reclamation, turf recycling options include reuse of the field in other settings, conversion to energy, and use for molded parts. Reuse options include practice fields, batting cages, driving ranges, residential and commercial work areas, and dog runs, as well as landscaping and erosion prevention applications. Sand and rubber infill recycling opportunities include reuse on other sports fields, in various construction projects, and for landscaping or soil treatments. FieldAway says as commercial channels continue to develop, the value of these materials will continue to increase and become more marketable. -Eric Schroder ■

the performance characteristics, appearance, and drainage properties. Mechanical grooming can accelerate the process when the proper equipment is chosen and operated by skilled personnel.

"Drainage is essential to effective maintenance. It is possible that the bed of infill material serves as a filter. Infill can unavoidably retain inert particulate matter conveyed or blown onto the field or carried by rainfall or other air contaminants. By moving and re-leveling the upper layers of infill, mechanical grooming can delay the timeline when problems may begin to occur in the normal course of use, which could reduce the drainage process.

"Accumulation of unwanted or foreign materials is inevitable. Too much grooming, or the negligence of grooming, can affect the long term turf performance, even if such does not appear in the short run. Should a contaminant have a growth potential, the species and its eradication agents should be carefully identified and removal should be immediate before serious infestation occurs. Equipment designed for that specific purpose must be operated by skilled personnel who have precise knowledge of its effects.

"Routine maintenance, if regularly applied, can reduce the long term effects of any external contaminants, making such occurrences almost a non-issue.

"Brushing. It is important that the synthetic turf pile is maintained vertically. Regular brushing is an important function that must not be overlooked or neglected. The surface should be brushed in a number of directions, alternating the direction in consecutive activities, but generally in the direction of the individual panels to avoid crossing over the main seams."

### EQUIPMENT SELECTION

"Turf and maintenance equipment manufacturer's advice should be sought when considering any type of maintenance operation and the use of any equipment or procedures not recommended by the manufacturer of the system. The objectives of the maintenance process must be understood.

"No two machines will operate to the same degree of efficiency and effectiveness. The condition of the surface will also affect the operation of the equipment. Both conditions should be evaluated.

"Most maintenance equipment utilizes a brush or brushing action. It is critical that the type of brush used does not abuse the condition of the surface. Drag brushes behind the power unit are normally not recommended because they tend to flatten the pile and generate the need to implement the cleaning operation twice or more unnecessarily. If drag

brushes are to be considered, a test strip should be used to determine whether or not the effect and process of those brushes are desired. Brushes that have a rotary action in a horizontal position in front of the pile unit are preferred since they agitate the blades of the synthetic turf. The simultaneous vacuuming action should remove the undesired pollutants and debris.

"Power brushing equipment may agitate the infill to various degrees. The type of brushing, vacuuming, de-compacting, and final grooming should be relevant to the end result. The objective of each grooming routine should be determined prior to initiating the selection of the maintenance equipment, i.e., stand up of the pile and clean or level the infill within the pile; provide uniform performance characteristics; etc."

### FREQUENCY

"A change in the use patterns and the intensity of play can influence the frequency of maintenance. The manufacturer should be consulted to recommend an initial maintenance schedule. It may take up to six months for the infill to finally settle into the pile of the synthetic turf. Environmental/climatic and use conditions may affect the final settling.

Testing of the synthetic surface should occur as noted in the "Suggested Guidelines for the Essential Elements of Synthetic Turf Systems," published by the Synthetic Turf Council, and available on [www.syntheticurfCouncil.org](http://www.syntheticurfCouncil.org)."

### TOOLS AND EQUIPMENT

"Experience has demonstrated that the longevity of the field and the effectiveness of the maintenance are very much dependent upon the use of proper tools and equipment and the skills of the operator. The criteria and specification of the tools and equipment to be used should be understood at the time the field is accepted by the owner/user.

"The type and quality of the equipment should be suited to the use and construction of the field. Proper selection is an essential element to the successful application of the maintenance procedures. The desired performance of the equipment must be able to restore the characteristics of the surface without damage. It is essential that a discussion take place between the provider, the maintenance equipment manufacturer, and the owner prior to acceptance of the field. Pre-testing of the equipment on location may assist in the selection process." ■

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