



**PENN STATE**

**CENTER FOR SPORTS SURFACE RESEARCH**

## **From the Field: Proper synthetic turf maintenance maximizes player safety and performance – Part 2**

**By Tom Serensits, Penn State's Center for Sports Surface Research**

*Welcome to From the Field - A Guide to Athletic Field Safety and Care.*

*Throughout this series, we will focus on a sometimes overlooked but critical component affecting the safety and performance for athletes of all ages – the playing surface.*

*Our goal is to provide you with simple, helpful tips about playing conditions that maximize both safety and performance.*

---

This is part two of a two-part series on synthetic turf maintenance.

A common misconception is that synthetic turf fields are maintenance-free. While routine mowing, fertilization and other upkeep required on natural turf fields are not needed on synthetic turf fields, other types of maintenance are required to preserve and enhance the safety, playability and lifespan of these fields.

If a field is not properly cared for, problems can develop, such as low and inconsistent infill levels, separated seams, degrading fibers and surface debris. These problems can create hazards and accelerate field aging. The good news is that by following a few field maintenance guidelines, you can help protect the athletes using your field and also your investment.

### **Repairs**

One of the advantages of synthetic turf is that it generally takes a long time before it wears out. However, high-use areas can wear out well before the entire field needs to be replaced. If lacrosse is also played on your field, goal mouth areas are notorious for quickly wearing out.

Sections of turf can be removed and replaced but matching the color of the new section to the turf that will be surrounding it can be difficult. The sun ages the synthetic fibers and the green color changes over time.

In order to avoid different shades of green, one option is to remove a piece of turf from outside the field of play and use that for the repair. Then, install new turf in the areas outside the field of play.

The other option is to take some leftover turf from the field installation and place it outside so that it is exposed to the same weather conditions as the field. Some high schools attach it to the

roof of the stadium press box or on the roof of a maintenance garage. That piece of turf can then be used for repairs, and the color should be similar.

Before doing any patch repairs, contact your turf manufacturer to determine if the warranty covers the repair along with proper repair procedures.

## **Painting**

There is a good chance that at least some of the football field markings are inlaid into your field and do not need to be painted. However, if some or all of your field markings need to be painted, it is important to use paint designed specifically for synthetic turf.

Over time, paint can accumulate in the infill if the same areas are constantly being repainted. This paint buildup can lead to a variety of problems, including an increase in surface hardness.

Paint should be removed according to manufacturer recommendations after every five re-paintings. If paint is allowed to accumulate, the infill may need to be removed and replaced.

Brushing or brooming prior to painting helps the fibers stand up and helps paint coat the entire fiber.

Avoid painting when the field is wet. If the turf is wet, the paint will not adhere properly and may not hold up during play.

There are many types of paint removal techniques and machines. Be sure to follow all instructions to avoid damage to the turf, and check with your turf manufacturer for the proper techniques for paint removal on your turf system.

## **Weed control**

This may seem like a strange topic in column on synthetic turf, but weeds can be a problem under certain conditions. If organic debris is not removed in a timely fashion or if the field does not drain rapidly, weeds can grow on synthetic turf fields.

Weeds growing in synthetic turf often are surprisingly difficult to pull by hand. An all-purpose weed killer with an active-ingredient of glyphosate (Roundup) can be used on synthetic turf. Again, be sure to check with your turf manufacturer.

## **Static electricity**

Static buildup can lead to crumb rubber sticking to the synthetic fibers, making the field appear darker in high-wear areas. This is primarily a problem on recently installed fields and tends to lessen as the field ages.

While just an aesthetic issue, static buildup can be reduced by spraying a diluted fabric softener. Diluting eight gallons of fabric softener with water in a 250-gallon spray tank is a common application method.

Several synthetic turf manufacturers also sell products to control static buildup.

### **Hydrophobicity**

Hydrophobicity refers to what happens when water beads-up on a surface – just like after you wax your car. It is an easily fixable problem that sometimes is misdiagnosed as a much more severe drainage issue.

Under hydrophobic conditions, water will tend to stay on the field surface and will not drain through the infill and into the drainage gravel below. This can typically be fixed by spraying a wetting agent (surfactant) onto the field.

Fields and gravel drainage systems thought to have major drainage problems have been completely removed and replaced at high cost in situations when the real issue was hydrophobicity – a problem that could have been solved quickly and inexpensively.

### **Disinfectants**

There are no documented cases of field users contracting skin infections from synthetic turf. Two Penn State studies investigating skin infections on synthetic turf are available [here](#) and [here](#).

The bottom line is that synthetic turf is not a hospitable environment for bacteria survival, let alone a breeding ground as some claim. UV light from the sun quickly kills bacteria on the surface and a properly draining synthetic turf field does not provide the moisture needed for bacteria survival.

Bacteria that cause problems in humans like a steady temperature of 98.6 degrees and moist, dark conditions. The rapid temperature fluctuations, dry surface and sunlight (on outdoor fields) do not meet those criteria.

### **Snow removal**

Snow can be cleared from synthetic turf fields. However, it can be a difficult task and cause damage to the turf if done improperly. There are several precautions that should be followed to prevent turf damage. Covering the field with a tarp is effective as long as snow is removed as it accumulates and not allowed to build up. Snow can be removed by using a retro-fitted plow or snow blower, making sure to not scrape all of the way down the turf surface. Equipment should never be set so that it digs into the field. More details are available [here](#).

Synthetic turf fields are a big investment. Like any investment, a field needs to be cared for and maintained along the way to get the most out of it. By performing the proper maintenance practices on a routine basis, you will be well on your way to providing a playing surface that maximizes player safety, playability and field longevity.