A TALE OF TWO TYPES OF TURF

Comparing natural and synthetic options

BY TODD FORD

Multiple factors should be considered when installing playing fields for parks and sports complexes, and chief among them is whether to install synthetic or natural turf. Each type has benefits and detractions, depending on intended field usage—including the number of teams or participants, the variety of sports being played, and the time of year each field will be used. By weighing the pros and cons of each type of turf, considering the latest technologies and dispelling misconceptions, officials can make the most appropriate choice for their facilities and communities.

A SYNTHETIC SURFACE HAS THE EDGE ON ITS NATURAL COUNTERPARTS BY NOT REQUIRING THE RE-PAINTING OF LOGOS, YARD LINES, FIELD MARKERS, ETC.

Synthetic turf was introduced 50 years ago to provide a field option that was weather-resistant, required less maintenance, and provided more durability. However, limited material and application options were sometimes criticized for safety and environmental issues. In addition, decision-makers who had grown up shagging balls in Little League or pulling down linebackers under Friday-night lights were more familiar with the feel and aesthetic of a natural-turf field.

Since those early days, synthetic turf has evolved to address and correct previous concerns, offer a similar ball roll and cleat-to-turf interaction to its natural counterparts, and improve upon a more current objective—to provide communities and complexes with the ability to host more frequent, varied, and profitable events.

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THE MOST IMPORTANT CONSIDERATION THAT SHOULD SHAPE A TURF DECISION FOR A COMMUNITY IS HOW A FIELD WILL BE USED. FOR EXAMPLE, IF A COMMUNITY WANTS TO MAXIMIZE A FIELD'S USE, INSTALLING LIGHTS TO EXTEND THE AVAILABILITY FOR SCHEDULING EVENTS PAST SUNDOWN IS A SMART MOVE.

By responding to the needs and wants of athletes and communities, synthetic turf is now a worthy rival to that of natural turf. The key to making the right call on which is the better fit is by further understanding the pros and cons of each.

INSTALLATION AND LONGEVITY, MAINTENANCE AND PLAYABILITY

Installing a synthetic-turf field usually costs more than installing a natural-turf field, starting at about 10 to 30 percent of the total construction cost of a natural-turf field. Improvements to materials and labor needs are working to close that gap.

Natural-turf fields have a less predictable lifespan than synthetic turf, since they are more affected by external influences like weather, wear, and overuse, but have the potential to last longer than their synthetic counterparts. While synthetic turf usually carries a warranty for eight to 10 years, the current average lifespan often extends to 12 years. However, proper maintenance can extend the lifespan and durability of both.

One of the primary reasons synthetic turf was developed was to ease the maintenance burden. Technological advances have made these surfaces increasingly weather-resistant and weather-tolerant, improving drainage and allowing fields to remain consistent and accessible for play during and/or immediately following rain and other inclement weather.

Natural-turf fields, especially at tournament-caliber sites, are more expensive to maintain. They require regular lawn care and irrigation, especially during dry periods, and frequent mowing during wet periods. Natural turf typically requires two to four growing seasons to fully establish a playable grass surface. Also, playing on a natural-turf field during or immediately following inclement weather can cause long-term maintenance issues.

Synthetic turf can require maintenance on heavy wear areas, such as a pitcher's mound, sliding zones, and a batter's box, but these can be sustained with replacement inserts, if needed. Unlike natural turf, however, synthetic-turf fields do not require repeated re-painting of logos, yard lines, field markers, etc. It also takes less time to prepare a synthetic-turf field for play and less time to recover optimal conditions afterward.

Synthetic-turf fields are continually being tested and improved for cleat-to-turf interaction, ease of play per sport, ball performance, etc., and provide that consistent, high-level playing surface no matter the weather or time of day. Multiple systems are available to help reduce the surface temperature during the warm seasons, and alternative infills, turf fibers, and other variations are available to provide a cooler turf system during summer usage.

These newer technologies and various infill options, including the use of a thatch layer, have successfully reduced the

FACING: THE MANCHESTER MEADOWS ATHLETIC COMPLEX IN ROCK HILL, S.C., REPORTEDLY HAS MADE A $3.5-MILLION ANNUAL ECONOMIC IMPACT ON THE COMMUNITY SINCE OPENING IN 2006 BY HOSTING YOUTH SOCCER CHAMPIONSHIPS.

amount of infill that is displaced (otherwise known as infill splash) while playing on a synthetic-turf field.

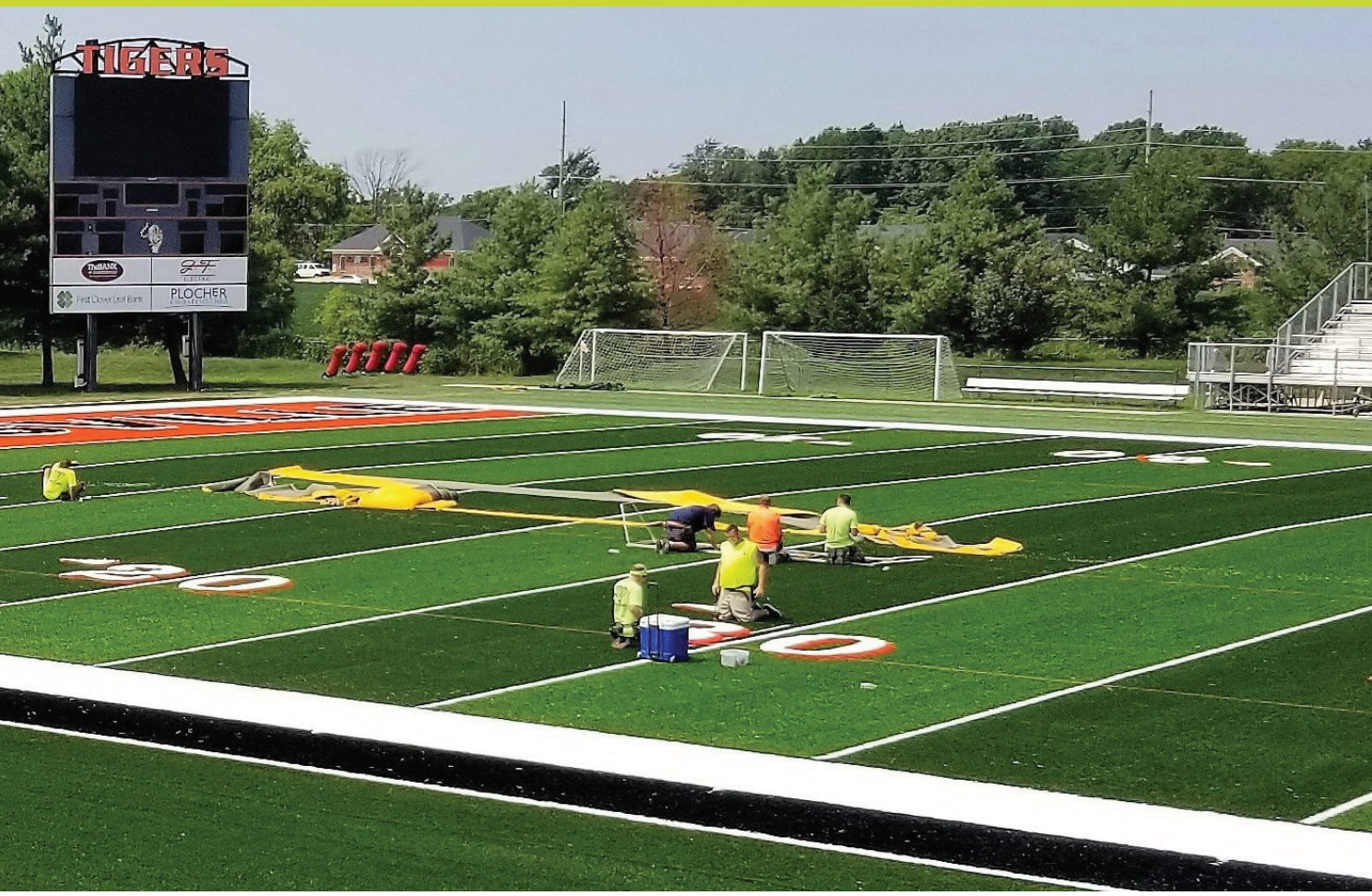
SAFETY AND ENVIRONMENTAL FACTORS

Playing just about any sport on an even, weather-resistant, well-drained surface decreases the incidence of injuries like sprains, contusions, and concussions. The Concussion Legacy Foundation has reported that one of every five concussions occurs when the head impacts the playing surface. Natural turf often hardens over its lifespan, increasing the potential for these safety issues. Synthetic turf offers the optional installation of a shock pad with fiber technologies and multiple infill options for further protection.

These shock pads also have been found to improve a field's results during Gmax testing, which measures the shock-attenuation performance of a sports surface, and provides a more favorable result per its Head Injury Criterion (HIC) testing, which measures the likelihood of a head injury arising from an impact.

Studies also have found that a muddy natural-turf field provides the least resistance to cleat-releasing from the field surface, which can reduce the incidence of leg, ankle, and feet injuries. Synthetic-turf fields are being created to mimic the quality of the natural-turf field at its best, consistently providing that ideal playing surface.

Environmental concerns also are a determining factor when choosing a turf field. As synthetic turf has been implemented over the years, there were questions about whether the materials used—specifically the optional use of tire crumb-rubber infill—caused health concerns for the athletes. The U.S. Environmental Protection Agency reported in 2016 that "several studies that have examined potential human health risks have not shown an elevated risk from playing on fields with tire crumb-



rubber infill," adding that additional research is needed. There has been no conclusive finding to prevent its use, and multiple infills have been developed since that have addressed these concerns and not incurred the same scrutiny.

Conversely, due to the lawn-care chemicals sprayed on natural turf and the emissions from mowers and other equipment needed to maintain these fields, the use of recycled, quality-controlled materials for synthetic-turf fields is now being considered a more "green" alternative.

INSTALLING A SYNTHETIC-TURF FIELD MAY COST MORE INITIALLY, BUT IT TYPICALLY COSTS LESS TO MAINTAIN. THE DIFFERENCE IN COST MAY BE AS LITTLE AS 10 PERCENT TO 30 PERCENT OF THE TOTAL CONSTRUCTION COST.

TURF OPTIONS CONTINUE TO EVOLVE

Ideally maintained, natural turf likely will be used as the benchmark for athletic fields. However, due to ongoing technological improvements, synthetic-turf fields provide an outstanding option for communities and athletic complexes of multiple sizes and uses. Synthetic-turf fields mimic the playability of the natural-turf field while providing a more durable, economical, and safe surface of play.

By providing athletic fields—whether natural, synthetic, or a combination of both—that can consistently host games or tournaments for a variety of sports, often over multiple years, communities can have valuable local assets, increase regional sports tourism, and spur significant and long-term economic benefits. **PRB**

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