

THREE KEY CONSIDERATIONS WHEN SELECTING SYNTHETIC TURF FOR COLLEGIATE ATHLETICS

WOOLPERT WHITE PAPER

By Andrew Pack
andrew.pack@woolpert.com



February 2013

In the sporting world, the field of play is the stage on which legends are born. European football refers to this stage as the “pitch”; North American football’s “gridiron” is spoken of with almost sacred reverence. The field of play in collegiate athletics is equally as important, serving as both a training ground for legendary athletes and a place where competition gives rise to fierce rivalries that elicit a sense of school pride. Not to be taken for granted, the field of play in collegiate athletics must befit the venue—and be designed to perform under the duress of sport and the natural elements.

Technological innovations in athletic synthetic turf have introduced many alternatives to natural grass in the sporting world. The prospect of increased durability, multi-purpose functionality and relative ease of maintenance (compared to natural grass) has increased its popularity, especially within collegiate athletics. Since the mid-1960s when it was first introduced, athletic synthetic turf has evolved from an artificial grass surface—one that lacked many of the characteristics of natural grass—to a variety of highly realistic grass-like alternatives. The science of synthetic turf has taken great strides in recent decades, resulting in surfaces that deliver state-of-the-art athletic field performance, tailored to serve a multitude of sporting activities and functional purposes.

Selecting the Perfect Synthetic Turf Requires Careful Consideration

Synthetic turf selection is often the first and most important decision when planning new construction of an athletic facility, whether its intended use is for collegiate football, soccer, field hockey or lacrosse (or all of them). The selection process requires careful consideration to determine the ideal turf “programming,” or what attributes are best suited to meet the field’s functional goals, including types of sports, other planned uses, frequency of usage, orientation of field within the overall facility design, physical appearance and desired longevity. Combined, these programming criteria will dictate the pile height, fiber material and surface playability, as well as determine installation and maintenance requirements. At the university level, turf selection is a decision that requires the input (and ultimate blessing) of facilities directors, athletic directors, university administrators and members of the coaching staff. With so many synthetic turf options to consider and the number of stakeholders involved, those ultimately responsible for selecting the optimal playing surface often lack the expertise needed to make an informed decision.

Unfortunately, this knowledge gap can lead to poor programming and the installation of synthetic-turf athletic fields wrought with performance and maintenance issues. With proper planning and the help of experienced consultants, these pitfalls can be avoided. The purpose of this white paper is to explore the key considerations and offer best practices when planning the installation of a synthetic turf field for collegiate athletic programming.

Consideration One: Master Planning and Programming

Tour Neighboring University Facilities

An exhaustive planning process is the first key to successful synthetic turf selection. Often the best place to start is to research the types of synthetic turf other universities have recently installed. Visit as many facilities as possible to get a hands-on feel for what’s available and successfully in use. While onsite, speak to facilities directors and inquire why the particular playing surface was chosen. Has the synthetic turf performed as intended? What are its maintenance requirements? Finally, what was the cost?

Acquire a Geotechnical Report

Enlist the services of a geotechnical firm to conduct a subsurface investigation and determine the physical properties of the soil conditions beneath the proposed athletic field. Qualified geotechnical engineers will collect onsite soil samples using hand augers or drill rigs to evaluate the existing condition of the subgrade, identify potential issues and issue a geotechnical report. If subgrade issues are encountered, engineers can help determine the costs to implement the needed improvements.

Understand the Drainage and Maintenance Requirements

Effective drainage of a synthetic turf is critical to its overall performance and longevity. Stakeholders must be acutely aware of the drainage and discharge points of the proposed field location to ensure compliance with local stormwater and zoning regulations. Because drainage properties differ among synthetic turf types, it's critical to plan for sufficient drainage to accommodate possible turf selections. It's also important at this stage to fully investigate the maintenance requirements for the potential synthetic turf options and plan accordingly to have the staff and resources in place to support that effort.

Narrow Down the Selection

The increasing number of synthetic turf manufacturers has resulted in the availability of countless grades of material quality—some are even constructed with environmentally friendly materials as well. During the master planning stage, stakeholders must establish a budgetary range to guide the selection process, with an emphasis on achieving the ideal balance of price and performance, while still meeting the project's functional goals. Before sending the project out to bid, it's a best practice to narrow down the synthetic turf options to a select few.

Consideration Two: Finalize Construction Plans and Specifications

Subgrade Preparation

With master planning largely completed, stakeholders can start putting those plans into motion, compiling construction specifications and soliciting sports field contractor and synthetic turf manufacturer bids. Depending on the types of synthetic turf under consideration, facilities directors must verify the requisite subgrade design and compaction specifications with the geotechnical engineer who collected the onsite samples. In addition, the proposed field's grades are within industry design tolerances using the latest laser grading techniques.

Turf Performance Requirements and Warranty

Detailed synthetic turf performance specifications must be carefully documented for the bidding process, along with a listing of the manufacturers and turf varieties (recommended minimum of three) that were selected in the master planning phase. Turf design details—such as pile height, infill methods, nailing strip type, access, drainage, air venting, logos, line markings, goal post sleeves, etc.—must also be carefully documented. Make sure the specifications clearly state the minimum warranty period for both the contractor and manufacturer to cover defects in materials and workmanship (eight to 10 years is common). For maximum protection against performance issues or defects, owners may consider a potential third-party warranty.

Installation and Testing Provisions

To pre-qualify synthetic turf field installers, request the general contractor employ a sports field contractor that maintains an American Sports Builders Association-Certified field builder status. The sports field contractor should be able to produce a minimum of three reference projects of similar scale and complexity to ensure they possess the requisite experience.

Employing the services of a third-party testing firm safeguards that the project owner obtains a truly objective and rigorous testing of the athletic field's specification requirements. Everything from turf material and field-of-play performance to drainage and maintenance requirements should be evaluated in these tests.

Create Construction Documents

Once all of the specifications have been thoroughly defined and established, a professional sports field designer can compile all the information gathered to create proper construction drawings that represent all of the performance requirements, including manufacturer's warranty, actual synthetic turf product options, turf/stone sub-grade layer designation and drainage instructions.

Consideration Three: Establish and Document the Maintenance Plan

Perhaps the greatest predictor of long-term synthetic turf success is the level of access to reliable service contractors and the adherence to manufacturer's maintenance recommendations. Owners may obtain a maintenance contract from the manufacturer, use the facility's onsite resources or rely on a combination of the two.

If maintenance will be conducted onsite, owners must require the sports field contractor to provide a written maintenance manual and training for the maintenance staff on techniques to properly clean and groom the synthetic turf. As important, the manufacturer's representative will ensure that proper maintenance equipment is being used by the maintenance staff to prevent unintended damage to the turf.

Lastly, stakeholders should obtain certified letters and warranty documents from the manufacturer, turf installer and the general contractor for the installed product.

The Proof Is in the Performance

The combination of master planning, careful programming definition, construction specifications and maintenance considerations will ultimately result in awarding the bid to the best sports field contractor/manufacturer to provide a playing surface that meets all stakeholders' objectives. Once installed, the synthetic turf should provide more than a decade of performance. But its ultimate success will be measured on the field: supporting the sports team's practice regimens, hosting game days and holding up to the maintenance crew's cleaning and grooming activities. When all of these criteria are met, then the synthetic turf can live up to its inherent purpose of providing a stage for encouraging athletic exceptionalism.