

SYNTHETIC TURF Athletic Field Surface



9-21-08 Patrick J. Hendrickson / Highcamera.com

Natural Turf vs. Synthetic Turf



Synthetic Turf Solution

- ❖ Synthetic turf fields have essentially become a viable and practical option for developing athletic fields, serving participants at the professional, collegiate, secondary education, municipal, and athletic youth league levels.
- ❖ Synthetic turf fields have similar construction processes, though product and material types, infill systems, and drainage systems may be unique to your project.

Synthetic Turf Benefits

❖ Increased Playability

- Estimated to increase playing capacity by 62% in conjunction with the addition of lights, when compared to natural turf. Increases capacity on lighted existing field sites lessening the need for constructing additional fields.

❖ Increased Durability

- Reduces field closure due to overuse, allowing fields to remain open for the length of the season. Eliminates divots, bald spots, and uneven terrain of rigorously used natural turf fields.

Synthetic Turf Benefits

(continued)

❖ Improved Drainage

- Superior ability to drain water. Fields can be used during or immediately after most rain events. Virtually eliminates the need to reschedule games due to inclement weather.

❖ Lower Maintenance Costs

- Requires no mowing, fertilizing, pesticides or re-seeding. Regular maintenance includes grooming and debris removal.

Stormwater Management Benefits of Synthetic Turf

Synthetic turf field drainage systems may be approved as an innovative Best Management Practice (BMP) in your jurisdiction, providing storm-water *quantity* and *quality* controls which benefit existing waterways.

Stormwater Management Benefits of Synthetic Turf

(continued)

Quantity

- Synthetic turf reduces the peak storm-water flow into the existing natural storm-water system.
- Storm-water must travel through the entire synthetic turf system before entering an existing natural waterway.
- Peak flow reduction causes less erosion in the existing natural waterway.

Stormwater Management Benefits of Synthetic Turf

(continued)

Quality

- Synthetic turf systems provide water quality improvement by reducing phosphorus runoff to nearby streams and tributaries.
- The synthetic turf system acts as a filter, capturing small amounts of physical and chemical contaminants.
- Natural grass athletic fields often do not have healthy stands of grass due to over-use. The lack of healthy stands of grass increases the amount of sediment present in storm-water runoff.
- Synthetic turf fields do not require the use of fertilizer and other chemicals that ultimately enter the natural storm-water system.

Stormwater Management Benefits of Synthetic Turf

(continued)

The installation of synthetic turf fields eliminates the need for irrigation systems and fertilization, saving precious water resources and protecting the environment.

Pros & Cons

Synthetic Turf vs. Natural Turf

Synthetic Turf – PROS & CONS

•Continuous play (even during inclement weather, except for thunder & lightning)

•No chemical applications

•Eliminates the need for irrigation

•Less maintenance

•Sweeping

•Tining

•Grooming

•Consistently uniform playing surface

•With the exception of monthly painting game lines that are not permanently sewn in, none of this is required on a synthetic field.

Natural Turf – PROS & CONS

•Rainouts

•Delays

•Use of fertilizer and pesticides

•Irrigation system to provide necessary watering

•Seeding

•Painting of all lines

•Fertilization

•Mowing

•Aeration

•Bare spots

•Holes

•Rocks and/or gravel

•It costs approximately \$23,500 annually to maintain a typical rectangular field (this includes twice weekly mowing painting lines and turf maintenance. On heavily used fields irrigation is also essential.

Pros & Cons

Synthetic Turf vs. Natural Turf

(continued)

Synthetic Turf – PROS & CONS

- Quantitative savings on laundering and replacement of uniforms
- No downtime regarding use of field after yearly seeding or re-sodding of grass
- Ability to host an unlimited amount of community activities, football, soccer, lacrosse, field hockey and rugby
- Potential decrease in transportation costs for transporting students to off-site practice fields
- The potential for revenue generation from holding play-off and championship games on synthetic turf fields
- Extended playing season
- Higher surface temperature

Natural Turf – PROS & CONS

- Extra laundering due to mud and grass stains
- Fields have to be re-seeded or sodded
- Due to adverse field conditions, loss of scheduling to give the field a chance to repair
- Transportation costs to transport students to off-site practice fields
- Limited number of games held due to adverse field conditions
- Average/below playing season
- Consistent surface temperature

Annual Maintenance Cost

	Natural Turf	Synthetic Turf
Labor	\$ 8,800	\$13,000
Materials & Equipment	\$ 7,600	\$ 500
Contracted Services	\$ 1,700	\$ 1,200
Lighted	\$ 2,900	\$ 4,000*
Irrigation	\$ 2,500	\$ -0-
TOTAL	\$23,500	\$18,700

* Additional cost for lighting for Synthetic Turf Fields is due to extending playing seasons for winter use.

Life Span

Synthetic Turf

An industry leader for synthetic turf fields guarantees their fields for 8 years. Therefore it is reasonable to assume that the fields will last in the range of 8-10 years. At the end of its life span, a new synthetic field would cost significantly less than the original because the basic design, foundation, and drainage would already be provided.

Natural Turf

The life span of a natural turf field varies greatly, depending on the amount of use, turf practices, staffing levels, etc. Given the existing pressure to over-use fields, it is difficult to keep them at a high level of quality. It is reasonable to assume that such highly used fields will need a major overhaul every ten years or so. This would obviously not be a total replacement, but instead of rehabilitation of the soil profile, the grade, the turf, and the irrigation system.

Funding Mechanisms

- ❖ Fairfax County Park Authority – Various multi-million dollar bond projects along with several other funding sources including proffers, private-public partnerships which thus far have contributed to 22 synthetic field installations

Construction Process



Stripping Top Soil

Construction Process

(continued)



Laser Grading

Fine Grading and Proof Rolling Subgrade



Fine Grading



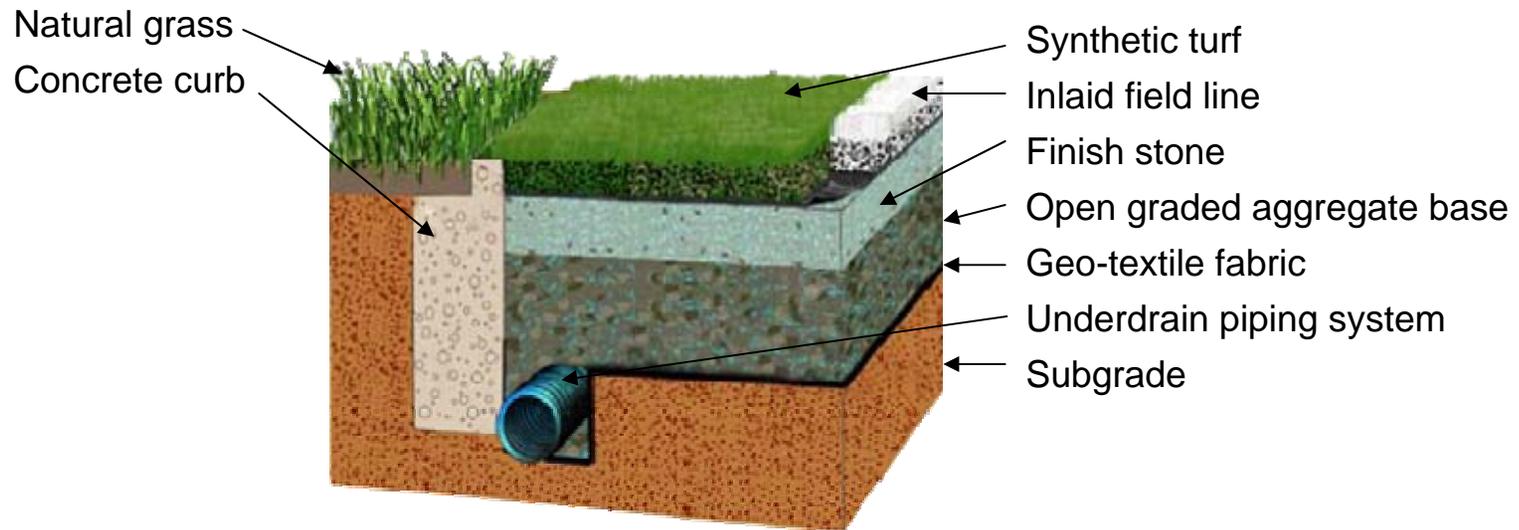
Proof Rolling

Subsurface Drainage Systems



Synthetic Field Development Profile

BASE AND DRAINAGE SYSTEM DETAIL



Perimeter Curb Installation



Stone Base Installation



Final Stone Base Installation



Synthetic Turf Installation



Installing Infill Materials



Brushing Infill Material



Replacement of Synthetic Turf

- ❖ A well engineered sub-surface drainage system should be sustainable for two or three synthetic turf replacements

Completed Field With Inlays

