

Morning Michael,

It was a pleasure to speak with you and Kevin on the call yesterday.

Playability Considerations for Synthetic Turf vs. Natural Grass Fields based on my experience.

Impact of Weather on Playability

While synthetic turf fields offer significant advantages in terms of quicker recovery and usability after heavy rain events, this is only one climatic factor affecting playability. Heat, particularly radiant heat, has a significant impact on both the performance and safety of artificial turf surfaces.

Surface Temperature and Infill Options

Recent developments in infill materials provide some mitigation of excessive surface temperatures. For example, BrockFILL, a natural pine infill, has demonstrated significantly lower surface temperatures when compared to traditional Crumb Rubber. In a side-by-side test with identical turf products:

- BrockFILL: 121°F - *BrockFILL is not without drawbacks. When wet, it is prone to freezing, which renders the field unplayable in colder conditions.*
- Crumb Rubber (with cooling agent): 154°F

Non-Shoulder Season Play Challenges

Athletic performance can be significantly hindered by elevated surface temperatures, even during what are otherwise considered temperate days. For instance, during a collegiate field hockey match on a 70°F fall day in New England, surface temperatures reached 135°F—just below the NCAA's 140°F threshold for playability. Such temperatures raise legitimate concerns about athlete safety and the risk of heat-related illness, especially at the high school level where athletes may not be conditioned to the same standard.

Spring sports, such as track and field, often utilize the infield areas of turf fields. Yet, high radiant heat can make these spaces unsafe or unusable during peak sunlight hours.

To think you are going to play on a synthetic field all summer is unrealistic.

Shoulder Season Play

In regions like New England, early spring use of fields under snow-covered conditions is appealing. Synthetic turf can be cleared of snow, but this comes with risks:

- Potential damage to turf seams
- Need for specialized snow removal equipment
- Increased labor and maintenance costs
- Possible voiding of manufacturer warranties

In contrast, growth covers have enabled natural grass fields to be playable as early as March, offering a viable alternative for early-season sports, as well as, late season repairs.

Maintenance and Replacement Costs

Usage and Wear

The more a field is used, the more intensive its maintenance needs become. As Mr. Shay notes in his article *Making Smart Plays*, determining weekly player-use hours and the sports played are crucial factors in surface selection. For high schools in New England, natural turf options are generally limited to native soil fields due to climate and resource constraints.

Synthetic turf fields are often marketed as supporting 3–4 times more play hours than natural grass. However, this increased usage also accelerates wear and reduces the effective lifespan of the field.

Case Study:

At the 2023 NE-Sports Field Management Association Forum, Chase Ferguson (Assistant Director of Athletics/Operations, Holy Cross) reported the need to replace turf in their Indoor Practice Facility after only 7 years of use—despite being protected from weather and UV exposure. This underscores how wear and tear can rapidly degrade turf even under ideal conditions.

Cost of Replacement

The cost to resurface an artificial field is typically around 60% of the original installation cost. For a \$1 million field:

- Resurfacing Cost: ~\$600,000
- Average Resurfacing Cycle: Every 8 years
- Annualized Cost: ~\$75,000

Most fields can be resurfaced twice before the underlying shock pad requires replacement, which often costs as much as a new field installation.

Example – Stellos Stadium, Nashua, NH:

- Original Installation: 2001
- 2011 Replacement Cost: \$609,525

"School officials have said the turf field is worn out, with soft spots that may not pass safety tests."

Source: [Nashua Telegraph, 2011](#)

- 2024 Replacement Estimate: \$850,000
- 2024 Actual Cost: \$1.5 million