

Serious Questions About New-Generation Artificial Turf That Require Answers

In order to make fiscally and environmentally sound decisions regarding the potential purchase and installation of artificial turf in their communities, decision makers must consider all short- and long-term issues and concerns.

Artificial turf is being widely promoted as a cost-efficient, environmentally- and user-friendly product that can replace natural grass on sports fields and home lawn areas.

Unfortunately a large number of unsubstantiated claims are being made by promoters of the new-generation artificial turf products (particularly those that incorporate ground rubber as part of their base).

Claims made by many artificial promoters include some or all of the following:

1. Artificial surfaces have a life expectancy of 15 to 20 years.
2. Initial purchase and installation costs are quickly offset by the absence of on going, maintenance costs.
3. Safety of the artificial playing surface is un-matched by natural turfgrass.

Significant questions about the validity of these claims deserve answers.

Of equal or greater concern are questions that typically will not arise during the normal artificial turf sales presentation process, in particular issues related to the health and safety of our children and serious threats to our environment.

These issues require answers.

In a world where we all want the best for our children and where professional or even high school level coaches want the best for their athletes, we search for solutions that on the surface may seem the perfect answer. As experience has proven time and again, "If it seems too good to be true, it probably is," is an adage worthy of contemplation when consideration is being given to constructing an artificial turf area. While "fraud" is a highly charged word, some claims made by some artificial turf companies may fall within the legal definition of that term, while other claims may only be deceptive, over-statements, misstatements or misunderstandings.

The issues raised by the following questions are intended to assist in the decision-making process by focusing on real and serious areas of concern.

Insist on answers to these concerns.

HEALTH CONCERNS

Health and safety are two major principles that guide many of the decisions individuals, parents, athletes and coaches as well as appointed and elected officials must make on a daily basis. When decisions impact children or the environment, ignorance is no excuse, neither is falling under the guile of an agenda- or commission-driven salesperson.

Ground tire rubber is used in some artificial fields as an impact-softening base. The toxic content (including heavy metals) of tires prohibits their disposal in landfills or through ocean dumping. Yet, this toxic material is being allowed (in large quantities) where children and professional athletes come into direct contact with it.

1. Should the presence of potentially toxic ground rubber on a sports field or home lawn be a concern to decision-makers, athletes, coaches, spectators and parents?
2. For those firms who make claims of using shredded athletic shoes, what percentage of this type of rubber is being used (if any), versus ground tire rubber?
3. What is the heavy-metal and/or toxic material analysis of the ground rubber?
4. What are the short- and long-term health effects for athletes and spectators to the inhalation of the ground rubber dust?
5. What are the health concerns related to the ingestion of ground rubber particles that takes place from sliding face-first on the surface or dropping and re-inserting a particle-covered mouth-piece onto the field?

Temperatures on artificial fields have been documented to be upwards of 86.5 degrees (F) hotter than natural grass fields under identical conditions. For example, at one location, when the natural grass surface temperature was 93.5 degrees (F), the measured artificial field temperature was 180 degrees (F).

1. What length of time can players of different ages (particularly the very young and/or very old) be safely exposed to this heat level?
2. If watering artificial turf reduces the field temperature, what is the length of time the temperature is reduced, and by how many degrees?
3. Does the requirement to have a field-watering system negate some of the projected cost-savings of artificial turf?
4. Although artificial fields are sold on a basis of being able to utilize the field 7 days a week, 24 hours a day, what outdoor temperature levels will cause the field to be closed because of potential health concerns to participants? Similarly, what lesser temperatures will cause participants to be so uncomfortable as to not enjoy playing on the surface?

Field sanitation that includes removal of bodily fluids (spittle, blood, sweat, vomit, urine), and/or bird or animal droppings may present a unique problem for artificial fields.

1. Will the use of antiseptic cleaners properly sanitize the area?
 - a. How frequently must the field be sanitized?
2. Will the use of these sanitizing cleaners invalidate the surface's product warranty?
3. Do the sanitizing cleansers or the scrubbing process damage the artificial fibers and lessen the projected life expectancy of the product?
4. How much time, equipment and manpower must be budgeted to ensure a reasonably sanitary playing surface?

Abrasive surfaces can result in difficult-to-heal injuries, particularly in the presence of bacterial or viral pathogens.

1. What standards of abrasiveness have been established for artificial products?
2. Are parents, coaches and sports medical personnel trained to recognize the potential seriousness of abrasive wounds caused by artificial surfaces and prepared to treat them properly?

Field hardness (either too hard or too soft a surface) can result in serious chronic or immediate athletic injury.

1. What standards of artificial turf installation and maintenance have been developed to ensure field-wide, season-long uniformity and consistency, particularly when different field uses (i.e., soccer, football, marching bands, concerts, etc.) are allowed or encouraged?
2. What is the correlation between the potential for increased on-field players' speed and the incidence of serious injuries?
3. If additional ground tire rubber is periodically added to the field are potential health and environmental concerns about the toxicity of this material also renewed?

Athlete Health and Career-Longevity can be seriously jeopardized by exposure

to extreme temperatures, overly hard or overly soft surfaces, greater speed at point of impact (with the field or other players) and staphylococcus (staph) infections caused by parasitic bacterium present on the playing surface.

1. What specific sports injury studies have been conducted to document the safety or artificial sports surfaces?
2. What specialized equipment, particularly footwear and padding, is recommended or required to address sports injury concerns that occur frequently on artificial fields?
3. Has the health-care profession developed hydration guidelines for athletes at different ages, performing on hot artificial fields to reduce or avoid serious or even life threatening dehydration situations?
4. What field maintenance practices are recommended or required to address the abnormally high presence of staphylococcus bacterium that can develop on an artificial surface?

ENVIRONMENTAL CONCERNS

Ground rubber and artificial turf particulates are present on the playing field and in the surrounding spectator stands. Pesticides and cleansing products may be routinely applied to the surface, with unknown consequences to the environment.

1. What levels of these materials is a health concern? Has the EPA established maximum exposure levels to these materials? Has OSHA established exposure limits for workers in tire shredding operations?
2. Because of the presence of ground rubber and various man-made or plastic components in and on artificial surfaces, will environmentally safe disposal of a large amount of this material be possible when replacement of the field becomes necessary?
3. What gases would be released into the atmosphere in the event of a fire on the artificial surface?
4. How would an artificial turf fire be fought so as to extinguish the fire as quickly as possible, minimize danger to the fire fighters and/or reduce the release of toxic fumes into the atmosphere?
5. What scientific testing has been completed to document that run-off or leachate from an artificial area is not polluting surface or groundwater?
6. What impact does an artificial surface have on the area's capacity to recharge groundwater or an aquifer?
7. What products are available to safely control weeds, algae or other conditions that develop on artificial surfaces, particularly when large amounts of water are applied in an effort to reduce the surface's heat build-up? Herbicides, fungicides or algaecides are not now labeled by the USEPA for application on artificial surfaces because of fears of runoff and contamination, similar to applying pesticides to a driveway or other hard surface.
8. Given the fact that artificial turf surfaces absorb radiant heat (sunlight) and are therefore hotter than the surrounding area, how serious of a heat-island effect can be expected after installation of such a field?
9. What will be the overall environmental impacts to an area when artificial turf is used to replace natural grass? (Natural grass reduces temperatures, traps and bio-degrades airborne pollutants, filters rainwater and facilitates the recharge of groundwater and aquifers. Artificial turf performs none of these environmental benefits and may cause damage, as noted above.)

COST CONCERNS

The initial purchase price of an artificial surface (sports field or home lawn) is many times greater than a natural grass area; however, promoters of the artificial products maintain that tremendous costs savings will be forthcoming because of reduced maintenance costs, as well as the product's warranty.

Because many of the artificial products are relatively new and not tested over time and use, no- or low-cost maintenance requirement claims that are consistently made by promoters of artificial surfaces may prove to be highly exaggerated.

1. Will the artificial turf manufacturing and installation company provide a warranty specifying the expected life of the product?
2. Given the fact that several artificial turf manufacturing companies have gone bankrupt, will the selling firm provide a warranty bond for the life of the product, ensuring that the buyer has some legitimate recourse in the event of failure?
3. What is the longest period of time the artificial field being specified has been in use (at a level of use at least as great as the area being considered)?
4. What conditions or maintenance practices will void the field's warranty?
5. Does a single warranty cover all aspects of the artificial field's soil-base preparation, base materials, artificial turf materials, top-dressing, irrigation system, etc., or will there be separate warranties and warranty voiding conditions for each element...some of which could contravene each other?
6. What is the minimum and maximum financial investment in specialized capital equipment that must be purchased to maintain the artificial field at a level that will provide maximum playing conditions and maintain the warranty?
7. What level of manpower (ground crew) is required to maintain an artificial field, compared to a natural grass field? Has any crew size or man-hour requirements been reduced with the installation of an artificial turf area?
8. What level of technical training is supplied, recommended or required for the ground crew in order to properly maintain the area and the warranty conditions?
9. What are the warranty required or recommended processes to address each of the following repair or replacement requirements of the artificial surface:
 - a. Damage caused by cigarette burns? Burns to larger areas?
 - b. Discoloration of areas caused by wear pattern differences?
 - c. Replacement of areas caused by wear or other physical or weather-related damage?