# Fieldturf PUSD Questionnaire Responses

1. Describe the manufacturer recommendations concerning annual maintenance and repair. Include whether water or chemical agents (including anti-bacterial agents) are recommended and, if so, the quantity and frequency of application.

We recommend that your maintenance staff groom the field every 2-3 months depending on usage and other factors. We do not recommend any additional chemical agents be used on the field but certain anti-bacterial agents won't hurt the field either. If you are concerned about the need of these agents because of possible Staph infections, please read the attached document concerning that issue. Another option is to install our EcoGreen infill (see attached flyer), which contains Microban anti-bacteria for extra protection. The Micoban is embedded in the colored rubber infill as part of the manufacturing process so there would be no need to use any chemical sprays in the future.

2. Describe the durability of the field, including the hours of potential use per day and number of days of potential use per year. Indicate whether the durability changes over the estimated lifetime of the field.

For a 25,000 sq ft. field, we would recommend our Mini-pitch XP fiber, which is the strongest on the market and used in smaller installation such as this. Like any product, the durability is dependent on both use (total hours of play, not years), climate, maintenance, type of sports played, type of shoes used, the age of the users and other usage and environmental factors.

While we still have many fields in the ground (over 100) from our 1st generation of turf that have well surpassed their warranty periods and still play great after 9-11 years, we would tell you that you should only base the life span of these fields on their warranty period, which is for 8-years.

3. What is the estimated lifetime of the field?

8-10 years but again, please do your field replacement cost estimates only on the 8-year warranty.

4. What is the product warranty (for what period is the field guaranteed to be usable and meeting applicable standards, and what is the remedy if it does not)?

Eight years with a 3rd party insured policy. The most important factor of whether a field is or is not meeting applicable standards is safety. The field must maintain stable infill levels, planarity with no uneven infill or trip hazards from the fill or from seams or lines coming up and keep in the recommended g-max range of under 200 as per ASTM.

No synthetic grass field goes from looking brand new to worn out overnight and so the ascetics of any quality turf field should fade well before its playability, performance and safety.

With Fieldturf, if a client is not satisfied with any aspect of the field, you would call your local sales representative and they would arrange a site visit with our local installation crew chief along with our west coast construction manager. The field would be evaluated along with the usage and current maintenance schedule and a determination would be made along with the client as to the best way to remedy the situation. Some times that involves using Fieldturf's maintenance company for a few groomings or infill might need to be added or taken out, seams or lines repaired, etc.

The single most important factor for you to know about Fieldturf and our warranty is that with over 3,000+ fields installed in the ground over 12-years, Fieldturf has never had a claim field against our warranty or insurance policy. That is not because we never have issues; it is because we always work with our clients to resolve any issues before it ever gets that far.

5. Does a single warranty cover all aspects of the artificial field's soil base preparation, base materials, artificial turf materials, etc.? Will there be separate warranties and warranty voiding conditions for each element, some of which could contravene each other?

We would warranty the base prep and materials only if we were doing this scope of work. Normally the base prep is bid out to local general contractors and the turf is secured with as a sub through the GC or separately through a CMAS contract. The advantage of CMAS is the client can pick the turf company they want and get already negotiated government discounted

volume pricing. This way also saves the client the markup on the turf by the GC of 8%-12%.

6. What is the cost of replacement at the end of the warranty period?

Approximately $.80 psf in today's dollars if put in a landfill and $.50 psf if recycled.

7. Are recycled materials used to manufacture the field material?

Fieldturf is 100% recyclable and used the highest amount of post consumer recycled content of any turf company. As a matter of fact, the state of California encourages, funds and gives grants to end users of turf fields, tracks and playgrounds who use our recycled rubber. Fieldturf contributes to Leed points.

8. Is the field material recyclable upon replacement?

Fieldturf is 100% recyclable and we are the only company to have recycled a field to date and turned the entire field into new consumer products. (see attached field recycle information.). The estimated cost to recycle a field is around $.50 psf.

9. What is heat of the field compared to conventional grass on a warm, sunny day? What can be done to mitigate excessive heat?

All synthetic turf fields get warmer than natural grass. 20-30 degrees on average on very hot days and 10-15 degrees on warm days. In the Bay Area climate, in is not much of an issue except for maybe a few days per year. 80% of the heat comes from the fibers, not the infill. Water from a perimeter sprinkler system or quick connects is the best method of cooling fields. Fieldturf, in conjunction with our fiber supplier, TTC, has developed a new heat resistant fiber called the Fieldturf DuraSpine Pro HR. This new fiber looks to reduce field temperatures by 10-15 degrees. Using a green or tan colored rubber like our EcoGreen infill can also help reduce temperatures a very slight amount by about 3-5 degrees.

10. What certification does the manufacturer/vendor supply regarding the presence or absence of chemicals on California's Prop 65 list?

Fieldturf can supply written certification regarding the absence of chemicals on California's prop 65 list. The only chemicals at issue in older synthetic turf in regards to prop 65 was lead. Fieldturf is 100% lead free and will have an independent lab certify this so this is not an issue for our company.

11. What is the risk of bacteria and mold growth in the material? What can be done to mitigate this risk?

A significant body of work has been done by Dr. Andrew Mcnitt at Penn State University regarding the issue of the growth of bacteria and mold growth in artificial turf.

One thing is clear; the growth of bacteria in natural grass is approximately 80,000 times more than that of artificial turf. On this note, artificial turf is not a breeding ground for bacteria. Due to the fact that our system is inert, bacteria will not survive.

For further information, please visit the following link and the attached document:

Http://ssrc.psu.edu/microbial/index.cfm

Should you have any additional question, please feel free to contact Dr. Mcnitt directly:

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12. What is the risk that the field material will aerosolize (become respirable)? What can be done to mitigate this risk?

A significant body of work has been done on this topic. Two of the best studies are:

1 - Evaluation of the environmental effects of synthetic turf athletic fields, prepared for Milone and Macboom.

The three areas the study addressed were water quality from the runoff that passes through the synthetic turf, the temperature of the surface of the turf, and the air quality on and surrounding the synthetic field. The questions they sought to answer were:

Milone & Macbroom, a Connecticut-based firm specializing in environmental science, has completed a study on the water quality, air quality, and temperature of three scholastic synthetic turf athletic fields infilled with crumb rubber and silica sand in Connecticut. Their study lasted 1 year (2008) and the results of their findings are clear, conclusive and leave no doubt that the three factors mentioned above, along with any other environmental factor, should be of no concern with regards to the safety of synthetic turf fields.

2 - Air quality survey of synthetic turf fields containing crumb rubber infill, prepared for New York City department of health and mental hygiene.

Report finds that under most severe conditions, air quality over synthetic turf fields poses no health risk; air quality over turf fields similar to air quality over grass fields and in upwind locations.

13. What is the risk that the field material will migrate off the field, including but not limited to migration into the storm drain system? What can be done to mitigate this risk?

Using Fieldturf with a layered sand and cryogenic rubber mix with 9 lbs of infill psf will minimize any migration and runoff. Our heavy weight infill system stays in suspension and we have never had to come back and add infill to our fields, even 10-year old fields. All-rubber systems or any light weight infill systems with less than 6-7 lbs of infill psf will have migration and runoff issues.

14. What is the longest period of time the field being specified has been in use at another school, college, or university?

Fieldturf has over 100 fields in the ground that have made it past an 8-year warranty period, some now 11-years old and we have over 400 field installed in N. California alone.