

December 2, 2022

To whom it may concern,

Below is an FAQ on PFAS (Perfluoroalkyl and Polyfluoroalkyl Substances). Please let us know if we can help with anything else. We have the utmost confidence in the safety of our products.

1. *Are there recent studies assessing the relative risks of various cancers in individuals who play soccer, field hockey, and football on natural grass vs. Field Turf's array of infill products?*

The research that has been done centers primarily around one infill in particular and that's recycled crumb rubber. Recycled rubber is a scientifically proven safe material. More than 110 technical studies on the various applications of recycled rubber have concluded that there is no health risk.

Please find the following recent studies and additional attachments that confirm the safety of crumb rubber for us in sports fields:

[US EPA Report](#)

Summary of the EPA report and its findings:

This report highlights what we already know about crumb rubber infill in synthetic turf fields: crumb rubber is made of the same components found in everyday consumer products, and hospital and classroom floors. The report reconfirms that the mere presence of a substance does not equate with human exposure, and recognizes substances are also present in grass fields and other types of surfaces. Furthermore, when the EPA tested for dozens of substances it found low- and below-detection limits emissions, which is consistent with previous studies.

We've prepared the attached handout which includes more information on the EPA report.

[Washington State Department of Health study](#)

One of the most comprehensive human health study came from the State of Washington Department of Health and researchers at the University of Washington School of Public Health, which had formed a project team to investigate issues related to soccer playing and cancer. Their findings were VERY positive for crumb rubber. Here is the most important part of their conclusion:

"We did not find the number of cancers among soccer players, select and premier players, or goalkeepers reported to the project team to be higher than expected based on Washington cancer rates for people of the same ages."

[European risk assessment study on synthetic turf rubber infill – Part 3: Exposure and risk characterization](#)

The European Risk Assessment Study On Synthetic Turf Rubber Infill (ERASSTRI) is one of the most comprehensive multinational exposure studies to be conducted. The study involved researchers collecting a variety of samples from indoor and outdoor synthetic turf fields and rubber recycling facilities across Europe, looked at different exposure possibilities, and concluded that "no health concerns were found for synthetic turf with ELT-derived infill materials."

The Three-Part, Peer-Reviewed, 20-Month Study:

- **Examined Wide Variety Of Sources:** *The study analyzed 86 crumb rubber samples from synthetic turf fields and rubber recycling facilities in 14 European countries.*
- **Included Comprehensive Bioaccessibility Analysis:** *The study analyzed the migration of crumb rubber infill into artificial body fluids (sweat, saliva, and gastric fluid), as well as particles in the air above and around 17 synthetic turf fields in six European countries.*
- **Conducted A Complete Health Risk Analysis:** *Calculated for oral, dermal, and inhalation routes using their extensive database obtained from infill sample collection, risk assessment analysis, and exposure measurements, carcinogenic and non-carcinogenic health risk characterizations indicated no health concerns.*

[Comprehensive Multipathway Risk Assessment of Chemicals Associated With Recycled Crumb Rubber in Synthetic Turf Fields](#)

The study concluded:

- *Estimated non-cancer hazards and cancer risks for all the evaluated scenarios were within US EPA guidelines. In addition, cancer risk levels for users of synthetic turf field were comparable to or lower than those associated with natural soil fields.*
 - *For most scenarios, cancer risks were higher for natural soil fields.*
 - *The use of synthetic turf fields containing recycled rubber infill would not result in unacceptable risks or hazards to adults or children under US EPA's risk assessment guidelines.*
- 2. Which of Field Turf's various infill materials have been engineered to respond to the concerns about "crumb rubber" infill that have been publicized over the past 10 years. I see on your website that you feature at least two rubber-based infill products. How do these synthetic infill materials compare with "crumb rubber" in terms of health and safety?**

Crumb Rubber is safe and still the infill of choice for the majority of our clients. With that being said, we understand that clients want different options and we have the most extensive line of high performance alternative infill solutions in the industry.

With respect to their safety, we have third party testing in accordance with EN 71-3 Safety of toys Part 3: Migration of certain elements - Material of Category III), which is attached and proves their safety.

[CT Department of Health- PFAS](#)

3. How do the various non-synthetic infill products (i.e. olive pits, coconut husks, cork, etc.) vary in price? Performance?

FieldTurf does not install turf systems that we don't believe in, so all of our alternative infill systems – ranging from Thermoplastics to Organics – are safe and high performing. All are backed by FieldTurf's third party insured warranty as well.

Price wise, there are significant differences and we can price out some specific options for you to get an understanding of the cost difference.

4. Did Field Turf / industry ever publish responses to the specific set of concerns raised in the 2015 ESPN broadcast / report about cancer rates in soccer players who played on synthetic turf? (I have seen the U of Washington report you post on your website). If so, please share those statements.

Crumb rubber has been reviewed by more than 110 technical studies (including government and academic) that have concluded that there is little to no risk from recycled rubber. In other words, it is safe. On the topic of cancer rates (aside from the State of Washington analysis in Question #1), I'd encourage you to take a look at this research by Dr. Archie Bleyer, Clinical Research Professor in Radiation Medicine at the Oregon Health and Science University, and founding member of the Critical Mass Young Adult Cancer Alliance and founder of DEFEATcancer. Dr. Bleyer chaired the Children's Cancer Group for 10 years, then the world's largest pediatric cancer research organization, the Department and Division of Pediatrics at the University of Texas MD Anderson Cancer Center, and Community Oncology in the Department and Division of Medicine at the M.D. Anderson Cancer Center.

Synthetic Turf Fields, Crumb Rubber, and Alleged Cancer Risk
Bleyer, Archie
[Sports Medicine Study](#), May 2017)

Conclusion:

All the prior studies and the perspectives expressed here cannot completely exculpate crumb rubber as a cause of cancer. Even the Washington State study of the very soccer players whose cancer raised the concern is not without significant limitations, as fully expressed by the investigators [27] and critiqued by others [34]. The concern of parents, coaches, school administrators, sports medicine specialists, other healthcare professionals, and the players themselves is reasonable, especially when, if the hypothesis were true, the adverse outcome is potentially preventable. After all, cancer is one of the most feared diseases [35] and to have it happen in the young could not be worse.

It is also human nature to blame. Blaming autism on vaccines is a recurrent quintessential example. It also illustrates another human behavior: refusal to believe objective scientific irrefutable evidence [36] and this antiscience attitude appears to be increasing in our society [37, 38]. This human need and attendant denial causes unnecessary alarm, especially when cancer is the fear and

especially in the United States. When American adults were asked which of five major diseases they were most afraid, 41% said cancer, 31% said Alzheimer's disease and only 6-8% named heart disease, stroke or diabetes [39].

Regular physical activity during adolescence and early adulthood helps prevent cancer later in life [40]. Restricting the use or availability of all-weather year-round synthetic fields and thereby potentially reducing exercise could, in the long run, actually increase cancer incidence, as well as cardiovascular disease and other chronic illnesses [41]. That the Washington State study found a much lower incidence of cancer in their soccer players than expected from their general population [27] supports the concern that restricting access to such fields and playgrounds may lead to the opposite of what was intended.

5. *What is Field Turf's response to concerns recently reported about the City of Boston's decision to halt turf field installation due to environmental concerns about PFAS/forever chemicals used in some artificial grass blade materials?*

We believe that their decision is shortsighted and not based on any science. Consider the fact that within the City of Boston hundreds of thousands of athletes – including ones at Harvard, Boston College, Boston University and with the New England Patriots (NFL) / Revolution (MLS) continue to play on artificial turf on a daily basis. If the City of Boston believed in their science would they allow hundreds of fields to remain open and playable? This provides further evidence that their decision was not made using science.

6. *Do you have grass blade materials that are not made with PFAS/forever chemicals? If not, how is the industry responding to those concerns? (Note: Maine looks to curb use/sale of intentionally added PFAS in its economy under 38 M.R.S. § 1614) Is Field Turf developing technology/materials that replace PFAS in the grass blade production process?*

Our product has been tested comprehensively, and we have allowed our clients to test it in whatever way they see fit. This includes the Town of Portsmouth, NH which conducted exhaustive testing on our turf system, leading to the following conclusion:

Below and contained within the link are the comprehensive test results from Portsmouth. Of the materials tested, the carpet sample had the least amount of detectable PFAS – none in the pre-treatment sample.

[https://www.cityofportsmouth.com/sites/default/files/2022-06/Technical%20Memorandum Portsmouth Final.pdf](https://www.cityofportsmouth.com/sites/default/files/2022-06/Technical%20Memorandum%20Portsmouth%20Final.pdf)

As shown in Table 1, there were no detectable concentrations of PFAS in the FieldTurf, synthetic turf carpet pre-treatment sample. The following eight individual PFAS were detected at very low concentrations in the TOP Assay after extreme oxidizing conditions (see PDF for details).

The report concluded: “Based on this evaluation, the detection of very low levels of a limited number of PFAS in the synthetic turf components does not represent a human health risk to those using the synthetic turf ballfields.”

Regards,



Darren Gill
Executive Vice President