

Re: Memo on PFAS-free Synthetic Turf Standards and Testing

Jeff Gearhart <jeffg@ecocenter.org>

Tue 11/17/2020 2:07 PM

To: Alex Elvin <elvin@mvcommission.org>;

Cc: Adam Turner <turner@mvcommission.org>; planningboard@oakbluffsma.gov <planningboard@oakbluffsma.gov>;

Thanks Alex,

I appreciate your work on this and I truly understand what a challenge it is. Ultimately, I think you want to get to a point where the public has confidence in the standards you are applying and in the testing you are requiring. For the reason I previously stated, I don't think your current testing program will accomplish this.

The most current work in this area is in fact utilizing the elemental fluorine testing we are recommending. This testing can be done for as little as \$75 per sample.

GreenScreen Standard for Firefighting Foam

<https://www.greenscreenchemicals.org/certified/fff-standard>

"PFAS-free is defined as zero intentionally added PFAS to the product and PFAS contamination in the product must be less than 0.0001 percent by weight of the product (1 part per million) total organic fluorine as measured by combustion ion chromatography."

This is the exact standard and test method we are suggesting you apply to your evaluation.

Three other standards also specify certification of PFAS-free using elemental fluorine testing:

- **GreenCertified Standard for Textiles** https://www.greenscreenchemicals.org/images/ee_images/uploads/resources/GSCTextileChemicalsStandard_v2.0_FINAL_20201026_%282%29_.pdf
- **GreenScreen Standard for Furniture & Fabrics** https://www.greenscreenchemicals.org/images/ee_images/uploads/resources/GreenScreen_Certified_Furniture_Fabric_v1_20201001.pdf
- **BPI Certification Scheme Compostable Products** https://bpiworld.org/resources/Documents/BPI_Certification_scheme_2019.pdf

Finally, you should understand that our definition for what is considered PFAS is based on a well understood and commonly accepted class approach to describing PFAS chemicals. I have included the definition from the GreenScreen methods below. Again most of these chemistries are not measurable by the methods you are currently using. It is still unclear from the link you provided why your consultant is objecting to this testing.

I hope we can help you get to point where the public will confidence in the work you are doing.

Let me know how I can help,

Jeff Gearhart

Definition of PFAS used in GreenScreen Certified Standards:

Per- and Polyfluoroalkyl Substances (PFAS) A class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom. The class includes all structural groups defined by Buck et al, 2011, as well as all new structural groups identified by OECD in 2018. The structural groups defined by Buck et al, 2011, include:

- 1) Perfluoroalkyl substances: Substances for which all hydrogen atoms on all carbon atoms (except for carbons associated with functional groups) have been replaced by fluorine atoms;
- 2) Polyfluoroalkyl substances: Substances for which all hydrogen atoms on at least one (but not all) carbon atom have been replaced by fluorine atoms;
- 3) Fluoropolymers: Carbon-only polymer backbone with fluorine atoms directly bound;
- 4) Perfluoropolyethers: Carbon and oxygen polymer backbone with fluorine atoms directly bound to carbon atoms; or
- 5) Side-chain fluorinated polymers: Variable composition non-fluorinated polymer backbone with fluorinated side chains. Additional groups defined by OECD, 2018, include perfluorinated alkanes, perfluorinated alkenes, perfluoroalkyl alcohols, perfluoroalkyl ketones, semi-fluorinated ketones, side-chain fluorinated aromatics, some hydrocarbons, hydrofluoroethers, and hydrofluoroolefins.

(Buck, R. et al, 2011. Perfluoroalkyl and Polyfluoroalkyl Substances in the Environment: Terminology, Classification, and Origins. Integrated Environmental Assessment and Management 7(4): 513–541; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3214619/>, accessed 8/27/20; and Environment Directorate OECD, Toward a New Comprehensive Global Database of Per- and polyfluoroalkyl substances (PFAS): Summary Report on Updating the OECD, 2007, List of Per- and polyfluoroalkyl substances (PFAS), OECD Environment, Health and Safety Series on Risk Management No. 39, Paris 2018; [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV-JM-MONO\(2018\)7&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV-JM-MONO(2018)7&doclanguage=en), accessed 8/27/20) The reference list of PFASs by chemical abstract service number as defined by the Organisation for Economic Development (OECD) is available here: <http://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals>, accessed 8/27/20.

----- Forwarded message -----

From: Alex Elvin <elvin@mvcommission.org>

Date: Mon, Nov 16, 2020, 7:09 PM

Subject: Re: Memo on PFAS-free Synthetic Turf Standards and Testing

To: Jeff Gearhart <jeffg@ecocenter.org>, Adam Turner <turner@mvcommission.org>, planningboard@oakbluffsma.gov <planningboard@oakbluffsma.gov>

Thanks, Jeff. I will add this to the public record for the MVRHS project.

The testing of the synthetic products is now underway, and the scope of work is available here. It does not include all the tests you recommend in your letter, but does follow Horsley Witten's recommendations, and indicates that TOP and TOF testing could be undertaken in a future phase.

Thanks,

Alex

Alex Elvin
Development of Regional Impact (DRI) Coordinator
Martha's Vineyard Commission
The Olde Stone Building
33 New York Avenue
Oak Bluffs, MA 02557
(413) 884-3289

From: Jeff Gearhart <jeffg@ecocenter.org>
Sent: Monday, November 16, 2020 4:45 PM
To: Alex Elvin; Adam Turner; planningboard@oakbluffsma.gov
Subject: Memo on PFAS-free Synthetic Turf Standards and Testing

The Martha's Vineyard Commission and Oak Bluffs Planning Board,

Please see attached memo which summarizes our experience testing synthetic turf fibers for PFAS. I have included some guidance on best practices for assessing these products.

I look forward to working with you on this issue.

Jeff Gearhart
Research Director
Ecolog Center

Jeff Gearhart

734-369-9276

734-945-7738

skype: jeff.gearhart1442