



The Commonwealth of Massachusetts
Executive Office of Health and Human Services
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Bureau of Environmental Health
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COMMISSIONER

April 29, 2008

Janice Berns, Director
Needham Board of Health
1471 Highland Avenue, Room 24
Needham, MA 02192

Dear Ms. Berns:

The Massachusetts Department of Public Health (MDPH), Bureau of Environmental Health (BEH) has reviewed the findings of various public health agencies that have been involved with addressing public health concerns associated with artificial turf. We have also reviewed scientific publications and information from advocacy groups relative to potential health effects from exposure opportunities to chemicals in synthetic turf.

Components of turf include artificial grass fibers and crumb rubber and sand infill overlaid on a carpet backing. Grass fibers are composed of nylon or polyethylene. The state of New Jersey tested dust from both synthetic turf composed of nylon grass fibers, as well as polyethylene grass fibers. They reported that elevated levels of lead were found in two of twelve samples, both of which were nylon. No lead was found in synthetic turf with polyethylene grass fibers. Thus, based on available information, it appears that polyethylene grass fibers are preferable to nylon grass fibers.

Crumb rubber infill is typically made of recycled tires. This material has been found to contain chemicals, including polycyclic aromatic hydrocarbons (PAH), metals, and volatile organic compounds (VOC). While these chemicals are in the material of the crumb rubber, current information does not suggest significant exposure opportunities to the chemicals in the materials such that we would expect health effects.

The most relevant study we identified to evaluate potential health effects related to the fill was a California study. California's Office of Environmental Health Hazard Assessment completed a study investigating the potential health risks of playground surfaces and track surfaces that are composed of recycled tires. MDPH feels that this is the most complete and relevant study at this time, as these materials are similar to those used in the infill of synthetic turf. Findings from this assessment concluded that exposure opportunities to the rubber materials would not be expected to result in health effects.

With respect to the temperature issues you raised during our recent conversation, I asked our staff for an opinion of protocols for use during hot weather periods. Available information

suggests heat levels rise on some artificial turf material as outdoor temperatures rise. Thermoplastic rubber (TPE) infill can be used as an alternative to infill from recycled tires. TPE is manufactured in lighter colors which are thought to generate less heat than black infill. TPE also does not contain recycled products and is made of polyethylene or polypropylene and rubber. Based on a brief review of the literature, there is information suggesting that the composition of polyethylene or polypropylene and rubber presumably contains fewer chemicals than infill made of recycled tires.

In summary, MDPH/BEH believes that based on the available information, the use of polyethylene artificial turf is not expected to result in health impacts. However, if there are ongoing concerns regarding artificial turf and health impacts, the town may want to consider using a turf that is light colored, composed of polyethylene grass fibers, and has TPE infill (as opposed to infill consisting of recycled tires). If you have any questions, please feel free to contact us at 617-624-5757.

Sincerely,

A handwritten signature in black ink, appearing to read "Suzanne K. Condon". The signature is fluid and cursive, with a large loop at the beginning.

Suzanne K. Condon, Associate Commissioner
Director, Bureau of Environmental Health

Cc: Peter Connolly, Needham Board of Health