Feeling the heat on artificial turf

By Tom Sciacca

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WAYLAND -

On July 16, at 1:30 p.m., when the air temperature was 86 degrees, I measured a surface temperature of 162 degrees on the Wayland artificial turf field. In early June I measured 161. In both cases nearby grass measured in the low to mid 90s.

Last year I made a series of temperature measurements on local turf fields beginning in August showing dangerously high temperatures, as high as 156 degrees. I presented the data to the Wayland Board of Health in January, which subsequently suggested to the Park and Recreation Commissioners that they post signs warning of danger from extreme heat on the Wayland field. To date, the Wayland Park and Recreation Commission and the Board of Selectmen, led most vocally by current Chair Michael Tichnor, have refused to acknowledge any thermal problem. New York City officials, however, heard about the Wayland idea of posting a sign through the media and have now done it on their hundreds of artificial turf fields, where they have also measured temperatures in the 160’s. The NYC Health Department report says people can suffer dehydration, heatstroke and thermal burns at field temperatures above 115 degrees.

"This field can get hot on warm, sunny days," says the posting by the city’s Parks Department. "If you experience symptoms of heat-related illness, such as dizziness, weakness, headache, vomiting, or muscle cramps, move to a shaded area. Drink water, rest, and seek medical attention if you do not feel better."

This is not a new problem. Shortly after the installation of one of the first new generation artificial turf fields (like Wayland’s) in 2002, a Brigham Young University coach received burns on his feet through his shoes. As a result the BYU Health Services Department investigated and imposed a temperature limit of 120 degrees for use of the field. And the problem hasn’t gone away. Just last year Sports Illustrated reported that six Peruvian soccer players suffered foot burns from playing on hot turf.

The other concern besides burns is heat stress. Playing on a hot day in the hot sun generates an enormous amount of thermal stress on the human body in any case. The added radiative heat from a hot turf field below may be enough to exceed the body’s ability to get rid of all that heat, leading to serious illness ranging from heat rash to heat stroke, a serious life-threatening emergency. Coaches and players need to be trained to deal with hot conditions.

Nancy McShea, Park and Recreation Director, claimed to have checked "thousands" of Web sites and found no evidence of injuries from hot turf. As a result, she argued against any need for warning signs. Inexplicably, she apparently did not find the same articles I did while researching this column.

Even the industry is finally admitting the problem. Rick Doyle, President of the Synthetic Turf Council, says "I don’t think anyone in our industry would suggest it’s a good idea to play on a surface that’s that hot.” Speaking to NPR on Aug. 7, he goes on to say "Just as coaches have to reschedule games due to rain when they play on grass fields, so too they need to reschedule or consider an alternative surface to play on when it’s sunny."

Wayland officials were warned of these problems before the field was built, but in the manner characteristic of the governing style of the last few years they had already decided to build this field before the plans were ever revealed publicly. So they bullheaded and partially built it in spite of an outstanding environmental appeal, and then argued they had to finish it because of safety considerations! But their lack of willingness to deal with the heat safety issues speaks volumes about their real motivations.

Despite the promises to Town Meeting that the field would be rented out virtually around the clock to generate income for the town, it has been very little used over the summer. But school sports teams will begin using it this week of August, and some are scheduled for 2 p.m. games. From my measurements last year I expect temperatures in the 140’s at that time on sunny afternoons in August and September. (Because the sun is lower, it will not get quite as hot as in June and July.) Because they refuse to acknowledge the problem, it seems unlikely that school and town officials will do anything to protect children from heat-related injury. It is up to parents to carefully consider whether they want to allow their children to play on these fields during sunny afternoons.

Tom Sciacca is a retired engineer and life-long environmentalist.

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