

# For Artificial Turf - THE HEAT IS ON!



One of the adverse environmental and health impacts of artificial turf fields is the “heat island” effect. This means two things: the synthetic surface undesirably absorbs, retains and emanates heat at temperatures and rates that are harmful to the environment, and the turf in its life-cycle is responsible for generation of

carbon dioxide and other greenhouse gases that contribute to global warming.

The thermodynamics of the artificial turf in winter and summer conditions accelerates the breakdown of the synthetic grass fibers and rubber crumb into dust particles, which easily can be inhaled or ingested by children. This is likely to produce respiratory and dermatological health risks in children.

The promoters of artificial turf admit openly that the field runs 10° to 30° F hotter than a natural grass field. That admission alone however does not tell the whole story. Often, 10 or 30 degrees will tip the surface temperature past a dangerous point. Skin injury can result from ten-minute contact with a surface that runs about 120° F.

According to Joseph Shirley, Director of Facilities at Boston College, Chestnut Hill, Newton/Brookline, Massachusetts, the surface is watered down prior to game time in order to cool down the surface. During summer youth camp programs, in a hot day, every 20 minutes the children are taken off the field so that the field can be cooled down.

According to a news report on *WJLA* (ABC 7 – DC Metro Area) - Markham Evans, **“Summer Heat Rekindles Artificial Turf Battle,”** - July 19, 2010, “The summer heat wave is reigniting debate about the use of artificial turf at some local schools.”

Kathleen Michels, a neuroscientist, states, “Any temperature over 120° F can cause skin burns with skin contact in two seconds.” Using a heat gun, Michels detected temperatures of up to 135° F on the field at [Richard Montgomery High School]. At the same locale, Samie Scaffidi told *WJLA* that she has “poured water into her cleats to keep cool. Some of her friends sprint for shade when they’re playing.”

According to the *WJLA* report, “A new American Cancer Society study just added Carbon Black to a list of possible causes of cancer. Critics say that’s one of many possible dangerous chemicals within artificial turf.”

Moving up north, in Boston, we find Tony DiCicco who coaches the Boston Breakers of the Women’s Professional Soccer. In 1994-1999 he coached the United States women’s national soccer team, winning the Olympic gold medal and in 1996 and 1999 FIFA Women’s World Cup. In 2008, he coached the U.S. U-20 Women’s national team to victory in the FIFA Women’s U-20 World Cup in Chile.

In and around Bean Town, for many years, the purveyors of artificial turf fields, their boosters and allied politicians misrepresented to the public the thermal effect of plastic and crumb rubber fields. Recently, L.E. Eisenmenger of *Boston Pro Soccer Examiner*, **“How hot was it? Stadium field turf soars to 120 degrees,”** July 24, 2010, Head Coach Tony DiCicco was asked exactly how hot it was on the Harvard Stadium field turf during the game.

“There are thermometers they put out on these fields because these fields get too hot,” said DiCicco. “If it’s 95 or 100 degrees, the fields get to about 120 degrees and that’s why it’s so dangerous for young kids. For our height it’s 105 degrees, but down there [kids’ height] it’s 120 degrees.” “The first halves are usually a little bit slower because there’s a lot of heat coming up,” explained DiCicco, “because it’s at least ten degrees higher.”

To stress the point, the report cited the 2002 Brigham Young University study that found “The surface temperature of the synthetic turf was 37 degrees higher than asphalt and 86.5 degrees hotter than natural turf. Two inches below the synthetic turf surface was 28.5 degrees hotter than natural turf at the surface. Irrigation of the synthetic turf had a significant result cooling the surface from 174° F to 85° F but after five minutes the temperature rebounded to 120° F. The temperature rebuilt to 164° F after only twenty minutes.”

The report also mentioned a Penn State University study that revealed “similar results measuring nine different types of synthetic turf. Temperature measurements were made on three occasions with air temperatures registering 79 degrees, 78 degrees, and 85 degrees. The corresponding average surface temperatures reported for the synthetic turf plots were 120 degrees, 130 degrees and 146 degrees F.”

Source: Guive Mirfendereski  
<http://www.synturf.org/contact.html>