Magic carpet

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The newest synthetic surfaces aren't perfect, but they're a smoother, safer ride

By Amalie Benjamin, Globe Staff | October 16, 2005

Quinton Porter exposes the inside of his right elbow, lifting it just high enough to reveal a quarter-sized scab. That's nothing, the Boston College quarterback says. Had he been on AstroTurf, his entire arm might be the deep raised red of the abrasion.

But the old stuff is gone from Alumni Stadium, replaced at the start of the 2004 season with the latest and greatest surface: FieldTurf, a brand of new synthetic turf. It's supposedly the softer, no-turf-burn, low-maintenance magic carpet that's being installed everywhere from the professional levels to that rec league field in the center of town.

It's the catch-all, save-all and, most important, it's not anything like AstroTurf.

"The biggest difference with the FieldTurf is when you fall, it almost feels like you're falling on a bed," BC linebacker Ray Henderson said. "It's really, really soft. [AstroTurf] was like playing in the street. You fall on that, you're going to feel it the next day -- for a couple days, actually."

AstroTurf, nearly obsolete outside of field hockey, once *was* the artificial turf industry. Installed in Houston's Astrodome in 1966 -- though its first home was Providence's Moses Brown School -- the surface quickly became the choice for indoor stadiums and those looking to cut down on maintenance costs.

No longer.

Now it's the new turf systems, from companies with names like FieldTurf and Sportexe and Sprinturf, that are exploding onto fields at high schools and colleges and pro stadiums across the country. With the first installations taking place about eight years ago, the numbers have soared to an estimated 750-800 new fields nationwide this year, up from 550-600 in 2004, according to the Synthetic Turf Council.

"I love playing on turf," said Patriots linebacker Rosevelt Colvin, just days after a game against the Atlanta Falcons played on the Georgia Dome's FieldTurf. "I'd love for Mr. Kraft to put FieldTurf in the stadium, but I doubt he would do that. Just because the way football is around here. Hard-working people. Sloppy, muddy games. Snowy games. That's football. That's old-school football. I think that's one of the things people out here enjoy -- although I still would love [turf]."

Don't expect synthetic turf to invade Gillette Stadium, though the Patriots have installed FieldTurf on their indoor practice field. It's not likely to happen in a place where the grass field was left conspicuously uncovered before the playoff game against the Indianapolis Colts a year ago, resulting in a league-approved soggy pit.

Synthetic turf means no dirt, no mud, no mess. Other than that, well, it's not like comparing AstroTurf -- or concrete, as most athletes call it -- to grass. Not even close.

"These new in-fill systems are vastly superior to [AstroTurf]," said Andy McNitt, assistant professor of soil science/turfgrass at Penn State. "These things are interacting much more like natural turf than the old systems."

And that's just the point. The synthetic turf is, in essence, trying to replicate natural grass without being natural.

It has appeared at Chestnut Hill and North Andover and Brockton, replacing grass at Merrimack College and Reading High School and Lincoln-Sudbury Regional. It has converted baseball diamonds at Xaverian High School and the Metrodome, and has become the new surface in 13 NFL stadiums, all at price tags that start around $400,000.

And someday soon synthetic turf will likely be coming to your town -- if it isn't there already.

Ground controlWalk out onto a turf field, one of the new ones. It's spongy, without the solidity of real grass and real ground. The blades are slippery -- plastic cut to exact specifications and sunken into a sea of tiny black pellets.

The new generation of synthetic turfs, known as in-fill systems, are designed to cushion the players and provide stability in ways AstroTurf never did. And they do, to a point.

"You can stop so much more quickly [on turf]," said Porter, who professed his preference for grass. "The stopping all occurs [in the foot and ankle], so then your body has to do the rest. Whereas on grass, you have some time. You stop your foot and there's some time because you're going to smooth into it. If you try to stop too quickly on any kind of turf you'll fall over, so you kind of have to ease into it."

Because the surface is softer, easier to sink into, football players wear different cleats, a shorter molded version. The ability to move and cut and plant is increased on synthetic turf, aiding players like linebackers and running backs who have to change direction quickly.

"Some people are just naturally fast, they can be fast on anything," Colvin said. "But you take a person and put them on turf and you take a person and put them on grass, it's maybe a couple 10ths [of a second] difference. But those couple 10ths, that half a second, that's the difference between a sack or a pick, the difference between a touchdown and a batted ball."

Instead of a layer of shag carpeting covering a base of concrete, like AstroTurf, the new systems feature synthetic fibers set into a base of sand and pulverized recycled rubber with up to four layers of backing.

That can be both good and bad. While it's still too early in the development of the surface to have conclusive studies on injury rates, in-fill turf would seem to cut down on the knee and head traumas often sustained on AstroTurf, as well as the turf burn that defined the original.

But the new turf is also harder on the joints than grass, giving way to a soreness that usually sinks in about the fourth quarter.

Of course, if you're managing it -- and not playing on it -- there are few issues. Athletic directors and CEOs and coaches tick off the benefits: They don't need to be mowed or fertilized or painted, just groomed occasionally; they can absorb nearly constant wear and tear; they don't freeze to rock-hard extremes when the temperatures dip, and they can save up to $50,000 a year in maintenance costs.

Henderson, who prefers to play on FieldTurf, doesn't have many complaints. After all, as he admits, he's not the fastest player. And FieldTurf lets him move -- and change direction -- a little bit quicker. There's just one problem.

"I think the most annoying thing is the little rubber particles that they use in it,"

Henderson said. "Those can sometimes get in your eye or in your mouth. If your mouthpiece falls on the ground, it's covered in the rubber particles. It's a pain in the neck, especially if you're in the middle of a game. You've still got to throw it in your mouth with all the rubber stuff. It's kind of gross."

Falling apart at seamsWelcome to Rocky Marciano Stadium in Brockton, a facility manager's paradise. Its in-fill turf looks great, even in poor weather. It requires little maintenance and barely wears.

At least that was the sales pitch.

By its second season of use, Brockton's AstroPlay surface began to show its age. The company that manufactured it, SRI Sports, which once marketed AstroTurf, never came to repair the damage -- then went bankrupt in early 2004.

Now Brockton athletic director John Boutin is saddled with synthetic turf that, in its fourth year, has begun to break down enough that the top layer is pulling away from the backing underneath. Boutin has already had to spend nearly $4,000 fixing a surface that came with an eight-year warranty.

"The frustrating part is when I have to tell my athletic teams that they have to steer clear of certain areas on the field," said Boutin, who is involved in bankruptcy proceedings with SRI. "This shouldn't be happening. We're keeping our fingers crossed that we can get another four years out of it. I don't have any choice."

He, like most athletic directors, simply doesn't have another $400,000 to replace the surface. And even converting back to natural grass would cost $200,000.

He's stuck, trying to stay ahead of a growing problem.

Brockton seems to be in the minority, but the town was also one of the first in the state to delve into the in-fill market. It might simply be too early to judge other town-owned fields.

So while high schools have begun to install the new fields at an astounding rate, Penn State's McNitt cautions that the new synthetic turfs might not always be the best options. Don't, he says, get rid of grass quite so fast.

"I think high schools look at this as a silver bullet," McNitt said. "I go to a lot of high schools where they say their natural turf fields are failing. But have they made the

commitment to the natural turf fields? Some of the schools really need to spend more money and brainpower on taking care of their natural turf fields -- and in the end it may be cheaper."

National exposureJohn Gilman likes to tell a story. It starts with Lincoln, Neb., a city looking to replace the AstroTurf in a sports complex shared by four teams back in 1998. A jet was chartered -- less expensive than buying commercial tickets -- to get the decision-makers out to view a FieldTurf field.

Unexpectedly, former University of Nebraska football coach and Congressman Tom Osborne joined the crew, flying across the country and walking across the field only to ask Gilman, FieldTurf's CEO, to point out the turf.

It was under his feet.

Lincoln took the turf and, not long thereafter, so did the university. Nebraska played on national television five times that year. It would be FieldTurf's big break, one that has led the company to the top of the synthetic field heap with, according to Gilman, about 60 percent of the total market share. That figure, he says, rises to at least 85 percent of the elite (college and professional) installations.

Gilman said FieldTurf installed 250 fields in 2004 and expects to put in about 400 by the end of 2005. But that might be its limit, with high schools clamoring to have surfaces built in the small window between June and September. They can make more. They just don't have the manpower to install them.

So others are catching up. Sportexe, No. 2 in the market, has been around for only 18 months. The companies spend millions trying to differentiate themselves, in marketing and research and development and chatter. They insist they are not the same. Their fibers are closer together, tufted in their own specialized manner. They incorporate more layers of backing beneath the surface. They customize their fields.

It's not necessarily convincing McNitt, who has been studying 10 samples for the last four years.

"The major brands that are out there do not have a lot of difference between them [in] playability in four years of research," McNitt said. "There are some outliers, but, for the most part, the names you've heard of, they're pretty similar."

No worse for wearRocky Marciano Stadium holds just a circle of football players in the

late afternoon sun. They kneel, ears to the coach, awaiting instruction.

Around them, the field rests, a rare moment of peace for a battered surface. It doesn't last. Four teenagers claim the territory minutes later, soccer ball and football in hand. Two more overtake the far goal. This, truly, is the biggest benefit to synthetic turf: Its ability to handle whatever and whoever needs it.

The field is a bright green, slightly unnatural, and will remain that way for the rest of the season. But check out a natural turf field in, say, November. That's when a grass field -- like those in the majority of high school football stadiums across Massachusetts -- would be showing wear, the bald brown earth creeping into sight.

And those fields usually only see high school football. They have to be saved.

"Town recreational programs go through absolute nightmares in scheduling their youth programs, and it all has to do with fields," said Massachusetts Interscholastic Athletic Association executive director Bill Gaine, who mandated that all postseason football, soccer and field hockey competition take place on turf. "You can start at 6 in the morning and go till those kids should be in bed and never lose a moment," he said. "They go all day. It's remarkable."

That's the problem for Boutin. Synthetic turf has become the best -- and perhaps only -- option.

So it's spreading, at a rate that even the top company in the country might not be able to handle. It's why -- if districts can find the money -- grass football fields will rarely be the first choice in new development projects at the high school level.

"It gets an incredible amount of use between the community and our athletic teams," Boutin said. "We have [physical education] classes out there. Oftentimes we're out there until 9:15 or later. Youth soccer, you name it. There's a million things that go on in that stadium. It's incredible how much use it gets.

"Would we consider going back to grass? We couldn't." ■