



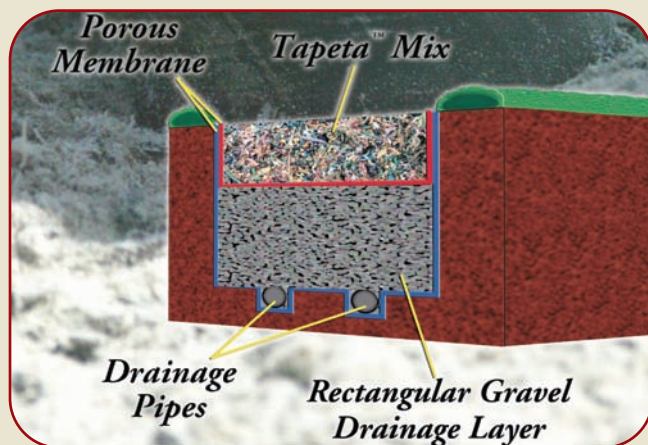
Synthetic Racing Surfaces Come to California

By Mary Forney

Barbaro's near catastrophic injury in this year's Preakness Stakes cast horseracing once again into the spotlight, but for all the wrong reasons. From all corners of the country came questions about the safety of the sport, and of the industry's commitment to improving safety for horse and rider. Not unexpectedly, attention focused on racing surfaces, and on the promising new artificial track surfaces.

A Closer Look at Synthetic Surfaces

Tapeta



Polytrack



Synthetic surfaces – such as Polytrack, Cushion Track, and Tapeta – are proving to be kinder on horses, thus safer for both the horses and riders, and easier and less expensive to maintain than conventional dirt tracks. This article will take a look at the different types of synthetic surfaces available, the experiences of tracks and horsemen to date, and the future for California racing, as we shift to artificial surfaces.

And shift we will, thanks to a bold mandate by the California Horse Racing Board (CHRB) – strongly supported by TOC and all other major California industry groups – requiring the switch to synthetic racing surfaces on California's five major Thoroughbred tracks, by the end of 2007. Hollywood Park will be the first track to install a synthetic surface. The surface, known as "Cushion Track," will be in place for its Autumn meet, which begins Nov. 1.

The Manufacturers

Earlier this year, the California Horse Racing Board (CHRB) held a series of public informational meetings on the various synthetic surfaces currently available. Presentations were made by four manufacturers: Polytrack, Tapeta All-Weather Surfaces, Stabilizer Solutions ("StaLok"), and Equestrian Surfaces ("Cushion Track").

All four products are composed of a polymer wax-coated silica sand and synthetic carpet fiber mixture. Polytrack, Tapeta, and Equestrian Surfaces also contain small bits of ground rubber, while Stabilizer Solutions' mixture includes ground polypropylene tape. More importantly, what they all have in common is a vertical drainage system and porous base. Unlike our current racetracks, these are designed to accommodate the vertical flow of water through the materials to an extensive subsurface drainage system that will carry the water down and away from the track, rather than across its surface. Because conventional dirt tracks drain horizontally, they tend to suffer from "washouts" that compromise the track's condition and safety.

While all four surfaces have been in use at training facilities throughout the world, the only surface on which the U.S. has

any experience racing is Polytrack. Polytrack was installed at Turfway Park in Kentucky in 2005, and has received broad acclaim from the horsemen who have raced on the surface. Nonetheless, as far as anyone can tell, all appear to offer improved safety and maintenance characteristics in comparison to conventional dirt tracks.

Hollywood Park's New Surface

According to Dennis Moore, track superintendent for Hollywood Park, Cushion Track was selected because the manufacturer – Equestrian Surfaces of the U.K. – offered extensive pre- and post-installation support, as well as a long-term guarantee of the product. Moore was pleased to note that, "Equestrian Surfaces will have someone on site from beginning to end, as well as at the beginning of our meet, when we will be going through a learning process for the maintenance of the track."

As far as the base and drainage system goes, Moore said the system Hollywood Park intends to use, "basically is very similar to what the Polytrack base requirements are." It will install a vertical drainage system in a rock base, but rather than cover it with a layer of macadam, Hollywood Park will use "Mirafi," a type of membrane cloth. Moore explained that the membrane cloth is placed directly on top of the rock, and then heated, to seal the base – creating an even subsurface that is porous enough to allow water to flow through it.

What The Industry Knows So Far

Just exactly how safe are synthetic surfaces? It may be early in the game to know for sure, but the statistics from Turfway Park's first season of racing on Polytrack were astonishing! During its recent winter-spring meet, Turfway had only three fatal breakdowns – compared to 24 during the corresponding 2004-05 meet. Considering the extreme winter weather conditions they experience, those numbers are nothing short of remarkable!

Although the use of synthetic surfaces won support from nearly all segments of California's horseracing industry, there were some who posed questions about the toxicology of such surfaces.

Following Turfway's lead, Keeneland began installation of Polytrack this spring. "I think this is the right thing to do," said Keeneland president, Nick Nicholson. "If you care about the horses, you have got to consider this. If you do what is best for the horses, everything else sooner or later will work out."

Although the use of synthetic surfaces won support from nearly all segments of California's horseracing industry, there were some who posed questions about the toxicology of such surfaces.

Addressing the issue of equine toxicology, Dr. Rick Arthur, the soon-to-be Equine Medical Director for the CHRB and a renowned expert in the field of veterinary medicine, said, "It's a very inert surface material. In terms of particle size, in terms of its makeup, it's probably safer than the dirt that horses aspirate in a race. Depending on racing surfaces, you sometimes see sand and dirt as far down the trachea as you can visualize with an endoscope. Talking to veterinarians who practice at Turfway, this material gets down the trachea much, much less than it does at our dirt tracks here in California. So," Arthur concluded, "I think it's non-issue."

To identify potential health risks for the human riders, in May of this year, TOC commissioned Dr. Randall Browning to review and assess any health risks associated with the Polytrack product. Dr. Browning is one of approximately 200 Board certified toxicologists in the U.S., and is based in California. Accordingly, Polytrack's material safety data sheets ("MSDS") were reviewed, as was other independently researched relevant information.

The four key components of "Polytrack I" – silica sand, synthetic organic fibers (such as carpet fibers), rubber granules, and the wax, were of particular import. The potential effect of silica sand inhalation was a primary focus of Dr. Browning's, and after reviewing the materials and his research, he concluded that Polytrack does "not pose a toxicologic hazard to humans."

According to Dr. Browning, human toxicity from silica occurs only when extremely fine crystalline silica particles – such as those used in sand blasting operations – are breathed into the lungs in large quantities, for prolonged periods of time. Because of their small size, such particles can travel deep into the respiratory portion of the lung, eventually leading to scarring of the lung. Dr. Browning, however, noted that, "the grain size of the silica sand used in Polytrack I is sufficiently large that there is no anticipated adverse health effect from exposure to the unprocessed sand." Consequently, the sand would have to be ground, crushed, or otherwise processed to create "respirable crystalline silica." Human risk would then be determined by assessing the amount of respirable crystalline silica released, the amount that reaches the breathing zone of the rider, and the duration of exposure.

While Dr. Browning felt that respirable crystalline silica

exposure to riders is likely very small, if at all, he noted that the specific risk could be quantified by measuring respirable crystalline silica concentrations present in riders' breathing zone on a well-traveled track.

Furthermore, despite the fact that "diseases caused by respirable crystalline silica have been studied extensively over the last 100 years," Dr. Browning was unaware of any scientific literature ever associating silica-related disease and horseracing activities. He felt this an important observation given the industry's long history of silica sand being a primary component of "dirt" track surfaces.

Dr. Browning's findings were indirectly confirmed by Dr. James H. Jones of the University of California, Davis. Dr. Jones is a professor of comparative physiology, chair of the Department of Surgical and Radiological Sciences, and director of the Giannini Equine Athletic Performance Laboratory at the UC Davis School of Veterinary Medicine. According to Dr. Jones, "The silica used in the Polytrack material is not in the dangerous respirable crystalline dust form, and in order to be converted to it would require crushing or grinding by a mechanism that seems unlikely to occur on a racetrack."

Additionally, Dr. Jones found that the "Polytrack particles are too large to be respirable, and if inhaled would be extremely unlikely to penetrate to the respiratory (alveolar) portion of the lungs of either horses or jockeys...." Lastly, he concluded that, since the particles are larger and heavier than the sand particles that exist naturally in dirt tracks, "any Polytrack material kicked up from the track surface would have a more difficult time rising to a height at which it would be inhaled."

Southern California-based trainer Howard Zucker, head of the CTT track safety committee, and one who has worked tirelessly to develop safer tracks in California, spoke about the reality of installing new surfaces for horsemen: "It might be a different story if there were a local supply of natural, sandy loam, so a track could resurface like we did in the old days. But there just isn't," said Zucker. "Here's a chance for California to be in the forefront of making racing safe. Let's start with safe, then we can move on from there."



Added Benefits

What's good for the horses is in many ways good for their owners, and this is particularly true when it comes to synthetic surfaces. Among the most important goals of TOC efforts in this regard are the protection of the horse and the investment in those horses made by California Thoroughbred owners. According to TOC president, Drew J. Couto, "By conservative estimates, California owners lose about \$6 million worth of horses each month due to track related injuries – not necessarily to catastrophic injuries – but to injuries that take them out of training."

Echoing this point, Dr. Rick Arthur added, "The real issue that we have to address is that we lose way, way, way too many horses on California racing surfaces. If you look at the number of fatalities per start in Southern California, it is over two times what the national average is. That is unacceptable. It's also increased 50 percent in the last two years. "There are two issues that we have to look at," Arthur continued. "Number one is we have an obligation to do whatever we can to protect these horses that are running for us as hard as they can. The second issue is the economic issue that every owner faces.

"All you have to do is get one more start out of a horse per year, and it's the equivalent of adding over 500 horses onto our circuit in Southern California," Arthur concluded. "Handle is related to field size... If we can keep our horses sounder, we don't have to buy as many horses to replace the capital investment that owners are putting into it, the sport is more competitive because we have more horses, and everybody is happier. We have larger purses, keep the horses around longer, and it's the best chance owners are going to have to minimize the economic costs of racing horses."

Looking Forward

As each new synthetic track is installed, there will no doubt be adjustments. As Dr. Arthur explained, "Horses do have to learn to run on a different surface, just like people do. Years ago when we did a track safety study for the HBPA, we found that the greatest risk of injury is in the first two weeks of a new racetrack. And I would expect that to be the case with these new surfaces. Hopefully, however, when they move to a Polytrack, it's going to be less. And that's what I would expect."

Whatever adjustments are necessary, they are ones most horsemen are willing to make, considering the alternatives. For the groups and individuals who have worked diligently for so many months to make safer tracks in California a reality, they know that a "devil you know is better than the devil you don't" attitude just wouldn't cut it.

In the very near future, when the spotlight shines on California racing, it won't be because of a spectacular accident such as the one suffered by Barbaro – but because California's racing industry is a shining example of what can be accomplished when we work together to ensure the safest racetracks possible for our human and equine athletes.

With Hollywood Park, Del Mar, and Golden Gate Fields slated to install synthetic racing surfaces by the middle of 2007, California racing is indeed headed in the right direction again.