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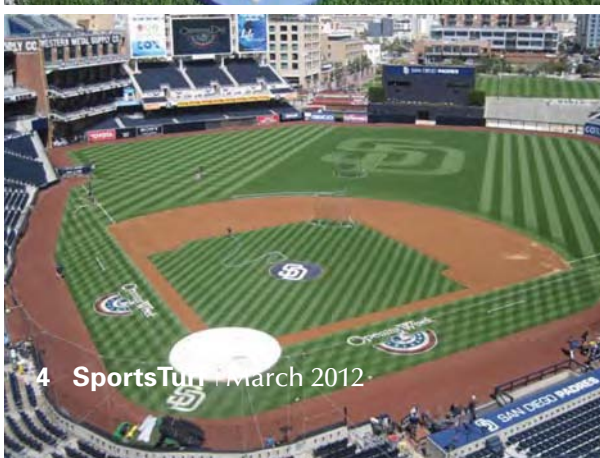
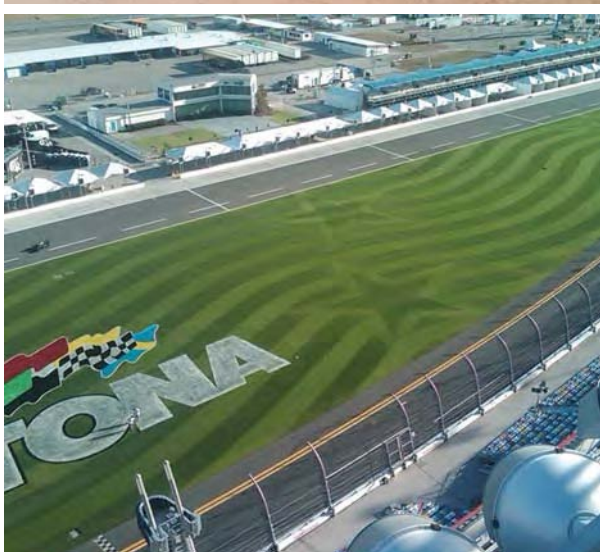


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On the cover: Village Green Park, Northbrook, IL Park District won the STMA Schools/Parks Baseball Field of the Year Award. The head sports turf manager is Michael Brouillard and his full-time staff included crew leader Jorge Morales, George Baumgardt, Salvador Gutierrez, Jose Torres, Isidro Gonzalez and Rigoberto Mendez.

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From the Sidelines



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Perfecting infield skins an art and science

THE REPORT beginning on page 8 this month is an attempt to provide you with recommendations for creating the best infield skin surface possible. One expert told me at the STMA Conference in January, "There's no class offered on infield skins," and others agreed that there's no real standard for infield mixes either, beyond a basic one from the American Society for Testing and Materials.

We asked a number of respected professionals in the industry to answer these questions: What should the standard for infield mix be? What adjustments from your standard can be made for skins being managed on low budgets? What questions should readers ask of their material suppliers to help get the best results?

Several of our experts prefaced their responses with some general comments that I thought worthy of sharing.

Norm Hummel, PhD, a soils consultant and test lab owner, has more than 35 years in the industry. He wrote, "Having served on the ASTM committee that wrote the current guidelines for infields, I can tell you that it can be quite contentious. Anything you write is likely to stir up a hornet's nest . . . I have been testing infield mixes for years; hundreds from around the country. Through tying in my testing experience with personal observations in the field as well as feedback from end users, I have come up with these guidelines."

Dave Dwizlewski, a consultant with Gail Materials, Corona, CA, wrote, "I have been for years talking about specific particle size distribution for sand, silt and clay. I first refereed that the differences between silt plus clay should not exceed 10% and I was saying this over 10 years ago. I believe Grant McKnight of Natural Sand coined the phrase silt to clay ratio which you hear about quite often . . . it's a better way to describe the idea than what I stated at a 10% difference. When I worked as a consultant at Soil & Plant Lab we used to consult for the local horse race tracks where similar requirements, primarily for sand distribution, were studied. Silt plus clay was required but at lower percentages for race tracks; however the same variance in particles was also true as it is with infield mixes. The true grandfather about a lot of this philosophy is Oris A Matkin, the founder of Soil & Plant Lab."

And finally, from Jim Hermann, CSFM, an athletic field consultant from New Jersey: "Infields are like Christmas trees; they all look good from the road."

I trust reading what the experts have to say about infield skin mixes will aid you in improving your fields.

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Green Media, publisher of this and other magazines in the Green Industry, including *Arbor Age*, *Landscape and Irrigation*, and *Outdoor Power Equipment* recently introduced GreenMediaMags, the official Green Media Facebook page. On the new fan page, which is regularly updated by our staff, you can find the latest Green Industry news, content, photos and commentary. Topics will cover all aspects of the Green Industry. You can interact with our editorial staff, as well as other professionals from throughout the Green Industry. The fan page is a great way to provide feedback, share ideas, and follow industry trends. Simply "Like" our Facebook page to start interacting with the Green Media community. Search for the GreenMediaMags page from your profile, or go directly to the following link: www.Facebook.com/GreenMediaMags and become a "fan."

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Plan the work and work the plan

ONE OF THE MOST IMPORTANT FUNCTIONS of the STMA Board of Directors is to develop and implement a Strategic Plan that guides the association over a defined timeline. Our strategic plan features a series of platforms, objectives, and goals designated by the Board as either continuing or new priorities. The plan is a living and evolving document that drives our actions as a Board.

Our most recent plan was implemented in 2007, completed in 2011, and I wish now to touch on a few specific highlights and accomplishments from this plan. Most of our current Board had the pleasure of reviewing the 2007 plan and marveling at the foresight of our predecessors as we used this plan to guide us in the preparation for the development of our 2012-2014 plan. I would like to detail a few specific accomplishments (out of many more) from our 2007 Strategic Plan in the areas of Education, Governance, and Outreach.

In the area of Education, two items jump out at me: 1) the development, vetting, and implementation of the Playing Conditions Index (PCI); and 2) STMA's hiring of an educational director, Kristen Althouse, and putting her talents to work in serving our Information Outreach Committee and its development of a variety of new publications and member resources. Kristen's position further complemented the herculean efforts of STMA staff, member volunteers, and exhibitors such that our conference and exposition have reached new levels, even during a major economic downturn.

The Strategic Plan called for several important changes in STMA Governance that were accomplished. A formalized, more transparent ascension process for officers was completed. An overall Board restructuring was completed with the combining of the Secretary and Treasurer positions, the addition of two at-large positions, and 1-year terms for offices.

Finally, in what I will term broadly as "Outreach," there were a host of important and very positive changes in STMA's relationship with its chapters. Our new approach took much more of an advisory and support relationship rather than one of "directing" the chapters. The plan also resulted in dedicated staff support to Chapter Relations. STMA saw its number of committees expand to a current total of 22 with the formation of two new standing committees of great importance in the 21st century: International and Environmental. Our plan also led to the establishment of cooperative working relationships with a variety of peer associations that now positions us for further collaboration with them and their membership, and these interactions are already providing more opportunities for our membership to grow and advance in the sports turf industry.

CEO Kim Heck provides an update on our newest Strategic Plan that was implemented in January 2012 in this month's issue on page 44. Please take a look at this article to learn about our exciting new and emerging platforms and objectives for the coming 3 years. We are well on our way to bigger and better things for our membership and our industry.

Mike Goatley



Setting a realistic standard for infield mixes: opinions from the experts

Editor's note: Last year we heard from an exasperated, high-profile groundskeeper who was fit to be tied about an article we ran that discussed silt to clay ratios for infield skins, among other topics. In response, we asked a number of industry professionals to answer these questions: What should the standard for infield mix be? What adjustments from your standard can be made for skins being managed on low budgets? What questions should readers ask of their material suppliers to help get the best results? Here are their responses:

BILL DEACON, director of landscaping and field operations, New York Mets/Citi Field

What should the standard for infield mix be? I believe that the sand, silt and clay percentage should be determined by the level of maintenance that you are capable of doing. As a general guideline you would have lower level maintenance fields in the 70-75% sand and 25-30% silt and clay with the clay being slightly higher than the silt; intermediate fields in the 65-69% sand and 31-35% silt and clay with clay slightly higher than silt; and the professional level 60% sand or slightly below with the corresponding silt to clay amounts, but again with the clay

being just slightly higher than the silt.

I think when looking at infield skins the silt-to-clay ratio is very important and should be in the 0.5-1 range. I also believe that the medium sand content is important; the medium sand would be the first three sand values on a particle size analysis test, the 1mm, 0.5mm and 0.25mm numbers added together, and you would like to have that number at 40% or above. I also believe the gravel should be below 3%.

When managing a low budget infield skin the most important thing is to have a well-balanced soil and identify how much time you will have to maintain it and if you will be

able to water it. Water the skin as much as possible, but if you can't water at all then I would personally like to be in the 70-75% sand range, even if I can only water it a little and don't have much time for maintenance I would want to be in the 70-75% sand range. I would spend the small amount on a test and remember you can always amend an existing infield skin to get it into the range of maintenance that is best for your situation.

I would budget to have it laser graded once a year if possible to help with low spots and any puddles. It is also important to have your infield graded, installed or amended correctly, this will alleviate future headaches. In a rainy climate you want to have some

>> **REGIONS PARK**, Hoover, AL, courtesy of Southern Athletic Fields, Inc.

kind of slope on your infield to move water off of it, in the 0.5%-1% range. Try to be creative with your maintenance, ask the teams or parents to rakes dirt chunks off the edges and drag it if there are no staff members there that day.

You also must manage expectations, no infield skin is maintenance free but maintenance is easier if it is a good quality material. The last thing is ask questions of different people, I ask people constantly about their maintenance practices, and be positive, no one ever had a good infield skin with the attitude that they can't do any better than it is.

What questions should readers ask of their material suppliers to help get the best results? Do you test your infield mix and if so is it an independent lab and can I see the results? Does your infield mix contain stones and vegetative matter? What do you screen your mix to? If I am not satisfied with the mix can I send it back? Can you send me the same mix every time I order it? Do you have a client list that I can contact?

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LUKE YODER, director/field & landscape maintenance, San Diego Padres/PETCO Park

I think for Little League to High School the numbers should be 70-75% sand with 30-25% combined silt and clay. The silt/clay ratio should fall in the range of 1.1-.5. The sand should be somewhat evenly distributed with a lower % in the very fine range and a higher % in the medium range. The fine gravel content should fall below 2%. For a higher maintenance/performing mix you can go anywhere from a 65/35 up to the highest of 50/50. Same rules and numbers apply to SCR, sand size, and gravel content. This could be a custom order for some people who know exactly what they want. For others that just know they want a material that will hold up better and already have the time, budget, and a good grasp on how to properly maintain an infield skin, they could go with a not-to-exceed 60/40. You will see a big difference in just a 5-10% increase of combined silt and clay. Always remember, you can add more next year, but it is difficult to take it back if you add too much silt/clay.

The only adjustment from the lower standard you can do to make it less difficult to manage would be to shoot for the higher sand % of 75 and lower combined silt and clay % of 25. Even this is not going to make a big difference in how it holds up with little or no maintenance compared to a 70/30. The key is getting it installed correctly and trying to budget for a proper laser grade 1x a year. A proper laser grade involves tilling (especially if you are adding new material), matching grade to your existing edges, providing a .5-.75% fall for sufficient surface drainage, and properly compacting in the material so there will be minimal settling throughout the year.

The supplier should try and get an idea of their client's expectations and make sure they are aware that no matter if the mix passes these requirements it will not take care of itself. Then share with them educational guidelines for install, renovation, maintenance, and make sure they are on board with just how hard it is to keep up a nice infield skin and that no matter how good the material is, it can and will get hard at times and be a struggle. I would rather have a firm, properly graded mix hold up well and stay in place most of the year than have an inferior mix that breaks apart and moves around resulting in bad hops and low areas that will hold water.

Questions to ask: Can you send me a

sample? Can you send me the data? Do a test yourself with the sample you get and compare the data. Can I come up to your plant and take a look at your operation and take a random sample then? Do you have a list of references for me to call?

If time permits, the best thing you can do is to take a sample of the actual material dumped at your sight and send it in for testing before installing it. Some suppliers will tell you what you want to hear and if you do not monitor properly, you could think you are putting in a mix with an SCR of 1 when in reality it is a 1.6 SCR. That is a big difference and will be something that you will pay dearly for and regret.

TOM BURNS, consultant, Diamond Pro/TXI & former MLB head groundskeeper

ASTM's F2107-08, Standard Guide for Construction and Maintenance of Skinned Areas on Baseball and Softball Fields is exactly what it says, a guide. The document states that the word "Standard" in its title means only that it has been approved through the ASTM process.

The physical properties of quality skinned infields at the professional level and the maintenance required to manage them are vastly different than those of recreational fields. However, there is an accepted starting point for the physical makeup that can be adjusted for the level of play and maintenance that the field receives.

The usual starting point for an infield skin is 60% sand and 40% silt/clay. It is desirable to have the silt/clay ratio to be 1/1 to .5/1. The majority of the sand should be in the medium to medium coarse range.

We can make adjustments for those on low budgets or limited manpower by increasing the sand content to say, 70%, and keeping the silt/clay ratio as close to the standard as possible. You can also make this adjustment by adding a manufactured amendment such as a calcined or vitrified material to the mix. Although these materials are made out of clays, due to the heating process, they react in the soil more like coarse sand. These adjustments to the mix will help to relieve excess compaction and make it easier to recover from rain events. However, it should be noted that these mixes will be more prone to erosion by wind, water and excessive play, and proper maintenance is critical to maintain the correct grade. They may also consider increasing the grade of the skin to .75% to help drain excess water.

First of all, [infield skin managers] need

to be honest with themselves and determine what level maintenance they will be able to perform. Do you have a reliable water source? Professional grounds managers spend hours each day managing the skin for one game.

I have always advocated that you should try to get your infield mix from a source relatively close to your location when possible. The high cost of fuel has driven transportation costs through the roof.

Know what you want. Ask for a test. If you are on a low budget, you may want to adjust your spec to +/- 5% on your sand, silt and clay. This will get you close to your ideal and may save you money in the long run.

DR. NORM HUMMEL, Hummel & Co.

Having served on the ASTM committee that wrote the current guidelines for infields, I can tell you that it can be quite contentious. Anything you write is likely to stir up a hornet's nest. Just the same, I have been testing infield mixes for years; hundreds from around the country. Through tying in my testing experience with personal observations in the field as well as feedback from end users, I have come up with these guidelines that I have used in my reports, with a few modifications.

For most fields: Sand content: 65-75%. Ideally more than 2/3 of the sand will fall into the medium and coarse sand fractions (0.25 – 1 mm). A silt to clay ratio of less than 1, preferably between 0.5 to 1. In other words we want at least as much clay as silt. Infields that don't have access to water and/or are not regularly maintained should be at the higher end of the sand range. Fields in drier climates will want to be on the lower end of this range.

Professional Fields or other highly maintained fields (access to water and routine maintenance, likely tarped): Sand content: 55-65%, with more than 2/3 of the sand in the medium and coarse sand fractions. Silt to clay ratio less than 1, preferably between 0.5 to 1.

A couple of things that are important:

One of the biggest misconceptions with infield mixes is that they must drain. It's hard for some to understand when I tell them they have to add clay to make their field drain better. I have seen elaborate drainage systems installed under infields that serve no purpose. In other cases they make the mix sandy, thinking that it will improve drainage. The fact is a good infield mix that is properly installed will not vertically drain, at least not very well. Therefore infields MUST be pitched to surface or sheet drain water off of the sur-