

ASTM Recommendations for Skinned Area Soils Are in the Works

by Steve and Suz Trusty

The diamond. To some, it's a coveted jewel. To sports turf managers involved with baseball and softball fields, it's equally prized. That grass-free patch is not only where the action is during a game, it's where the majority of field care time is spent.

Why so much concern about "the dirt?"

Excellent condition of the skinned area allows ballplayers to concentrate all their efforts on the game. Skinned area surfaces provide the traction for a player to round the bases at full speed and the cushioning for that slide to beat the ball. They must possess the right combination of underlying hardness and a cleat-depth layer of soft material overcoating to be effective in the game. Smooth transitions between skinned and turfed areas are also necessary. There must be no lip to alter the trajectory of the ball, so no bad hops will influence the outcome of the game.

If the desired results are so obvious, it must be easy to establish the recommendations for skinned area soils. Well, not really, according to Dr. Don Waddington, who is now Professor Emeritus of Soil Science at Penn State University after retiring from his role teaching and conducting research in the university's turfgrass program. Dr. Waddington also serves as Chair of the Natural Playing Surface Subcommittee within the Sports Equipment and Facilities Committee of the American Society for Testing and Materials (ASTM).

In the first place, baseball and softball diamonds aren't limited to premium fields. Waddington says,

"Unfortunately, at the sandlot level it's not unusual for a backdrop to be set up at the corner of a field and for the basepath to be "created" by wearing away the turf as young players run the bases. These skinned areas really are nothing more than exposed soil.

"With organized play, skinned area soils are part of native soil fields, augmented native soil fields and various construction formats of sand-based fields. All differ in levels of funding for construction and post-construction field maintenance. Even with the same basic construction and equal budgets, there are differences among teams and

practices," says Waddington. "An ASTM practice would give a definitive procedure for performing one or more operations. Guidelines give a series of options or instructions. They do not recommend a specific course of action. Of course, with either guidelines or standards, people have the choice to follow them, or not to follow them. ASTM doesn't legislate any more than the Sports Turf Managers Association (STMA) legislates."

"For example, ASTM has established standard methods in soil analysis. That doesn't mean that everyone in the world has to use those methods.

Other entities, like the United States Golf Association (USGA), can adopt those standard methods and insist that they be followed. That creates an incentive for testing facilities to follow the standards."

"What we are developing for skinned area soils is a guideline for construction as opposed to a standard set of practices. It's designed more for the novice than for those involved at the professional and major college levels, where many already have a feel for what they're doing.

We're working to set parameters with enough broadness that skinned area soils could be firm and impervious, or be quite porous and dependent on inter-drainage instead of surface drainage."

Construction and Maintenance Closely Linked

Waddington notes that when developing the construction plan within the range of reasonable soil consistencies for skinned area soils, the post-construction management of that area comes into play and is extremely important. He says, "The group of



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groundkeepers on what constitutes the 'right' degree of hardness and softness for the ideal skinned area."

Guidelines, Not Practices

Because of all these variables and the need to set workable parameters, Waddington and members of the ASTM Subcommittee on Natural Playing Surfaces are working on standard guidelines for skinned area soils. "These are guidelines, not standard

Little League baseball teams I was working with acquired the same sandy clay skinned area material that is used by Penn State University. The University had a wide range of implements with which to work the skinned area, and had adequate personnel to handle the task. The Little League teams had a shed containing a few shovels and hand rakes and a "staff" of part-time volunteers. It's pretty obvious which field had the best playing surface."

The point is, post-construction maintenance needs are dictated primarily by how the skinned area is constructed and how the field is used. Field use estimates are generally established before a construction plan is developed. After all, if you don't know why you need a field, why would you build one?

Logically, general estimates of post-construction budgets should be available prior to construction as well. It's common sense to take both use and maintenance needs into consideration when developing the construction plan.

As planned by the committee, the guidelines for skinned area soils will give a range of construction options for the three different types of fields: native soil, sand and modified soil. The range of options will include construction formats relying heavily on internal drainage and those relying primarily on external drainage. Also, within those separate ranges, there will be room to accommodate the differences in tools, soil amendments, equipment, personnel and overall funds for maintenance at varying levels of field use.

Obviously, this is no easy task. These will be practical guidelines to be applied in real world situations under real world practices.

The Real World Takes Work

The following scenario fits most high profile field basic baseline daily maintenance practices.

Remove any "lip" - that section where infield material builds up in the turf along the infield and outfield

edges of the skinned basepaths. Remove excess clay from all inside and outside edges of the turf daily with a soft-bristled brush, rake, "leaf blower," or stream of water.

Prepare new infield material in the same proportions as the existing skinned area material. The new material will need to be moist, but not overly wet. It should be wet enough to "bond" with the existing material, but dry enough to keep from sticking to equipment. The soil should not be so dry that it continually needs rewetting.

Use a scarifying drag that pene-



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trates one to three inches into the skinned area to break up the surface and loosen any areas of compaction. Add new material as necessary. Eliminate differences between the level of the turf soil surface and that of the skinned area. The "feel" of the transition area as the player moves from the turf to the skinned surface and back again should be smooth and uniform as well. This helps give the ball a "true" bounce, whether it hits a turfed or skinned spot.

Use a leveling drag to move material from high points to low points to create a level surface. Roll or tamp the area to create a solid base. Continue adding new material, "spiking" or scarifying, rolling or tamping, until the desired level is reached. Keep leveling drags 8 to 12 inches from the edge of the turf to avoid creating a lip. Use rakes and tamps to level the areas next

to the turf. If desired, work a higher percentage of commercial infield mix into the top quarter inch of the skinned area.

"Finish" the area with a mat drag. After the infield turf has been mowed, water the infield clay. Water the clay again after mat dragging it. Monitor moisture and apply water as needed until batting practice begins.

Finished consistency is key. The skinned area needs to be firm to support player activity, but not too hard. It must have a consistency that can be kept moist enough during play to inhibit dust, but not so moist that players have problems making twists, turns, starts and stops.

Waddington says, "Skinned area maintenance comes down to balance: if the material is too loose, add soil; if it's too tight, add sand, calcined clay, calcined diatomaceous earth or other amendments that loosen the surface. It's a continuous task balancing proper drainage and playability."

Developing the guidelines is much like skinned area maintenance, you've got to wade into it, get a feel for it, and then do the best you can to cover all the probabilities.

Guideline Status

According to Waddington, the ASTM Subcommittee on Natural Playing Surfaces prepared a draft proposal that was used to solicit comments and help. In the ASTM, if you don't like something you suggest something that is better. With the guidelines for skinned area soils, the hope is that the broadness of the specifications will take that into account.

As of January, Waddington was reviewing the proposal and putting it into a format that could be voted on by the subcommittee. With current timetables, the preliminary form of the guidelines will be voted on this spring by the members of the Natural Playing Surfaces Subcommittee. While there is still more to be done before the guidelines are officially introduced, considerable progress has already been made. □