



▲ **Top Left:** Excess skin soil is being removed from the base path to improve surface drainage. **Bottom Left:** A tractor is being used to spread the amendment evenly over the entire skinned area. **Middle:** The amendment is being rototilled into the existing skin soil at the recommended rate. **Right:** Notice the color is dull because the amendment is dusty from the tilling process.

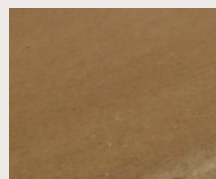
NO MORE MUDDY SKINNED AREAS

This article is the second in a series about muddy fields. The first one, “No More Muddy Football Fields” (July 2013), was about construction, reconstruction, and renovation practices that minimize muddy conditions on grass fields. This article is about alleviating muddy skinned areas of ball diamonds for both baseball and softball fields by replacing or amending the existing soil.

The number one complaint for skinned areas has to do with moisture—either too much or too little. Skinned areas with too much moisture will be wet, soft, and

muddy, while skinned areas without enough moisture will be hard, dry, and dusty. It’s important to remember, the recommendations that keeps fields from becoming muddy in wet climates also work for skinned areas in dry areas of the country. Soil texture and soil porosity are key elements for keeping fields playable in both wet and dry weather.

The opinions presented here are based on my 30 years’ experience with skinned area renovation and installation, along with feedback from hundreds of owners, coaches, and players. All of the examples are based on real world situations in renovating and building community fields, park and recreation fields, and high school and college fields.



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THE IDEAL SKIN

The ideal skinned area has many or all of the following qualities: First and foremost, the skinned area is graded for surface runoff of water. It is playable soon after a heavy rain with excess water evaporating quickly. It has the ability to retain moisture yet deal with excessive rainfall. It re-

sists rutting and washing out during a heavy rain event. And last but not least, it is easy to maintain, not dusty, and aesthetically pleasing. More qualities make the best possible skinned area.

AMENDMENTS V. CONDITIONERS

Amendments are relatively new for skinned area soil applications. Recently, crushed lava, shale, clay, and brick have been introduced for amending skinned areas. After crushing is complete the amendment is screened into a uniform range of sizes of 1/8 inch or less. Sometimes sand, silt, and clay is added to the mix depending on the texture of the soil to be amended. Amendments are typically added to skinned area soil that has a textural classification of “sandy clay loam” (the most common skin soil) at a rate of 50% amendment and 50% existing skin soil. At this rate, the physical properties of the existing soil are changed. The goal is to add enough amendment for bridging of the particles to create macropore space. A higher percentage of macropore space allows air and water to enter the profile then dry out quickly through surface evaporation. To take the guesswork out of the amendment process, make sure to choose a supplier who will test the physical properties of the existing skin soil and the amended soil. The amendment ratio varies from field to field depending on the texture of the soil to be amended.

Conditioners, on the other hand, have been around for a long time and have become a staple in the industry. Conditioners are either calcined clay, vitrified clay, or cal-

cined diatomaceous earth products. They are usually incorporated into the existing soil at a rate of 10% by volume. However, this rate is not high enough to be effective in bridging together to create macropore space and therefore does not change the physical properties of the existing soil. Nevertheless, they are a good choice for field managers on lower budgets because playability is definitely improved when conditioners are incorporated.

Before installing the amendment, prepare the skinned area by performing some simple renovation techniques. First of all, grade the infield for positive surface runoff of water with no standing water anywhere on the skin, infield grass, or foul territory. Remove all lips, mounded ridges, and hills leading from the grass to the skinned area. If there's any excess skin soil, remove it at this time to achieve the proper grade for surface runoff.

Next, seed or sod the edges before installing the amendment. In the North, the best time to seed is between August 15 and September 30. In the South, sod would be a better choice and can be installed anytime the sod is available. However, mid-August through late fall is usually the best time to sod the edges of both Northern and Southern fields because they may not be used at this time.

Now the field is ready for the amendment. Spread the amendment over the skinned area at the recommended rate. For the most part, an operator with a tractor can spread the majority of the material. Some hand work will be necessary along the edges and base paths.

For a 50/50 mix, rototill 1 inch of the amendment into 1 inch of the existing skin soil for a total of 2 inches of amended soil. Again, some hand work may be necessary along the edges and the base paths using a walk-behind rototiller.

Don't be disappointed in the color of the skin after tilling is complete. It's because the amendment got dirty during the tilling process. After the first rain, the amendment color will dominate because the rain will have washed the dust particles off the amendment.

REPLACING THE SKIN SOIL

In some cases, removing and replacing the skin soil is the only option. Some fields have an existing skin soil with many rocks over 3/8 inches in diameter. Other fields have a limestone skin area that's just too abrasive. The only way to improve the quality of both of these examples is to remove and replace the existing skin.

The first step is to grade the field for surface runoff of water. Perform the same renovation techniques that were described above in amending the skin soil. After renovation is complete, the removal process can begin. The reason for grading the field first is so a consistent depth of

▼ The final product looks like this after the first rain.



skin soil can be removed at a minimum of 3 inches deep. Then, the new material can be installed at a 3-inch depth over the entire skinned area. Now the field is graded perfectly for surface runoff. The final grade will mirror the grade that was established in the first step.

The companies that offer the amendments usually sell a skin soil that is made for new installations. It could be crushed material in a range of sizes of less than 1/8 inch to less than 3/16 inch with sand, silt, and clay added for stability. This blend has the same qualities and physical properties as the amended skin soil described above with one added advantage: the blending process at the plant is perfectly controlled with the right amount of sand, silt, and clay.

NEW CONSTRUCTION

For new construction, use the same blend of material that was described above for replacing the skin soil. Before installing the new material, make sure the subgrade is a mirror of the planned finish grade which is designed for surface runoff of water and a minimum of 3 inches deep.

Either the amended soil or the newly installed crushed material, with sand, silt, and clay is a great advancement in achieving the best



▲ After grading for surface runoff, 3 inches of skin soil is being removed in preparation for the new skin material.

possible skinned area for any baseball or softball field. And best of all, muddy conditions are alleviated. ■

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