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Sod Installation

Where budgets allow, sodding is the best method of turfgrass installation. It does not require the special care of a new seedbed because plants are already healthy and mature upon installation. Sod can be installed almost anywhere at any time of year. It establishes very quickly and is ready for use within a few days to a few weeks depending on thickness.



Photo courtesy of Chad Price, CSFM, CFB

Site Preparation

Conduct a soil test to determine the nutritional status of the site's soil. Soil tests should be conducted on a routine basis – every one year for sand-based soils and every three years for native soils, or when you are considering a fertilizer program change. A soil test analyzes nutrient requirements, pH, phosphorus and potassium levels, and will provide the best guide to fertilization to maintain or achieve a healthy field.

Regardless of if you are renovating or the site is a new construction, always start with bare soil to provide the best sod-to-soil contact and promote root growth. Loosen the top 4-6 inches of the rootzone and incorporate nutrients in accordance with soil test recommendations. The soil test report will provide recommendations for applications of lime, sulfur, potassium, and potash. Remove any large debris and smooth the soil surface by hand to avoid significant compaction.



For best results, always start with bare soil. Photo courtesy of Chad Price, CSFM, CFB

Consider the time of year. Installing sod during the growing season is preferred; however, it is possible to achieve successful dormant sodding. Dormant sodding is the installation of turfgrass when plants are in the dormant phase. Dormant sod still requires water to root and establish. It requires less water than actively growing sod, but failure to water can desiccate the sod.

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Square and Rectangle:

Calculate:
Length x Width = Area



Circle:

Calculate:
 $3.14 \times (\text{Radius})^2 = \text{Area}$



Triangle:

Calculate:
Base x Height / 2 = Area



Trapezoid (four-sided non-square area):

Calculate:
 $\text{Base 1} + \text{Base 2} / 2 \times \text{Height} = \text{Area}$



Total Acres:

Calculate:
Total square footage / 43,560
square feet = acres
1 Acre = 43,560 square feet
Acres x 43,560 = square feet

Measure the total area to be sodded. Sod producers will usually base orders on the number of square yards; therefore square footage can be divided by 9. The area of many sites can be based on a geometric shape. Use the guide above to assist in finding the square footage of your site.

Choosing the Best Sod

Choose sod that has been grown on soil physically similar to that of the field on which the sod is being installed. Combining soil of varying textures can create a layering effect that reduces water infiltration and percolation rates. Plant roots may never penetrate to the underlying soil due to water and nutrients staying confined to the sod layer. This creates an interface issue where root mass is limited in the subsoil and the sod surface is weak. This can become a constant maintenance problem and require extensive cultural practices to correct. Although expensive, washed sod may be a solution to avoid soil layering. Washed sod removes existing soil from the turfgrass plants before installation. Washed sod is necessary on sand-based fields to avoid any kind of interface issues.



Be sure the soil on which the sod is grown is physically similar to the soil where the sod is being installed. Photo courtesy of Chad Price, CSFM, CFB

Consider the age of the sod. Choose sod that has had time to mature. New production methods may allow sod producers to harvest tall fescue sod in as little as 6 months with the use of netting. Kentucky bluegrass sod may require a minimum of 12 months for harvest. Healthy root systems and slight thatch layer will help hold the sod together. Avoid sod with thick thatch layers as that will require maintenance and impact watering and fertilization.

Determine sod thickness based on how soon the site needs to be used. Standard cut sod is usually 0.5 inches of soil. The normal rooting period takes about 10-14 days and full establishment is expected to take 4-6 weeks. Thick cut sod is 1 inch or greater of soil and can be used within a week if thickness is uniform and seams are tight.

Consider the method of installation. Sod is either delivered by pallet or by the roll. Depending on the size of the roll, it may need to be installed using a machine. Square-cut sod is rectangular pieces delivered on a pallet and are installed by hand. Rolled squares are typically 18 inches wide by 6 feet long and also installed by hand. Big roll sod, which can be anywhere from 24+ inches wide by 40 or more feet long, is installed using a machine or tractor with 3 point sod installing tool. Big roll sod provides the advantage of fewer seams and added strength to the initial surface.

Consider visiting the sod farm to inspect the sod that is designated for your field.

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Begin installation along the longest, straightest line. Sometimes a base line on a baseball or softball field may establish those starting points. Avoid leaving small strips on outer edges as it will be difficult for those pieces to retain moisture. Stagger joints in each

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row in a brick-like fashion. If placing sod on a slope, arrange pieces so they run across the slope rather than up and down to minimize runoff and help retain moisture. Sod staples may be required on steep slopes to temporarily hold sod in place.



Photo courtesy of Darian Daily

Pull seams tight without stretching the sod. Positioning sod by pulling on the edges can stretch the pieces. When the sod shrinks back to the original size, gaps will appear in the turfgrass. If gaps appear after installation, fill gaps with matching soil and seed, or plug with matching turfgrass. During installation, trim any edges, corners, or torn areas.

Prevent indentations or air pockets by limiting walking or kneeling on the newly sodded area during installation.

Once installation has been completed, walk the site to check for undulations or irregularities that may have developed and make the necessary repairs. Roll the site with a 3-5 ton roller to smooth the surface, remove air pockets, and improve sod-to-soil contact. Remove any loose, thin-cut sod or tufted up turfgrass.

Water the sod within 30 minutes after installation. Depending on the size of the area, irrigation may need to take place throughout the installation process to avoid sod drying out and turfgrass plants wilting. Once installation is complete, soak the area to help settle sod, remove air pockets, and eliminate dry spots. Inspect moisture content underneath the sod to affirm that sod/soil moisture exists without dry spots.

Post-Installation Care

Water the sodded site liberally for the first two weeks to keep the soil moist, but not wet. Watering sod daily and for several weeks after installation is essential for initial root growth and successful long term plant growth. Letting the sod dry out too much may cause sod to fail or contribute to shrinkage which can increase the chance for gaps to appear. Overwatering new sod can encourage plant roots to stay within the sod layer instead of growing into the underlying soil. Overwatering can also promote weeds and diseases. Once the sod has established, the site can be watered at rates typical to established turfgrass.



Water new sod liberally to keep the soil moist, but not wet. Photo courtesy of Darian Daily

Mowing can begin as soon as the field can support equipment weight without rutting.

Applying 1 lb N / 1000 square feet each month for the duration of the growing season will help turfgrass plants establish and maintain health of the field.

Additional Considerations

Netting is sometimes used to reduce damage to sod during harvest and transportation. Netting is applied during harvest to reinforce, contain, and wrap large turf rolls. This helps to maintain roll quality, minimize turf loss, and protect sod during installation. Upon installation, the netting should be removed. One individual can pull the netting from large rolls as they are being rolled out, and then properly dispose of the

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netting. Otherwise, the netting may cause a safety issue during athletic use, such as a tripping hazard or footwear getting caught in the netting. As the field wears in high traffic areas, netting will be exposed. There have been documented injuries at elementary and high schools where athletes have experienced ankle injuries due to exposed netting. Even with regular surveillance and scouting, the netting can be a safety issue. In addition, maintenance equipment may get caught in the netting, which could damage machinery and damage the turfgrass area where the netting is exposed. Netting can also affect cultivation programs and will impact standard aeration programs to relieve soil compaction. Core aerification will pull the net through the sod in places and cause safety concerns for both athletes and equipment operators. As a turfgrass manager, if you enter into a situation where an existing field has netting in the rootzone, there are some corrective measures you can take. The field should be aggressively treated with multiple slicing passes in various directions in an attempt to cut up the netting.

Try to complete installation as soon as possible after sod is delivered. The longer sod sits on a pallet or roll, the more it will deteriorate, especially in hot weather. In hot weather, protect uninstalled turfgrass sod by placing stacks or rolls in the shade. If possible, lightly water unprotected sod.

Conclusion

Installing sod can be the most effective way to establish turfgrass on an athletic field due to both the quick establishment and the flexibility to install anytime during the year. However, care must be taken to prepare the soil according to the results of a soil test; install the sod properly; and water and fertilize according to the recommended guidelines above. Following these steps will ensure the optimum conditions for strong root growth and healthy turfgrass to provide a safe and playable surface for athletes.

Resources

Sports Fields: Design, Construction, and Maintenance - Jim Puhalla, Jeff Krans, Mike Goatley

2013 and 2014 STMA Information Outreach Committee

Sports Fields: A Construction and Maintenance Manual - ASBA

The Key Secrets to Successful Sod Installation – Liz Nutter - Nutter, Liz. 2012. Tennessee Turfgrass. April/May. p. 12-15.

Install sod like the pro that you are: A practical step-by-step primer for a successful turfgrass sod job - Novak, Jim. 2013. Turf [North Edition]. June. 26(6): p. A16-A17.

Turfgrass Producers International

Pictures from: Chad Price, CSFM, CFB and Darian Daily