

Targeted Constituents

● Significant Benefit ▸ Partial Benefit ○ Low or Unknown Benefit

● Sediment	○ Heavy Metals	○ Floatable Materials	○ Oxygen Demanding Substances
○ Nutrients	○ Toxic Materials	○ Oil & Grease	○ Bacteria & Viruses
			○ Construction Wastes

Description

The placement of sod allows the rapid establishment of grass vegetation, along with a layer of good topsoil. This can be beneficial in critical erosion areas, adjacent to natural streams and ditches, and as a filter strip to slow stormwater runoff and trap sediment.

Suitable Applications

- Critical erosion areas such as slopes, drainage channels, detention basins and streambanks.
- Adjacent to paved areas such as streets, sidewalks and parking lots to slow stormwater runoff and to filter pollutants.
- Adjacent to catch basins and yard inlets to filter pollutants.
- Areas without enough topsoil to establish seeded vegetation and grass.

Approach

Sodding is usually specified for aesthetic reasons on projects which have a substantial landscaping budget. However, sodding can also be useful for projects which have almost no landscaping budget and a limited erosion control budget. The use of sod adjacent to paved areas can greatly reduce the amount of sediment entering streets and parking lots. The use of sod in detention basins and adjacent to catch basins will greatly reduce the maintenance effort to clean stormwater structures.

The type of grass should be selected on the basis of use, site conditions and slope, amount of sunlight, intended grass height, etc. Popular types of grass that can be placed by sodding include:

- Kentucky 31 Fescue (all-purpose, residential and commercial lawns)
- Kentucky bluegrass (all-purpose, residential and commercial lawns)
- Bermuda grass (athletic fields)

Bermuda grass is considered a warm-weather grass that generally will not thrive in the Knoxville area without extensive maintenance. Additional information and advice on the best selection for sodding can be obtained from the UT Agricultural Extension office (5th floor, City County Building) and website. There are also many professional associations for sod and turfgrass producers.

Soil preparation is just as necessary for sod placement as it is for seeding operations. Do not place sod on compacted and hard soils. Disking and harrowing will usually be necessary to prepare the subgrade soil for receiving sod. See Table ES-09-1 for a comparison of advantages for seeding versus sodding.

The use of certified sod will ensure that a high-quality, dense stand of grass is established on fertile soil that is generally free from weeds, insects and plant disease. Tennessee (through the Department of Agriculture) and adjoining states control the sale and movement of sod, in order to prevent the spread of pests and plant disease.

Production

Sod is grown in controlled environments using certified seeds and carefully controlled soil. Obtain sod from a reputable dealer with appropriate certifications to ensure best quality. It may be beneficial to visit the facility in order to verify that adequate watering and fertilization equipment is used.

Sod should be at least 3/4 inch thick, consisting of a thatch and root zone that is capable of supporting the sod during transportation and placement. Biodegradable polypropylene netting is often placed on the sod early in the growing cycle as an erosion control measure to protect seedling. Sod shall consist of live, well-rooted growth of the specified permanent grasses. Often a blend of two or more tolerant grasses is specified, in order to increase survival rates. Sod shall be free from insects and disease. Sod shall be free from weeds such as Johnson grass, dandelion, nutgrass, poison oak or ivy, crabgrass, thistles, rushgrass, morning glory, etc.

Sod is generally harvested and transported the same day, in order to limit stress on the grass. Transportation distances are usually less than 100 miles, which also ensures that the sod is grown in climate conditions similar to the installation location. Harvesting may be done by slabs or rolls using mechanical cutters. Typical slab dimensions are 18" wide and 24" long. Transportation methods must minimize hot and cold temperatures and also desiccation by air during highway speeds.

Placement

Carefully prepare the subgrade soils prior to placing sod. Remove rocks, large clods and roots as a first step. The subgrade soils must be loosened to a depth of at least 3 inches prior to placing sod. Apply fertilizer and lime to the subgrade immediately prior to placing sod. Soil testing is recommended to determine fertilizer and lime application rates. Typical application rates are 10 pounds fertilizer and 50 pounds agricultural lime per 1000 square feet.

Inspect sod upon delivery; reject damaged sod or desiccated sod. Install sod soon after delivery to the project site. Keep sod in the shade prior to placement. Liberally water subgrade soils prior to placement to establish moisture beneath the sod layer. Place sod in a brick pattern so that there are no seams in the longer direction. Seams in the shorter lawn direction are permissible but should be limited in length. Align direction of sod so that cutting and trimming of slabs will be minimized. Do not use pieces of sod that are damaged.

Carefully handle sod during unloading and placement, to retain as much topsoil as possible for the grass root systems. Each strip of sod should be closely fitted to the existing edges. A machine cut may be angled in such a way that butt ends will fit. A mason's trowel is often used to correctly fit and tuck ends of sod together. Do not stretch a piece of sod to cover a few more inches; trim sod and place an additional piece of the correct size. Roll the sod into place using a lightweight hand-operated roller in order to create solid contact with the subgrade soil.

Sod should be immediately watered after installation, at a rate of up to 1 inch the first day during the heat of summer. Apply water gently and evenly so that the soil is moist throughout. Water at least daily for a period of three weeks.

Sod placed in drainage channels or slopes steeper than 4:1 will usually require pegs or staples. A typical pattern is four pegs/staples per block of sod, with an additional secure point in the middle for large pieces of sod. Additional jute netting or other erosion control may be required for drainage channels with substantial flows.

Maintenance

- Sod maintenance is important to preserve the cost and effort investment. Sod should be kept moist for at least 3 weeks until it is properly rooted. Do not mow sod for three weeks; set the mowing height to only trim the grass blades by 1/3 or less when cutting the sodded grass for the first time.
- Inspect sod daily, especially after heavy storms or severe winds. Repair damage promptly using stakes or pegs. High-quality topsoil may be used to repair chinks or gaps from storm damage.

Limitations

- Placement of sod can be expensive and time consuming. Sod must be handled carefully. Appropriate moisture conditions can be difficult to maintain during transportation and placement, especially in hot weather.
- Do not place sod during the winter or when frozen conditions may occur. Ideal conditions generally occur in the middle of spring or autumn.
- Protect newly-placed sod from heavy use and vehicle traffic for at least one month. Protect sod from burrowing animals and from foot traffic (children playing) when possible.

References

30, 31, 32, 141, 167, 172, 179 (see BMP Manual Chapter 10 for list)

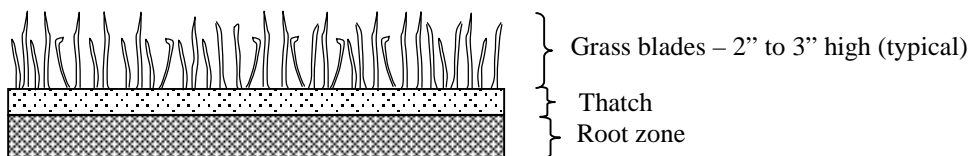


Table ES-09-1 Comparison of Seeding and Sodding	
<p>Advantages of seeding:</p> <ul style="list-style-type: none"> Less expensive materials Less labor and effort required No transplanting Grass develops in final location 	<p>Advantages of sodding:</p> <ul style="list-style-type: none"> Establish high-quality grass surface Less chance of failure Immediate aesthetics Immediate erosion control No weeds