Sodding (SOD)

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Practice Description

Sodding is the use of a transplanted vegetative cover to provide immediate erosion control in disturbed areas. Sodding is well suited for stabilizing erodible areas such as grass-lined channels, slopes around storm drain inlets and outlets, diversions, swales, and slopes and filter strips that cannot be established by seed or that need immediate cover.

Planning Considerations

Advantages of sod include immediate erosion control, nearly year-round establishment capability, less chance of failure than with seeding, and rapid stabilization of surfaces for traffic areas, channel linings, or critical areas.

Initially it is more costly to install sod than to plant seed; however, the higher cost may be justified for specific situations where sod performs better than a seeded cover. Sodding may be more cost-efficient in the long term.

Sod can be laid during the times of the year when seeded grasses may fail, provided there is adequate water available for irrigation in the early establishment period. Irrigation is essential at all times of the year to establish sod.

Sod placed around drop inlets can prevent erosion around the inlet and help maintain the necessary grade around the inlet.

The site to be sodded should be prepared for the sod before it is delivered so that the sod can be installed immediately. Leaving sod stacked or rolled can cause severe damage and loss of plant material.

Design Criteria and Installation

Prior to start of installation, design and installation guidelines should be specified by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the installation process.

Sod Selection

The species of sod selected should be adapted to both the site and the intended purpose. Species used in Mississippi include Bermuda, zoysia, centipede, St. Augustine, fescue, and Rye grass. Species selection is primarily determined by region, availability, and intended use. Use Tables SOD-l and SOD-2 and Figure SOD-1 for guidance in selecting and maintaining sod.

Table SOD-1 Grasses Adapted for Sodding in Mississippi

Species	Variety	Applications
Warm Season Grasses		
Bermuda Grass	La Prima, Yukon	Full Sun
Centipede	No Improved Varieties	Mostly Sunny to Full Sun
Zoysia	Zenith, Compadre	Mostly Sunny to Full Sun
St. Augustine	Bitterblue, Raleigh, Common	Partial Sun, Wet Areas
Cool Season Grasses		
Fescue – Turf Type	Combat Extreme	Partial Sun
Rye Grass	OSP Ryegrass	Winter Overseed

Surface Preparation

Prior to laying sod, clear the soil surface of trash, debris, roots, branches, stones, and clods larger than 2″ in diameter. Fill or level low spots in order to avoid standing water. Rake or harrow the site to achieve a smooth and mowable final grade. Apply appropriate soil amendments prior to final disking. Complete soil preparation by disking, chiseling or other appropriate means and then rolling or cultipacking to firm the soil. Limit the of heavy equipment on the area to be sodded, particularly when the soil is wet, as this may cause excessive compaction and make it difficult for the sod to penetrate the soil and develop the root system that it should attain.

Table SOD-2 Adaptation and Maintenance of Grasses Used for Sodding

Cool Season Grasses	Leaf Texture	Establish Rate	Nitrogen Use	Water Use	Drought Tolerance	Salinity Tolerance	Shade Tolerance	Fertility Needs	Wear Resistance	Mowing Height	Cold Tolerance	Acid Soil Tolerance	Thatching Tendency	Heat Tolerance
Bentgrass - Creeping	Fine	Moderate to Fast	Low to Moderate	High	Poor to Moderate	High	Poor to Moderate	High	Low	Low	Low	Medium to High	High	High
Bentgrass - Colonial	Fine	Moderate to Fast	Low	Moderate	Poor to Moderate	Moderate	Moderate	High	Low	Low	Low	Medium to High	High	High
Bluegrass - Kentucky	Moderate to Fine	Slow	Moderate to High	Moderate to High	Good	Moderate	Poor	Medium	Medium to High	Medium	High	Medium	Medium	Medium
Bluegrass - Rough	Moderate to Fine	Slow	Moderate to High	Moderate to High	Poor	Moderate	Excellent	Medium	Medium	Medium	High	Medium	Medium	Medium
Fescue - Chewings	Fine	Moderate	Moderate to Low	Moderate	Good to Excellent	Low	Excellent	Low	Low	Medium	Medium to High	Medium to High	Low to Medium	Low to Medium
Fescue - Hard	Fine	Slow to Moderate	Low to very Low	Moderate	Excellent	Low to Moderate	Excellent	Low	Low	Medium	Medium to High	Medium to High	Low to Medium	Low to Medium
Fescue - Creeping	Fine	Moderate	Low to Moderate	Moderate	Good	Low	Excellent	Low	Low	Medium	High	Medium to High	Low to Medium	Low to Medium
Fescue - Turf Type	Moderate to Coarse	Moderate	Moderate to High	Low to Moderate	Excellent	Low	Good to Excellent	Low to Medium	Medium to High	Medium to High	Medium	High	Low	High
Rye Grass - Perennial	Fine to Moderate	Very Fast	Moderate to High	Moderate to High	Good	Poor to Moderate	Poor to Moderate	Medium	Low to Medium	Low to Medium	Medium	Medium	Low	Medium to High
Warm Grasses	**Leaf Texture**	**Establish Rate**	**Nitrogen Use**	**Water Use**	**Drought Tolerance**	**Salinity Tolerance**	**Shade Tolerance**	**Fertility Needs**	**Wear Resistance**	**Mowing Height**	**Cold Tolerance**	**Acid Soil Tolerance**	**Thatching Tendency**	**Heat Tolerance**
Bahiagrass	Coarse to very Coarse	Slow to Moderate	Low	Low	Excellent	Excellent	Moderate to Good	Low	Medium to High	High	Low	Low	Medium to High	High
Bermudagrass	Fine to Moderate	Moderate to Fast	Moderate	Moderate to High	Excellent	Very Good	Poor	Medium	High	Low to Medium	Low to Medium	Medium	Medium	High
Blue Grama	Fine to Moderate	Slow to Moderate	Low	Low	Excellent	Moderate	Very Poor	Low	Low	High	High	Low	Low	High
Buffalograss	Moderate to Coarse	Slow to Moderate	Low	Low	Excellent	Moderate	Very Poor	Low	Low	High	High	Low	Low	High
St. Augustine Grass	Coarse	Moderate to Fast	Low	High	Low	Low	Excellent	Low	Medium to High	Low	Medium to High	Medium to High	High	Low
Centipedegrass	Moderate to Coarse	Slow	Low	Low	Good	Moderate	Moderate to Good	Low	Low	Medium to High	Medium to High	High	Medium	High
Seashore Paspalum	Moderate	Moderate	Moderate	Moderate	Excellent	Excellent	Good	Medium to High	Medium to High	Low	Medium	Low	Medium to High	High
Zoysia grass	Fine to Medium	Slow to Moderate	Moderate	Moderate	Excellent	Good	Moderate to Good	Low to Medium	Medium to High	Low to Medium	High	Low to Medium	Medium to High	High

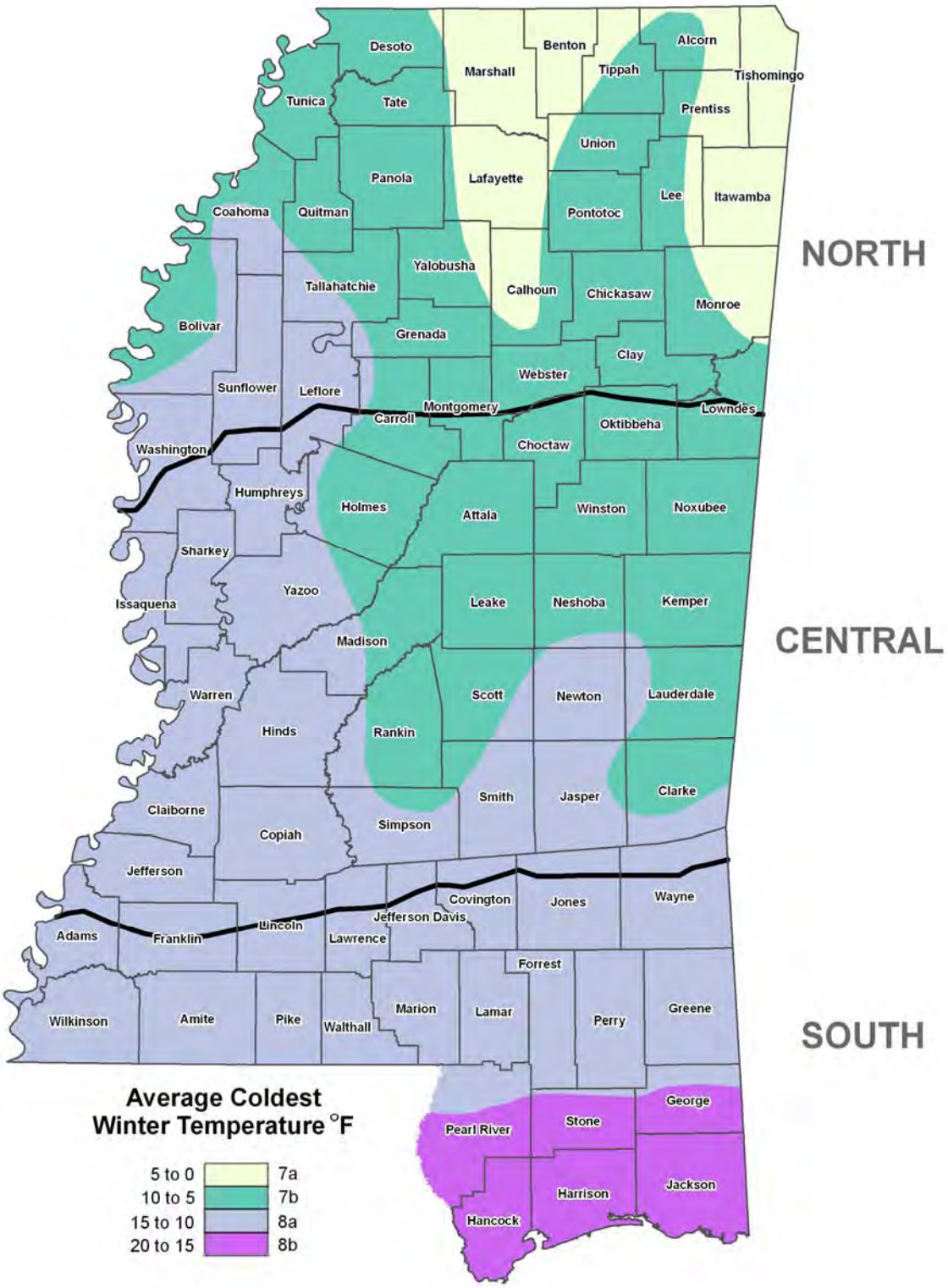

Figure SOD-1 Geographical Areas for Species Adaptation

Soil Amendments

Test soil to determine the requirements for lime and fertilizer. Soil tests may be conducted by Mississippi State University Extension Service Soil Testing Laboratory or other laboratories that make recommendations based on soil analysis. When soil test recommendations are unavailable, the following soil amendments may be sufficient:

- Agricultural limestone at a rate of 2 tons per acres (90lbs per 1000 sq. ft.). Other liming materials that may be selected should be provided in amounts that provide equal value to agricultural lime.

- Fertilizer at a rate of 1000 lbs per acre (25 lbs per 1000 sq. ft.) of 10-10-10.

- Equivalent nutrients may be applied with other fertilizer formulations. The soil amendments should be spread evenly over the treatment area and incorporated into the top 6″ of soil by disking, chiseling or other effective, means. If topsoil is applied, follow specifications given in the *Topsoiling Practice*. Minor surface smoothing may be necessary after incorporation of soil amendments.

Installing the Sod

A step-by-step procedure for installing sod is illustrated in Figure SOD-2 and described below.

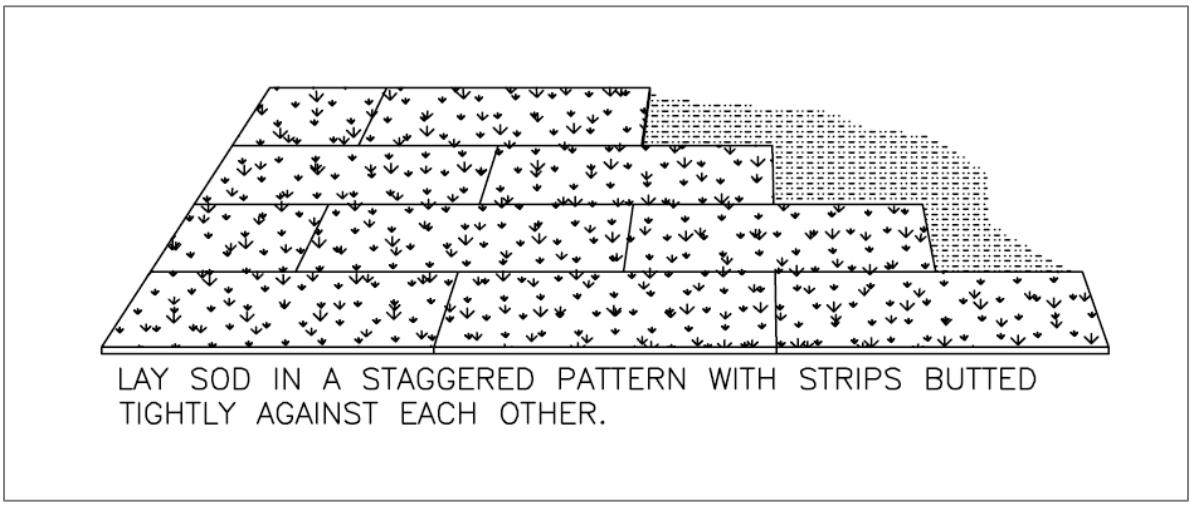

Figure SOD-2 Typical Installation of Grass Sod

Moistening the sod after it is unrolled helps maintain its viability. Store it in the shade during installation.

Rake the soil surface to break the crust just before laying sod. During the summer, lightly irrigate the soil, immediately before laying the sod to cool the soil and reduce root burning and dieback.

Do not lay sod on gravel, frozen soils, or soils that have been recently sterilized or treated with herbicides.

Lay the first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger strips in a brick-like pattern. (see Figure SOD – 2). Be sure that the sod is not stretched or overlapped and that all joints are butted tightly to prevent voids. Use a knife or sharp spade to trim and fit irregularly shaped areas.

Install strips of sod with their longest dimension perpendicular to the slope/waterflow direction. On slopes 3:1 or greater, in grass swales or wherever erosion may be a problem, secure sod with pegs or staples. Jute or other netting material may be pegged over the sod for extra protection on critical areas (see Figure SOD – 3).

As sodding of clearly defined areas is completed, use a weighted roller on the sod to provide firm contact between roots and soil.

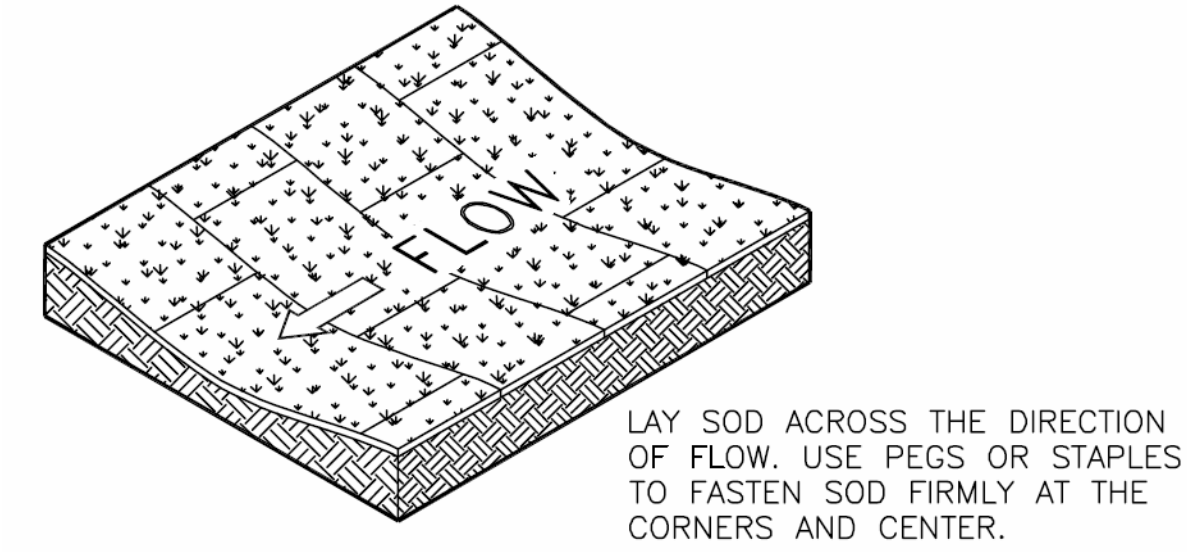

Figure SOD-3 Installation of Sod in Areas with Channel Flows

Irrigation

Immediately after laying the sod, roll or tamp it to provide firm contact between roots and soil, then irrigate sod deeply so that the underside of the sod pad and the soil 6″ below the sod is thoroughly wet.

Keep sodden areas moist to a depth of 4″ until the grass takes root. This can be determined by gently tugging on the sod. Resistance indicates that rooting has occurred.

Mowing should not be attempted until the sod is firmly rooted, usually in 2 to 3 weeks.

Construction Verification

Check materials and installation for compliance with specifications.

Common Problems

Consult with a qualified design professional if any of the following occur:

Variations in topography on site indicate the sodding materials will not function as intended; changes in plan may be needed.

Design specifications for sod variety cannot be met or irrigation is not possible; substitution or seeding may be required. Unapproved substitutions could result in erosion or sodding failure.

Sod laid on poorly prepared soil or unsuitable surface and grass dies because it is unable to develop a root system with the soil: remove dead sod, prepare surface properly and resod.

Sod not adequately irrigated after installation; may cause root dieback or grass does not root rapidly and is subject to drying out: irrigate sod and underlying soil to a depth of 4″ and keep moist until roots are established.

Sod not anchored properly may be loosened by runoff: use guidance under Site Preparation to repair the damaged areas, lay healthy sod, anchor properly and irrigate as planned.

Slow growth due to lack of nitrogen: apply additional fertilizer.

Maintenance

- See Table SOD-2 for maintenance guidelines for sod.
- Keep sod moist until it is fully rooted.
- Mow to a height of 2″ to 3″ after sod is well-rooted, in 2 to 3 weeks. Do not remove more than ⅓ of the leaf blade in any mowing.
- Permanent, fine turf areas require yearly fertilization. Fertilize warm-season grass in late spring to early summer; cool-season grass in early fall and late winter.

References

BMPs from Volume 1

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