Permanent Seeding

Plan Symbol

Description

Controlling runoff and preventing erosion by establishing a perennial vegetative cover with seed.

When and Where to Use It

A major consideration in the selection of the type of permanent grass to establish is the intended use of the land. Land use is separated in to two categories, high-maintenance and low-maintenance.

High-maintenance

High maintenance areas are mowed frequently, lime or fertilized on a regular basis, and require maintenance to an aesthetic standard. Land uses with high maintenance grasses include homes, industrial parks, schools, churches, and recreational areas such as parks, athletic fields, and golf courses.

Low-maintenance

Low maintenance areas are mowed infrequently, if at all, and lime and fertilizer may not be applied on a regular schedule. These areas are not subject to intense use and do not require a uniform appearance. The vegetation must be able to survive with little maintenance over long periods of time. Grass and legume mixtures are favored in these areas because legumes are capable of fixing nitrogen in the soil for their own use and the use of the grasses around them. Land uses requiring low-maintenance grasses include steep slopes, stream and channel banks, road banks, and commercial and industrial areas with limited access.

Seed Selection

The use of native species is preferred when selecting vegetation. Base plant seed selection on geographical location, the type of soil, the season of the year in which the planting is to be done, and the needs and desires of the permanent land user. Failure to carefully follow agronomic recommendations results in an inadequate stand of permanent vegetation that provides little or no erosion control.

Installation

Topsoil

Apply topsoil if the surface soil of the seedbed is not adequate for plant growth.

Tillage

If the area has been recently plowed, no tillage is required other than raking or surface roughening to break any crust that has formed leaving a textured surface. Disk the soil for optimal germination when the soil is compacted less than 6-inches. If the soil is compacted more than 6-inches, sub-soiled and disk the area.

Soil Testing

Soil testing is available through Clemson University Cooperative Extension Service.

Lime

Unless a specific soil test indicates otherwise, apply 1½ tons of ground course textured agricultural limestone per acre (70 pounds per 1000 square feet).

Fertilizer

Apply a minimum of 1000 pounds per acre of a complete 10-10-10 fertilizer (23 pounds per 1000 square feet) or equivalent during permanent seeding of grasses unless a soil test indicates a different requirement. Incorporate fertilizer and lime (if used) into the top 4-6 inches of the soil by disking or other means where conditions allow. Do not mix the lime and the fertilizer prior to the field application.

Seeding

Loosen the surface of the soil just before broadcasting the seed. Evenly apply seed by the most convenient method available for the type of seed applied and the location of the seeding. Typical application methods include but are not limited to cyclone seeders, rotary spreaders, drop spreaders, broadcast spreaders, hand spreaders, cultipacker seeder, and hydro-seeders. Cover applied seed by raking or dragging a chain or brush mat, and then lightly firm the area with a roller or cultipacker. Do not roll seed that is applied with a hydro-seeder and hydro-mulch.

Mulching

Cover all permanent seeded areas with mulch immediately upon completion of the seeding application to retain soil moisture and reduce erosion during establishment of vegetation. Apply the mulch evenly in such a manner that it provides a minimum of 75% coverage. Typical mulch applications include straw, wood fiber, hydromulches, BFM and FGM. Use hydromulches with a minimum blend of 70% wood fibers.

The most commonly accepted mulch used in conjunction with permanent seeding is small grain straw. Select straw that is dry and free from mold damage and noxious weeds. The straw may need to be anchored with netting or asphalt emulsions to prevent it from being blown or washed away. Apply straw mulch by hand or machine at the rate 2 tons per acre (90 pounds per 1000 square feet). Frequent inspections are necessary to check that conditions for growth are good.

Irrigation

Keep permanent seeded areas adequately moist, especially late in the specific growing season. Irrigate the seeded area if normal rainfall is not adequate for the germination and growth of seedlings. Water seeded areas at controlled rates that are less than the rate at which the soil can absorb water to prevent runoff. Runoff of irrigation water wastes water and can cause erosion.

Re-seeding

Inspect permanently seeded areas for failure, make necessary repairs and re-seed or overseed within the same growing season if possible. If the grass cover is sparse or patchy, re-evaluate the choice of grass and quantities of lime and fertilizer applied. Final stabilization by permanent seeding of the site requires that it be covered by a 70% coverage rate.

Inspection and Maintenance

- Inspect seeded areas for failure and make necessary repairs and re-seed immediately. Conduct a follow-up survey after one year and replace failed plants where necessary.
- If vegetative cover is inadequate to prevent rill erosion, overseed and fertilize in accordance with soil test results.
- If a stand of permanent vegetation has less than 40 percent cover, re-evaluate choice of plant materials and quantities of lime and fertilizer.
- Re-establish the stand following seed bed preparation and seeding recommendations, omitting lime and fertilizer in the absence of soil test results.
- If the season prevents re-sowing, mulch is an effective temporary cover.
- Final stabilization of the site requires a 70 percent overall coverage rate. This does not mean that 30 percent of the site can remain bare. The coverage is defined as looking at a square yard of coverage, in which 70 percent of that square yard is covered with vegetation.

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Preventive Measures and Troubleshooting Guide

Field Condition	Common Solutions
Areas have eroded.	Re-seed or replace eroded areas.
Vegetation cover is inadequate and rill erosion is occurring.	Overseed and fertilize in accordance with soil test results.
Stand of permanent vegetation has less than 40% cover.	Re-evaluate choice of plant materials and quantities of lime and fertilizer.
Vegetation show signs of wilting before noon.	Water vegetation by wetting soil to a depth of 4-inches.