

PC-34 VEGETATION/SEEDING

Refer to: ITD Standard Specifications, Sections 621, 711.05 to 711.12, and 711.16.
For assistance, contact the Roadside Vegetation Manager at ITD Headquarters.



BMP Objectives

- Perimeter Control
- Slope Protection
- Borrow and Stockpiles
- Drainage Areas
- Sediment Trapping
- Stream Protection
- Temporary Stabilizing
- Permanent Stabilizing

Definition and Purpose

Permanent seeding is the process of growing from seed a long-term or permanent vegetative cover (plants) on disturbed area or areas that need additional assistance for soil stabilization or erosion control. Vegetation/seeding uses prescribed and preferably native perennial grasses, forbs, legumes, and shrubs, including a nurse crop when appropriate (see the temporary BMP for Vegetation Seeding [EC-12]) to hold soils in place and prevent erosion.

Permanent seeding, with the objective of establishing diverse (variable root depth) vegetation, is the key component and the most cost-effective method for slope and surface erosion control. Vegetation provides added benefits in the form of competitive ground cover, aesthetics, wildlife habitat, and ease of roadside maintenance. A desirable, diverse, well-established permanent seeding will capture or filter (bio-filtration) stormwater runoff and sediment, preventing pollution of streams, rivers, and lakes.

The permanent vegetation advantages are:

- Excellent soil stabilization
- Soil erosion and sedimentation prevention
- Containment and filtration of stormwater runoff
- Valuable ground cover and wildlife habitat
- Competition with undesirable vegetation and noxious weeds
- Aesthetic qualities

- Maintenance cost reduction

Appropriate Applications

- Permanent vegetation should be considered and planned for all disturbed areas and where construction or maintenance soil-disturbing activities have been completed or finalized.
- Typical permanent vegetative cover sites are all areas disturbed by new construction, reconstruction, maintenance, landscape, materials source site(s), slope failures, and areas in need of revegetation.
- Good seed-to-soil contact with adequate seed coverage is critical. A light incorporation of the seed using a harrow or drill seeding is preferable to establish safe sites for seed germination and growth.
- Permanent seed should only be applied (dormant seeding) during the season of seeding, usually between October 1 and April 31.
- Reusing topsoil whenever practical is recommended and greatly assists the establishment of permanent vegetation.

Limitations

Permanent vegetation (except turf) is not an immediate or short-term solution for compliance with NPDES requirements. Permanent vegetative ground cover takes several years before sufficient establishment is achieved. Establishment occurs quicker in high-precipitation areas, usually over 20 inches, as opposed to the arid or semi-arid regions.

Permanent seeding should be conducted in conjunction with soil amendments, soil biological stimulants, and fertilizers, with various erosion control measures such as mulching, matting, or erosion blanket, and with an annual nurse crop such as annual rye, spring barley, wheat, oats, or sterile hybrid grains.

Other factors contribute to the success or failure of permanent seeding, such as the following:

- Proper species selection is critical to fit the site conditions and precipitation zone.
- The rate of seeding for each species, either in pounds per acre or number of seeds per square foot, to ensure that the area is not over- or under-seeded.
- The correct mean annual precipitation (MAP) zones to ensure that the plant species selected fit within the prescribed precipitation region.
- The proper season of seeding (proper time of year) to allow germination and growth.
- Fertilization, soil amendments, or soil biological stimulants as prescribed may contribute to the success of the seeding.
- Establishment water may reduce the risk of seeding failure in low precipitation areas (arid/semi-arid) and enhance establishment.
- Proper planting methods (seed must be in contact with the soil and partially covered) for optimum germination and establishment (drill-seeding, where practical, is preferable).

Design Parameters

- All permanent vegetation, soil amendments, or fertilizer shall be applied in accordance with the ITD Design Manual Final Design Section and the Standard Specifications.
- The materials (grass species, etc.), site preparation, slope, rate and season of seeding, installation methods, and other vegetation procedures are all important factors that require advance planning.
- Topsoil stripping, stockpiling, and placement shall be included whenever possible.
- Additional information can be obtained from TN Plant Materials No. 24, Improved Grass, Forb, Legume, and Wood Seed Species for The Intermountain West (USDA–Natural Resources Conservation Service) or the ITD Roadside Revegetation Guidebook.
- The ITD Roadside Vegetation Manager in the ITD Headquarters can provide assistance in developing project-specific special provisions.

Construction Guidelines

- Apply permanent vegetation as the last phase of reclaiming any disturbed soils. Check the requirements of your contract, the NPDES stormwater permit, or SWPPP for establishing permanent vegetation.
- Check that all other erosion control measures, such as dikes, basins, and surface control measures, have been installed before planting seed.
- Perform seedbed preparation, if required, in accordance with the Standard Specifications. The season of seeding will also be in accordance with the Standard Specifications. Most seed, unless otherwise specified, will be furnished by ITD.
- Select and apply fertilizer or soil amendment in accordance with the Design Manual Final Design chapter.

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications during construction.
- Periodic inspection and maintenance will be required based on post-construction site conditions.
- Make any repairs necessary to ensure the measure is operating properly.
- Indicate which areas need to be reseeded or where other remedial actions are necessary to ensure establishment of permanent vegetation.
- Monitor the seeded area annually following successful establishment of permanent vegetation.