SEEDING, TEMPORARY
From Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas
http://www.state.ma.us/dep/brp/stormwtr/files/esfull.pdf

Definition:
Planting rapid-growing annual grasses, small grains, or legumes to provide initial, temporary cover for erosion control on disturbed areas.

Purpose
• To temporarily stabilize areas that will not be brought to final grade for a period of more than 30 working days.

• To stabilize disturbed areas before final grading or in a season not suitable for permanent seeding.

• Temporary seeding controls runoff and erosion until permanent vegetation or other erosion control measures can be established.

• Root systems hold down the soils so that they are less apt to be carried offsite by storm water runoff or wind.

• Temporary seeding also reduces the problems associated with mud and dust from bare soil surfaces during construction.

Where Practice Applies
• On any cleared, unvegetated, or sparsely vegetated soil surface where vegetative cover is needed for less than one year. Applications of this practice include diversions, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles.

• Where permanent structures are to be installed or extensive re-grading of the area will occur prior to the establishment of permanent vegetation.

• Areas which will not be subjected to heavy wear by construction traffic.

• Areas sloping up to 10% for 100 feet or less, where temporary seeding is the only practice used.

Advantages
• This is a relatively inexpensive form of erosion control but should only be used on sites awaiting permanent planting or grading. Those sites should have permanent measures used.

• Vegetation will not only prevent erosion from occurring, but will also trap sediment in runoff from other parts of the site.

• Temporary seeding offers fairly rapid protection to exposed areas.
Disadvantages/Problems

- Temporary seeding is only viable when there is a sufficient window in time for plants to grow and establish cover. It depends heavily on the season and rainfall rate for success.

- If sown on subsoil, growth will be poor unless heavily fertilized and limed. Because over-fertilization can cause pollution of Stormwater runoff, other practices such as mulching alone may be more appropriate. The potential for over-fertilization is an even worse problem in or near aquatic systems.

- Once seeded, areas should not be traveled over.

- Irrigation may be needed for successful growth. Regular irrigation is not encouraged because of the expense and the potential for erosion in areas that are not regularly inspected.

Planning Considerations

- Temporary seedings provide protective cover for less than one year. Areas must be reseeded annually or planted with perennial vegetation.

- Temporary seeding is used to protect earthen sediment control practices and to stabilize denuded areas that will not be brought into final grade for several weeks or months. Temporary seeding can provide a nurse crop for permanent vegetation, provide residue for soil protection and seedbed preparation, and help prevent dust production during construction.

- Use low-maintenance native species wherever possible.

- Planting should be timed to minimize the need for irrigation.

- Sheet erosion, caused by the impact of rain on bare soil, is the source of most fine particles in sediment. To reduce this sediment load in runoff, the soil surface itself should be protected. The most efficient and economical means of controlling sheet and rill erosion is to establish vegetative cover. Annual plants which sprout rapidly and survive for only one growing season are suitable for establishing temporary vegetative cover.

- Temporary seeding is effective when combined with construction phasing so bare areas of the site are minimized at all times. Temporary seeding may prevent costly maintenance operations on other erosion control systems. For example, sediment basin clean-outs will be reduced if the drainage area of the basin is seeded where grading and construction are not taking place. Perimeter dikes will be more effective if not choked with sediment.
Proper seedbed preparation and the use of quality seed are important in this practice just as in permanent seeding. Failure to carefully follow sound agronomic recommendations will often result in an inadequate stand of vegetation that provides little or no erosion control.

Soil that has been compacted by heavy traffic or machinery may need to be loosened. Successful growth usually requires that the soil be tilled before the seed is applied. Topsoiling is not necessary for temporary seeding; however, it may improve the chances of establishing temporary vegetation in an area.

Planting Procedures

Time of Planting: Planting should preferably be done between April 1 and June 30, and September 1 through September 30. If planting is done in the months of July and August, irrigation may be required. If planting is done between October 1 and March 31, mulching should be applied immediately after planting. If seeding is done during the summer months, irrigation of some sort will probably be necessary.

Site Preparation: Before seeding, install needed surface runoff control measures such as gradient terraces, interceptor dike/swales, level spreaders, and sediment basins.

Seedbed Preparation: The seedbed should be firm with a fairly fine surface. Perform all cultural operations across or at right angles to the slope. See Topsoiling and Surface Roughening for more information on seedbed preparation. A minimum of 2 to 4 inches of tilled topsoil is required.

Liming and Fertilization:

- Apply uniformly 2 tons of ground limestone per acre (100 lbs. per 1,000 square feet) or according to soil test.

- Apply uniformly 10-10-10 analysis fertilizer at the rate of 400 lbs. per acre (14 lbs. per 1,000 Sq.Ft.) or as indicated by soil test. Forty percent of the nitrogen should be in organic form.

- Work in lime and fertilizer to a depth of 4 inches using any suitable equipment.
Seeding
Select adapted species from the accompanying table. Apply seed uniformly according to the rate indicated in the table by broadcasting, drilling or hydraulic application. Cover seeds with suitable equipment as follows:

- Rye grass 1.4 inch
- Millet 1.2 to 3.4 inch
- Oats 1 to 1-1/2 inches
- Winter rye 1 to 1-1/2 inches.

Mulch
Use mulch, such as clean grain straw; tacked and/or tied down with netting to protect seedbed and encourage plant growth.

Common Trouble Points

Lime and fertilizer not incorporated to at least 4 inches: May be lost to runoff or remain concentrated near the surface where they may inhibit germination.

Mulch rate inadequate or straw mulch not tacked down: Results in poor germination or failure, and erosion damage. Repair damaged areas, reseed and mulch.

Annual ryegrass used for temporary seeding: Ryegrass reseeds itself and makes it difficult to establish a good cover of permanent vegetation.

Seed not broadcast evenly or rate too low: Results in patchy growth and erosion.
Maintenance

- Inspect within 6 weeks of planting to see if stands are adequate. Check for damage after heavy rains. Stands should be uniform and dense. Fertilize, reseed, and mulch damaged and sparse areas immediately. Tack or tie down mulch as necessary.

- Seeds should be supplied with adequate moisture. Furnish water as needed, especially in abnormally hot or dry weather or on adverse sites. Water application rates should be controlled to prevent runoff.

References


