

5.10 Erosion Control Blanket



Description

An erosion control blanket (ECB) is a short-term control that protects newly seeded soil from erosion and supports vegetation growth through shade and moisture retention. It supplements or replaces loose mulch on areas where mature vegetation alone will provide permanent stabilization. ECBs include open weave textiles.

Use Criteria

Use an ECB on areas seeded in accordance with Chapter 5.6 or 5.8:

- with a high erosion potential such as highly erodible soil, slopes, grass-lined channels, shorelines, and streambanks, and
- where straw mulch is difficult to keep in place due to slope, wind, or surface flow.

This standard applies to short-term uses. The ECB's life should coincide with the length of time necessary to establish mature vegetation. Products in Erosion Control Technology Council (2017) categories 1 (three months) and 2 (12 months) are recommended. Some polymer netting fragments may remain much longer entwining in mowers and wildlife.

Apply an ECB to grass swales and stream banks subject to a shear stress of 2.0 pounds per square foot or less. Specialized ECBs may withstand slightly greater shear stresses.

Apply All ECBs in accordance with the manufacturer's recommended uses and limitations for the specified product.

Design Criteria

There are many types of ECBs. Specify an ECB appropriate for the intended application.

Specify a "wildlife friendly" ECB where practical. The U.S. Fish and Wildlife Service maintains a list of "wildlife friendly" products on its website (<https://www.fws.gov/media/wildlife-friendly-erosion-control-product-list>).

Manufacturer's specifications on use, installation, anchoring, and maintenance must be followed.

An ECB used on a streambank or vegetated swale must provide soil stabilization during the six to 12-month vegetation establishment period. Evaluate the shear stress from expected high flows and specify an ECB according to the manufacturer's maximum permissible shear stress. Extend the ECB to cover the wetted perimeter of a swale.

See the practice specification that follows.

Stormwater Pollution Prevention Plan

Include plans and specifications in a Stormwater Pollution Prevention Plan (SWP3) that describe the requirements for applying the practice to achieve its intended purpose. As a minimum, include the following in the SWP3.

- ☐ Indicate where to install the ECB.
- ☐ Thoroughly convey product specifications and installation instructions for the ECB.

Inspection and Maintenance

Check ECBs for dislocation or failure every seven calendar days and within 24 hours after each rainfall of one-half inch or more until vegetation has matured. Immediately repair all damaged areas by repairing rills or gullies to restore finished grade, re-applying fertilizer and seed, and replacing the ECB as needed.

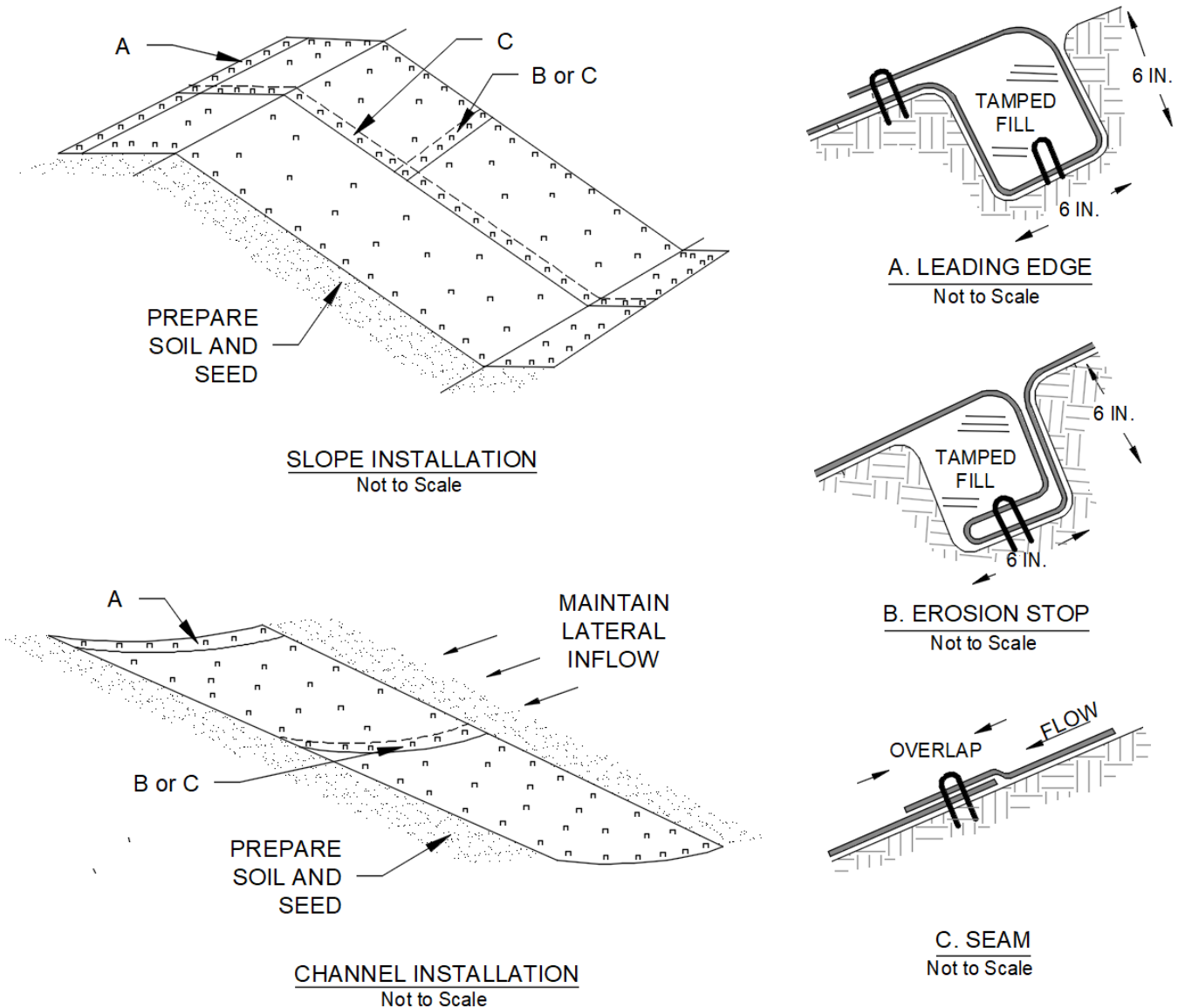
References

Erosion Control Technical Council. 2017. Installation Guide for Rolled Erosion Control Products (RECPs) including Mulch Control Nettings (MCNs), Open Weave Textiles (OWTs), Erosion Control Blankets (ECBs), and Turf Reinforcement Mats (TRMs). Accessed at www.ectc.org on October 10, 2024.

Alabama. 2022. Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Area (The Blue Book), Volume 1. Alabama Soil and Water Conservation Committee. Montgomery, AL.

US Fish and Wildlife Service. Wildlife and environmentally friendly erosion control products. Accessed April 23, 2025 at www.fws.gov/sites/default/files/documents/WLfriendlyErosionControl_final.pdf

Practice Specification Erosion Control Blanket



Scope

Furnish all materials, labor, and equipment necessary for installing erosion control blanket (ECB) in accordance with the construction drawings and these specifications.

Materials

1. ECBs shall meet the Erosion Control Technology Council's specifications for unvegetated shear stress, seedling emergence, tensile strength, and ultraviolet (UV) stability established for material types 1A through 2D.
2. ECBs shall consist of photodegradable plastic netting or biodegradable natural fiber netting that covers and is entwined in a mulching material.

3. Open weave textiles shall consist of processed natural (for example, jute or coir) or polymer yarns woven into a matrix.
4. The mulching material shall consist of wood fibers, wood excelsior, clean straw, coconut fiber, or synthetic fibers.
5. ECBs shall be of consistent thickness with the mulching material evenly distributed over its entire length. Mulching material must interlock or entwine to form a dense layer, which not only resists raindrop impact but also allows vegetation to penetrate the blanket.

Installation

1. Grade areas to be treated with ECB to form a firm surface free of rocks, soil clods, vegetation, roots, and other obstructions that could prevent direct contact with the soil. Blankets must lie flat on the soil surface. Blankets that ride over obstructions or bridge the soil will allow the flow underneath the blanket to erode the soil.
2. Ensure the area is seeded in accordance with the specifications for permanent or temporary seeding including topsoil and seedbed preparation requirements. Reseed any seeded areas damaged or destroyed during the placement of the blankets.
3. Anchor ECB to the ground with the fastener type, pattern, and density directed by the ECB manufacturer's installation instructions. Lay the ECB loose to ensure direct soil contact, do not pull taut. If not specified by the manufacturer, use the following anchor and seam specifications.
 - a. Anchor ECBs with 11-gauge steel U-shaped staples with a minimum width of one inch and a minimum length of 12 inches or approved equal. Use a minimum of 1.7 fasteners per square yard on channel installations and 1.3 fasteners per square yard on slopes. Use longer fasteners at a significantly higher density in sandy, loose, or wet soils or when directed by the engineer or manufacturer's representative.
 - b. Entrench the upstream leading edge of the blanket. The minimum trench dimensions shall be 6 inches wide by 6 inches deep. Staple the ECB to the bottom of the trench and backfill with compacted soil.
 - c. Overlap side-by-side seams a minimum of 3 inches and anchor every 18 inches through both layers to prevent separation.
 - d. Shingle consecutive rolls such that the upslope layer overlays the downslope a minimum of 6 inches and secure staples through the seam at 12-inch intervals.
 - e. Anchor the sides and terminal end with a row of fasteners.

Maintenance

1. Check ECBs for dislocation or failure every seven calendar days and within 24 hours after each rainfall of one-half inch or more until vegetation has matured. Immediately repair all damaged areas by repairing rills or gullies to restore finished grade, re-applying fertilizer and seed, and replacing the ECB as needed.