

BMP C235: Wattles

Purpose

Wattles are TESC barriers consisting of straw, compost, or other material that is wrapped in biodegradable tubular plastic or similar encasing material. They reduce the velocity and can spread the flow of rill and sheet runoff, and can capture and retain sediment. Wattles are typically 8 to 10 inches in diameter and 25 to 30 feet in length. Wattles are placed in shallow trenches and staked along the contour of disturbed or newly constructed slopes. See Figure 3.13 for typical construction details.

Conditions of Use

- Use wattles:
 - In disturbed areas that require immediate erosion protection
 - On exposed soils during the period of short construction delays, or over winter months
 - On slopes requiring stabilization until permanent vegetation can be established.
- The material used dictates the effectiveness period of the wattle. Typically, wattles are effective for one to two wet seasons.
- Prevent rilling beneath wattles by properly entrenching and abutting wattles together to prevent water from passing between them.

Design Criteria

- Install wattles perpendicular to the flow direction and parallel to the slope contour.
- Narrow trenches should be dug across the slope on contour to a depth of 3 to 5 inches on clay soils and soils with gradual slopes. On loose soils, steep slopes, and areas with high rainfall, the trenches should be dug to a depth of 5 to 7 inches, or one-half to two-thirds of the thickness of the wattle.
- Start building trenches and installing wattles from the base of the slope and work up. Spread excavated material evenly along the uphill slope and compacted using hand tamping or other methods.
- Construct trenches on contours at intervals of 10 to 25 feet apart depending on the steepness of the slope, soil type, and rainfall. The steeper the slope, the closer together the trenches.

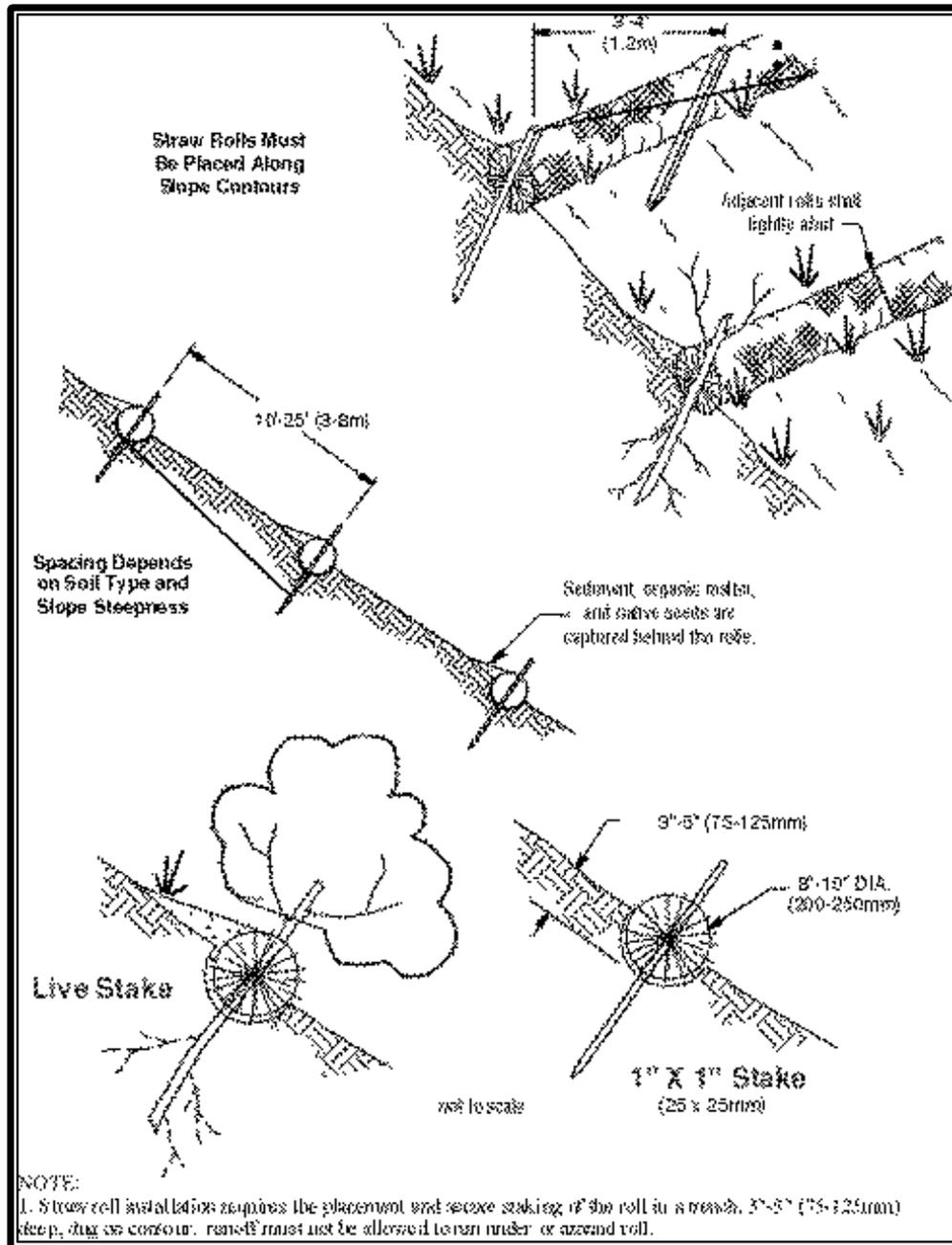


Figure 3.13. Straw Wattles.

- Install the wattles snugly into the trenches and abut tightly end to end. Do not overlap the ends.
- Install stakes at each end of the wattle, and at 4-foot centers along entire length of wattle.
- If required, install pilot holes for the stakes using a straight bar to drive holes through the wattle and into the soil.

- Wooden stakes should be approximately 0.75 x 0.75 x 24 inches min. Willow cuttings or 0.375-inch rebar can also be used for stakes. Note: rebar must be removed at end of project if used, while other fasteners maybe permitted to remain if all parts of the wattles are biodegradable and shown in plans for permanent erosion control.

Maintenance Standards

- Stakes should be driven through the middle of the wattle, leaving 2 to 3 inches of the stake protruding above the wattle.
- Wattles may require maintenance to ensure they are in contact with soil and thoroughly entrenched, especially after significant rainfall on steep sandy soils.
- Inspect the slope after significant storms and repair any areas where wattles are not tightly abutted or water has scoured beneath the wattles.

Approved as Equivalent

Ecology has approved specific products as able to meet the requirements of BMP C235. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. The county has reviewed these products for application in Pierce County, and has developed a county-specific list of the approved and prohibited products. This county-specific list can be obtained from Pierce County Planning and Land Services' (PALS) web site: <piercecounitywa.org/PALS>. The county web site is updated routinely, but the latest list from Ecology is available on Ecology's web site at <www.ecy.wa.gov/programs/wq/stormwater/newtech/equivalent.html>. Contact the county if a new Ecology approved product is not listed on the county web site.