

# STANDARD AND SPECIFICATIONS FOR BRUSH MATTRESS



## **Definition**

A mulch or mattress of brush laid on a slope and fastened down with stakes and wire.

## **Purpose**

To protect the soil surface on slopes from erosive forces through the generation of a dense stand of woody vegetation.

## **Conditions Where Practice Applies**

Brush mattresses are used primarily on streambanks where the velocity is less than 6 feet per second and excessive runoff from streamflow has created erosive conditions. This practice can resist temporary inundation, but not scour or undercutting.

## **Design Criteria**

**Layer Thickness**—The brush shall be a minimum of 3 inches thick (excluding top soil layer).

**Height**—The mattress shall be placed up the bank to the bankfull elevation. The toe of the mattress should be located in a fascine trench.

**Slope**—The maximum slope shall be 1.5:1.

**Anchoring**—The mattress shall be anchored on the slope by a grid of 3-foot stakes driven on 3-foot centers each way. No. 9 wire is then wound between the stakes, which are driven to secure the mattress. The upstream edge of the mattress should be keyed into the bank 2 feet.

**Materials**—The plant materials should be willow and dogwood brush placed as shown in Figure 4.3.

## **Construction Specifications**

1. Prepare slope surface by grading to a uniform, smooth surface, clear of obstruction. Slopes should be graded before the brush mattress is installed.
2. The fascine toe should be installed first. Then lay brush beginning at the downstream end of the work.
3. The butt end of the brush will be placed upstream and plant materials inclined approximately 30 degrees.
4. The upstream edge of the mattress will be keyed into the slope 2 feet. Stakes will be driven throughout the mattress on 3-foot centers each way beginning along the toe of the mattress.
5. No. 9 wire will be attached to the stakes and tightened to secure the mattress.
6. Slope areas above the mattress will be shaped and seeded.

## **Maintenance**

Scheduled inspections the first year are necessary to make sure the anchoring system is sound. Broken wire or missing stakes shall be replaced immediately. Any missing toe material missing shall be replaced.

**Figure 4.3  
Brush Mattress**

