CATEGORY: Runoff Management

USE GROUP: Permanent or Temporary

FIBER ROLLS/WATTLES

ISSUED: 10-1-2008

DEFINITION AND PURPOSE:

Fiber rolls (also called “coir logs” or “straw wattles”) are tube-shaped erosion-control devices filled with straw, flax, rice, coconut fiber material, or composted material. Each roll is wrapped with UV-degradable polypropylene netting for or with 100 percent biodegradable materials like burlap, jute, or coir. These devices reduce the effects of long or steep slopes by breaking up the slope length.

APPROPRIATE APPLICATIONS:

Fiber rolls can be used in areas of low shear stress including; (1) along the toe, top, face, and at grade breaks consisting of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow, (2) at the end of a downward slope where it transitions to a steeper slope, (3) along the perimeter of a project or stockpile, (4) as check dams in unlined ditches, and (5) downslope of exposed soil areas.

CONDITIONS FOR EFFECTIVE USE:

Type of Flow: Sheet flow and concentrated flow.

WHEN BMP IS TO BE INSTALLED:

Immediately after rough grading; prior to seeding or mulching.

STANDARDS AND SPECIFICATIONS:

On slopes, install fiber rolls along the contour with a slight downward angle at the end of each row to prevent ponding at the midsection. Turn the ends of each fiber roll upslope (like a j-hook) to prevent runoff from flowing around the roll. Determine the vertical spacing for slope installations on the basis of the slope gradient and soil type. A good rule of thumb is: 1:1 slopes=10 feet apart, 2:1 slopes=20 feet apart, 3:1 slopes=30 feet apart, and 4:1 slopes=40 feet apart. Stake fiber rolls securely into the ground and orient them perpendicular to the slope. Fiber rolls can also be used on projects with minimal slopes. Typically, the rolls are installed along sidewalks, on the bare lot side, to keep sediment from washing onto sidewalks and streets and into gutters and storm drains.

OPERATION AND MAINTENANCE PROCEDURES:

Inspect every week and after every ½” storm event. Remove sediment accumulation when it reaches ½ the height of the roll/wattle. Repair or replace split, torn, unraveled, or slumping fiber rolls.

SITE CONDITIONS FOR REMOVAL:

Fiber rolls are typically left in place on slopes. If they are removed after stabilization has been achieved, collect and dispose of the accumulated sediment.

TYPICAL DETAILS:

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