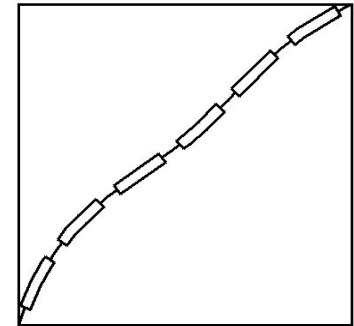


SC-8 SEDIMENT RETENTION FIBER ROLLS

Refer to: ITD Standard Specifications, Section 212 and 711

ITD Standard Drawing P-1-B

QPL Category: 212 Sediment Retention Fiber Rolls



Standard Symbol

Definition and Purpose

A sediment retention fiber roll consists of wood excelsior, rice or wheat straw, compost, or coconut fibers that are rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow and provide removal of sediment from the runoff. Sediment retention fiber rolls may also be used for inlet protection and as check dams or shoreline protection under certain situations. Sediment retention fiber rolls include degradable fiber wattles, degradable logs, and compost socks.

Appropriate Applications

- Sediment retention fiber rolls may be used as check dams in unlined ditches if low flow exists and if approved by the Engineer [refer to SC-2 (Check Dams)].
- Sediment retention fiber rolls may be used for drain inlet protection if properly anchored and if approved by the Engineer [refer to SC-6 (Inlet/Outlet Protection)].
- Degradable logs may be used for shoreline protection if approved by the Engineer.
- Sediment retention fiber rolls may be located:
 - Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
 - Below the toe of exposed and erodible slopes.
 - Down-slope of exposed soil areas.
 - Around temporary stockpiles.

BMP Objectives

- | | |
|-------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> | Perimeter Control |
| <input type="checkbox"/> | Slope Protection |
| <input checked="" type="checkbox"/> | Borrow and Stockpiles |
| <input checked="" type="checkbox"/> | Drainage Areas |
| <input checked="" type="checkbox"/> | Sediment Trapping |
| <input checked="" type="checkbox"/> | Stream Protection |
| <input type="checkbox"/> | Temporary Stabilizing |
| <input type="checkbox"/> | Permanent Stabilizing |

- Along the perimeter of a project.

Limitations

- Erosion may occur if sediment retention fiber roll is not adequately trenched in.
- Sediment retention fiber rolls may be used for drainage inlet protection if they can be properly anchored.
- Sediment retention fiber rolls are difficult to move once saturated.
- Sediment retention fiber rolls can be removed by unexpected high flows if not properly staked and trenched in.
- Sediment retention fiber rolls have a limited sediment capture zone.
- Sediment retention fiber rolls must be maintained (cleaned out) once 50% of capacity is reached.
- Sediment retention fiber rolls shall not be used on slopes subject to creep, slumping, or landslide.

Degradable Fiber Wattles

Degradable fiber wattles shall be manufactured from natural straw, coir (coconut), composted material, wood fibers, or a combination of; and wrapped in approved degradable netting made of plastic, natural fiber such as jute, sisal, cotton, hemp, or burlap. All material including netting shall have a life expectancy of approximately one year. Degradable fiber wattles shall have a minimum diameter of 8 inches. Degradable fiber wattles that are 8 inches to 11 inches in diameter shall have a minimum weight of one pound per linear foot. Fiber wattles with a diameter greater than 11 inches shall have a minimum weight of three pounds per linear foot. The ends shall be secured tightly with degradable twine.

Degradable Logs

Degradable logs shall be made of 100 percent durable coconut (coir) fiber or other approved material. Material shall be uniformly compacted within woven netting made of coir twine with minimum strength of 80 lbs tensile strength. The netting shall have nominal 2 inch by 2 inch openings. The log segments shall have a maximum length of 20 feet and a minimum density of 7 lbs/cf. All material including netting shall have a life expectancy of approximately one year.

Compost Sock

Compost sock shall have a minimum diameter of 8 inches and shall be free from any type of preservative. Sock shall be a mesh tube, oval to round in cross section and shall be clean, evenly woven, and free of encrusted concrete or other contaminating materials and free from cuts, tears, broken or missing yarns and thin, open or weak places. Sock shall have a minimum tensile strength of 44 psi. Sock shall be composed of either degradable plastic or polyester netting or composed of biodegradable jute, sisal, burlap, or coir fabric. Sock shall have a life expectancy of approximately one year.

Removal

- Degradable fiber rolls are typically left in place.
- If sediment retention fiber rolls are removed, sediment accumulation shall be collected and disposed of, and holes, trenches, depressions, or any other ground disturbance shall be filled and compacted to blend with adjacent ground as approved by the Engineer.

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications.
- Repair or replace split, torn, unraveling, or slumping sediment retention fiber rolls.