Greenville County Technical Specification for:

EC-10 Slope Interruption Devices

1.0 Slope Interruption Devices

1.1 Description

Slope Interruption Devices are temporary devices placed along slopes to minimize concentrated flow from forming on the face of the slope. Locations for installation are designated on the Plans or by the ENGINEER.

The maximum allowable continuous slope length for HECP (Hydraulic Erosion Control Products) and ECB (Temporary Erosion Control Blanket) applications is 50 feet. Provide Slope Interruption Devices for continuous slope length longer than 50 feet.

1.2 Materials

Do not use straw bales, natural pine needles, leaf mulch, and or grass clippings.

Provide a Slope Interruption Device *(Type F inlet structure filter)*that exhibit the following properties:

- Machine produced by a manufacturer experienced in sediment tube manufacturing.
- Materials are certified 100% weed free.
- When curled excelsior wood fiber is used, 80% of the fiber materials are a minimum of four (4) inches in length.
- When washed shredded recycled rubber particles are used, a minimum of 98% of metal is removed.
- Materials are enclosed by a tubular, flexible outer netting treated with ultraviolet stabilizers.

Do not use straw, curled excelsior wood, or natural coconut rolled erosion control products (RECPs) that are rolled up to create a Slope Interruption Device *(Type F inlet structure filter.*

1.2.1 Weighted Slope Interruption Device

Provide a weighted Slope Interruption Device *(Type F inlet structure filter)* that is a sediment tube capable of staying in place without external stabilization measures and has a weighted inner core or other weighted mechanism to keep it in place. Provide a weighted Slope Interruption Device *(Type F inlet structure filter)* that meets the minimum performance requirements shown in the following table.

Property	Test Method	Value
Pre-installed Tube Diameter	Field Measured	6.0 inch to 12.0 inch
Mass per Unit Length	Field Measured	6 inch = 6 lbs/ft minimum 12 inch = 12 lbs/ft minimum
Length per Tube	Field Measured	6 foot minimum
Tube Filtering Efficiency Performance	ASTM D5141 or ASTM D7351	80% Total Suspended Solids (TSS)
Clean Water Flow Rate	ASTM D4491 or Equivalent	100 gal/min/ft^2 minimum
Netting Ultraviolet Stability (retained strength after 500 hr)	ASTM D 4355	70%

1.2.2 Non-Weighted Slope Interruption Device

Provide stakes or other means to stabilize non-weighted Slope Interruption Device *(Type F inlet structure filter)* to keep them safely in place. Provide a non-weighted Slope Interruption Device *(Type F inlet structure filter)* that meets the minimum performance requirements shown in the following table.

Property	Test Method	Value
Pre-installed Diameter	Field Measured	6.0 inch to 12.0 inch
Mass per Unit Length	Field Measured	6 inch = 1.0 lbs/ft minimum 12 inch = 2.0 lbs/ft minimum
Length per Tube	Field Measured	6 foot minimum
Filtering Efficiency Performance	ASTM D5141 or ASTM D7351	80% Total Suspended Solids (TSS)
Clean Water Flow Rate	ASTM D4491 or Equivalent	100 gal/min/ft^2 minimum
Netting Ultraviolet Stability (retained strength after 500 hr)	ASTM D4355	70%

1.2.3 Quality Assurance

Provide Slope Interruption Devices (*Type F inlet structure filter)* listed on the most recent edition of *SCDOT Qualified Product List 58* in the appropriate category, or equivalent.

At the time of delivery, provide the ENGINEER with the Slope Interruption Devices (*Type F inlet structure filter*) packing list containing complete identification, including but not limited to the following:

- Manufacturer name and location,
- Manufacturer telephone number and fax number,
- Manufacturer's e-mail address and web address, and
- Slope Interruption Devices (*Type F inlet structure filter*) name, model and/or serial number.
- Certification that the specific Slope Interruption Devices (*Type F inlet structure filter*) meets the physical and performance criteria of this specification.

1.3 Construction Requirements

1.3.1 Site Preparation

Proper site preparation is essential to ensure that Slope Interruption Devices are in complete contact with the underlying soil or underlying surface. Remove all rocks, clods, vegetation or other obstructions so that installed Slope Interruption Devices have direct contact with the underlying surface.

1.3.2 Installation

Install Slope Interruption Devices in accordance with the manufacturer's written installation instructions, in compliance with these specifications and with all OSHA, local, state, and federal codes and regulations.

Install non-weighted inlet tubes for slope interruption devices for Hydraulic Erosion Control Products (HECPs) application prior to the HECP installation. Excavate a trench along (parallel) the contour of the slope to a depth that is 1/3 the tube diameter. Place the excavated soil on the up-slope side of the trench. Place the slope interruption device into the trench so it contours to the soil surface, ensuring no gaps exists underneath the tube. Compact the excavated soil against the tube on the up-slope side. Ensure the installation of the slope interruption device does not damage the prepared seedbed.

Install non-weighted inlet tubes slope interruption devices for Temporary Erosion Control Blankets (ECBs) application after the ECB installation on top of the ECB. Tube trenching is not required for ECB applications. Ensure the installation of the slope interruption device does not damage the installed ECB.

Install non-weighted inlet tubes for slope interruption devices using wooden stakes with a minimum length of 3 feet with a minimum measured dimension of 3/4 inch x 3/4 inch and a maximum measured dimension of 1 inches x 1 inches. Do not use steel posts for this application. Install a stake at each end of each tube and space stakes on maximum 4 foot centers. Drive stakes into the ground perpendicular to the slope to a depth of 2 feet or to the maximum extent practicable.

Install the stakes through the center of the non-weighted tube. Abut adjacent tubes tightly, end to end, without overlapping the ends. Tie the tube ends together using heavy twine or plastic locking ties. Dog leg terminal ends of slope interruption devices up slope to ensure containment and the prevention of channeling of runoff.

Ensure the areas for post installation are compacted so the posts are properly installed.

1.3.3 Delivery, Storage, and Handling

Follow the manufacturer's written procedures for Slope Interruption Devices labeling, shipment handling, and storage. Ensure that the manufacturer or supplier name, the structures size, shape, and weight clearly show on product labels.

Store Slope Interruption Devices off the ground and cover adequately to protect them from the following:

- Construction damage,
- Precipitation,
- Extended exposure to ultraviolet radiation including sunlight,
- On-site chemicals,
- Flames including welding sparks,
- Excess temperatures, and
- Other environmental conditions that can damage the physical properties of the inlet filters.

1.3.4 Inspection and Maintenance

- Inspect Slope Interruption Devices after installation for gaps that may allow concentrated flow to establish.
- Inspect Slope Interruption Devices every 7 days and inspections are recommended within 24-hours after each rainfall event that produces ½-inches or more of precipitation until final stabilization is achieved. Correct any damage or needed repairs.
- Remove and/or replace Slope Interruption Devices as needed to adapt to changing construction site conditions.
- Replace Type F inlet tubes damaged during installation as directed by the ENGINEER or manufacturer's representative.

1.3.5 Acceptance

Obtain ENGINEER approval of Slope Interruption Device installations. When requested by the ENGINEER, ensure that a manufacturer's representative is on-site to oversee and approve the installation of Slope Interruption Devices. Obtain a letter from the manufacturer approving the installation when requested by the ENGINEER.