

SWPPP Binder Insert – Ditch Stabilization

ERTEC Ditch Guard™

(Protection in Channels with Concentrated Flows)

Definition

Ditch Guard (DG) is water velocity interruption device for ditch and channel stabilization. The device is placed perpendicular to flow and situated so that flow cannot flank around the ends of the installation. The device is an inverted T- shaped assembly comprising semi-rigid, overlapping layers of apertured polymeric high density polyethylene (HDPE) sheets. Each segment is 3.0 feet long and has a freeboard height of 9" or 5", secured in place with 6" nails (60D Bright Common) and Stakes (1"x1"x18"). (Installation guidelines are available at www.ertecsystems.com).

Purpose

For ditch protection, DG is used to disperse or spread concentrated water runoff, to reduce runoff velocities and significantly reduce movement and accumulation of sediment. The system reduces the velocity of water yet allows it to flow-through, discouraging end-around flows, under and overflow.

Conditions Where the Practice Applies

DG is recommended for use in channels with concentrated flow. DG is available in 5" and 9" heights. DG 5" is recommended where lawn mowers may operate. Unlike wattles and other ditch protection devices, advantages to this device are its low total cost, its extended life, and high packaging density. Because DG has an integrated splash guard underneath and immediately downstream, DG does not require erosion control blankets beneath or downstream. Vehicles can drive over the barrier without permanent damage. It can be reshaped, repaired and may also be re-used under most conditions. The product is made from recycled materials and is recyclable at the end of life.

Installation Criteria

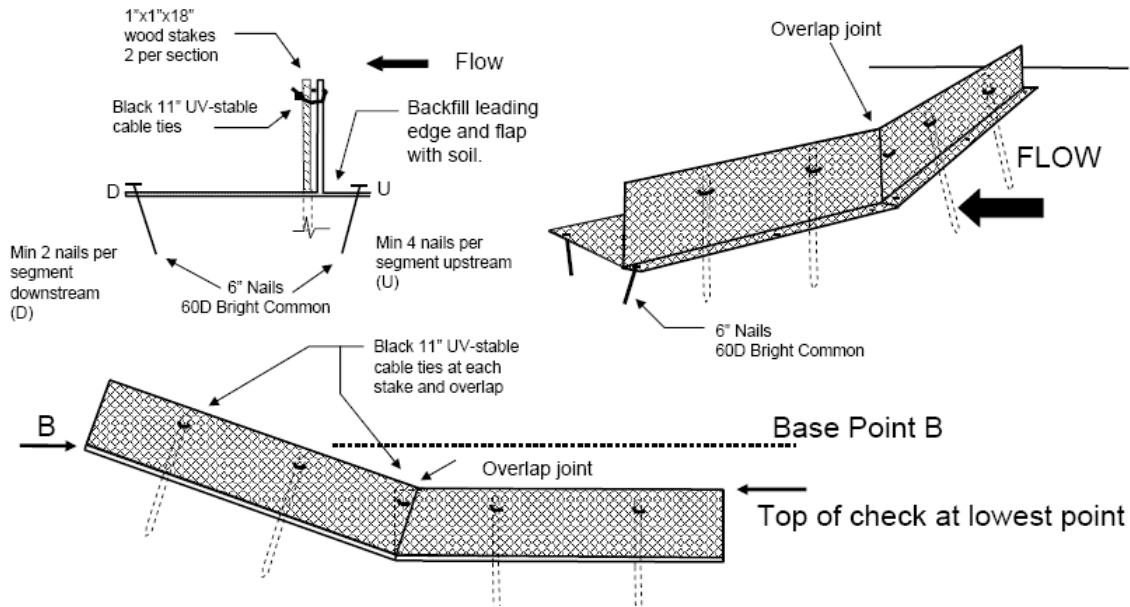
See (Figure 1). Prepare a surface across the ditch, perpendicular to the flow. Clear obstructions including, but not limited to, rocks, clods, and debris. Install segments across the ditch. At the segment overlaps, overlay one section onto the adjoining section as per the installation instructions. Install 6" Nails (60D Bright-Common) – minimum 4 nails per segment on upstream edge and a minimum 2 anchors per segment on downstream edge. Install 1"x1"x18" stakes on downstream side of upright. Precut holes are available for this purpose. Install two stakes per segment. Pound top of stakes flush with top of vertical section (5" from bed of channel). Backfill front or upstream flap to a level of 2 inches. Spacing between the Ditch Guard dams is indicated in the installation guidelines (Table 1). The elevation at the bottom surface at the end of each dam should be higher than the top elevation at the center of the dam to prevent water flanking. If this is not the case – a weir can be cut into the center. After cutting weir so that spill point is low enough to prevent flanking – suture outer jacket with black UV stable cable ties. Detailed installation guidelines are available at www.ertecsystems.com.

Maintenance

If flattened by equipment drive-overs, reshape to vertical immediately. Repair or replace split or torn segments. Inspect DG when rain is forecast. Perform maintenance as needed or as required. Inspect DG following rainfall events and at least daily during prolonged rainfall. Maintain DG to provide an adequate sediment holding capacity. Remove DG after the site has been stabilized. Vegetate or stabilize the disturbed PW area.

SWPPP Binder Insert – Ditch Stabilization Installation Details - ERTEC Ditch Guard™

Figure 1 Ditch Stabilization



Insure that Base Point B is installed higher than the top of the check (at the lowest point in the channel) to prevent water flanking around installation and to ensure flow toward center of channel.

Table 1

Height 5"

Design Spacing = Height (0.417 ft) / Gradient
(Example: 5% Gradient 0.417 ft / 0.05 = 8 ft)

Gradient	Spacing (ft)
1%	42
2%	21
3%	14
4%	10
5%	8
6%	7
7%	6
8%	5

Height 9"

Design Spacing = Height (0.75 ft) / Gradient
(Example: 5% Gradient 0.75 ft / 0.05 = 15 ft)

Gradient	Spacing (ft)
1%	76
2%	38
3%	25
4%	19
5%	15
6%	12
7%	11
8%	9



Ditch Guard™

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Systems**

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Toll Free: 866-521-0724