

SWPPP Binder Insert – Slope Stabilization

ERTEC ProWattle™

(Protection for Stabilized Slopes or Low-Traffic Job Site Perimeters)

Definition

ProWattle is water velocity interruption device for slope stabilization or a temporary perimeter sediment barrier with a hinged flap at the bottom made of high density polyethylene (HDPE) containing an integrated filter. The device is placed in parallel runs along the contour of disturbed and graded slopes. ProWattle can also be placed along the perimeter of construction sites where soil is disturbed. (Installation guidelines are available at www.ertecsystems.com).

Purpose

For slope protection, ProWattle is used to intercept and spread water flow, to slow its velocity and prevent slope erosion and loss of soil. On perimeters, ProWattle is used to intercept sediment laden water and the associated pollutants from entering the street and the storm water system. The system reduces the velocity of water yet allows it to flow-through, discouraging end-around flows, under and overflow. On slopes, the system tends to spread rather than concentrate flows. ProWattle filters certain sized smaller particles in suspension, captures a high percentage of total solids and prevents them from flowing through the barrier. The filter develops a filter cake which in turn filters smaller and smaller particles over time.

Conditions Where the Practice Applies

ProWattle is recommended for use on slopes along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow. ProWattle is also recommended for use around the perimeter of job sites with smaller drainage areas where sheet flow and light concentrated flow exists rather than heavy concentrated flow. Unlike wattles and silt fence, advantages to this device are its low total cost, its extended life, high packaging density, 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 recyclable at the end of life as #2.

Design Criteria

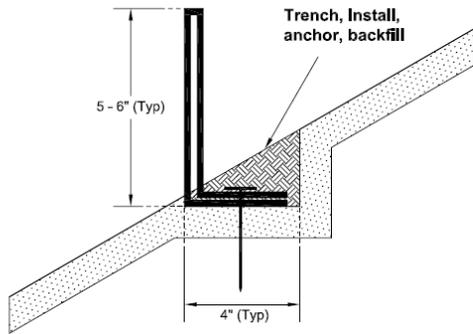
- Filter Material or outer Jacket: Uses ERTEC's HDPE Product. For detailed product characteristics contact ERTEC Environmental Systems @ (866) 521-0724 or www.ertecsystems.com. The unit weight of the system is 0.30 lbs per foot. Each segment is 6' 8" of usable feet in length. The freeboard height of the filter is 5.0 to 6.0". The jacket contains at least 8,000 openings per yd².
- The last in-line ProWattle segment should be bent or dog-legged upslope to ensure sediment containment. Slit the flap to bend if necessary. When placed on soil surfaces, insure that no gaps exist between the soil and the bottom of PW. When installing on a slope a shelf should be cut into the slope – around 4 inches for proper installation and a stake should be installed on the downstream side every five feet (See **Figure 1**). When installing curbside in low traffic areas, it is necessary to trench the flap at least 1" deep by 4" wide (See **Figure 2**). PW flap should be directed upstream, anchor with 6" nails (60D Bright Common), one per 2.5 feet, then backfill with soil. Washers are not required with the nails. (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 PW. Inspect PW when rain is forecast. Perform maintenance as needed or as required. Inspect PW following rainfall events and at least daily during prolonged rainfall. Maintain PW to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches 50% of the barrier height. Removed sediment shall be incorporated in the project at designated locations or disposed of outside the project or the road right-of-way in conformance with requirements. Remove the PW after the site has been stabilized. Vegetate or stabilize the disturbed PW area.

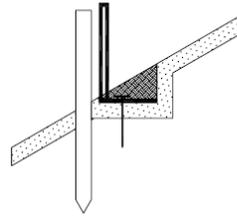
SWPPP Binder Insert – Slope Stabilization Installation Details - ERTEC ProWattle™

Figure 1 Slope Stabilization

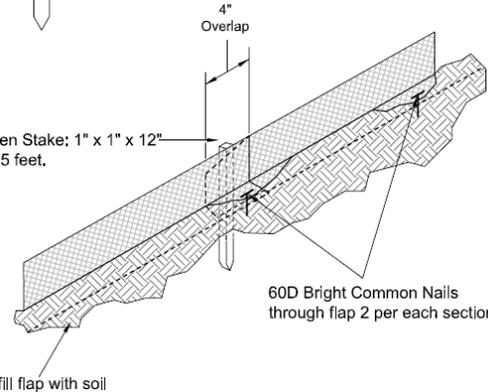


Notes:

1. Insert adjoining segments. Chamfered end fits inside adjoining segment.
2. Use 6" nails (60D Bright-Common). Install 2 nails per each 7' segment. One at overlap and one mid-segment.
3. Install nails flush with flap so that flap is in good contact with soil.
4. Cover flap with soil to prevent undercutting.
5. Reinforce with wooden stakes as shown - one stake every 5 feet.



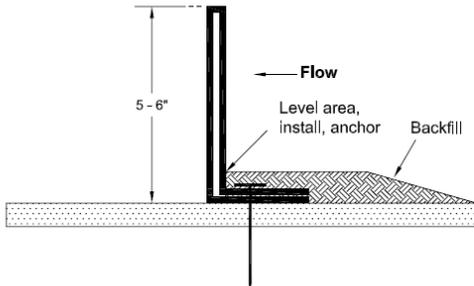
Wooden Stake: 1" x 1" x 12"
every 5 feet.



Notes:

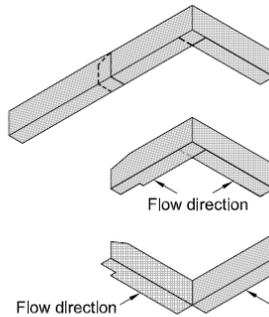
1. Stakes required on slopes
2. Reinforce ProWattle with wooden stakes. Install one wooden stake every 5 feet.

Figure 2 Perimeter Protection



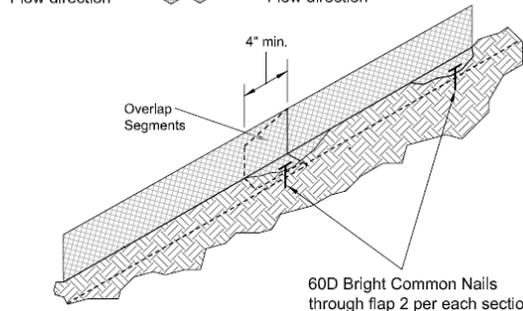
Notes:

1. Insert adjoining segments. Chamfered end fits inside adjoining segment.
2. Use 6" nails (60D Bright-Common). Install 2 nails per each 7' segment. One at overlap and one mid-segment.
3. Install nails flush with flap so that flap is in good contact with soil.
4. Cover flap with 1" of soil to prevent undercutting - not necessary to trench.



Notes:

1. To bend ProWattle™ around obstacles, first silt flap through to crease. Then bend to desired angle, in either direction, as shown.
2. Dog-leg at end-of-runs or bend around obstacles to contain sediment.
3. Dog-Leg periodically on down hill run to slow velocity and prevent scour.



For Slope Installation ProWattle shall be installed as follows:

1. A shelf-cut shall be constructed 4" horizontally into the slope.
2. Stakes shall be installed on slopes. Install stakes 5 feet apart. Stakes shall be driven flush with the top of the ProWattle. Stakes shall be at minimum; 1" x 1" x 12".
3. ProWattle shall be placed as follows:

Feet Apart along the slope	Slope Inclination (vertical:horizontal)
10 feet	1:2 and steeper
15 feet	1:2 to 1:4
20 feet	1:4 and 1:10
50 feet	1:10 and flatter

4. The shelf-cut for ProWattle shall be cleared of obstructions including, but not limited to, rocks, clods, and debris greater than 1" in diameter prior to installation.
5. ProWattle shall be installed parallel to the slope contour.
6. ProWattle shall be installed prior to the application of other temporary erosion control or soil stabilization materials in the same area.
7. When no longer required, ProWattle can be removed and reused.



ProWattle™

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