

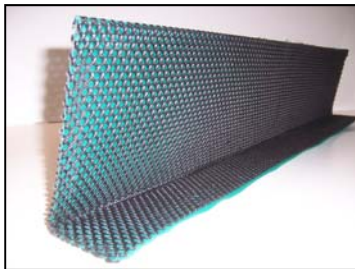
ERTEC Environmental Systems

Protecting the Integrity of Global Lands and Waterways™

Case Study ProWattle™



- > Lower Project Costs
- > Better Performance



4" Flap, 6" of freeboard height



Stakes on downstream side



Side view—trenched, backfilled and staked

Application: Slope Stabilization **Slope angle:** 1.4 : 1
Product: ERTEC ProWattle™
Location: Pittsburg, CA
SWPPP Planner: Stevens, Ferrone & Bailey, Concord, CA
Project Date: Winter 2006— updated as of June 2009

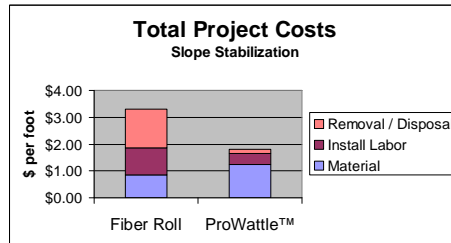
ERTEC ProWattle is a tested, patented, **high performing** and **low cost** system designed to protect slopes from erosion during construction. ProWattle dramatically reduces logistics, installation and maintenance costs for the installer. ProWattle is fast to install. Unlike wattles, ProWattle tends to spread rather than concentrate flow.

ProWattle:

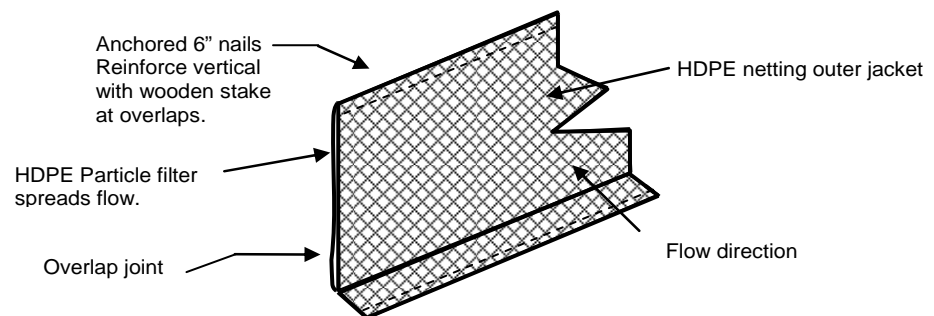
- Is key part of a comprehensive BMP system to protect slopes.
- Spreads water and significantly reduces water velocity
- Is made from HDPE. It can be reclaimed, reused or recycled if desired

The Challenge: The current best practice in the Western U.S. is to use wattles placed along freshly graded slope contours spaced evenly and parallel. The purpose is to form velocity checks to prevent storm water from forming rills and gullies which can quickly destroy a graded slope devoid of vegetation. In this application, wattles can sometimes be ineffective by damming which can cause undercutting which, in turn may concentrate flows. Straw decays and in drier climates, may not last long enough to protect the slope until vegetation returns.

ProWattle results: "The initial material cost was more than wattles, but the labor to install was less than half. Because ProWattle packs up to 10 times denser than wattles, our trips back and forth to the stockpile was reduced dramatically. The slope stabilization results were excellent. Used in combination with a bonded fiber



matrix, we had little soil movement over seasons. It will continue to perform, which is important, because the vegetation has not reached optimal coverage. Wattles would be gone by now. It did a great job to spread flow in areas where flows were beginning to concentrate." - Manuel Lopez, Erosion Control Installation Lead



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ProWattle works differently than wattles. Because it allows flow-through, it tends to spread rather than concentrate flow. It is difficult for water to undermine, so developing rills have difficulty propagating past the installation.

Job Notes

Installation completed in October, 2006.

- Slope Angle: 1.4:1 Rise 1 Run 1.4
- Footage installed: 2000 feet
- Length of slope 700 feet Average length of slope: 40 ft.
- Case Study Date: June 10, 2009 Number of storm seasons: 3 Number of growing seasons: 3
- BMPs employed & order of installation: Slope Graded & Track Walked, ProWattle installed, Bonded Fiber Matrix hydraulically applied
- No maintenance was performed on the slope from installation through date of case study: October 2006 thru June 2009 — three storm seasons. Product partially removed for redeployment. The product is in excellent condition after 3 years.



December 2006—two months after installation



1.5 years after installation—two storm seasons—ProWattle still in place, but barely visible where vegetation has returned



April 21, 2008



April 21, 2008



ProWattle tends to spread concentrated flow into sheet flows—reducing the chances of erosion damage



A new way of doing things

Time and time again, ERTEC has delivered the following benefits to builders:

- Lower total cost
- Significantly better sediment control