EcoWattle™

Environmentally Positive Temporary Erosion and Sediment Control

The Smarter Construction-Period Erosion and Sediment Control Device

EcoWattle meets or exceeds National Pollutant Discharge Elimination System (NPDES) Phase II and local Storm Water Pollution Prevention Program (SWPPP) requirements and meets or exceeds the expected turbidity requirements of the next phase of NPDES.

• Environmentally *positive*

Organic Hardwood Mulch filtration media
Exclusive, fully degradable netting
No after-use landfill by-products
Returns nutrients to soil

• Functionally *superior*

Strong water flow through with high filtration rate
Easy lift and place installation
No trenching, staking only at mid-slope installations
Stackable for large sheet flow sediment retention
Easy to remove, easy to maintain or repair

• Price *competitive*

Total Cycle Cost competitive to silt fence
Lower installation costs
Easy maintenance
NO removal costs

Superior storm water erosion and sediment control for every construction site.

Texas Sustainable Industries, LLC
4828 S. Broadway, #321 • Tyler, TX 75703 •
(903) 279-6112
erosioncontrol@ecowattle.com • EcoWattle.com

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Frequently Asked Question:

Silt fence is about 24" above the ground. Your wattles are 12" and they settle down. Why won't the sediment just wash over the top?"

- The answer: High flow-through rate reduces ponding.

  Storm water flows through EcoWattle but silt fence causes ponding.

In a web article, "Temporary Barriers as BMPs. Revisited", in the January 14, 2010 issue of Erosion Control Magazine on-line, Britt Faucette writes:

"....a study conducted by Ohio State University and recently published in the Journal of Environmental Quality concluded that ..... sock barriers have an average 50% greater hydraulic flow through rate, relative to silt fence, and that ponding height can be as much as 75% less for this technology relative to silt fence under similar runoff conditions (Keener et al. 2007). **Research engineers concluded that sediment barriers with greater hydraulic flow-through rates, thereby generating less ponding, do not need the same height requirement or may be spaced further apart, relative to silt fence.** It should also be noted that the researchers concluded that increased flow-through rate did not come at the expense of sediment removal efficiency, signifying that these practices combine filtration and sediment deposition principles to remove sediment from storm runoff.

"In conclusion, the article does raise interesting questions about how we design our sediment control barriers and the need to develop design criteria for these practices. It is evident that simply adopting design spacing and height specifications associated with silt fence is not appropriate for tubular sediment control barriers, which often have very different hydraulic flow-through characteristics."

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• Compare to *"traditional" systems*

LIFT & PLACE

POSITION ENDS

STEP TO JOIN

	ECOWATTLE	SILT FENCE	STRAW WATTLES
WEIGHT	8 LBS PER FOOT	N/A	2.5 LBS PER FOOT
STAKING REQUIRED?	Mid Slope only	YES	YES
TRENCHING REQUIRED?	NO	YES	YES
FLOATING / UNDERMINING?	NO	YES	YES
REMOVAL COSTS	NONE	HIGH	MEDIUM
EASY MAINTENANCE?	YES	NO	NO
SUPERIOR SEDIMENT CONTROL	YES	NO	NO
USABLE ON PAVED SURFACES?	YES	NO	YES
NATURAL DEGRADATION	YES	NO	MAYBE
EASY RIBBONS AND STACKING	YES	NO	NO
EASY REPAIR AND REPLACEMENT?	YES	NO	NO

Compare to Silt Fence

Silt Fence, usually a geo-textile fabric on wire backing, is now an outdated product. Everyone knows it's prone to failure. Silt Fence installation requires trenching, backfilling and staking; it is labor intensive to install and remove. It can be difficult to install on areas of rocky soil and limited access, it is often not installed or maintained correctly, leading to overflow and undermining, allowing sediment to exit site perimeters. Removal and disposal creates a huge volume of landfill by-product.

EcoWattle solves all of these problems with its easy, low labor installation, simple maintenance, and 100% natural degradation on site for zero removal and disposal cost and zero landfill.

Compare to Straw Wattles

Straw wattles are a preliminary attempt at solving some of Silt Fence's problems, but they fall far short. Straw wattles require heavy staking, cannot be stacked, and are prone to undermining which makes them useless. Replacement is difficult because stakes have to pulled and soil backfilled.

EcoWattle is an evolutionary step in Temporary Sediment Control - no floating or undermining, no staking on most installations, stackable, and easy to repair or replace because of small section size and flexibility.

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• Environmentally *positive*

100% ENVIRONMENTALLY DEGRADABLE. EcoWattle can be left on site as a low berm or the netting can be cut and buried and mulch spread before landscaping.

FILTER MEDIA IS 'RECYCLED' organic native hardwood mulch ground from trees cleared for construction.

DEGRADED HARDWOOD MULCH adds nutrients to soil.

FULLY DEGRADABLE NETTING has 24 to 36 month life. Our exclusive degradable extruded netting leaves no landfill waste materials.

LOW CARBON EMISSIONS AND WASTE PRODUCT in manufacturing.

In a field test with Tx Dot, 50' of EcoWattle was installed on a corner radius of a new access road on Hwy 161 in Grand Prairie, TX on July 29, 2009. A .82" one hour rain event occurred on July 30. EcoWattle held back virtually 100% of the potential run-off. Installation took less than 10 minutes. No stakes or trenches. The project engineer's contact info is available.

After rain the next day. Note how clean the road is - and the sediment is behind the EcoWattles.

Pyramid for large field sheet flows

Ribbon to slow water flow on long slopes

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• Functionally *superior*

NO TRENCHING, and staking only on mid-slope installations. Bottom of slope or mid-slope placement on low slopes don't need staking.

SAFER TO HANDLE AND FASTER TO INSTALL than wire backed silt fence and other systems that require trenching and/or staking. Easily installed on trencher-inaccessible terrain and rocky soil. No wire or steel stakes that can tear skin and clothes.

EASY STACKING AND RIBBONS for large sheet and sediment areas. Create a 20”+ barrier with a 3-wattle pyramid for the gathering spot, usually the lowest corner. Stack only the lowest areas and eliminate overflows with minimal additional cost.

CRUCIAL BALANCE provides stability, superior dispersion, flow rate, and sediment retention. EcoWattle dramatically reduces overflows and undermining.

EASY OR NO REMOVAL. EcoWattles can be left intact on site to degrade or the netting can be cut allowing the mulch to be spread. The netting can then be buried.

ECOWATTLE WON’T “FLOAT.” Straw wattles need to be trenched and staked to prevent undermining and floating. No such issues with EcoWattle.

EASY TO MAINTAIN. EcoWattle design prevents failures from buckling or overfills. 10’ sections are easily replaced if damaged.

USABLE ON PAVED SURFACES - especially useful around storm drains.

We delivered EcoWattles to Pine Cove Camp, which has significant erosion problems. Their buildings are all on slopes and rain events create major channels. They can't use silt fence - it’s too dangerous to the campers. They’ve installed EcoWattles with tremendous success. KIds can run on them. Jump over them. Fall on them. Erosion channels are filling in and natural grasses are taking hold. Call and we’ll give you the facilities director’s contact info.

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• Price *competitive*

Use our TOTAL CYCLE COST analysis and see why EcoWattle is cost-competitive with silt fence when total materials, installation, maintenance, removal and disposal costs are considered.

Complete the analysis and see for yourself. Call and request a price list or quote.

Total Cycle Cost
Comparison – per foot

Cost Component	EcoWattle	Silt Fence
Materials – Delivered		
Installation Labor		
Removal Labor	None	
Disposal Cost	None	
Total Cycle Cost		

Assumes reasonably accessible delivery locations

Assumes TxDot specifications for silt fence – 36”, wire-backed, steel T-Posts at 10’.

Assumes EcoWattles are left in place to degrade.

Assumes Silt Fence is removed and “crushed” for landfill disposal.

EcoWattle Works!
Easy - Efficient
Environmentally Positive

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The Fine Print

EcoWattle© is native hardwood mulch filled temporary sediment control barrier comprised of biodegradable hardwood mulch as filter media inside fully degradable extruded polyethylene netting. The netting is a new product developed for EcoWattle© using proven degrading technology that is not UV dependent EcoWattle© is made in 12" diameter and can be manufactured to varying lengths, with 10' our standard length. EcoWattles weigh +/- 8.0 lbs. per linear foot; EcoWattle© installed at the bottom of slopes or on slope less than about 2.5:1 do not require trenching or staking. EcoWattle© is designed to fully degrade in 24 to 36 months, depending on the exposure to elements that affect degradation rates – sun, extreme temperatures, humidity, precipitation, fungi, insects and bacteria.

EcoWattle's dry weight eliminates the problem of floating during the initial period of rainfall and the weight of a wet wattle prevents the wattle from being displaced in all but extremely heavy rain events. Undermining is avoided by the flexibility of the mulch and the netting, which allows the wattle to settle onto the ground before and during rain events. Pooling and overflowing are avoided due to the flow through rate afforded by the size of the mulch pieces and holes of the netting. Suspended soil and other particles are filtered from water runoff that flows through the mulch wattle; the mulch wattle prevents water borne sediment from infiltrating protected areas.

The fill material / filter media is biodegradable, natural hardwood mulch. The hardwood mulch is ground and filtered to particular specifications. The sizes of the biodegradable hardwood mulch pieces are determined so as to be large enough to create air space for water flow-through, yet small enough to maintain sufficient filtration levels, wattle flexibility and to facilitate proper wattle filling. Insects, fungi and bacteria assisted by heat, sun, moisture, freezing and thawing break down mulch; decomposition increases the organic material in the soil.

The netting is manufactured to be tubular and does not require stitching. It has sufficient tensile strength such that a 10' EcoWattle© can be lifted at the ends or any point without failure by the netting. The holes on the netting are small enough to prevent more than an acceptable rate of mulch falling through the netting during transportation, installation and use. The degradable netting becomes brittle beyond its design life, with ambient heat and oxygen breaking it into small fragments. These fragments are further broken down until they are digestible by microbes in a second stage of degradation.

Setting adjoining wattles so that, if flat, the ends would overlap by approximately 6" creates EcoWattle© "runs". By lifting adjoining ends and lowering them together, the ends compress and flatten, creating an efficient joint.

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