Bioengineered Solutions
Shoreline Protection • Retaining Walls • Slope Stabilization • Erosion Control
INTRODUCTION

The ecologically advanced Envirolok vegetated system provides permanent erosion control.

Envirolok’s patented system provides immediate stabilization, erosion control, and a permanent vegetated solution. Envirolok is adaptable to water or dry land sites.

Envirolok’s encapsulated soil bags and spikes combined with the engineered strength of soil reinforcing materials supply the connection necessary for an ecological vegetated solution.
APPLICATONS

STREAM BANK RESTORATION
SHORELINE RESTORATION
VEGETATED SLOPE STABILIZATION
STORMWATER MANAGEMENT
ORNAMENTAL LANDSCAPES
ENVIROLOK® NATIVE SOD™

ENVIRLOLOK BENEFITS

- Engineered for reinforced soil structures (MSE or RSS)
- Stabilizes shorelines and riverbanks
- Encapsulates soil
- Native bioengineered facing
- Ideal for steepened slopes and contours
- Native roots lock system together becoming stronger over time
- Moves freely with freeze and thaw cycles
Envirolok’s patented construction method provides support over soft streambeds & shorelines in saturated soil environments while allowing construction to follow existing contours.

Envirolok supplies a permanent vegetated answer to the persistent shoreline erosion which contributes to the bioaccumulation of sediment in our lakes and rivers daily.

Envirolok’s cinching and twining provides added strength to the modular bioengineered system.
• Envirolok provides structural support that when combined with native vegetation allows the establishment of habitat along sensitive environmental corridors

• Envirolok efficiently conforms to the natural contours of a slope compared to other modular systems
permanent green solutions
Envirolok stabilizes underlying soils while creating a barrier from further breakdown.

Envirolok restores your shoreline to its original condition, while stabilizing soil, promoting drainage and providing sustainable erosion control.

Diverse, native vegetation grown into the Envirolok system creates a buffer zone, mitigating effects of lakeshore development and increasing water quality in our lakes, rivers and wetlands.

Envirolok protects your property while preserving an attractive natural appearance.

Envirolok's vegetation improves marine habitat.

Envirolok's living shorelines use natural shoreline ecosystems to absorb wave energy reducing erosion on adjacent properties.
• Envirolok vegetated wall system reinforces erodible sites

• Envirolok’s patented modular system and encapsulated structural soils allows for near vertical construction that can be contoured to the existing non-load bearing soils with the flexibility to adapt unlike hard armors

• Supports vegetation on manipulated slopes

• Envirolok installation allows a reinforced erosion control system in areas where minimized excavation and disturbance is required

• Installations provide immediate erosion protection
• Envirolok will conform to fit the circumference of a culvert without the use of a form or specialized tools

• Envirolok’s modular design can be made to fit any size emergency repair situation

• Envirolok can be used to repair undermining and washout situations

• Envirolok allows vegetation establishment in narrow construction areas along roadways and commercial developments

• Provides ecological vegetated reinforced solution to the surcharge loading created by highway and commercial construction
ORNAMENTAL LANDSCAPES

- Create modular landscape designs with ease
- Living wall
- Raised gardens
- Rain gardens
Envirolok® Native Sod™ is a pre-vegetated mat of a deep rooting native species with a light geotextile or biodegradable core.

Once laid on a surface, the plants take root in the soil and quickly form a secure vegetated mat to hold the surface soils in place against erosive forces.

- Easy installation
- Instant erosion control
- Immediate vegetation
- Low maintenance
- Multiple cores available

* See representative regarding lead time and availability
Why Natives?

- Extensive root systems that lock the bags to the parent material
- Root structure becomes stronger and deeper over time
- Native habitat attracts songbirds, butterflies and pollinators
- Envirolok wall becomes a beautifully restored native prairie that provides habitat year round
- Sequesters oxygen and moisture
- Provides safe habitat for amphibious species

Native Prairie Root System vs. Turf Root System

Native plants are increasingly used for stormwater management. They control erosion; they increase infiltration and purify rainwater and runoff so that the aquifer remains full and pure.
Native species in shoreline transitional zones allow for the ecological restoration of habitat for game fish, amphibious life, birds and butterflies.

A diverse mix of sedges, grasses, wildflowers and live stakes creates sustainable vegetation when combined with the Envirolok system.

Envirolok components allow for root penetration, adding to the strength of the system.
1. **Filling and Closing Envirolok Bags**

Fill the Envirolok bags with an engineered soil using an Envirolok Bag Filler. The soil properties should consist of 60% sand, 20% high grade compost and 20% top soil. The engineered soil may change to meet the specific project needs. Excavated material may be used to backfill during construction. Clay and silt are not appropriate fill material. All bags should be filled consistently and will be closed with a UV resistant zip tie. Bags may also be sewn or closed using hog-rings.

2. **Preparation**

Dig a trench no less than 3" deep, 16" wide for the length of the structure. Embedment depth will be specific to the project. Compact bottom of foundation using hand tamper or vibratory plate compactor. This trench serves as toe stabilization and will protect the structure from undermining. Larger structures will require engineering.

3. **Placing Envirolok Bags**

The foundation course will begin with placing spikes in the excavated trench at the desired location of the first row. Place filled bags next to each other, seam side in, horizontally, the full length of the structure. The “snorkel” of the bag will land on top of the previously placed bag.

4. **Placing Additional Bag Courses**

After laying one entire course of bags, compact the soil ensuring a solid and uniform structure. Insert two spikes in the top of each bag evenly spaced. The spike placement will vary with the slope of the structure and should be placed in the center of the bag contact area between courses.
5. **Backfilling and Compacting the Structure**

Backfill and compacting after each course ensures strength and stability of the system. Backfill should be compacted to the specifications of the wall design. Backfill must support vegetation and be free draining.

6. **Geogrid Placement**

Structures that require geogrid reinforcement will be specified by an engineer. After compaction, geogrid placement will begin at the front of the bag course and will go towards the existing material. Place spikes on top of the geogrid and continue placing bag course. Geogrid should be pulled tight prior to backfill. Continue with course compaction.

7. **Top Row**

Install the top row of the structure the same way the other courses have been placed. Tuck the “snorkel” under to give a finished look to the last course. If specified, the top row may need to be anchored into the existing landscape.

8. **Vegetation Establishment**

Once the wall is completed, vegetation is the final step. Native vegetation is recommended because of its adept root structures that will bind the wall together forming a monolithic structure that will renew itself year after year. Using vegetation suitable for your local climate is necessary for a successful project. You may build the wall and place live plants in the courses as you build the structure. Live plant material should always be placed in between the courses. Cutting the bags open and planting into this cavity is NOT recommended. It is recommended that a combination of live plants and seed are used to ensure proper vegetation.

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