



COHANSEY MEADOWS LLC

Patens Perimeter Log (PPL)

Native Salt Hay Based Bio-Log for Wetland Restoration and Erosion Control

Product Class:	Bio-log / Sediment Retention Fiber Roll (SRFR)	Date Issued:	June 2026
Status:	Patent Pending / Equal Substitute	Origin:	Fairton, New Jersey, USA

1. Product Description

The **Patens Perimeter Log (PPL)** is an advanced, climate-resilient ecological engineering matrix developed and manufactured by Cohansey Meadows Farms. Crafted from sustainably harvested, 100% natural Delaware Bay salt hay (*Spartina patens*), the PPL is uniquely engineered for coastal, estuarine, and high marsh stabilization. It functions as a high-performance "Blue Carbon Solution" that integrates seamlessly into living shorelines, trapping sediment, mitigating low-to-medium energy wave impact, and accelerating native plant community establishment.

CRITICAL ECO-DESIGN INNOVATION: 100% NET-FREE CONSTRUCTION

Unlike standard commercial coconut coir logs that utilize synthetic plastic or heavy twine outer netting, the PPL features a net-free matrix consolidation. This eliminates the risk of wildlife entanglement, making it 100% safe for highly sensitive coastal avian and herpetological species, including the Saltmarsh Sparrow, Black Rail, and diamondback terrapins.

2. Technical Specifications & Material Characteristics

Property / Parameter	PPL Standard Value	Test Method / Compliance Basis
Core Matrix Component	100% <i>Spartina patens</i> (Salt Hay)	Botanical Verification (Native Origin)
Standard Diameters	12 in, (±0.5 in)	Field Measurement Scale
Standard Lengths	10 ft, 20 ft (±0.2 ft)	Field Measurement Scale
Dry Density	~5.5 lbs/cu ft	ASTM D3776 / Internal Volumetric Mass
Outer Containment	Net-Free / Integrated Fibrous Matrix	Zero Structural Outer Plastic or Twine Mesh
Standard Weight	~55lbs, 110lbs	Field Measurement Scale
Functional Longevity	3 – 5 Years (Environment Dependent)	Accelerated Estuarine Field Monitoring

3. Comparative Advantages over Coconut Coir Logs

- **Superior Rot-Resistance in Brackish Systems:** Coconut coir is derived from freshwater tropical palms and breaks down more rapidly under severe high-salinity tidal cycles. *Spartina patens* is naturally evolutionarily adapted to continuous brackish and saltwater exposure, sustaining cross-sectional physical integrity longer in estuarine configurations.
- **Zero Import & Ultra-Low Carbon Footprint:** Standard coir logs rely on international marine shipping networks (primarily from South Asia). PPL logs are grown, harvested, and fabricated locally on the Delaware Bayshore, drastically lowering upstream supply chain lifecycle emissions.
- **Optimized Living Shoreline Planting Matrix:** The structural intertwining of salt hay allows mechanical tools or manual dibble bars to easily penetrate the core without structural unraveling. Native plant plugs, such as saltmeadow cordgrass or saltgrass, establish roots rapidly directly into the organic salt-hay medium.

4. Hydraulic Performance & Design Thresholds

Design Criteria	Permissible Level	Performance Conditions
Maximum Velocity	Up to 6.5 ft/s (2.0 m/s)	Dependent on pinning density and anchoring method
Maximum Shear Stress	3.2 lbs/sq ft (153 Pa)	Under fully staked and unbuoyed installation profiles
Wave Energy Compatibility	Low to Moderate Intertidal	Best applied in high-marsh perimeters and energy-attenuated channels

5. Installation Guidelines & Structural Anchoring

For effective erosion control and long-term biological integration, PPL bio logs must be pinned securely to prevent lift during high-amplitude lunar spring tides.

- **Trenching:** Prepare a shallow contour trench along the high-marsh or shoreline boundary equivalent to 15–20% of the log's total diameter.
- **Staking Schedule:** Drive hardwood stakes (minimum 2 in x 2 in x 36 in) alternating on opposite sides of the log every 2 to 3 linear feet. Stake length must be increased in deep soft-muck soils.
- **Securing Matrix:** Since the system is net-free, use high-strength biodegradable natural manila/sisal twine wrapped over the log's crown between alternating stakes, driving stakes home to compress the twine tightly against the upper surface.
- **Interconnection:** Overlap log ends by 6 to 12 inches in a shingle-lap fashion relative to prevailing water flow directions, securing the junction with dual-staking.

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Disclaimer: Technical data and property values are based on baseline site monitoring, production parameters, and restoration engineering standards. Modifications may be made to enhance habitat integration.