Nature Friendly and Effective Rectangular Wattle for Stormwater Management

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CEO
Background

1. Until now rectangular wattles manufactured to have longer lengths were not available for storm water management and sediment control.

2. If available, rectangular wattles need less raw materials to manufacture.

3. If available, rectangular wattles take less space which leads to reduced freight costs.

4. If available, rectangular wattles make handling in the field easier due to their lightweight nature.

5. If available, rectangular wattles cost less due to savings from both raw material and lower freight cost.

6. If available in longer lengths, rectangular wattles would also lead to savings from faster installation and less overlaps.

7. If available, uniform & relatively thin thickness supports quick seepage while retaining sediment.
Saves Raw Material
Better Seepage & Filtering

Compare thicknesses

BioD-SiltTrap™
Saves Transportation Costs

55 ft of 9” wattle
40 ft of 12” wattle
30 ft of 18” wattle

More savings from easy handling & fast installation
Transport on Pallets

Easy handling, less storage space & lower shipping cost

BioD-SiltTrap™
Comes in Longer Lengths
Can be cut to any length easily

9-in product
Up to 55 ft long

12-in product
Up to 40 ft long

18-in product
Up to 30 ft long
Applications

1. As check dam devices
2. As slope length shortening devices
3. As curbside inlet protection devices
4. As perimeter sediment control devices
5. As drop inlet protection devices
BioD-SiltTrap™

US Patents 10,280,578 & 9,315,962
BioD-SiltTrap™

Hard wood stakes with a notch near the top
(Can be installed with regular stakes and metal staples too)
BioD-SiltTrap™

Installation Method 1

Downward pressure using strong twine loops and stakes with a notch

During installation, coir twine loops at the top catches the top notch in the wooden stake to anchor down the BioD-SiltTrap™.

Flow

Optional metal staples
BioD-SiltTrap™
Installation method 1 (continued)

- Its installation uses wooden stakes with a notch near the top.
- The BioD-SiltTrap™ is manufactured to have strong coir twine loops at the top.
- During installation, the notch on the wooden stakes catch these loops to anchor down the BioD-SiltTrap™.
BioD-SiltTrap™
Installation method 1 (continued):
BioD-SiltTrap™
Installation Method 2
Using 1”-2” anchor trench, regular stakes and metal staples

End view 2
Soil surface
BioD-SiltTrap™ Installation (continued)

- The 12” and 18” BioD-SiltTrap™ come with pre-installed invisible holes.
- When used as a check dam, if necessary, these holes can be opened by pulling coir plugs. Water flow through these holes reduces possible concentrated flow in the lowest point (middle) of the check dam.
BioD-SiltTrap™
Curbside inlet Protection Device

Installation shoe
BioD-SiltTrap™

As a slope interrupter (Slope length shortening device)
Longer lengths of BioD-SiltTrap eliminates too many overlap connections
BioD-SiltTrap™
Performance
Compare with standard fiber rolls
BioD-SiltTrap™ 9
AASHTO, NTPEP Performance Testing on 9/19/2019

Project: ASTM D 7351
Client / Listing # / Product: NTPEP / ECP-2019-03-006 / BioD-SiltTrap 9"
Test Date: 9/19/2019
Test Setup: Toe-of-Slope Installation per Manufacturer Recommendation
Duration: 35 minutes
Water / Soil Input: 1650 lbs water 20 lbs soil
Sediment Concentration: Sandy Clay @ 1.2%

Soil Retention Effectiveness: 84.24%
Water Retention Effectiveness: 10.26%
Seepage Effectiveness: 89.74%
An example for poor seepage check dam
BioD-SiltTrap™ 9
NTPEP Performance Testing on 9/19/2019
BioD-SiltTrap™ 9
NTPEP Performance Testing on 9/19/2019
BioD-SiltTrap™ 9

NTPEP Performance Testing on 9/19/2019

Test Soil
The test soil used in the test plots had the characteristics shown in Table 2.

<table>
<thead>
<tr>
<th>Soil Characteristic</th>
<th>Test Method</th>
<th>Value</th>
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<tbody>
<tr>
<td>% Gravel</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>% Sand</td>
<td>ASTM D 422</td>
<td>50</td>
</tr>
<tr>
<td>% Silt</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>% Clay</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>Liquid Limit, %</td>
<td>ASTM D 4318</td>
<td>50</td>
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<td>Plasticity Index, %</td>
<td></td>
<td>26</td>
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<td>Soil Classification</td>
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BioD-SiltTrap™ 9

NTPEP Performance Testing on 9/19/2019

The testing is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRU neither accepts responsibility for nor makes claim as to the final use and purpose.

CJS 10/10/19
Quality Review / Date
## BioD-SiltTrap™ 12

AASHTO, NTPEP Performance Testing on 3/26/2020

| Project: ASTM D 5351 modified for Inlet |
| Client / Listing #: Product: NTPEP ECP-2019-03-007 BioD-SiltTrap 12 |
| Test Date: 3/26/2020 |
| Test Setup: Inlet Protection Installation per Manufacturer Recommendation |
| Duration: 30 minutes |
| Water / Soil Input: 4700 lbs water 57 lbs soil |
| Sediment Concentration: Sandy Clay 1.2% |

| Soil Retention Effectiveness: 80.05% |
| Water Retention Effectiveness: 10.29% |
| Seepage Effectiveness: 89.71% |
BioD-SiltTrap™ 12

NTPEP Performance Testing on 3/26/2020
BioD-SiltTrap™ 12

NTPEP Performance Testing on 3/26/2020
BioD-SiltTrap™ 12

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On October 11, 2018 on IECA Field Day
BioD-SiltTrap™ 18 at work
BioD-SiltTrap™ 18 (15’ long) Demonstration with a scour protection mat
BioD-SiltTrap™ 12 (15’ long)
A Field Demonstration with scour protection mat
Regular coir logs are 10’ long and when used as check dam water tends to flow from sides.

RoLanka has developed an answer for it.

**BioD-SiltTrap-W™**
BioD-SiltTrap-W™

US Patents 10,648,149 & 10,280,578

Comes with extendable wings for check dam applications

Extendable wings stop water from passing on sides
BioD-SiltTrap-W™

With extendable wings for check dam applications

- Reduces drop height of overflow
- Avoids concentrated overflow in the middle resulting in less erosion from overflow
BioD-SiltTrap-W™
With extendable wings for check dam applications

A comparison with the regular circular 10-ft long coir log check dam.
Non-biodegradables increase the cost of removal, hauling and landfill.
BioD-SiltTrap™

Long term performance

• No plastic nets to interfere with wildlife or maintenance activities.
• No need to remove at the end of the project. Vegetation grows over it.
Thank you!

Since 1993!