



VIS Systems - Socks

FILTRATION SOLUTIONS FOR VEHICLE IMPACTED STORMWATER

VIS Systems Socks, AKA The Bellevue BURito, by Cedar Grove are compost-based filtration media encased in 12" 5 mil. HDPE socks designed to filter stormwater pollution off vehicle impacted surfaces, including retention ponds and roadway ditches. They are modeled around the proven success of bioretention soils ability to remove pollutants from stormwater, but designed to be installed in specific areas of concerns such as retention ponds and roadway ditches.

VIS Systems – Socks, including installation services, is available through Cedar Grove Composting – solutions@cgcompost.com



City of Bellevue BURito Project 2019

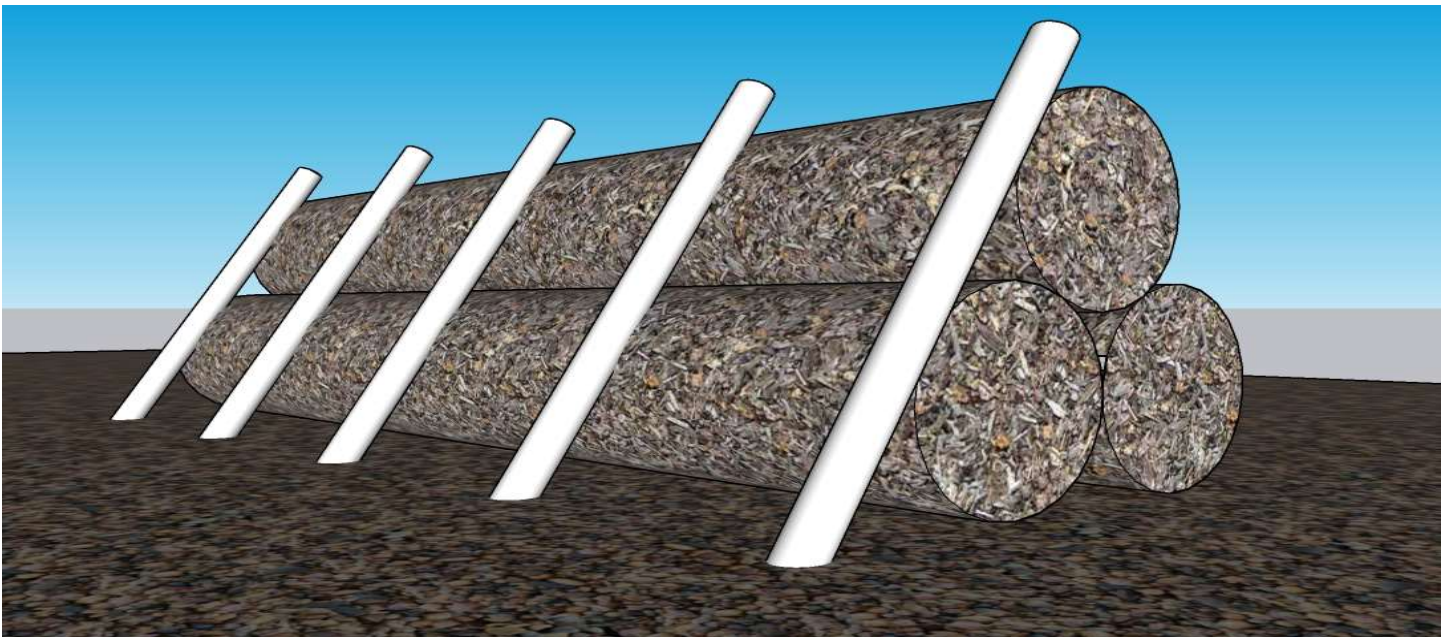
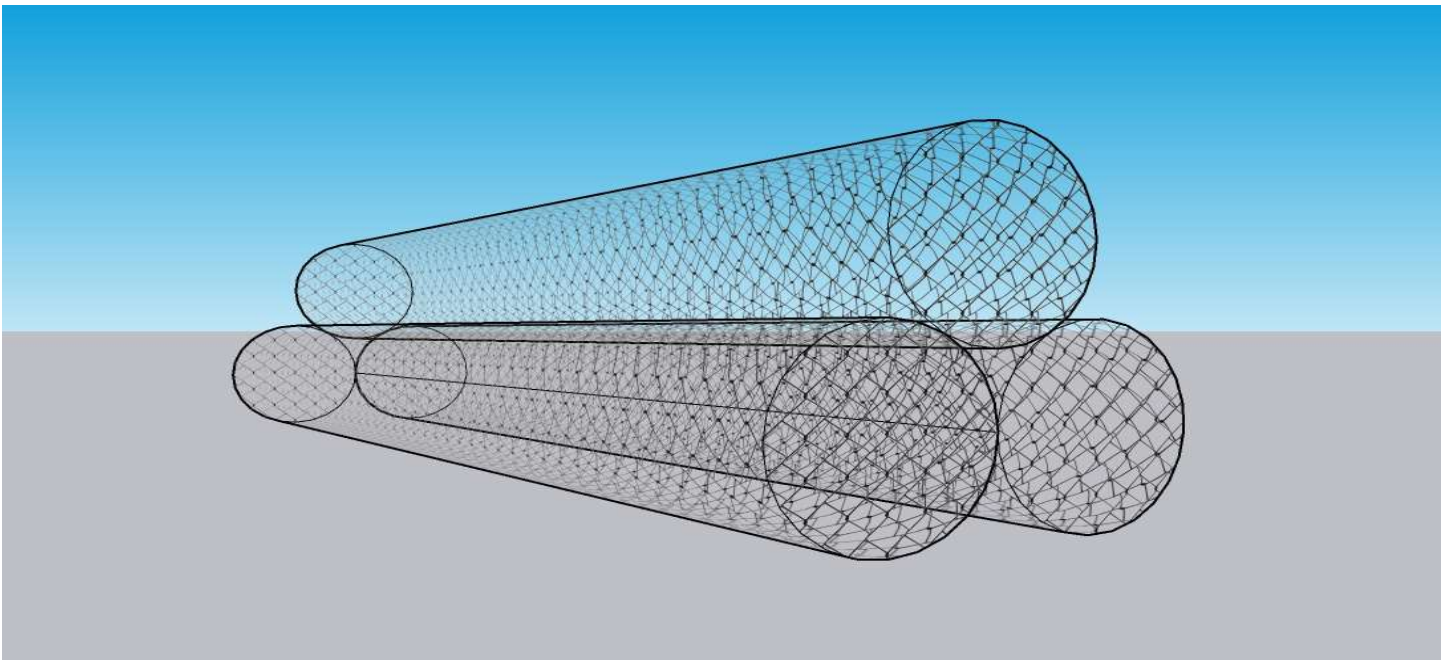
VIS Sock



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VIS Systems Socks are designed for ultimate flowthrough while still offering the same filtration benefits shown with traditional bioretention media. The most effective installation technique is installation of two 12" socks perpendicular to the filtration path with a third sock stacked above. This allows for the highest amount of surface penetration, while offering a 3-dimensional filtration path as the water works its way through the media.





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Material specifications for VIS Systems Socks

The below chart is the aggregate gradation recommendation for VIS Socks.

General Guideline for Mineral Aggregate Gradation	
Sieve Size	Percent Passing
3/8"	100
#4	94-100
#8	40-60
#16	20-30
#40	4-10
#100	0-4
#200	0-2

Compost to Aggregate Ratio, Organic Matter Content, Cation Exchange Capacity

- Compost to aggregate ratio: 60-65 percent mineral aggregate, 35–40 percent medium compost
- Organic matter content of blended product: 5 – 8 percent by weight.
- Cation Exchange Capacity (CEC) must be > 5 milliequivalents/100 g

The following compost standards are required.

- Meets the definition of “composted materials” in WAC 173-350-220
- Produced at a composting facility permitted by the WA Department of Ecology.



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- The compost product must originate from a minimum of 65 percent by volume from recycled plant waste as defined in WAC 173-350-100 as “Type I Feedstocks.” Feedstocks shall originate from local recycling collection programs, and contain a minimum of 10% post-consumer food waste as defined in WAC 173-550. No biosolids to be substituted for recycled plant waste.
- Stable (low oxygen use and CO2 generation)
- Moisture content range: no visible free water or dust produced when handling the material.
- Tested in accordance with the U.S. Composting Council “Testing Methods for the Examination of Compost and Composting” (TMECC), as established in the Composting Council’s “Seal of Testing Assurance” (STA) program.
- Screened to the size gradations for Medium Compost under TMECC test method 02.02-B.
- pH between 6.0 and 8.5 (TMECC 04.11-A).
- Manufactured inert content less than 1% by weight (TMECC 03.08-A)
- Minimum organic matter content of 40% (TMECC 05.07-A)
- Soluble salt content less than 4.0 mmhos/cm (TMECC 04.10-A)
- Maturity greater than 80% (TMECC 05.05-A “Germination and Vigor”)
- Stability of 7 or below (TMECC 05.08-B “Carbon Dioxide Evolution Rate”)
- Carbon to nitrogen ratio (TMECC 04.01 “Total Carbon” and 04.02D “Total Kjeldahl Nitrogen”) of 18:1 - 35:1.



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Additional Notes

- VIS Systems Socks are HDPE Socks filled using a blower truck with a specialized mix of medium compost and coarse sand. Care must be taken during installation and maintenance to ensure the integrity of the sock.
- Socks should be staked every 18" on the downward side using 2" grade stakes or similar at a 45-degree angle abutting the sock but not penetrating the sock.
- Keying in the bottom and ends of the sock is recommended to ensure erosion does not occur under or around the sock, which would allow for free-flowing water to bypass the system without the benefits of filtration.
- Clear signage is recommended at every installation site to inform maintenance crews of the presence of a VIS Sock system. This signage should clearly state caution is to be used within 12" of the installation.

VIS Sock Maintenance

- Quarterly inspections are recommended to ensure that sediment is not impeding the flow of water through the sock. Any sediment should be carefully removed using hand tools as to not damage the sock.
- In the event that sock is damaged, patching may occur using sock material and fishing line or similar.
- General pond maintenance should be performed carefully and cut vegetation should be removed from the pond to ensure it doesn't impact the flowthrough of the socks.
- In the event that the flow of water through the sock is impeded by sediment, pressure washing may be used to break the outer layer of sediment and extend the lifespan of the sock.
- Removal and replacement of the VIS Systems Sock is recommended every 3-5 years or in the case of a retention pond, when the pond is scheduled to be cleaned.