

Big River Industries – Filter Media Bioswale/Rain Garden

Application/Description – For the purpose of storm water treatment, BRI Filter Media is ideal for both a component in enhanced soils and as a final filter media just under the shrubs, grass and top soil of a rain garden.

Many municipalities are requiring that storm water be retained and filtered on site for many shopping complexes and housing developments. The two biggest concerns are:
1. Filtering of surface level contaminants so that they do not spillover into local waterways. 2. Filtering storm water before it filters back into the ground water.

Purpose (What is Targeted For Removal) – The Bioswales filter oils, nitrogen, phosphorus, and other pollutants through plant and grass vegetation uptake and filtration. The use of BRI Filter Media primarily removes phosphorus from storm water (P-levels reduce from 3 to 0.49 mg/L in 3 hours- Compared to 3 to 2.19 mg/L in 3 hours using masonry sand) (Pg 3-4, Ref: 1).

Advantages to the Designer – Faster water percolation through the BRI Filter Media (compared to sand). This reduces the amount of time rainwater remains onsite (mosquito control). BRI Filter Media removes greater amounts of phosphorus than other media. Using BRI Filter Media allows the project to meet the requirements for phosphorus reduction. When using BRI Filter Media in enhance soils, BRI Filter Media facilitates cationic exchange and microbial action, breaking down organic substances and further reducing pollutants such as dissolved metals and phosphorus through adsorption.

Owner/End User – Municipalities for public school and government building projects and large complex developments (Shopping and warehouse shopping centers, and commercial and private apartment and housing complexes).

However, there are also entities, who are not “owners/end users”, who must be convinced of the benefits of using BRI Filter Media in storm water treatment. They are the landscape architects, developers, and builders who are involved in the targeted projects. Additionally, they are the regulatory and governmental agencies having oversight on the targeted projects. These entities are the primary influencers the municipalities rely upon for decision-making.

Below: Before/After photographs- Bioswales at a High School in Atlanta, GA
(Clay Soil)





References:

Dissolved Phosphorus Retention of Light-Weight Expanded Shale and Masonry Sand Used in Subsurface Flow Treatment Wetlands, Environmental Science & Technology/VOL. 38, No 3, 2004