

Filtrex® Filtration Sand

Sediment Reduction Technology

FILTREXX® FILTRATION SAND

Description

Sand has been widely used as a water filtration media for many applications. Filtrex® Filtration Sand may be blended with the FilterMedia™ or applied in the field to any of the following Filtrex® *sediment control and filtration* practices, including Sediment control, Check dams, Concrete washouts, Slope interruption, and Filtration system baffles. It is specifically used to further **reduce suspended solids and turbidity in storm runoff**. Filtration Sand should not be used without one of these Filtrex® practices but may be used in any landscape and/or near receiving waters. For optimum performance this Support Practice™ may be applied immediately upslope and/or along the inner circumference of the Filtrex® management practice or blended with Filtrex® FilterMedia™ prior to FilterSoxx™ installation. Filtration Sand grade used for this application shall be 50% #20 and 50% #30 grade sand (medium coarse/coarse -all purpose).

Function

Sand is a material that can be used for physical filtration of solids from water and storm water. Used with FilterMedia™ it can reduce suspended solids and turbidity of runoff when applied with Sediment control, Check dams, and Slope interruption, or solids content of storm water and effluents where Concrete washouts and Filtration system baffles are utilized. Filtration Sand is an inert material that when blended to FilterMedia™ can reduce porosity and permeability within the FilterSoxx™. Reducing porosity and permeability will reduce the ability of solids to permeate the filter and will decrease the ability of smaller sediments (and solids), which normally contribute to suspended solids and turbidity in storm water runoff, to migrate through macro pores in the FilterMedia-FilterSoxx™ matrix.

By blending Filtration Sand with FilterMedia™, hydraulic flow through rates will be reduced and water ponding may increase. This may be desirable in applications where low hydraulic flow through rate is desirable or unimportant, or when FilterMedia™ is too coarse and hydraulic flow through rates are too high.

According to independent testing by the Soil Control Lab, Inc., in Watsonville, CA, blending the specified Filtration Sand with FilterMedia™ at 6% (v/v) has been shown to increase turbidity reduction performance from 26% to 53% and suspended solids removal from 64% to 71%. Increasing the blend percentage to 25% (v/v) has been shown to increase turbidity reduction from 26% to 65% and suspended solids removal from 64% to 82%.

Alternatively, if a 1 in (2.5 cm) high line of Filtration Sand is applied to the upslope or inside edge of the FilterSoxx™ suspended solids and turbidity reduction from runoff or solids-laden effluent can also be attained. This application may also reduce hydraulic flow through rates, particularly under low flow conditions. This may be desirable in applications where low a hydraulic flow through rate is desirable or unimportant, or when FilterMedia™ is too coarse and hydraulic flow through rates are too high. *This application may also function to minimize undercutting of the FilterSoxx™.*

According to independent testing by the Soil Control Lab, Inc., in Watsonville, CA, adding a 1 in (2.5 cm) high line of the specified Filtration Sand to the upslope or inside edge of the FilterSoxx™ has been shown to increase turbidity reduction performance from 26% to 65% and suspended solids removal from 64% to 89%. Similarly, the USDA-ARS has reported a 10% increase in TSS removal efficiency when adding a line of Filtration Sand to FilterSoxx™.



Installation

There are two installation options for this Support Practice™.

Option #1

1. Where required, Filtration Sand shall be surface applied manually, directly upslope, and along the entire edge-length of the Filtrexx® sediment control or filtration practice.
2. Filtration Sand shall be applied to a height of 1 in (2.5 cm), or 1 lbs/linear ft (1.5 kg/linear m), along the upslope or inside edge of the sediment and/or filtration practice.
3. Filtration Sand shall be 50% #20 and 50% #30 grade sand (medium coarse/coarse -all purpose).

Option #2

1. Where required, Filtration Sand shall be blended with FilterMedia™ prior to FilterSoxx™ installation.
2. Filtration Sand shall be blended with FilterMedia™ on a volumetric basis to a minimum of 6% (135 lbs/yd³, or 45 kg/m³) and maximum of 25% (535 lbs/yd³, or 185 kg/m³).
3. Filtration Sand shall be 50% #20 and 50% #30 grade sand (medium coarse/coarse -all purpose).

Inspection & Maintenance

1. Additional applications of Filtration Sand may be added after storm events to decrease suspended solids and turbidity resulting from future rainfall/runoff events.
2. If Sediment control, Check dams, Concrete washouts, Slope interruption, or Filtration system baffles exhibit significantly reduced hydraulic flow through rates or become clogged, they should be cleaned out or replaced.

Method of Measurement

Bid items shall show measurement as Filtrexx® Filtration Sand backfilled or blended with FilterMedia™ + Filtrexx® BMP per linear ft or per linear m installed.

ADDITIONAL INFORMATION

For other references on this topic, including trade magazine and press coverage, visit the Filtrexx® Website at: <http://www.filtrexx.com/resourcespress.htm>.

For research reports not included in the Appendix, visit: <http://www.filtrexx.com/resourcesreports.htm>.

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