BOLD & GOLD®
Filtration Media

BOLD & GOLD® ECT3
BIOSORPTION ACTIVATED MEDIA SPECIFICATIONS

1.1 Description

Bold & Gold ECT3 Filtration media is a Biosorption Activated Media (BAM) for stormwater treatment in conjunction with other structural or non-structural stormwater BMPs. Bold & Gold Filtration media is a patented product developed at the Stormwater Management Academy of the University of Central Florida. Environmental Conservation Solutions, LLC. (ECS) is the licensed manufacturer of the Bold & Gold Filtration media.

1.2 Responsibility

The contractor shall be responsible for the satisfactory delivery, stockpiling, installation, and maintenance of the Bold & Gold ECT3 Filtration media during construction based on information provided in the Contract Documents and as provided by the supplier. The Bold & Gold ECT3 Filtration media shall be purchased from an approved source.

Contact your local Ferguson Waterworks branch for pricing information. ECS will provide a Certificate of Authenticity to the Engineer of Record at the completion of the project. The Certificate of Authenticity includes the quantity of media delivered to the project site and certifies the Bold & Gold media delivered meets the patent requirements of the University of Central Florida.

1.3 Material

Composition: The Bold & Gold ECT3 Filtration media shall be manufactured with mineral materials and no organic materials. The final product shall have less than 2% passing the US #200 (75 micron opening size) sieve. The media mix shall be composed of 75% expanded clay (light-weight aggregate of maximum aggregate size of ⅜ inches) and 25% sorption materials composed of recycled tire chip with no measurable metal contents. Percentages shall be determined by in place volume. Water passing through the media must not exhibit acute or chronic toxicity and not change the pH of the filtered water by more than 1.0 unit. The material shall have a water holding capacity of at least 5%, as measured by porosity, and a total porosity of 40%. The permeability as measured in the laboratory must be greater than 96 inches per hour at maximum compaction.



Storage and Handling: The Bold & Gold ECT3 Filtration media is delivered pre-mixed and ready to install. Material shall not be stockpiled longer than 30 days before installation and must be covered always, to prevent separation of the material due to adverse weather and environmental conditions such as, but not limited to rainfall and wind.

1.4 Construction

Delivery: Bold & Gold ECT3 Filtration media is delivered to the jobsite pre-mixed. The delivered material is certified to meet the patent requirements and a certificate shall be issued as stated in Section 1.2 of this specification.

Installation: Surface on which the Bold & Gold ECT3 Filtration media is placed shall be reasonably levelled within ±1-inch of the elevations shown in the plans. Unless a slope grade is specified in the plans, a level surface is recommended for the subgrade soil to ensure even infiltration of filtered stormwater spread over the entire surface area.

1. The Bold & Gold ECT3 Filtration media shall not be installed until all areas that drain to it have temporal/permanent erosion and sedimentation stabilization in place. No runoff shall be directed to the specified location of the Bold & Gold ECT3 Filtration Media until all drainage area leading to the location are stabilized. If the installed Bold & Gold ECT3 Filtration media becomes contaminated with sediment, prior to the placement of the cover material, it shall be removed and replaced at the contractor's expense.
2. The Bold & Gold ECT3 Filtration media shall be placed loosely or compacted to meet the specifications as shown in the plan by the design engineer. Compaction of the Bold & Gold ECT3 Filtration Media shall be achieved by using industry-standard compaction techniques. The Bold & Gold ECT3 Filtration media may be placed in one lift and compacted to the density specified in the plan by the design engineer. The compacted thickness shall be no less than the thickness shown in the plans. Clean water with no contaminants may be added to the material to meet the compaction requirements. If the compacted Bold & Gold ECT3 Filtration media has an in-place density greater than 105% of the required density, the material will be reworked to meet density requirements.

1.5 Maintenance

1. Maintenance requirements for the Bold & Gold ECT3 Filtration media shall be dependent on the proper functioning and maintenance of all components of the applicable BMP in which the filter media is used. To prevent the clogging of the voids of the Bold & Gold ECT3 Filtration media, there shall be installed a prefilter prior to the filter media surface for gross pollutant controls.
2. In the event of the clogging resulting from the reduction of permeability through the prefilter material and the filter media, the sediment-laden cover prefilter shall be removed and replaced with new material meeting the original specifications. Reduction in permeability shall be described as the increase of the drawdown time that exceeds the design duration for the specific BMP application.
3. Bold & Gold ECT3 Filtration media is typically designed to last the life span of the applicable BMP. However, maintenance shall be performed if the Bold & Gold ECT3 Filtration media has shown a reduction in the performance efficiencies on the reduction of Total Phosphorus (TP) below the design value before and/or at the expiration of the design service life. The maintenance procedure shall involve the removal of the prefilter and Bold & Gold ECT3 Filtration media and replaced with new material and filter media meeting the original specifications. The spent filter media and cover material shall be disposed off at an approved landfill.

1.6 Applications

1. Bold & Gold ECT3 Filtration media is recommended for use as in inter-event flow using Up-flow filter at wet pond and Down-flow filter at dry basins (filtration).
2. It is not intended for storage to control volume attenuation but provides some storage capacity to the limits of the available porosity of 0.25 of the volume occupied by the filter media.

1.7 Design Considerations

The primary control for sizing the Bold & Gold ECT3 Filtration media is to capture the water quality volume ($WWWW_{vv}$) and pass it through the filter media with a specified hydraulic residence time (HRT) to achieve a specified drawdown time. The capture volume is dependent on the flow- through rate per available surface area of the filter media. Thus, primary design parameter for the filter media is the minimum surface area, which is expressed as:

$$SSSS_{ffff} = \frac{WWWW_{vv}}{1/SSSS \cdot kk \cdot tt} = \frac{EEEEEE \cdot TTTT}{1/SSSS \cdot kk_{ffff} \cdot tt}$$

where $SSSS_{ffff}$ = surface area of filter media (square feet); $EEEEEE$ = EffECT3ive Impervious area (square feet); $TTTT$ = treatment depth over the contributing area (feet); $SSSS$ = factor of safety (2.0); kk_{ffff} = laboratory permeability of the filter media (16.0 ft/hr); and tt = required drawdown time (72 hr).

Environmental Conservation Solutions
2346 Vulcan Road
Apopka, FL 32703

ecs-water.com
407.298.5121
admin@ecs-water.com