

Publication #8675



# ESCS

The Clear  
Choice for  
Storm Water  
Management



Rotary Kiln Produced  
Structural Lightweight Aggregate



## Storm Water Management

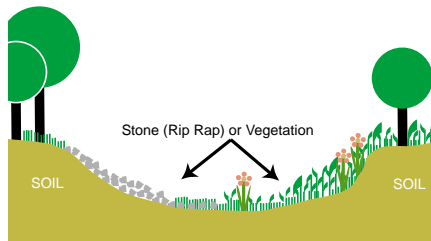
It is costing billions of dollars annually to address environmental concerns about the threat of storm water to our clean water supply. ESCS (Expanded Shale, Clay and Slate ceramic lightweight aggregate) is providing new consistent and cost effective options to meet these concerns. ESCS provides for design flexibility for storm water management programs in meeting this environmental crisis. ESCS meets or exceeds existing and proposed government regulations without the use of chemicals, high maintenance, specialized equipment or major facility upgrades.

## Types of Self Contained Urban Storm Water Treatment Systems

**Swales** (stone or vegetated) are linear drainage media channels, either planted with appropriate vegetation for the bioremediation of pollutants from urban storm water runoff or lined with stone or rip rap. The collected runoff slowly flows at a shallow depth through the media and vegetation but generally has little or no ground infiltration. These are very common but limited in the removal of TSS, NO<sub>3</sub>-N, Zn and TPH-D.

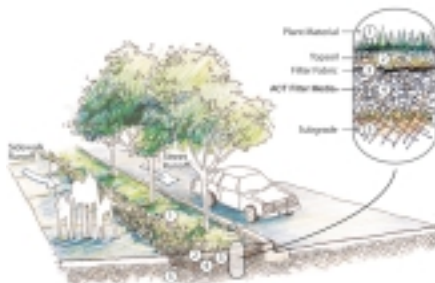
TSS = Total Suspended Solids  
 NO<sub>3</sub>-N = Nitrate  
 Zn = Zinc  
 TPH-D = Total Petroleum Hydrocarbons-Die Set

**Filter Strips** are areas of vegetation over which dispersed runoff sheets flow at a very shallow depth. Filter strips are very well suited to treat runoff from impervious areas such as parking lots and may be designed into the overall landscape as parking area islands or edge borders.



Cross Section of Stone (Rip Rap) or Vegetated Swale

*ESCS in filter strips promote faster water percolation through the filtering system and reduces*



### What Is ESCS?



ESCS is a manufactured lightweight, porous ceramic material produced by expanding and vitrifying select shales, clays and slates in a rotary kiln. The process produces a consistent and predictable high quality ceramic aggregate that is structurally strong, physically stable, durable, environmentally inert, light in weight and highly insulative. It is a non-toxic, absorptive aggregate that is dimensionally stable and will not degrade over time.

As a filter medium, ESCS is very durable, and coupled with its porous structure and enhanced surface area, it is an exceptional filtering material for metalloids, suspended solids, oils and grease. ESCS has the long-term ability to absorb nutrients and maintain hydraulic flow to ensure that water treatment is effective and sustainable.

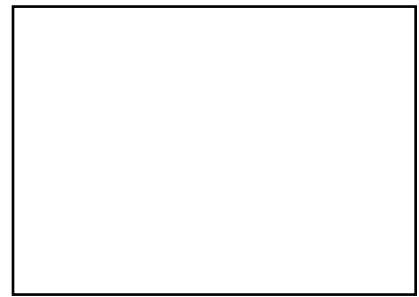


Photo I.D. Atlanta school before

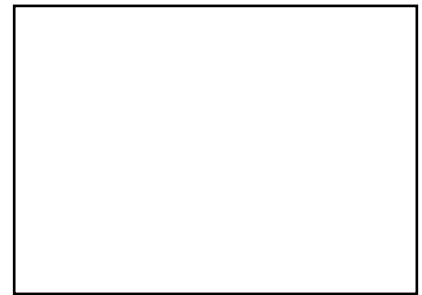
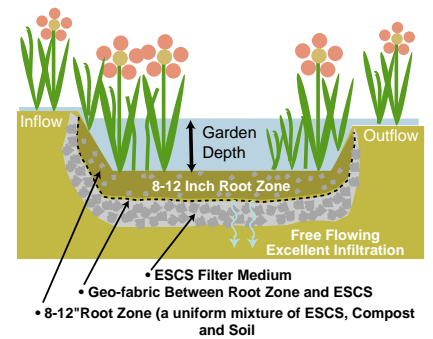


Photo I.D. Atlanta school bioswale after

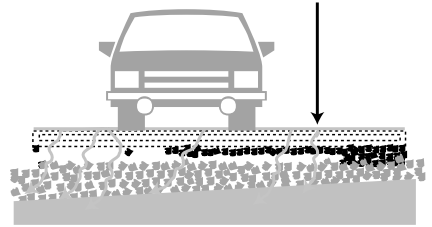
*the amount of time standing water remains exposed. This can be an important element in mosquito control. ESCS also facilitates cationic exchange and microbial action which break down organic substances and reduce pollutants.*

**Rain Gardens**, unlike a swale or filter strip, are designed to retain water and allow infiltration. Water is cleansed by vegetation and by simple soil systems filtration. Rain gardens also help control mosquitoes because they are designed to drain in less than 24 hours.



Cross Section of Rain Garden

*ESCS in rain gardens provide the same filtering function as in filter strips. It is an excellent medium for amending heavy clay or com-*



See back for ESCS Advantages

