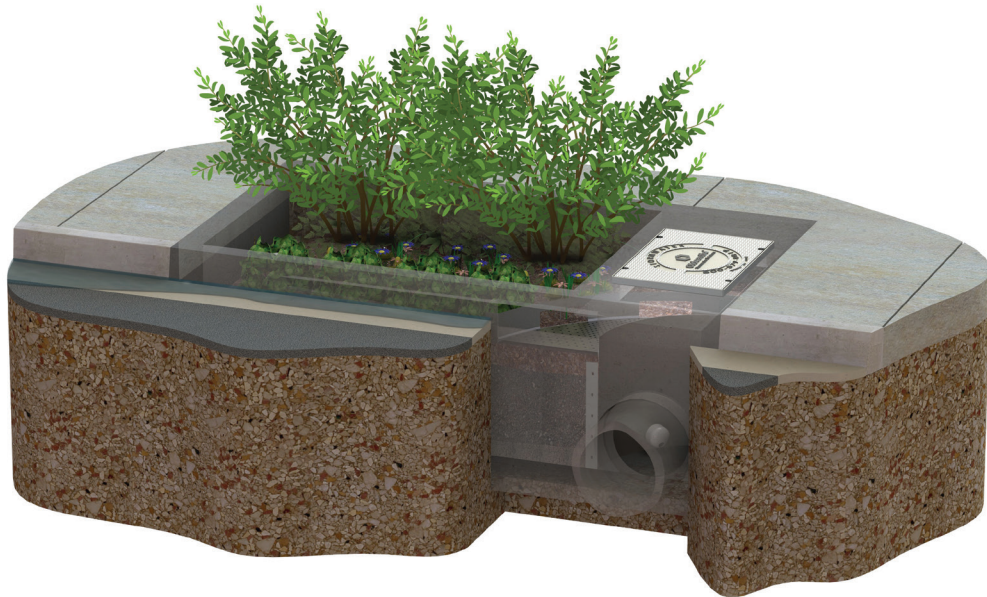




BIOPOD[™] BIOFILTER

WITH STORMMIX[™] BIOFILTRATION MEDIA

Activation Guide



BioPod Activation Guide

This BioPod Activation Guide may be followed by the site contractor to bring the BioPod online after all sitework is complete, landscaping and soils are stable, and the development is ready for final occupancy permit.

Overview

The BioPod[™] Biofilter System (BioPod) is a stormwater biofiltration treatment system that uses physical, chemical, and biological treatment processes including separation, filtration, sorption, and biological uptake to remove total suspended solids (TSS), metals, nutrients, gross solids, trash and debris, and petroleum hydrocarbons from stormwater runoff. The BioPod system uses the StormMix[™] media, an engineered, high flow rate biofiltration media, to remove stormwater pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass to minimize scour. The biofiltration chamber is filled with horizontal layers of mulch, biofiltration media, and drain rock (which may or may not include an underdrain). Stormwater enters the unit and passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the gross solids and larger sediment. The biofiltration media provides treatment by retaining finer sediment and providing sorption and biological uptake of dissolved pollutants. The drain rock allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

Delivery

Smaller BioPod units, up to and including the 6' x 10' model, are delivered with drain rock, underdrain piping, and StormMix media pre-installed. BioPod models larger than 6' x 10' have the drain rock and underdrain piping pre-installed, but the StormMix media is shipped separately in heavy duty bulk storage bags. The bagged media is delivered at the same time as the treatment unit and must be stored where it will not be damaged or get wet until it is used to fill the BioPod prior to bringing it online. Separate, smaller bags of mulch will also be delivered with the BioPod. The mulch should also be stored and protected from damage and moisture until the BioPod is activated.

Installation

The basic activities involved in installation of the BioPod unit include, preparing the excavation and base rock, off-loading the unit from the delivery truck, setting the unit in the excavation, plumbing inlet and outlet piping as necessary, and backfilling the excavation. These activities are detailed in Oldcastle's BioPod Installation Manual.

Sediment Protection

Contractors usually choose to install the BioPod early in construction when other site utilities are being installed. The BioPod must be protected from construction sediment during the remaining phases of construction. If the BioPod is equipped with a curb inlet, the unit will be delivered with a temporary plug in the curb inlet opening. This plug should be left in place until construction is complete and the unit is brought online. If an inlet pipe is plumbed to the BioPod, the contractor must place a temporary pipe plug in the line to prevent water loaded with sediment from entering the system. The contractor is responsible for sourcing and supplying the temporary pipe plug. The plug should be left in place until construction is complete and the unit is brought online.

Site Stabilization

Before the BioPod can be activated, the construction site must be stabilized to prevent heavy sediment loads from prematurely exhausting the system. All curb and gutter placement and paving must be complete, and all landscaping activities must be complete and disturbed soils must be stabilized.

Media Placement (if necessary)

To activate a BioPod, StormMix media must be added to units where the media has been bagged and shipped separately. Remove the tree grate or access covers, as appropriate, and carefully place the media directly on top of the drain rock. A geotextile is not used to separate the media from the drain rock. The amount of media provided in the bag will provide the required 18" media depth if evenly placed across the entire bed of drain rock. In some regions, BioPod units are delivered from the manufacturer with fill lines for drain rock, media, and mulch marked on the structure. If fill lines are present, they can be used as a guide to ensure proper media depths.

Planting (if necessary)

The BioPod Tree and the BioPod Planter are typically vegetated with a tree, shrub or shrubs, and/or grasses. Vegetation should be planted after the media is installed but before the mulch is spread on the surface of the media. The contractor must source vegetation meeting the project landscaper's specifications for species and quantity. Trees or large shrubs should be sourced in 15-gallon containers. Holes dug to receive the plantings should not exceed 15" in depth. Prior to planting, the contractor should remove between one-third to one-half of the soil from the roots of the vegetation to minimize the amount of fertilizers that are incorporated into the treatment media. Once the vegetation has been planted, redistribute the media evenly within the BioPod biofiltration chamber. Standard landscape stakes should not be used to support vegetation since they could damage the underdrain pipe. Stakes that bolt to the tree grate or other means should be used to support vegetation.

Mulch (if necessary)

Mulch is delivered pre-installed in smaller BioPod Surface and BioPod Underground units. However, for larger BioPod Surface and BioPod Underground units and all BioPod Tree and BioPod Planter units, mulch is bagged and delivered separately. Bagged mulch is delivered at the same time as the treatment unit and must be stored where it will not be damaged or wet until it is used. Pour the bagged mulch around the plantings and then spread it evenly across the entire surface of the media. The quantity of mulch supplied will result in an even 2" layer of mulch when spread across the surface of the media.

Activation

Once the media, plantings, and mulch are in place, the BioPod is ready to activate. Prior to activating the unit, sediment should be swept from gutters and plugged stormwater collection system piping should be flushed and cleaned, as appropriate. To activate the unit, remove the plug blocking the curb inlet and/or remove the plug from the inlet pipe. The BioPod is now activated and ready to receive and treat stormwater runoff.

Irrigation (if necessary)

BioPod units with vegetation must be irrigated immediately following planting and then periodically during establishment. In dry climates, vegetation may be required on a continuing basis.

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