



# CITY OF PORTLAND ENVIRONMENTAL SERVICES



1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204 ■ Nick Fish, Commissioner ■ Michael Jordan, Director

**February 25, 2019**

## **Stormwater Management Manual Approved Manufactured Stormwater Treatment Technology**

### **Oldcastle Infrastructure BioPod™ Biofilter System with StormMix™ Media**

#### **City of Portland Decision:**

The Oldcastle Infrastructure BioPod™ Biofilter System with StormMix™ Media meets Portland's pollution reduction requirements, per the 2016 Stormwater Management Manual (SWMM), and is approved for use in the City of Portland with the following conditions.

#### **Background:**

As part of the application process, Oldcastle Infrastructure submitted the Washington State Department of Ecology (DOE) Technology Assessment Protocol (TAPE) Technology Evaluation Report for the device, including all appendices and performance monitoring data. The submittal demonstrates the BioPod Biofilter System meets the City of Portland's pollution reduction requirements.

Oldcastle Infrastructure gave a technical presentation to City staff and the public on December 13, 2018. The presentation was followed by a technical interview with the City of Portland review committee to discuss water quality performance, maintenance, and overall use in the public right-of-way.

Additional information is available online for this system, including:

- <https://oldcastleinfrastructure.com/product/biopod-planter-with-stormmix-media/>
- [https://fortress.wa.gov/ecy/wqpd/pds/newtech/use\\_designations/BIOPODoldcastleGULD.PDF](https://fortress.wa.gov/ecy/wqpd/pds/newtech/use_designations/BIOPODoldcastleGULD.PDF). The device has received the General Use Designation (GULD) for Basic, Enhanced, and Phosphorus Treatment, sized at 1.6 gpm/sq ft of media surface with a minimum media thickness of 18 inches.

#### **Conditions of Use:**

1. All configurations covered in the WA TAPE approval for the Oldcastle BioPod Biofilter are approved for TSS removal. Selection of a specific configuration is the responsibility of the project designer.
2. Use of the Oldcastle BioPod Biofilter does not exempt a project or site from required flow control requirements, operations and maintenance requirements, or other applicable requirements of the SWMM.

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To request a translation, accommodation or additional information, please call 503-823-7740, or use City TTY 503-823-6868, or Oregon Relay Service: 711.

3. For use in the public right-of-way, the following conditions must be met:
  - Units must meet City of Portland street design requirements, including but not limited to H-20 vehicle load rating, non-slip surface, and American with Disabilities Act tolerances specific to surface grates or vault lids.
  - The O&M Plan must call for an assessment during the two-year warranty period of project-specific maintenance requirements and frequencies.
4. Oldcastle-certified providers should be utilized for activation, inspection and maintenance of the system.

**Project Designer Responsibilities:**

1. Ensuring that the Conditions of Use are met.
2. Ensuring the project meets all applicable requirements of the Portland SWMM, including the Stormwater Infiltration and Discharge Hierarchy.
3. Ensuring the design and installation of the units are appropriate for the project goals, site conditions, long-term maintenance requirements, and any other site-specific design requirements on private property or for use in the public right-of-way.
4. Sizing units to meet the current Portland SWMM presumptive design approach and pollution reduction requirements. The pollution reduction capacity is flow-based and assumes a treatment flow intensity of 0.19 inches per hour, 5-minute time of concentration, and a 0.90 runoff coefficient using the Rational Method with treatment rates based upon WA GULD approved flow rates. The treatment capacities for the Oldcastle BioPod Biofilter, based on those assumptions, are provided in Table 1. For sites with different times of concentration, different rainfall intensities may be appropriate.

<b>Table 1. BioPod Biofilter Sizing to Meet City of Portland Pollution Reduction Requirements</b>						
	<b>Internal Bypass</b>			<b>External Bypass</b>		
<b>Model Size</b>	<b>Biofilter Area (ft2)</b>	<b>Design Flow Rate (cfs)</b>	<b>Maximum Drainage Area Per Unit (ac)</b>	<b>Biofilter Area (ft2)</b>	<b>Design Flow Rate (cfs)</b>	<b>Maximum Drainage Area Per Unit (ac)</b>
4' x 4' *	-	-	-	16.0	0.06	0.33
4' x 6' *	20.9	0.07	0.43	24.0	0.08	0.50
4' x 12' *	44.9	0.16	0.93	48.0	0.17	0.99
4' x 16' *	60.9	0.22	1.26	64.0	0.23	1.32
4' x 20' *	76.9	0.27	1.59	80.0	0.28	1.66
6' x 6'	32.9	0.12	0.68	36.0	0.13	0.75
6' x 8'	44.9	0.16	0.93	48.0	0.17	0.99
6' x 12'	68.9	0.24	1.43	72.0	0.25	1.49
8' x 16'	124.9	0.44	2.58	128.0	0.45	2.65

\* Availability of these model sizes varies depending on configuration; see drawings for specifics.

5. Each site plan must be reviewed by Oldcastle before the City of Portland can approve the unit(s) for site installation. A letter certifying the project has been designed to the manufacturer’s specification must be submitted to BES prior to the appropriate design milestone. For public improvements, including public works permits, the letter must be submitted to BES prior to the 60% plan review. For installation on private property, the letter must be submitted prior to building permit plan approval. The project designer is highly encouraged to work with Oldcastle prior to the appropriate review milestone to optimize placement and performance of the unit(s).
  
6. If the project designer wishes to vary from these conditions of approval, the project designer must use the Performance Design Approach required by the SWMM.

**General Conditions:**

1. BES may at any time suspend or revoke approval if the performance of the technology does not meet performance criteria, if there are changes to the TAPE certification, or the performance criteria change due to local, state, or federal pollution reduction standards.
  
2. If any changes, updates, or revisions have occurred to the BioPod Biofilter, the applicant must obtain WA DOE TAPE GULD certification and re-apply following submission guidelines in effect at the time of the application.

**Revision History:**

Date	Action
February 2019	The device was approved for use in the City of Portland