



# ENVIRONMENTAL SERVICES CITY OF PORTLAND

working for clean rivers



## Approved Manufactured Stormwater Treatment Technologies

The City of Portland approved the following manufactured stormwater treatment technologies under the submission and review requirements of the *Stormwater Management Manual (SWMM)*. Designers may use these technologies to meet Portland's water quality treatment standard under the Performance Approach, as outlined in the manual.

The listed technologies have been through Washington's Department of Ecology (DOE) Technology Assessment Protocol (TAPE)<sup>1</sup> and achieved General Use Level Designation (GULD) for Basic Treatment/TSS removal. On the basis of that designation and associated performance data, Portland reviewed and approved the technologies for compliance with its own water quality treatment standard. The City of Portland list includes conditions of approval such as allowable uses and configuration specifications.

A pretreatment technology may not meet Portland's standards for pollution reduction with a single standalone installation and other stormwater management options may be necessary, such as a treatment train. Designers should determine which technology best fits their site conditions, project goals, and long-term maintenance requirements. Not all technologies will be appropriate for every site or project.

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For reference, DOE TAPE categorizes each technology by treatment type<sup>2</sup>, which describes its effectiveness at removing specific pollutants. The treatment types are defined below:

*Basic Treatment: Intended to achieve a goal of 80% removal of total suspended solids for an influent concentration range of 100 mg/L to 200 mg/L. For influent concentrations less than 100 mg/L, the effluent goal is 20 mg/L total suspended solids. For influent concentrations greater than 200 mg/L, a higher treatment goal is intended.*

*Phosphorous Treatment: Intended to achieve a goal of 50% total phosphorus removal for an influent concentration range of 0.1 to 0.5 mg/L as well as achieving basic treatment.*

*Enhanced Treatment: Intended to achieve a higher level of treatment than basic treatment. Enhanced treatment is targeted at removing dissolved metals.*

*Pretreatment: Intended to achieve 50% removal of fine (50 micron-mean size) and 80% removal of coarse (125-micron-mean size) total suspended solids for influent concentrations greater than 100 mg/L, but less than 200 mg/L. For influent concentrations less than 100 mg/L, the facilities are intended to achieve effluent goals of 50 mg/L of fine and 20 mg/L of coarse total suspended solids.*

*Oil Treatment: Intended to achieve the goals of no ongoing or recurring visible sheen and a daily average total petroleum hydrocarbon concentration no greater than 10 mg/L with a maximum of 15 mg/L for discrete (grab) samples.*

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<sup>1</sup> <http://www.ecy.wa.gov/programs/wq/stormwater/newtech/index.html>

<sup>2</sup> <https://fortress.wa.gov/ecy/publications/publications/1110061.pdf>

## City of Portland - Approved Manufactured Stormwater Treatment Technologies

Manufacturer	Device Name	DOE Treatment Type	Approval Expiration	Conditions
CONTECH Engineered Solutions, LLC	Filterra Bioretention Systems	Basic Treatment Enhanced Treatment Phosphorus Treatment Oil Treatment	7/9/2018	<a href="#">See Conditions of Approval.</a>
CONTECH Engineered Solutions, LLC	Stormfilter using ZPG Media	Basic Treatment	1/3/2017*	<p>The following configurations are approved for standalone use in the <u>public right-of-way</u> at 15 gallons per minute (gpm) treatment flow per cartridge:</p> <ul style="list-style-type: none"> <li>• Vault-type with multiple filter cartridges</li> <li>• Precast 48" manhole with 2 filter cartridges</li> <li>• Precast 60" manhole with 3 filter cartridges</li> </ul> <p>The following configurations are approved for standalone use on <u>private property</u> at 15 gpm treatment flow per cartridge:</p> <ul style="list-style-type: none"> <li>• Vault-type with multiple filter cartridges</li> <li>• Precast 48" or 60" manhole designs</li> <li>• Catch basin model</li> </ul>
Modular Wetland Systems	MWS Linear	Basic Treatment Enhanced Treatment Phosphorus Treatment	6/21/2019	<a href="#">See Conditions of Approval.</a>
Oldcastle Stormwater Solutions	PerkFilter™ Media Filtration Device (using ZPC Filter Media)	Basic Treatment Phosphorus Treatment	11/28/2019	<a href="#">See Conditions of Approval</a>

**\*1/3/17: Device under renewal review. Approval expiration extended until process complete.**