Halgan Environmental

Up-Flo Filter® Stormwater Treatment

Environmentally Sustainable Treatment Solutions

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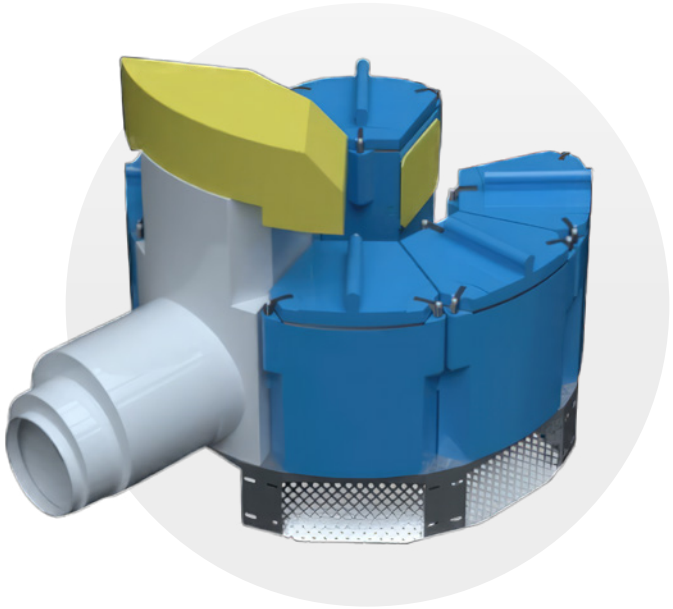
Up-Flo Filter

The Up-Flo Filter® is a multi-stage stormwater treatment system that combines sedimentation and screening with filtration to provide the necessary pollution removal for stormwater drainage systems. Supplied in Halgan lightweaight polyethylene (PE) or high density polyethylene (HDPE) vessels, the design enables ease of adaption to various catchment areas. Each device consists of an array of modules that are configurable to suit various council stormwater treatment requirements.

The Up-Flo Filter® uses fluidized bed filtration technology for superior filtration rates and maintaining media longevity. It captures sediment, oils, heavy metals and nutrients from stormwater runoff, achieving up to 98% removal rates for total suspended solids (TSS).



Applications

- Removal of sediment, nutrients and heavy metals from runoff stormwater
- Source control for redevelopment or new construction projects
- Suitable for carparks, industrial hardstand areas, residential sub-divisions, municipal roadways, existing urban catchments, upstream or wetland/river discharge
- Treatment downstream of Water Quality Volume detention systems
- Water Sensitivity Urban Design Projects (WSUD)

Advantages

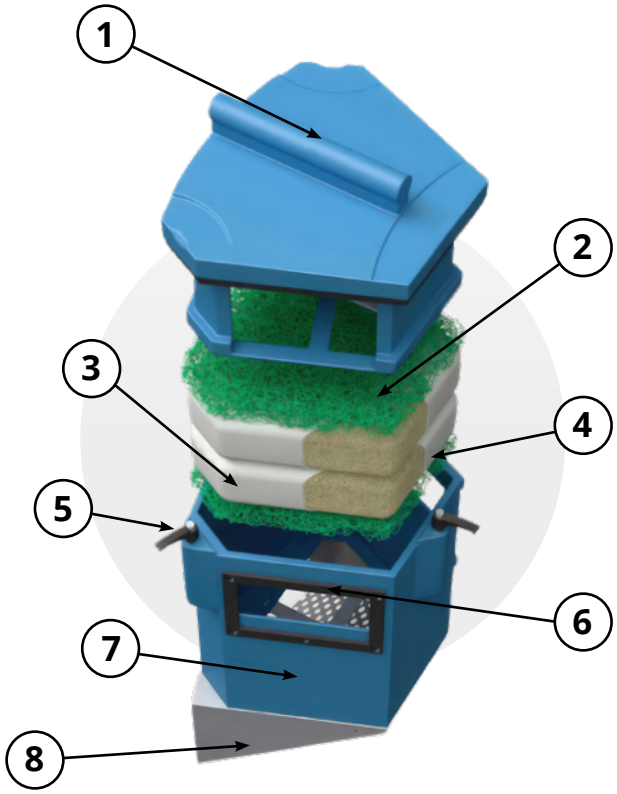
- Combines sedimentation, screening and filtration into one structure
- Upflow fluidized bed technology prevents clogging of filter media - lower maintenance
- Economical and simple process for replacement and maintenance of filter cartridges and media bags
- High flow bypass siphoning system for trapping hydrocarbons, oils and litter
- Higher loading rates resulting in smaller treatment footprint

Approvals

- NJDEP certifications
- New Jersey Corporation for Advanced Technology
- Virginia Department of Environmental Quality BMP Clearinghouse (Phosphorus Removal)
- California Water Boards Full Trash Capture
- ISO 14034 Verified

Components

1. Filter Module Cover & Media Restraint
2. Flow Distributing Media
3. Filter Media Bags
4. Replaceable Media Pack
5. Cam Latch
6. Conveyance Channel
7. Filter Module
8. Support Bracket & Angled Screen



How it works

Stormwater runoff enters the chamber through the inlet pipe, filling up the chamber. As the chamber reaches capacity, the flow is directed up through the angled screen and into the filter modules.

Litter, debris, and sediments are trapped by the screen and settle out in the sump, while hydrocarbons/oils and floatables rise to the surface of the water.

The water subsequently flows through the filter modules and discharge through the outlet module into the outlet pipe. Any excess flows are discharged to the outlet through a Siphonic Bypass, which also serves as a floatables baffle, trapping and preventing oils and floatable littler from entering the outlet pipe.

A drain down port guards against pollutant leaching and filter media degradation between storm events.

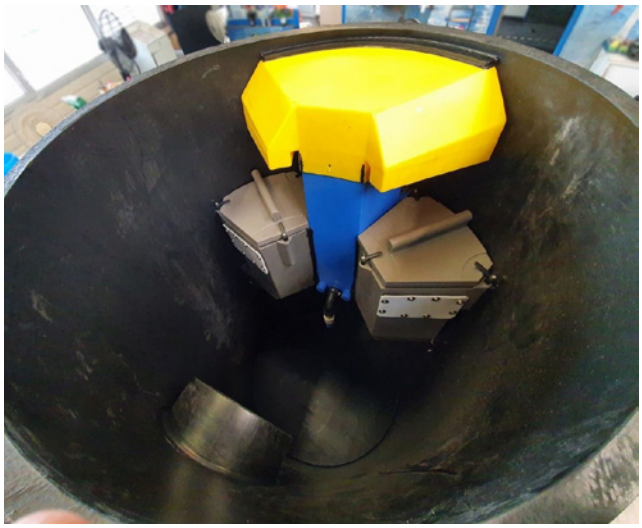
Design and sizing

Sizing for the Up-Flo Filter® is determined by design flow rates to meet a water quality treatable flow rate. The treatable flow rate for each individual filter module is 1.6L/s.

Halgan supplies a variety of designs for the Up-Flo Filter®, catering for:

- variable depths to invert
- required treatable flow rates
- WSUD MUSIC Modelling requirements.

The Up-Flo Filter® is also frequently paired with the Halgan GPT, First Defense® or Downstream Defender® for best practice and results.



Model and size table

Model	Size	Maximum Filter Modules	Maximum Treatable Flow Rate (L/s)	Maximum Pipe Size (mm)	Sump Capacity (L)
HUFF1200	H: 2570mm Ø: 1430mm	7	11	375	1200
HUFF.R.85	H: 2020mm L: 3760mm	10	15.8	600	1500
HUFF.R.125	H: 2020mm L: 5020mm	18	28.5	600	2000

Operation and maintenance

The Up-Flo Filter® is designed to operate on simple fluid hydraulics. It is a self-activating device, that has no moving components or require any external power and has been fabricated with durable and corrosion resistant material.

Maintenance for the Up-Flo Filter® is limited to periodic inspections, gross pollutant removal (sediment and floatables), Media Pack replacement and Drain Down Filter replacement.

Activity	Frequency
Inspection	Regularly during the first year of installation. Every 3-6 months after the first year of installation.
Floatables, Hydrocarbons and Oils Removal	Twice per year, or as needed. Immediately if there is a contaminated spill in the drainage area.
Sediment Removal	Every 6-12 months, depending on the Up-Flo Filter® configuration. The maximum allowable sediment depth in and Up-Flo Filter® configuration is 410mm. Following a contaminated spill in the drainage area.
Media Pack Replacement	Once per year. Replacement is required any time inspection reveals that the high-water level indicator has been activated after two consecutive storms and the subsequent weighing of the Media Bags shows a wet weight greater than 18kgs. Following a contaminated spill in the drainage area.
Drain Down Filter Replacement	Once per year with Media Pack replacement. Replacement is required anytime inspection reveals that the water level inside the vessel has not reached a level equal with the base of the Filter Modules approximately 36 hours after a 25mm rainfall event. As needed, in the event of continuous base flow conditions.

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FAQs

Q: How often do filter bags need to be replaced?

A: The rate of replacement will vary depending on many contributing factors such as location or practices performed on site. However, the acceptable industry standard is every 12-18 months. For heavily trafficked commercial and industrial sites, every 6 months is considered best practice. Visual inspections every 3-6 months should also be conducted to monitor filter bag replacement.

Q: What are the removal efficiencies?

A: Precise removal efficiencies are dependent on particle size, specific gravity of the pollutant and multiple other variables. Please contact Halgan Sales Representative to discuss your specific removal requirements. Halgan also produces MUSIC Models to demonstrate the achieved removal efficiencies.

Q: What maintenance is required?

A: Maintenance consists of removal of sediments, floatables, litter, hydrocarbons/oils, and other debris from the sump. This can be completed with a standard sump vacuum or vactor truck. Media bags can be easily replaced by hand, requiring no heavy lifting equipment.

Q: Does the inlet have to be 240mm higher than the outlet?

A: No, this is not compulsory. The inlet pipe can be level with the outlet pipe invert if available head permits. The preference for the inlet to be installed 240mm above the outlet, is to reduce the volume of stormwater left untreated during the drain down process after a storm event.

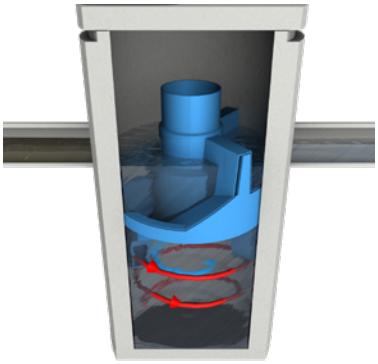
Q: Can multiple inlets be incorporated into the design?

A: Yes, in some instances it may. Please contact Halgan Sales Representative to discuss your specific requirements.

Q: What is the maximum online flow rate?

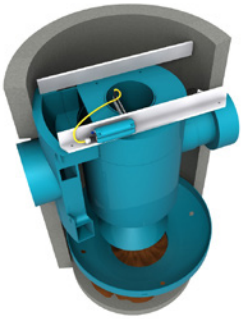
A: The maximum online flow rate allowed by the bypass hood is 115L/s. For any design flow exceeding this limit, it is recommended to position the Up-Flo Filter® offline with an upstream weir diversion.

Other Products



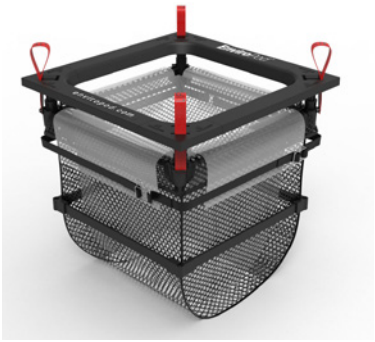
First Defense

The First Defense stormwater separator captures and retains sediments, litter and floatables. Through low-energy vortex separation, the First Defense eliminates the agitation of captured pollutants to ensure they are not washed out during subsequent storm events. Installed in a lightweight Halgan Polyethylene or high density polyethylene vessel the First Defense is available in various sizes and works with multiple inlets and pipe sizes.



Downstream Defender

The Downstream Defender is an advanced hydrodynamic vortex separator designed to treat high peak flows. It provides reliable capture and retention of fine and coarse particles, hydrocarbons and floatable debris from stormwater runoff. Installed in a lightweight Halgan Polyethylene or high density polyethylene vessel the Downstream Defender has been carefully engineered so that the internal components isolate pollution storage areas, ensuring the captured pollutants are retained, even during high flows.



Enviropod 200

The Enviropod is an easy to install and operate, pre-treatment device that removes gross pollutants, debris and other associated nutrients and pollutants. It comes in varying sizes and is most practical for retrofits, requiring no alterations to the drainage.

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