

Aquip® Enhanced Media Filter



Enhanced passive media filtration

Aquip® – A Versatile Stormwater Filter

Aquip® is a patented[†], passive media filtration technology for enhanced stormwater treatment. Sized to fit the hydrology of the site, Aquip® is typically installed above ground and fed by a simple pump station. Aquip®'s simple, easy-to-operate system uses media that can be formulated to **remove a wide range of pollutants** including suspended solids, turbidity, heavy metals (*including dissolved metals*), organics (e.g. COD and hydrocarbons); and nutrients like nitrogen and phosphorus. Targeted metals include copper, lead, zinc, iron, aluminum, nickel, cadmium and others.

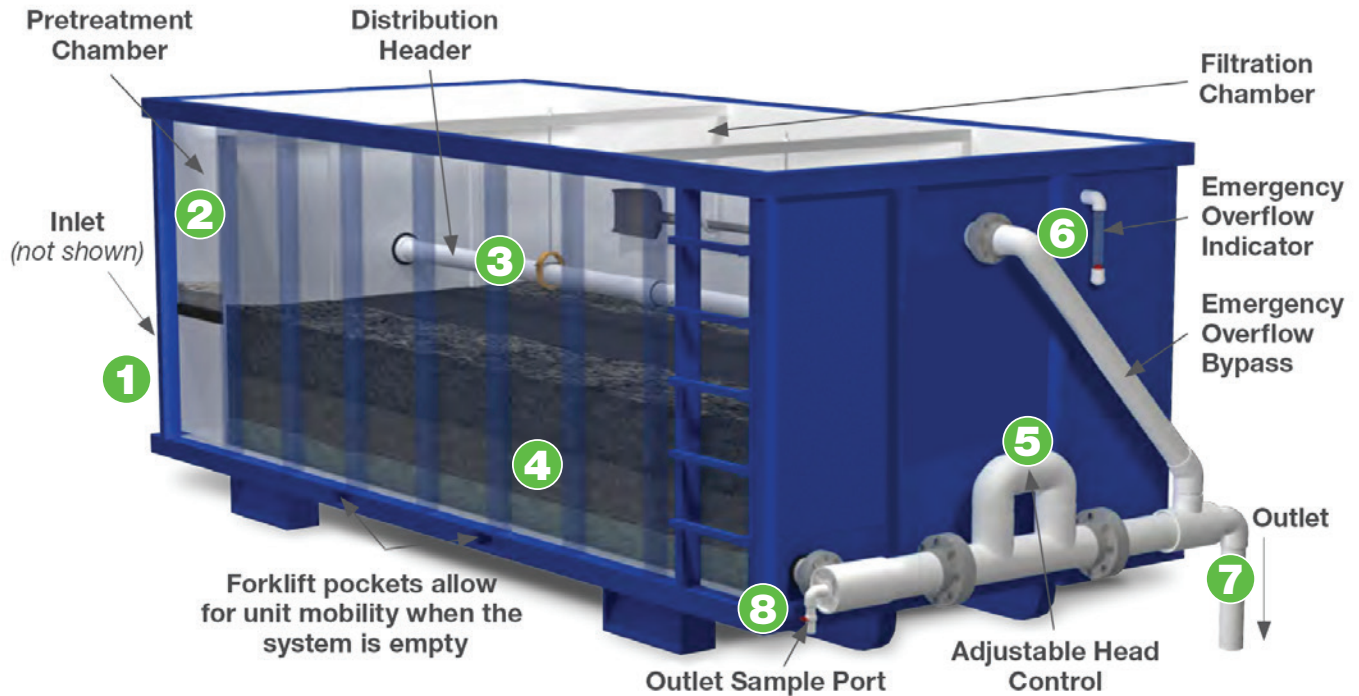
Aquip® Design Advantages

- Removes suspended solids, turbidity, dissolved pollutants (*including heavy metals*), organics and phosphorus
- Targeted metals include copper, zinc, iron, lead, aluminium, nickel and others
- Patented filtration – no chemicals or backwash
- Passive gravity flowthrough system – no moving parts
- Open top for easy access and maintenance
- Operates unattended
- Simple and safe effluent sampling
- Awarded **GULD Designation** (*The Washington State Department Of Ecology*)
- Available structures include steel, concrete, and plastic
- Freeze protection, cover and other options available

[†]US Pat. 8,002,974, Canada Pat. 2,640,800



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The Aquip® Operation

- 1 Inlet:** Polluted stormwater flows into Aquip® via the inlet pipe, then into the pretreatment chamber. In most cases stormwater is pumped to Aquip® using a simple float- actuated stormwater pump. To assist with predictive maintenance, a totalizing flow meter on the system lets owners track the rate and volume of stormwater treated.
- 2 Pretreatment Chamber:** This chamber is customized to naturally balance the water chemistry and improve the removal efficiency of the treatment. The pretreatment process works synchronously with Aquip®'s filtration media to settle solids, remove free oil, and to create metal complexes that are more easily removed in the filtration chamber. A pretreatment pump may be included on certain models to encourage aerobic conditions and to draw down the standing water level between storm events. A mosquito barrier is provided for systems without a pretreatment pump.
- 3 Inlet Distributor:** Water from the pretreatment chamber flows by gravity into the inlet distributor and is dispersed along the full length of the filter media bed, optimizing the contact area of stormwater with filtration media. Energy dissipation fabric lies beneath the distributor to prevent scouring of the media bed.
- 4 Filtration Chamber:** Layers of inert and adsorptive media remove stormwater pollutants such as metals, particulates, oil, organics and nutrients. Within the filtration chamber, pollutant removal occurs through a combination of straining, filtration,

complexing, adsorption, absorption, micro-sedimentation, and biological degradation, producing excellent stormwater quality. Once passed through the media bed, clean stormwater flows into the high efficiency underdrain and out of the system, leaving the targeted pollutants permanently trapped in the filter bed. The filter bed drains down between storm events. Integrated ladders, filter maintenance tools and an external filter bed drain-down make routine maintenance without special equipment simple.

- 5 Adjustable Head Control:** Clean stormwater leaving the system passes through the adjustable head control. This device can be adjusted in the field and assures optimal water/filter media contact under a range of operating conditions.
- 6 Emergency Overflow:** In the event that the filter bed becomes plugged during a rain event, the emergency overflow allows the stormwater to bypass. Filter bed plugging is avoided by maintaining the system per StormwaterRx recommendations.
- 7 Outlet:** Clean stormwater discharges from the Aquip® unit by gravity through the outlet.
- 8 Outlet Sample Port:** This port provides safe and easy access to system effluent for stormwater compliance sampling.

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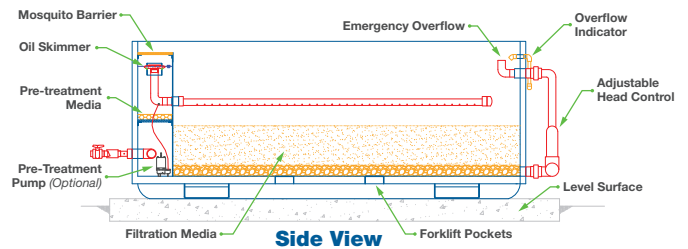
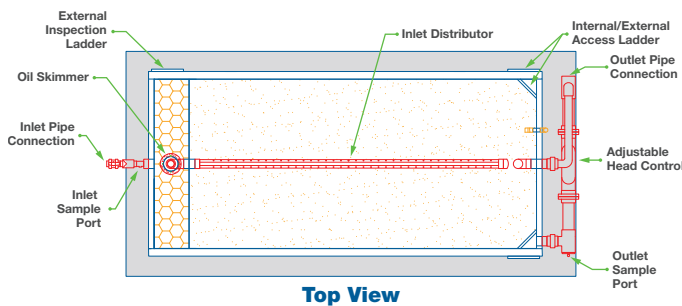
Available Aquip® Configurations

Whether the structure is steel, plastic, concrete, fiberglass, earthen, or owner-supplied, Aquip® owners can expect the same high level of performance and reliability. Available upgrades for Aquip® include freeze protection, covers and seismic tie-downs.

Aquip® Standard System Sizing*

Model	10S/P	25S	25S	80S	110S	160S	210S	300S	400S
Treatment Rate (gpm)	5 - 15	3 x 9	25 - 75	40 - 120	60 - 170	80 - 240	100 - 320	150 - 450	200 - 600
Footprint (ft x ft)	3 x 9	5 x 9	7 x 12	7 x 16	8 x 18	8 x 27	8 x 32	13 x 36	13 x 47

* Recommended model size depends upon application. Please contact StormwaterRx for more information.



Proven Performance & Versatility

Aquip® performance has been demonstrated at a wide range of industrial sites, including scrap and recycling, galvanizing, metal fabrication, wood treating, automobile salvage, transportation equipment, food processing, power generation, marine and a host of others. Representative performance data from Aquip® are presented in the figure below. As the data show, Aquip® produces good quality stormwater effluent for the regulated stormwater pollutants as well as for many pollutants that are not currently regulated, but may be in the future.



Aquip® 110S with optional freeze protection and rolltop cover



Aquip® 250C underground (full gravity flow)



Aquip® 400SBE



Aquip® User-Built configuration where customer supplies housing