

SuperSand™

Continuous Backwash Filters



WESTECH®

The World's Leading Continuous Backwash Sand Filter



WesTech's SuperSand™ continuous backwash sand filter, pioneered by Nordic Water products, allows you to get the most out of your tertiary treatment and enhanced nutrient removal process. With over 35 years of experience and 25,000 filters installed for municipal and industrial applications, WesTech has the experience and the proven equipment to meet or exceed your application needs.

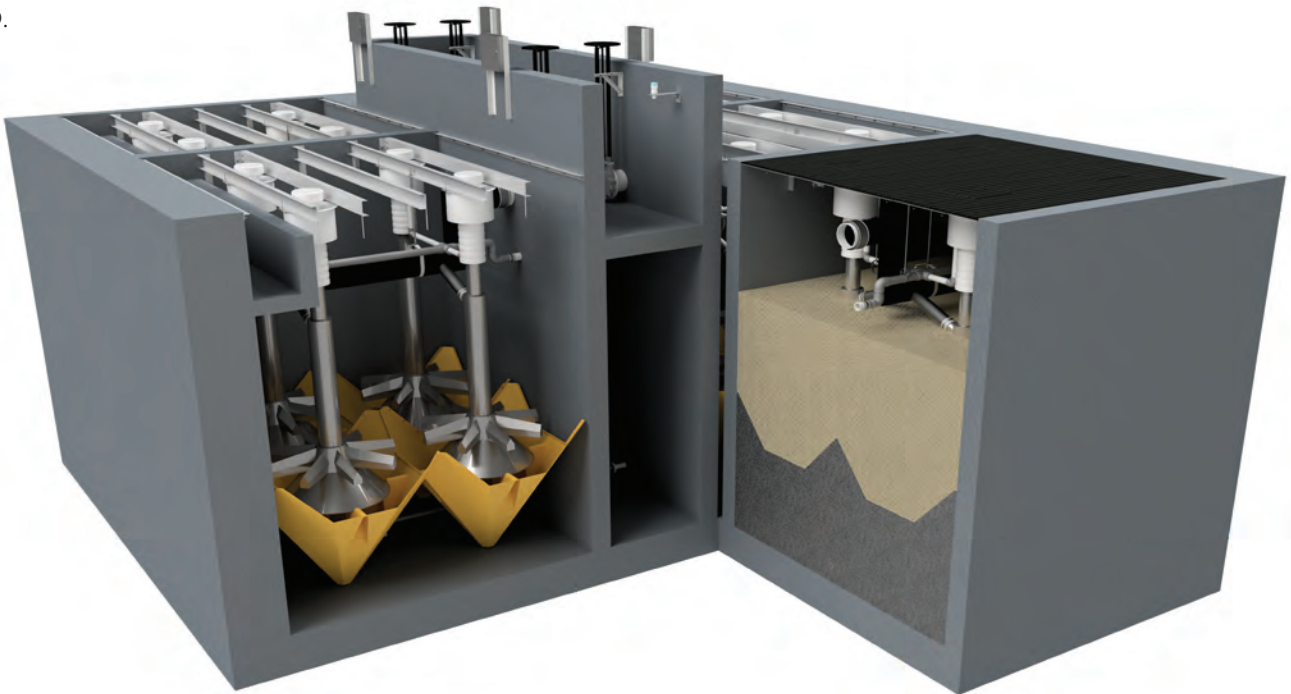
Proven Process

The SuperSand™ is an up-flow, moving bed filter that is constructed with various media depths for different applications and configurations. Raw water enters near the bottom of the tank by means of a stainless steel water distributor. Suspended solids are filtered out as the raw water flows up through the media bed. As the filtrate reaches the top of the filter, it passes over the effluent weir and is discharged. A portion of the filtrate is diverted through the sand washer and used for cleaning and transferring the waste solids.

The SuperSand™ filter employs a backwash rinse that is performed continually while the tank is processing water. Meaning the filter does not have to be taken out of operation for backwash or cleaning. An air lift pump, located at the center of the module, draws the media from the bottom of the filter up into the wash box. As the media is released into the wash box, it falls into the sand scrubber where the filtered solids are separated from the sand. From there, the filtrate carries the solids out as waste (backwash). The washed sand falls down onto the media bed for continued use.

Concrete Basin Installation

The filter cells (each consisting of multiple filter modules) share a common sand bed. Filter modules are available in 50 sq. ft. or 64 sq. ft. Choosing a 64 sq. ft. module is a great option in reducing footprint. A plant can be designed for an unlimited filter area, enabling the SuperSand™ to be applied to small and large treatment plants with capacities ranging from 0.05 MGD to flow rates in excess of 100 MGD.



Multiple Modules Per Tank

SUPERSAND™ CONTINUOUS BACKWASH

SuperSand™ Design Advantages

Sand Washer

- **Mold Injected Polypropylene material** for superior abrasion resistance
- **Two infinitely adjustable waste weirs** allow for fine tuning of the waste flow
- **Independent waste rate measurement** improves optimization and waste reduction

Air Lift Pump

- **HDPE material** for abrasion resistance for an extremely long life
- **Sectioned** for ease of installation and removal

Upgrade Option:

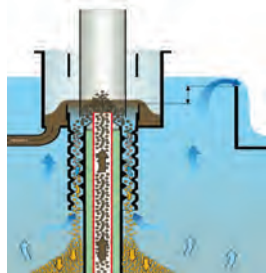
Upgrade for the ability to operate in either continuous or intermittent mode.

Intermittent Wash

- **Alternating** periods of media bed cleaning
- **Controlled solids accumulation** which results in a filter bed that removes very small particles thus greatly improving effluent quality.
- **Environmentally Friendly** by reducing energy consumption during periods in which the air system is shut off for solids accumulation.

While also minimizing the amount of waste water needing to be treated.

Sand Washer

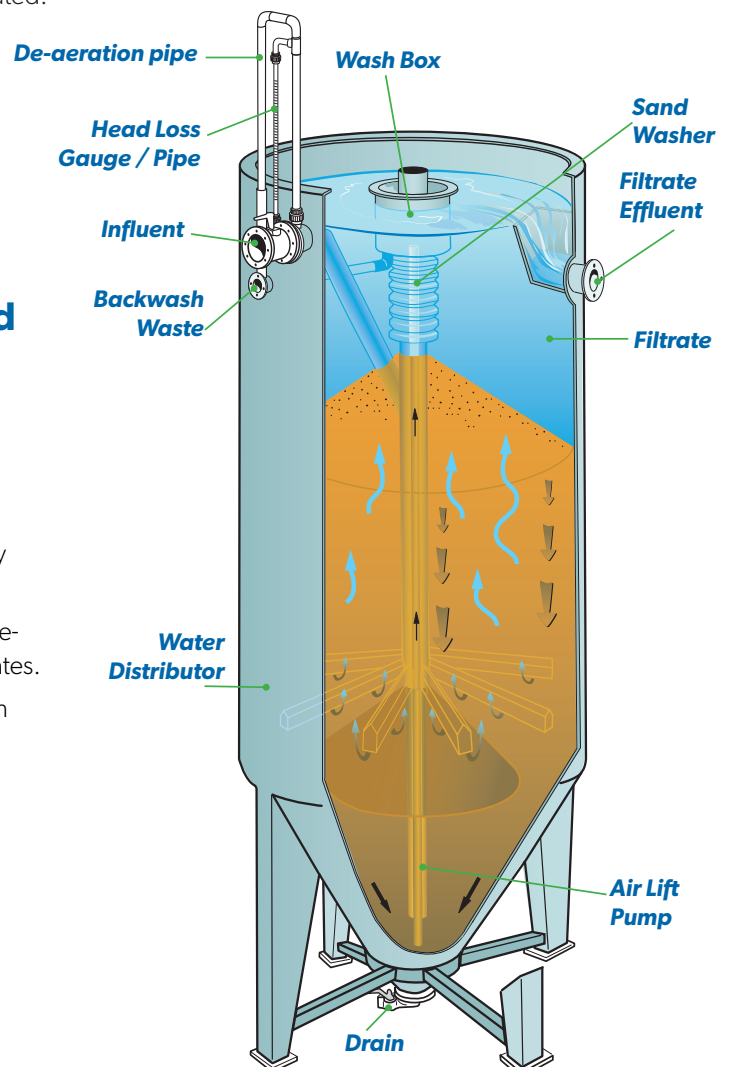


Why Choose Continuous Backwash Sand Filters?

- **No Redundancy:** Because the filter bed is cleaned while the filter is operating, there is no need for extra filters for redundancy during backwash.
- **High Solids Load:** Significantly higher inlet solids loads (up to 60 mg/l) can be handled by a single SuperSand vs a conventional gravity filter.
- **Reduced Costs:** Because the SuperSand has no moving parts, it reduces energy and maintenance costs while still offering high filtrate rates.
- **Eliminates Backwash Tanks and Pumps:** Continuous backwash sand filters eliminate the need for large backwash holding tanks and backwash pumps.

Process Applications

- **Suspended Solids Reduction**
- **Water Reuse, Title 22 Certified**
- **Denitrification and Nitrification**
- **Chemical Phosphorus Removal**
- **Treatment of Metal-Bearing Industrial Effluents**
- **Pretreatment to Other Processes**



The SuperSand™ Filter is available as a freestanding unit in multiple sizes. Tank materials of construction include Stainless Steel, FRP, and Carbon Steel.



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