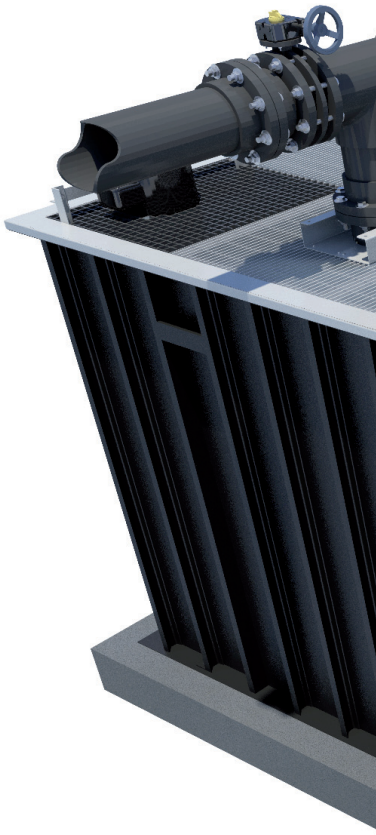
MICROFLO® VACUUM SAND FILTERS

Filtration systems for swimming pools, water features and aquatic facilities.

"THE IDEA THAT ALL POOLS ARE CREATED EQUAL JUST DOESN'T HOLD WATER."

Natare Corporation

MICROFLO FILTRATION



MicroFlo vacuum sand filters are available in different styles to satisfy the unique needs of any aquatic construction project.

We tailor each MicroFlo vacuum sand filter to the specific size, turnover and activity requirements of the project, including specific site conditions, construction requirements, program and user needs and often most importantly, budget considerations.

Natare MicroFlo vacuum sand filters remove particles one half (½) the size of particles removed by typical pressure filters. This means cleaner, clearer, and more satisfactory water quality. MicroFlo vacuum sand filters do not require coagulants, flocculants, or other expensive filter aids to produce excellent water quality.

MicroFlo vacuum sand filters actually remove organic compounds from pool water, including the precursors to chloramines and the combined chlorines that cause eye irritation and poor sanitation.

Nothing beats the durablity of stainelss steel

MicroFlo vacuum sand filters guarantee clean, clear, sparkling pool or spa water.

Easy on the environment and your budget

- Eco-friendly manufacturing using recycled stainless steel. Natare's green filters can qualify for LEED credit.
- Natare MicroFlo vacuum sand filters will reduce water consumption by as much as 80%.
- Natare MicroFlo vacuum sand filters substantially reduce maintenance costs.
- Economical operation significantly reduces labor and maintenance expense.
- The parts for Natare MicroFlo vacuum sand filters require no field service.
- Natare MicroFlo vacuum sand filters eliminate the need for separate hair and lint strainers, which are required for typical pressure filter systems.

BUILT TO LAST

Natare MicroFlo filters are constructed from heavy-gauge stainless steel, the toughest, most durable material available for pool construction. Fifteen (15) year warranties are offered with MicroFlo filters. Compare the warranty of a MicroFlo vacuum sand filter to any other filter and the difference is clear.

MicroFlo vacuum sand filters operate on the principal of using atmospheric pressure to do the work. Because the pump is located after the media bed, the entire system operates as a low head, high efficiency. Smaller pumps can be used and the configuration eliminates the wasteful high pressure environment of typical pressure filters.

Every Natare MicroFlo filter begins with stainless steel!

Natare MicroFlo vacuum sand Gen II filter control system (Optional)

- Post-mounted control station including touchscreen, sensor housing, analog gauge panel, and filter data plate
- Pump motor monitoring and control
- System air pressure monitoring
- Integral Automatic Water Level Control system, with digital level sensor.
- Make-up water valve monitoring and control.
- Integral air release system
- Plus much more...

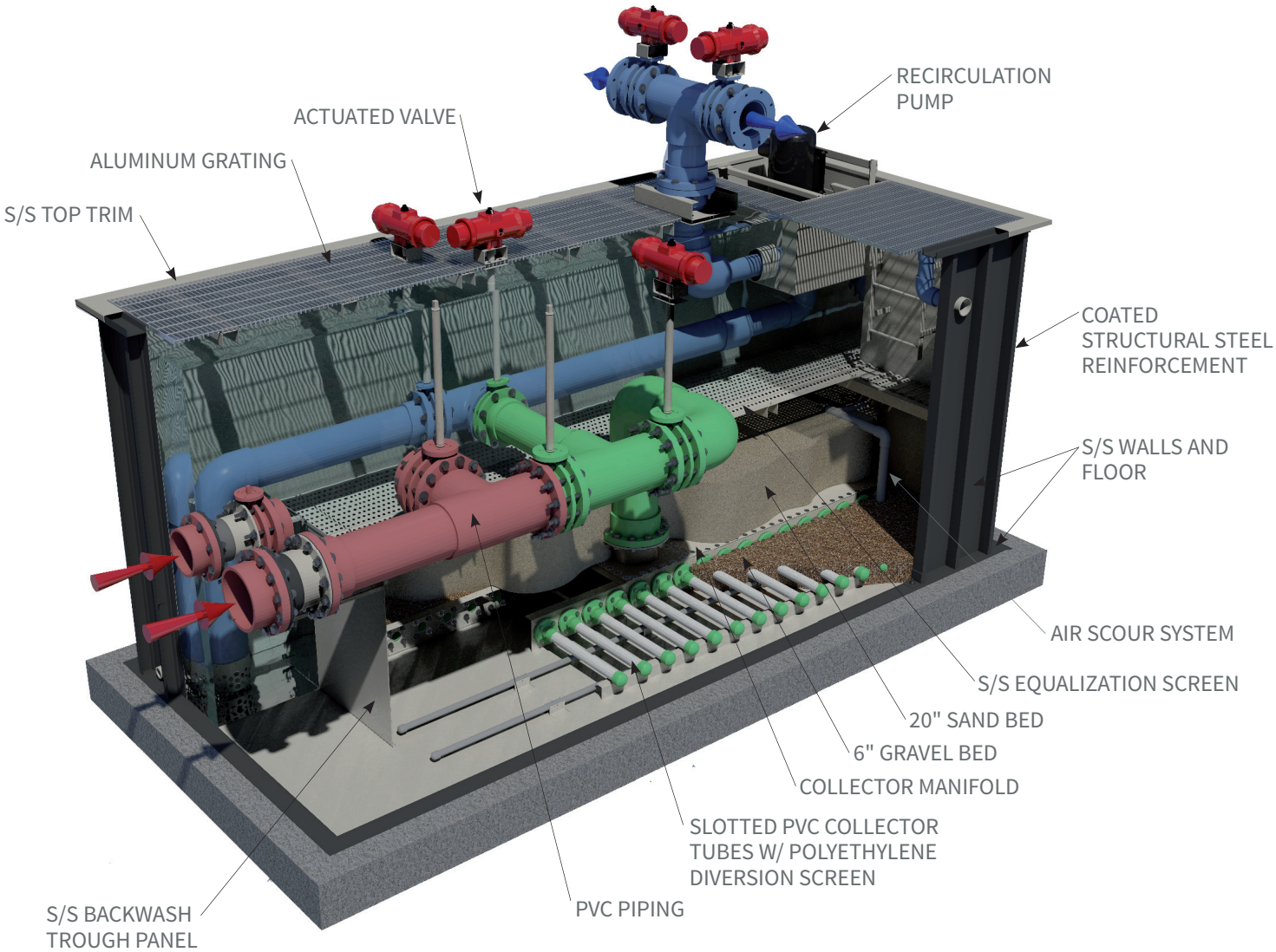
IMPORTANT FEATURES

- Ideal water clarity for competition, training or lap pools, water features, recreational pools, spas and special purpose pools. MicroFlo filters are certified to provide water quality required by all codes and regulations as well as the standards required by current USA Swimming, FINA, NCAA, YMCA and NAHSA standards.
- Furnished as complete circulation, filtration, and treatment systems. Integral heat exchangers are also available.
- Heavy-gauge stainless steel construction, pre-engineered to eliminate site-construction variations or design changes.
- Suitable for in-ground, on-ground, or elevated use.
- Simple slab-on-grade installation.
- NO hair and lint strainers to clean. Daily maintenance is eliminated.
- Natare filtration systems can eliminate the need for separate surge or balance tanks. Surge tanks and balance tanks are difficult to construct, hard to balance and prone to deterioration and leakage.
- Ideal for renovation or new construction.
- Natare MicroFlo vacuum sand filter systems comply with all state, municipal, and local construction codes.

THE BENEFITS

There are significant benefits to selecting a Natare Moving Bulkhead for your facility. Natare Corporation has constructed and installed some of the largest and most sophisticated bulkheads in the world, and these bulkheads have proven capabilities for international swimming competition.

Natare Moving Bulkheads have been part of more world records than all other manufacturers combined. More importantly, Natare Moving Bulkheads are economical and cost effective. Our years of experience and efficient manufacturing allow Natare to offer high-quality moving bulkheads at significant savings over other manufacturers and suppliers of similar products.



Crystal. Clear. Water.

Eliminates issues with “site-designed and site-built” mechanical systems.

The entire filtration plant is designed and manufactured under controlled conditions and is shipped to the project site as a complete unit. MicroFlo vacuum sand filters are complete with all required pumps, valves, controls and media, certified to produce excellent water quality and economical operation. These pre-engineered systems can reduce construction time by over 80%.

A Natare pool mechanical system featuring a MicroFlo vacuum sand filter can reduce building space or footprint by over 75% when compared to typical pressure filters and pressure filtration mechanical plants.

Before specifying or purchasing a pool, compare a few of the features and benefits of a MicroFlo vacuum sand filter. How do other pool filters compare?

MicroFlo filters:	Why it matters…
Water Quality:	
Crystal Clear, sparkling water	MicroFlo vacuum sand filters produce water quality that far exceeds typical pressure filtration. No flocculants or coagulants are required for clear, clean water.
Filter Performance:	
Extended filter cycles without frequent backwash	Extended filtration cycles of 30-days or more save water, chemicals, and energy and maintenance time.
Materials of Construction:	
Stainless steel, high density polyethylene, PVC	MicroFlo vacuum sand filters are durable, do not deteriorate in the pool environment, and are highly eco-friendly in design.
Filter Tank Valves:	
Industrial duty PVC Butterfly valves with PVC disk and stainless steel hardware	PVC valves are totally corrosion resistant and do not rust and deteriorate over time. No plunger valves to lose O-Ring seals or molded valves crack or leak.
Filter Valves Operators and Locations:	
Valve operators are located above the filter tank grating and easily accessible for service. Industrial grade pneumatic valve operators.	Valves are easily seen and accessible for service. Air operators are efficient and durable and eliminate electrical shock potential around the filter system
Filter Pumps:	
Paco, Gould, Peerless or Aurora. Industrial grade vertical pumps designed and selected for the filter. Bronze or cast iron impellers	High efficiency, low NPSH pumps eliminate cavitation, bearing, impeller, and motor failure. Lower electrical consumption. Superior hydraulic performance and lower maintenance costs. Redundant pump configuration ensures 99.999% reliability
Filter strainer (hair and lint strainer for pump protection):	
The pump is located after the media and the integral diffusion screen protects the entire filter from large debris, hair, and lint. All debris is automatically flushed from the filter during backwash.	Pressure systems require hair and lint strainers protect pumps and they must be cleaned as often as twice daily, adding high maintenance costs. Strainer design may lead to improper hydraulic performance, pump failure and inefficient pumping systems
Filter Controls:	
VFD pump controls and “soft-start.” Automatic air release with variable pressure and time settings. Automatic backwash shutdown. PVC filter control panel capable of remote mounting.	Integral VFD provides increased performance while saving energy, space, costs, and time. Immediate payback with precise control of flow, torque, and energy. Liquid filled gauges are more accurate and durable. Remote control mounting gets control panel away from filter tank. Highly reliable Solid state PLC controller Control system is designed for the filter and supplied with a Natare filter system.
Filter Flow meters:	
Signet analog self-powered indicating flow meter, suitable for remote mounting	High accuracy, durability, and readability.
Filter walkway grating:	
Aluminum with stainless steel cross-bracing. Suitable for equipment mounting and easy access with an observable filtration process	The unique design of the vacuum sand filter greatly reduces space requirements and eliminates wasted areas above and around the filters. No below-grade mechanical spaces are required.

MicroFlo filters:	Why it matters…
Vacuum Equalization Screen	
Exclusive patented stainless steel extrusions with removable precision multi-beam orifice slots for flow dispersion and air release. Acts as an integral strainer to further protect the media bed	Stainless steel diffusion screen provides balanced operation, eliminates bed fouling, and assures long, trouble free operation. Most filters have no diffusion screens and debris entering the filter tanks is ultimately deposited in the media bed
Filter Suction Header:	
Formed stainless steel with integral air scour connections welded into the tank interior	Stainless steel suction headers eliminate breakable pipe, cycolac or light duty molded internal construction and are far more durable. The large cross section area provided means lower operating head, better efficiency and longer pump life.
Filter Laterals:	
Machined Schedule 80 PVC with O-ring connection and PVC mounting block. Lateral retainer at end of lateral. 360° flow dispersion with outer polypropylene screen to ensure long life.	ABS plastics are brittle and break. Molded slots vary in size. Schedule 80 laterals are far more durable while machined openings provide better flow control. 360° lateral flow is more efficient.
Filter Backwash:	
Air enhanced with integral air channels in filter header. Highly efficient pulse collapse backwash.	Save energy, chemicals, and maintenance time. Air enhanced backwash cleans faster and more effectively and provides better bed expansion. Highly efficient pulse collapse backwash cleans better with far less water consumption.
Filter Media:	
Standard .45 - .55 quartzite filter media	Quartzite filter media is readily available in standard sizes. No special media required. Media replacement is not required over the life of the filter (25+ years)
Filter Warranty:	
25-years structural, 15-years on filter. No limitations	Few pressure filtration systems offer warranties beyond a few years, and the typical life expectancy of a pressure filter system is typically less than 10-years.

The preceding information was gathered from standard manufacturer's specifications, technical data, and field observations. This material is believed to be current and accurate. MicroFlo™ is a registered trademark of Natare Corporation.

Do the calculations and see how MicroFlo vacuum sand filters can save construction and installation costs while providing economical GREEN operation. Here are a few of the more important cost savings.

Design and Construction Savings	Amount saved with Micro-Flo vacuum sand filtration
MicroFlo vacuum sand filtration can reduce the building or floor space devoted to filtration and mechanical systems by as much as 90%. With typical construction costs in excess of $100.00 per square foot, savings add up quickly. *Save square footage in design and construction. Typical savings with MicroFlo vacuum sand over antiquated pressure filtration can be 500-ft^2 of building space or more.*	($50,000)
MicroFlo vacuum sand filtration can reduce backwash disposal by as much as 80%, which can significantly reduce the cost of drains, sumps, and waste water handling systems. *Save money with smaller drains, sumps, and transfer pumps. Eliminate lift stations and water disposal infrastructure, lessen environment impact.*	($20,000 to over $100,000)
MicroFlo vacuum sand filtration can reduce construction time, errors, and scheduling issues. *Expect faster, error free construction and reduced scheduling issues, all with limited man-power on site.*	(Tens to hundreds of thousands)
Operational and Life Cycle Savings	**Amount saved with Micro-Flo vacuum sand filtration**
Natare MicroFlo vacuum sand filters will reduce water consumption by as much as 80% through carefully designed hydraulics and "air boost" backwash. This means that thousands of cubic meters of water are no longer lost during each backwash. The cost to purchase, treat, and filter makeup water is substantially reduced. *Save water, heat, and chemicals, and eliminate water disposal costs.*	(Tens to hundreds of thousands)
The parts for Natare MicroFlo vacuum sand filters require no field service. Automatic, failsafe operation. Long life cycle. *Save staff time for maintenance, pool operation interruptions, premature equipment failure*	(Tens to hundreds of thousands)
Natare MicroFlo vacuum sand filters remove particles one half (½) the size of particles removed by typical pressure filters. This means cleaner, clearer, and more satisfactory water quality. MicroFlo vacuum sand filters do not require coagulants, flocculants, or other expensive filter aids to produce excellent water quality. *Save on chemicals while providing better conditions in the pool area. Safer pools through increased clarity*	(Tens to hundreds of thousands)

These are just a few of the economic and environment benefits of MicroFlo vacuum sand filtration, and there is no more economical, efficient, and cost effective filtration system, period.

MicroFlo Vacuum Sand Filters… the last filter you will ever buy.
Can we build one for you?

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