

Defender® Regenerative Media Filters: The Proven Choice for Superior Water Quality



NEPTUNE BENSON

Established in 1956, Neptune Benson has proudly served the commercial aquatics industry for over six decades. Our Defender® line of regenerative media filters has become synonymous with the term “RMF” in the industry. With over 20,000 installations in 45 countries, we have the filtration and disinfection experience to help meet your water quality needs, while keeping sustainability and safety of your guests top of mind.

REGENERATIVE MEDIA FILTRATION

Sand and regenerative media filters both operate on the principle of mechanical filtration. Sand filters trap particles in water throughout the depth of their bed. When the filter becomes dirty, it is cleaned by backwashing, a process that sends considerable amounts of water to drain. RMFs trap particles on the surface of flexible tubes coated with perlite media. When the perlite becomes loaded, RMFs regenerate by bumping, a process in which no water is lost. In addition to providing superior 1 vs 20-30 micron particulate removal, RMFs significantly reduce the amount of water sent down the drain.

BENEFITS

- Superior Water Clarity
- 90% Water Savings
- 75% Space Savings
- 50% Energy Savings
- 30% Chemical Savings

REGENERATIVE MEDIA FILTERS

Simply put regenerative media filters are nothing like traditional sand filters. Neptune Benson pioneered development of RMF technology to provide aquatics venues with the clearest, cleanest and safest water possible!



Better Water Filtration

REMOVES PARTICLES DOWN TO 1 MICRON

Defender® filters produce sparkling, crystal clear water by removing particles down to 1 micron; 20–30 times finer than typical sand filters. The difference in water clarity is like night and day. In addition, the dramatic reduction in turbidity improves transmission of UV light, which improves disinfection performance as well.

UP TO 90% WATER SAVINGS

Nobody likes backwashing. With Defender filters you don't have to! Defender filters automatically “bump”—regenerating media for a fresh start without wasting water to drain.

- Reduces footprint and operating weight
- Eliminates backwash holding tank
- Requires smaller waste line to sewer
- Addresses backwash flow rate restrictions

UP TO 50% IN ENERGY, FUEL AND CHEMICAL SAVINGS

Eliminating backwashing translates into significant operational savings. Consider the money that can be saved by not re-heating and chemically re-treating all of the water sent down the drain. Defender filters also operate at lower head pressures, reducing power demand and electrical costs.

UP TO 75% SPACE AND CONSTRUCTION SAVINGS

Running out of space in your mechanical room? The footprint of Defender filters can be up to 75% smaller than equivalently sized sand filters, saving both space and construction costs.

COST SAVINGS ANALYSIS

In addition to superior water quality, Defender filters reduce water, energy and chemical consumption, which translates into significant bottom line savings. Some facilities have realized an ROI of less than one year. Our team of experienced aquatics experts are waiting to help quantify savings for your facility.

EXAMPLE SAVINGS ANALYSIS

Water Impact	Sand	Defender
Backwash Volume	1,483,560 gal 5,616 m ³	88,938 gal* 337 m ³ *
Potable Water (Make-up) Fees**	\$5,192	\$311
Discharge Fees**	\$5,192	\$311
Energy & Fuel Impact		
Pump Power Consumption (kW)	216,569	170,170
Pump Power Cost**	\$13,308	\$10,456
Heating Requirements (Therms)	4,449	489
Heating Costs**	\$4,004	\$240
Chemical Impact		
Chemical Costs**	\$4,451	\$267
Total Costs	\$32,147	\$11,585

* Includes 5% of the sand filter backwash volume to account for makeup water
 ** USD



SYSTEM CONTROLLER

RMF operations are controlled through a fully redesigned high resolution LCD control panel. Crisp real-time graphics depicting system status, user-friendly on-screen menus and touch-screen navigation make operation simple and intuitive. Remote monitoring capabilities allow you to access system data from outside of the mechanical room.



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