



efficpool

Regenerative filtering system

SUSTAINABILITY AND SAVING

**THE MOST
EFFICIENT REGENERATIVE
FILTRATION SYSTEM
FOR POOLS AND WATER FACILITIES**



A sustainable and energy efficiency system for improved water quality and management of collective use pools

efficpool is a special perlite regenerative filtration system which is characterized by its **capacity to filter particles up to 1 micron without the need for backwashing**, offering an exceptional water quality together with important savings in the consumption of water, energy and chemicals and installation space.

efficpool is a product aligned to the 4.0 industry, offering the possibility of **monitoring the installation, smart control and remote access**, thus providing maximum performance in terms of efficiency and sustainability in the pool filtration/purification system.

Regenerative filtration:

- Captures particles up to 1µm
- Captures 99.9% of protozoa including cryptosporidium
- Reduction in chloramines
- Increase in water transparency
- 90% reduction in water consumption
- 50% less energy consumed
- 75% less spaced required
- 30% less chemicals
- Reduction in filter maintenance time
- No flocculant required (or accepted)

Monitoring, control and remote access:

- Integration of devices
- Installation monitoring
- Process control and automation
- Optimization of filtration and treatment
- Remote access to the installation
- Web app for users
- Mobile app for users



Regenerative filtration of particles up to 1µm

efficpool has been designed for the sector of pools intended for collective use, whether a small spa, an Olympic-size swimming pool or a water park. The main feature of the system is in the filtration of the pool water, which is carried out through a regenerative filtration system that uses special perlite as the filtering medium.

This filtration medium is a harmless and abundant volcanic mineral, which has been treated at a temperature above 800C° and expanded to 10 times its original size, with the capacity to filter particles up to 1 micron, which is 20-30 times superior to traditional silex and glass filtration systems.

This results in water of extraordinary quality, exceptional transparency and much healthier, generating more comfort together with associated saving in pool water filtration and disinfection.

Main advantages:

- Captures particles up to 1µm
- Captures cryptosporidium
- Captures 99.9% of protozoa
- Reduction in chloramines
- Increase in water transparency
- Eliminates the generation of biofilm
- Better operation of UV disinfection
- Reduction in consumption of chemicals



Efficiency, sustainability and rapid return

Up to 90% SAVING IN WATER CONSUMPTION

The **efficpool** filtration system is characterized for the absence of the need for filter backwashing, significantly reducing the water consumption associated to the pool filtration. This is thanks to the regeneration capacity and useful life of the filtration medium, where the system is capable of managing the renovation of the pool water automatically. This results in more convenience, a reduction in filter maintenance and important saving in the water consumption and bill.

Up to 30% SAVING IN CHEMICALS

The **efficpool** filtration systems offer a saving in the consumption of pool water disinfection and stabilization products. This is thanks to the high filtration capacity compared to traditional filtration systems, which offers water of extraordinary quality with reduced chemical consumption. The reduction in water consumption for backwashing also represents an important saving in the disinfection and stabilization of the pool regeneration water.

Up to 50% SAVING IN ENERGY CONSUMPTION

The **efficpool** filtration system offers an important saving in the energy required for pool filtration and heating. The filters operating permits the automatic optimization and management of filtration speeds, thus optimizing filtration and the filtration load until the end of the filtration medium's useful life. In heated pools, the reduction in renewed water also offers an important saving in the heating of new pool water, resulting in an associated saving in energy consumption.

Up to 75% REDUCTION IN INSTALLATION SPACE

One of the main advantages of the **efficpool** filtration system is the reduction in the associated space in the installation of equipment. Thanks to the high filtration area capacity, reducing volume and space compared to traditional filtration systems. This makes the **efficpool** filtration system ideal in the case of renewing installations, where in most cases we encounter limitations in terms of installation access and space.

Rapid return on investment

efficpool offers a high return on investment thanks to the savings generated in running the installation, which may vary depending on the type of installations and the pool dimensions.

The table on page 9 shows a comparison in the associated savings with respect to silex and glass systems for a heated installation of 25 x 12.5 m with a filtration flow rate of 150 m³/h.

Ask for a study!



Operation and maintenance

Regenerative filtration

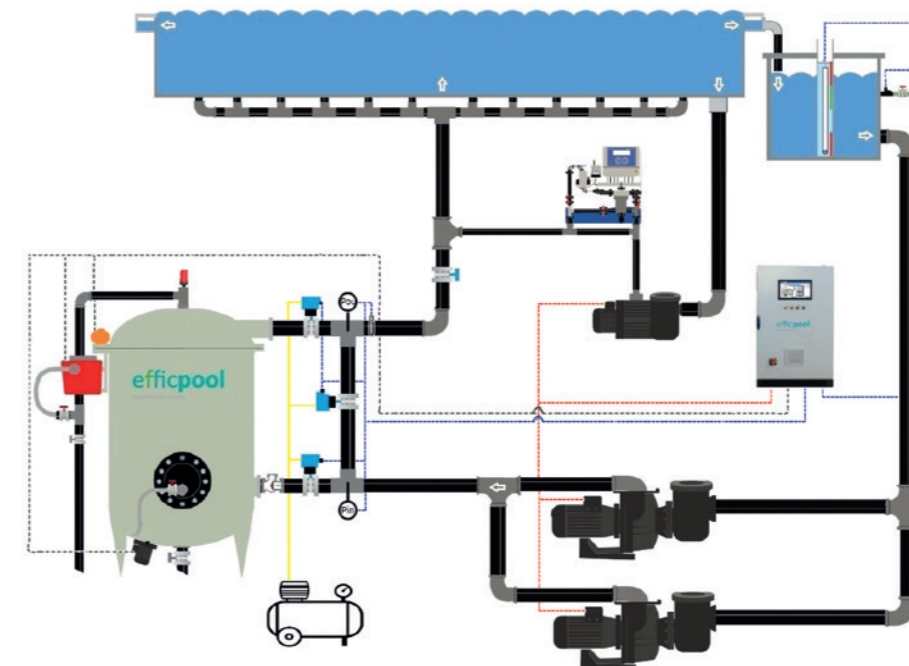
Perlite regenerative filtration systems have an absorption capacity 20-30 times higher than traditional systems. This is thanks to the advanced filtration technology using membrane collectors in which the filtration medium adheres and regenerates automatically. By design, the filtration medium has an average autonomy of up to 4 weeks, depending on the bathing load and the characteristics of the installation. No action is required on the installation during this period, significantly reducing the time associated to filter maintenance.

Operations

The **efficpool** filtration system is characterized by its autonomy in pool water filtration, executing the filtration and regeneration cycles automatically. The system itself offers the possibility of managing water renewal according to the quality of the water in the pool, as well as adjusting and optimizing filtration speeds autonomously, therefore optimizing the filtration load and useful life of the filtration medium. In this way, the **efficpool** system provides control at all times over the pool cleaning system, with no need for any other action or maintenance until the filtration medium is saturated.

Maintenance

Maintenance tasks in regenerative filtration systems are mainly associated to the renewal of the filtration medium. Once the medium has become saturated, the system issues a warning signal, at which time the medium is replaced. This can be done by a single operator and takes a few minutes. During this time, emptying, rinsing and reloading with the new filtration medium is carried out through a vacuum transfer system. Once this task had been completed, the installation can be brought into use again, and it will not be necessary to repeat this procedure until the filtration medium becomes saturated again.



Monitoring, control and remote access



Centralization and monitoring

The **efficpool PRO** system enables all the pool purification system parameters to be centralised in order to report the facility's efficiency and status in real time. The system enables **all the facility information to be easily and efficiently managed**, whether filter status, hydraulics, water quality, consumption or any other information.

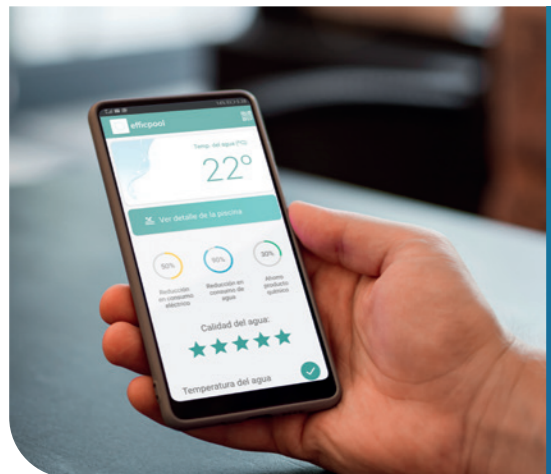
The system can be accessed from the device itself or through an internet connection, to check the data in real time through tables, graphs, history trends and alarms, among many other options.



Control and optimization

The **efficpool PRO VFD** system provides **smart facility control to optimise all pool areas**, as well as to automatically adjust and operate all connected devices. The system enables the filtration speed to be adapted through variable frequency drives following a schedule or based on the real-time pool activity, that is, the system can automatically detect the number of swimmers and increase or decrease the filtration flow rate. All this is done automatically to ensure the best quality depending on the activity in each facility.

The **efficpool PRO** can be programmed to connect other devices or parameters, depending on the requirements of each facility.



Remote access and user app

The **efficpool PRO** system can be complemented at any time with the **efficpool app**, turning the PRO system into the PRO-i system. With the PRO-i system, the facility's manager or director can **access the efficpool system information through the efficpool web platform**. Several user profiles can be created with **different access to system information, graphs, history records, etc.**

In the PRO-i system, the facility manager or director can **activate the efficpool swimmer app**, where authorised users can check the pool status and any other information the facility manager may want to provide, whether water quality or announcements (pool closed for maintenance, holidays, etc.)

efficpool product line

efficpool has been designed for maximum performance and efficiency in pools intended for collective use, offering a wide range of models, nominal sizes and materials, available at different levels of monitoring, control and remote access.

efficpool BASIC*

Filtration system with **basic control panel** for the management and operation of the filtration system. The filtration equipment has all elements necessary for installation, operation and maintenance. It does not include monitoring, control and remote access to the installation.



efficpool PRO*

Filtration system with **monitored control panel** for smart management of all pool areas and devices. It reports the system status and efficiency in real time. It includes a monitoring panel, smart facility control, recirculated and fresh water control. Pressure sensor.



efficpool PRO VFD*

Filtration system with monitored control panel and remote access to the facility. This option includes all the PRO version systems and **adds the variable frequency drives (VFD)** for the filtration pumps and pump programming to regulate pump velocity based on real-time pool occupancy.



*Design tailored to the installation and the customer's requirements.

Technical data

MODELS FILTERS HI - Stainless Steel AISI 316L				
	Product Code	Filtration Area m ²	Filtration Flow 1,3-4,8 m ³ /h/m ²	Perlite Load kg
HI450	WPP-HI-450	7,3	9,5-35	2,5
HI600	WPP-HI-600	15	19,5-72	5
HI800	WPP-HI-800	25	32-120	10
HI800L	WPP-HI-800L	33	43-158	13
HI1000	WPP-HI-1000	42	55-202	17
HI1000L	WPP-HI-1000L	54	70-259	22
HI1200	WPP-HI-1200	59	77-283	24
HI1200L	WPP-HI-1200L	77	100-370	31
HI1400	WPP-HI-1400	83	108-398	33
HI1400L	WPP-HI-1400L	108	140-518	43
HI1600	WPP-HI-1600	107	139-514	43
HI1600L	WPP-HI-1600L	139	181-667	55

MODELS FILTERS HPRFV - Polyester reinforced with glass fiber				
	Product Code	Filtration Area m ²	Filtration Flow 1,3-4,8 m ³ /h/m ²	Perlite Load kg
HPRFV600	WPP-HPRFV-600	11	20-53	5
HPRFV600L	WPP-HPRFV-600L	15	20-72	6
HPRFV900L	WPP-HPRFV-900L	41	53-197	16
HPRFV1200	WPP-HPRFV-1200	55	72-264	22
HPRFV1200L	WPP-HPRFV-1200L	70	91-336	28
HPRFV1400	WPP-HPRFV-1400	80	104-384	32
HPRFV1400L	WPP-HPRFV-1400L	105	136-504	42
HPRFV1700	WPP-HPRFV-1700	120	156-576	48
HPRFV1700L	WPP-HPRFV-1700L	150	195-720	60

efficpool reserves the right to modify any data or characteristics without prior notice.

efficpool references in facilities




**PORTAVENTURA CARIBE
AQUATIC PARK - 2022**

Various facilities

1000m³

1 filter efficpool HI-1050L 250m³/h




POOL ALCOVER - 2022

Swimming pool

Pool size 25x12,5 500m³

1 filter efficpool PI-850 150m³/h

Activity pool

Pool size 12x6 90m³

1 filter efficpool PI-500 48m³/h




**POOL SERRADELLS
ANDORRA - 2018**

Swimming pool

Pool size 50x25m

3 filters efficpool EFP 185m³/h




**CLUB NATACIÓ
TERRASSA - 2021**

Activity pool with hydromassage (SPA)

Spa size 244 m³

1 filter efficpool PI 125m³/h




**CAMPING AUBE
DELTEBRE - 2020**

Playful pool

Pool size 600m³

1 filter efficpool PSV 150m³/h




**BASSA DEL PLÀ
FORÉS - 2021**

Ornamental lake with fish and ducks

Lake size 1.500m³

1 filter efficpool EFP 80m³/h

Frequently asked questions

Why efficpool?

efficpool offers a high-quality tested product. It is built with materials selected for the types of water used in swimming pools and aquatic facilities.

efficpool filters offer you the peace of mind of being in good hands.

Is the efficpool system compatible with older installations?

Yes, the **efficpool** filters are fully compatible with all types of pools. In fact, **efficpool** is the most suitable system for swimming pool renovations. Its small size allows it to be accessed through the existing doors and it occupies 75% less space than conventional filters.

Can the efficpool system manage the water treatment system?

Yes, **efficpool** PRO can monitor all the water treatment equipment. In addition, it includes as standard electronic flow meters for supply and recirculation and frequency inverters for the filtration pumps, and it manages the chemical treatment pump.

How is the treatment performed?

The **efficpool** PRO system is totally autonomous. It manages the filter, adapts the filtration flow to the occupation of the pool in real time, optimizes electricity consumption and adjusts the quality of the filtering.

Can I convert a conventional filtration system into a regenerative one?

Yes, it is perfectly feasible. Many old facilities use regenerative filtration to renovate their pools, making them sustainable and efficient.

Why regenerative filtration?

Regenerative filtration offers 100% use of the filter medium without the need for backwashing.

Regeneration takes place automatically inside the filter every 4 hours without the need for intervention or supervision.

The time invested by the staff of the facility in maintaining the filters is therefore considerably reduced.

What savings does regenerative filtration involve?

It is not necessary to backwash the filter medium. This represents a great saving in new water, in not having to deal with the water that would be used in the backwash and in not having to heat the new water in heated pools. It also offers savings of the product for chemical treatment of the new water supplied.

Why are efficpool filters the most sustainable?

efficpool filters are manufactured with stainless steel and other materials that can be fully recycled at the end of their useful life.

efficpool filters considerably reduce water and energy consumption. They occupy a minimum space in the filter room.

How is the efficpool filter regenerated?

The regeneration is carried out by means of small vibrations that relocate the perlite so that it can be used 100%.

This process is fully automatic and lasts between 5 and 10 minutes. It is carried out every 4 hours of continuous filtration.

What happens during the regeneration?

The **efficpool** PRO system allows the pool water to continue to recirculate during the regeneration without affecting users, and it maintains the disinfection active.

Why must perlite be regenerated?

Like most filter media, perlite gets dirty, so to extend its useful life, the filter performs automatic regeneration.

When the regeneration has just been carried out, the head loss decreases again, lengthening the useful life of the perlite until the saturation reaches 100%. At this time the perlite must be replaced.

How often should the perlite be replaced?

Installations that are used little or have a low load of organic matter to be filtered can go for several months without replacing the perlite.

However, facilities such as spas with a high number of bathers saturate the perlite in weeks. The average frequency of perlite replacement is 4 weeks. This seems like a very short time compared to the average of 6 years for flint and 12 years for glass (approx. twice as long as flint).

However, the cost of perlite, added to the cost of the replacement process, means that replacement is cheaper even if it is done every 4 weeks.

How long does it take to replace the perlite?

Performing a change of perlite in an **efficpool** filter is very simple and requires no tools. **efficpool** filters have everything necessary for the process to be carried out quickly and safely. The process usually takes between 10 and 20 minutes, depending on the capacity of the filter.

How much perlite is needed for a regenerative filter?

Perlite filters are very efficient. For a filtration of 125 m³/h in a conventional filter, a 2000 mm diameter filter could be used with a capacity of 4800 kg for flint or 4200 kg for glass, whereas in a regenerative perlite filter only 15 kg of perlite would be needed.

Is handling perlite dangerous?

The expanded perlite used by **efficpool** filters preserves the original qualities of the natural mineral. It is chemically neutral, inert to atmospheric agents and the passage of time, non-combustible, non-toxic, insoluble and non-hygroscopic. However, if the place where it is handled is not ventilated, wearing a mask is recommended.

Are there any benefits in replacing perlite monthly?

Filters are the part of the pool that accumulate the most organic matter, so even if they are backwashed, dirt and biofilm can accumulate inside them.

If the filter medium is replaced every 4 weeks, in this short space of time no biofilm can be generated and no dirt can accumulate that can be transmitted to the filtered water. The combined chlorine of chlorine-treated facilities is therefore reduced.

What should be done with the saturated perlite?

Filters are optionally available to retain the perlite, so that it can be removed periodically (generally annually). Perlite is an inert mineral of volcanic origin. As it is a very versatile, it can be processed with minimal environmental impact. It can be treated through a WWTP just like flint.

Is it difficult to obtain perlite?

Perlite is an abundant material on our planet. It is a mineral that occurs in nature, and it has the unusual property of expanding greatly when subjected to a temperature above 800°C. Perlite is used in many applications, and there are manufacturers and distributors in all countries.

We hope that this FAQ has helped you to answer your queries. If not, please let us know so that an **efficpool** technician can resolve them.

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