UFPOOL

Swimming pool SOLUTION for FILTER WASHING WATER RECYCLING

Important company in the public swimming pool market for more than 20 years, SYCLOPE Electronique propose you an efficient and easy to use equipment adapted to environmental, technical and normative public swimming pool needs.

The **UFPOOL** range, manufactured in France, has been developed in accordance with Health Ministry recommendations *(reference DGS/EA 4 N°273)*.
This simple process allows the optimization of operating costs of public swimming pools. It generates substantial water savings while having a very low cost of operation.

The **UFPOOL** is fully automated: level, backwash phases, dirty and clean water tank management... available in 20, 40 and 80 m³/day.

The raw wastewater is directly discharged to wastewater.

The **UFPOOL** has a first settling step, than a step of membrane filtration and finally a step of oxidation by sodium hypochlorite injection.

Advantages:

- Environmental and economical solution for water treatment
- Product developed and created for swiming pools
- Rapid amortization
- Low operating cost
- Solution combining membrane filtration and injection of sodium hypochlorite
- "Made in France"
- Turnkey equiment: ready to be used
- Know-how and services by SYCLOPE *(free feasibility study)*

Treatment of filter washing water

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Filtration and recycling of this water

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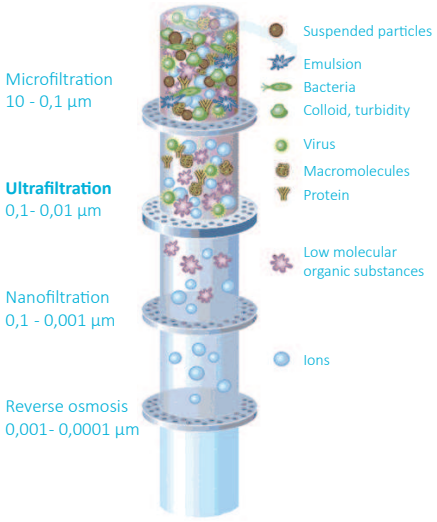
Reuse for filter cleaning phases

WATER SAVING - PROFITABILITY - QUALITY

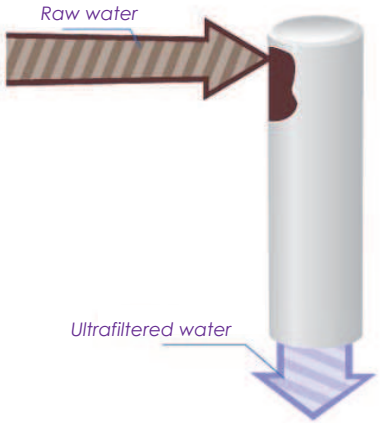
UFPOOL

A clean treatment

Membrane filtration was developed in the 70s for the treatment of liquids especially in the dairy industry. With its strong development for the production of drinking water, the filtration on hollow fiber membrane is now recognized as a clean, efficient and economical technique for water purification of domestic and industrial water treatment.
It often replaces more conventional process and also the microfiltration because of its abilities to not only eliminate small but also pathogenic particles including microorganisms, viruses, pyrogens and some dissolved organic species.
Moreover, the membrane technology does not require the addition of chemical products to overcome turbidity variations that may happen according to the seasons.
So, the membrane filtration is a physical process that generate no by-product and can treat all type of water quality with the same action of clarification - elimination of biocontaminants.



Optimal filtration: Double skin hollow fiber membrane



The use of this method allows to provide a filtration area about twice to the internal area of a membrane of a same size.

Advantages:

- External / Internal filtration process is more effective for the elimination of agglomerated particles,
- Efficient and sage systems without clogging fiber,
- Compact and economical modules: 42 m² filtration area.

Cutoff to 100 000 da (Dalton)
The cutoff is a molecular mass. This means that all molecules whose molecular weight is superior to 100 000 da will be retained at 100%.

Modules specifications

Advantages:

- Simplicity of the method thanks to modules having input and output which may operate at low pressure with raw water and air injection,
- Efficient and economical water/air backwashing (water saving),
- Economical installation because modules have only 2 connections against 3 for internal/external tangential filtration,
- Easy maintenance thanks to a visual detection of non-integrity, easy and fast leak detection and repair on one side of the fiber.

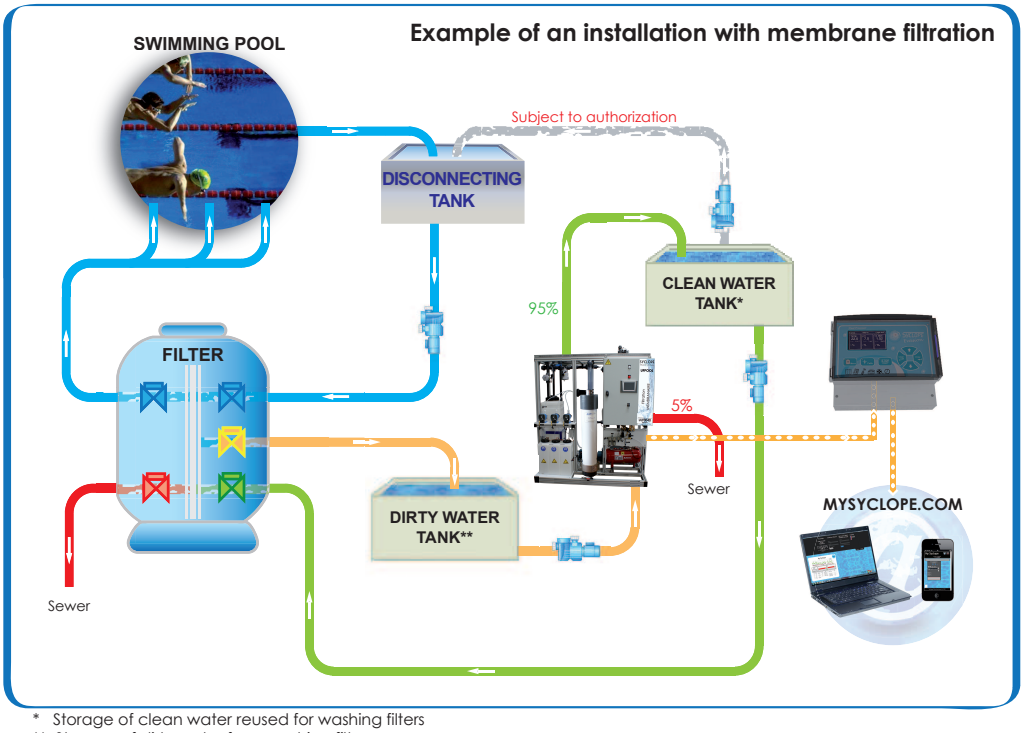
Module made up of bundles

Bubbler for cleaning

Membrane filtration by SYCLOPE

UFPOOL technical assets

- Low operating cost,
- Automatic chlorination of ultrafiltered water in output skid and upstream tank storage of clean water,
- Optimal filtration quality and membrane life: important filter areas for a slow filtration (filtration area of 42m² for a flow of 20m³/day),
- Works with all types of filter: sand, hydro-anthracite, glass...
- No necessary prefiltration system,
- Ultrafiltered water quality independent of the installation settings,
- Water volume normally used for backwashes between 5 and 9% of the product volume, that means a yield between 95 and 91%,
- Turnkey equipment (except engineering),
- Free feasability study done by SYCLOPE team,
- Controller with a clear and accurate display.



* Storage of clean water reused for washing filters
** Storage of dirty water from washing filters

Example of saving water for UFPOOL de 20 m³/day:

Swimming pool working: 350 days a year

350 operating days
x 20 m³ of treated water per day
= 7 000 m³ of saving water

In France, average cost per m³ of treated and heated water
= 5€ / m³

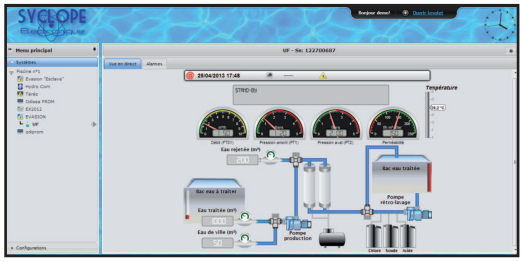
Savings thanks to UFPOOL of 7 000 x 5 = 35 000 €

Communication

To transmit data to a controller, UFPOOL equipment include communication port using MODBUS procotol.

Transmitted data:

- Input/Output pressure and differential
- Flow
- Temperature
- Membrane permeability
- State equipment



Through a controller EVASION, you can access to the website www.mysyclope.com, in order to follow in real time and remotely from your computer or Smartphone, all the UFPOOL data.

Technical specifications:

Range	20 m³/day	40 m³/day	80 m³/day
Membrane			
Material	Polysulfone	Polysulfone	Polysulfone
Porosity	0,01 micron	0,01 micron	0,01 micron
Configuration	Hollow fiber - filtration from outside to inside		
Module			
Type	UF 80S2 (ACS approved)	UF 80S2 (ACS approved)	UF 80S2 (ACS approved)
Length	950 mm	950 mm	950 mm
Diameter	200,0 mm	200,0 mm	200,0 mm
Filtering surface	42 m²	84 m²	168 m²
Number of module	1 installed online	2 installed online	4 installed online
System			
Type of operation	Frontal	Frontal	Frontal
Transmembrane pressure	0,5 -1,5 bar	0,5 -1,5 bar	0,5 -1,5 bar
Backwashing			
Type	Reverse flow using treated water (2,0 bars) and air		
Frequency	20 - 180 minutes	20 - 180 minutes	20 - 180 minutes
Duration	30 - 60 seconds	30 - 60 seconds	30 - 60 seconds
Volume	from 5 to 10 %	from 5 to 10 %	from 5 to 10 %
General			
Maximum pressure	3,0 bars	3,0 bars	3,0 bars
Maximum Ptm	2,5 bars	2,5 bars	2,5 bars
Temperature	0 - 35 °C	0 - 35 °C	0 - 35 °C
pH	from 2 to 12	from 2 to 12	from 2 to 12
Centrifugal pump			
Gavage and backwashing			
Material	Stainless steel 316 L	Stainless steel 316 L	Stainless steel316 L
Réservoirs			
Raw water tank integrated			
Permeate tank	500 l	1000 l	2000 l
Electricity			
Power supply	230-400 VAC - 50 Hz - 3P+T.	230-400 VAC - 50 Hz - 3P+T.	230-400 VAC - 50 Hz - 3P+T.
Installed power	3,5 kW	4,25kW	4,5 kW
Connections			
Raw water	DN32	DN32	DN40
Treated water	DN25	DN25	DN25
Rejection	DN40	DN40	DN40
NEP alimentation	DN25	DN25	DN25
Air valve	4x6 mm	4x6 mm	4x6 mm
Ventilation module	4x6 mm	4x6 mm	4x6 mm
Dimension and Weight			
Skid without tank	1550 x 876 x 2050 mm (L x w x h)	1550 x 876 x 2050 mm (L x w x h)	1800 x 876 x 2050 mm (L x w x h)
Storage tank	500 l	1000 l	2000 l
Weight without tank	220 kg	240 kg	280 kg

In accordance with Health Ministry recommendations *(reference DGS/EA 4 N°273)*.

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