

# PURASAND



**GRAVITY NON-STOP FILTRATION WITH  
STABLE TREATED WATER QUALITY**

Purasand is a sand filter specially designed and patented by aqualia industrial for the treatment and purification of different types of water. Purasand works continuously without needing to be stopped for cleaning as the sand washes itself during use, without interruption. The depth of the filtering medium guarantees a uniform quality of all the water produced, with the characteristics highly independent of those of the intake water.

### ADVANTAGES

#### Compared with pressure sand filters:

- Less valves and fittings.
- Continuous operation. The equipment can therefore on a single filter.
- Higher quality of filtered water by keeping the sand constantly clean.
- Constant head loss while the filter is in use.
- 20% less energy consumed.
- 30% savings in reagents compared with conventional decantation purification treatments, by not needing relatively large flocs.
- Biofiltration: possibility of nitrification and removal of organic material through the use of an internal air distributor.
- Requires less space, by relying on an internal sand rinsing system.
- Drastically lower initial investment and maintenance.
- Optimised sand rinsing with less wasted water.

#### Compared with continuous sand filters:

- Lower water distribution optimisation with uniform water distribution and better use of the functional surface of the sand bed.
- Built-in measurement of the wastewater flow.
- Drastically lower initial investment and maintenance.

### APLICACIONES

#### Municipal water

- Tertiary filtration.
- Phosphorus removal.
- Seaweed removal.
- Water purification.
- Nitrification.
- Denitrification.
- Filter rinse water.
- Removal of Giardia and Cryptosporidium.

#### Industrial water:

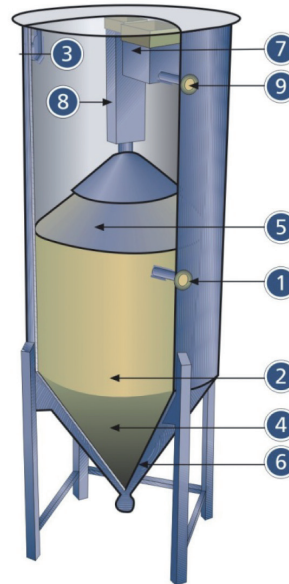
- Purification of waste or industrial water.
- Process water.
- Refrigeration cycles.
- Surface treatment of metals.
- Oil removal.
- Filter rinse water.
- Filtration prior to reverse osmosis.
- Bioremediation of contaminated soil.

### MATERIALS

aqualia industrial offers different options according to the application and water characteristics:

- Body in GRP and internals in Stainless Steel AISI304 or 316.
- Body in Stainless Steel AISI304 or 316 and internals in Stainless Steel AISI304 or 316.
- Body in concrete and internals in Stainless Steel AISI304 or 316.
- For other options, please, consult.

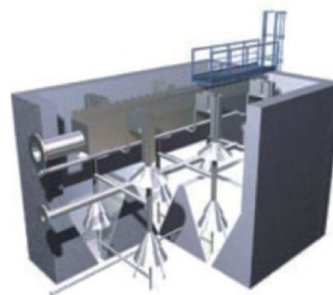
### OPERATION



The water to be treated enters through a radial tube (1), then passes through another in the centre of the filter, leading to a distributor situated inside the sand bed in the lower part of the filter (2). The water then flows upwards through the sand bed, depositing its impurities in the bed (4). Finally it leaves the filter through an outlet in the upper part of the filter (3). The sand is washed continuously, extracting the dirty sand (4) from the bottom of the filter and putting it back in clean at the top of the filtering bed (5). This process is carried out with an "air-lift" pump inside the filter (6), which has no moving parts and needs only compressed air, entering through a sand washer located next to the

filtering bed (8). The sand, water and impurities are pumped to the washer, which places the dirty sand in contact with the filtered water (7). The water draws out the impurities, producing dirty wastewater (9), while the clean sand falls back into the filter bed due to gravity.

### INSTALLATION IN CIVIL WORKS



For use in filtering large flow, we can provide modules in concrete. The number of modules is calculated and adapted to suit each individual case, depending on the requirements for its use.

MODEL	Average Flow (m³/h)	Filtration area (m²)	Diameter (mm)	Sand volume (m³) (1)	Sand volume (m³) (2)	Filter High (mm) (1)	Filter High (mm) (2)	Air flow m³/h 4 bar	Package Dry Weight (kg) (3)	Package Dry Weight (kg) (4)	Package Operating Weight (kg) (4)	Package Operating Weight (kg) (4)
PR-10	5,0-10,0	0,8	1.000	1,39	1,81	3.970	4.470	1,5	450	650	4.600	4.800
PR-14	10,0-22,0	1,54	1.400	2,89	3,67	4.410	4.910	2,0	750	850	9.400	9.500
PR-20	22,0-45,0	3,14	2.000	6,44	8,01	5.280	5.780	5,5	1.200	1.500	18.300	18.500
PR-25	40,0-75,0	4,90	2.500	10,31	12,75	5.960	6.460	12,0	1.800	2.100	32.000	40.000
PR-30	75,0-100,0	7,00	3.000	15,84	19,24	6.730	7.230	15,0	2.000	2.500	47.500	48.000

(1) High Sand Bed = 1,5 m • (2) High Sand Bed = 2,0 m • (3) Body in GRP • (4) Body in Stainless Steel

Note.- The rejection flow for all models is 2-12%, according to the TSS inlet concentration.