

Drinking water from Surface water

Large range of containerized and skid mounted filtration systems notably for Pre-treatment, Surface Water Treatment and Potable Water Production in compliance with SANS 241 and WHO requirements.

Filtra-Pack

Flow rates from 5 to 100 m³/hr



How does it work ?

PROCESS

The process combines coagulation, flocculation, lamella clarification, sand filtration and disinfection using chlorination. Reduces suspended solids, turbidity and organics.

Packaged range is specifically designed to supply treated water to isolated communities or locations.



FEATURES & BENEFITS

- Pre-assembled and Factory Acceptance Tested (FAT) in workshop
- Short manufacture lead time
- Modular design; can be combined for larger capacities or specific treatment applications
- Treatment to SANS241 and WHO for Potable Water Production
- Ease of operation, fully automated
- Small footprint
- Quick installation and start up
- Cost effective, Proven Technology with several references in Africa



FEED WATER REQUIREMENTS

WATER TEMPERATURE	°C	5 - 30
FEED PRESSURE	bar	>1
TSS	mg/L	< 300
TOC*	ppm	Up to 10
TURBIDITY	NTU	< 600

* For specific design treatment requirements based on raw water quality, please contact your local VWT representative.



TECHNICAL PERFORMANCES

MODEL		Filtra-Pack 005	Filtra-Pack 010	Filtra-Pack 020	Filtra-Pack 030	Filtra-Pack 050	Filtra-Pack 080	Filtra-Pack 100
TREATED WATER FLOWRATE	m ³ /hr	5	10	20	30	50	80	100
TREATMENT CAPACITY BASED ON 22 HOURS PER DAY OPERATION	m ³ /day	110	220	440	660	1100	1760	2200
PERSON EQUIVALENT BASED ON 150 LITERS PER PERSON	PE	750	1500	3000	4400	7500	12000	15000
TREATED WATER DELIVERY PRESSURE (MAX)	Bar	1	1	1	1	1	1	1
INSTALLED POWER	kW	5	8	10	12	18	25	30
LAYOUT* (BASE UNIT)	Container/Skid	1 X 6mSTD	1 X 6mSTD	1 X 12mHC	1 X 12mHC + Skid	1 X 12mHC + Skid	1 X 6mSTD + Skid	1 X 6mSTD + Skid

* Layout configuration based on standard package only, Filtra-Pack layout to be confirmed based on model selection, see options. Design configurations up to 10 Mega Liters per day are possible; please contact your local VWT representative.

Case study:

Lepelle Northern Water Politsi, Limpopo - South Africa



Potable Water Municipal Market



KEY FIGURES

- Capacity: 5 Ml/day
- Population: 36 000 PE
- Contract award: 2015

DESIGN, SUPPLY & MANUFACTURE - POTABLE WATER TREATMENT PLANT

The objective of the client was to produce drinking water for Politsi's growing population (district of Limpopo, in South Africa).

Aim of the project

Double the capacity of the client's existing plant producing 5MLD of drinking water. Therefore supplying water to an additional 36 000 People Equivalent (PE).

Challenge

Work the existing site and adapt to the available footprint and space on site. If the Client had gone for a civil based plant, 4 to 5 times the footprint of the plant provided would have been necessary.

Water source

Dam water located 500m from the treatment plant. The dam will eventually feed gravitarily the plant but currently our plant is fed from the existing 5MLD plant.

The Solution

- Dosing station (containerised)
- Clarification system (skid mounted)
- Sand filtration system (skid mounted) - photo below

Additional Support

Training the operating staff.

Client Feedback

- Recurring client, overall very satisfied with the plant.
- Contract in constant evolution and improvement (additional installation, sludge drains, walkways, etc.)



Process water or Drinking water from Borehole/ Brackish water

Osmo-Pack

Reverse Osmosis (RO) systems produce high purity permeate water while removing up to 99% of dissolved inorganics, organics, colloids and solid particles.

Flow rates
from 6 to 168m³/hr



How does it work ?

PROCESS

As the feed water enters the semi-permeable membrane under pressure, the water molecules pass through, while the contaminants are held back and discharged through a reject stream. This is sometimes fed back into the feed water supply to be recycled, helping to save water.



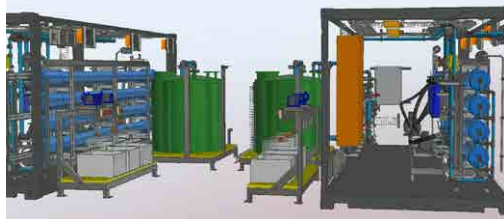
FEED WATER REQUIREMENTS

Feed Water should be free from organic materials, chlorine and suspended solids. A softened water supply is normally required. Feed water salinity 100 to 5000mg/L TDS.



FEATURES & BENEFITS

- Short lead-time: quick installation and start-up
- Robust: pre-filter for membrane protection, dry-run and high pressure protection, epoxy coated Carbon steel skid frame
- Cost-effective: lower CAPEX and OPEX
- Energy savings due to variable frequency drive (VFD)
- Proven and reliable technology with more than 20 references in Africa
- Fully automated and easy to operate: integrated PLC and HMI; no compressors required; separate dosing section



For specific design treatment requirements, membrane selection and process options based on client requirements; please contact your local VWT representative.



TECHNICAL PERFORMANCES & SYSTEM DETAILS

MODEL		OSMO-PACK 5	OSMO-PACK 7	OSMO-PACK 10	OSMO-PACK 15	OSMO-PACK 20	OSMO-PACK 25	OSMO-PACK 30	OSMO-PACK 40	OSMO-PACK 50	OSMO-PACK 80	OSMO-PACK 90	OSMO-PACK 120	OSMO-PACK 140
FEED* (MAX)	m ³ /hr	6	9	13	19	25	31	38	56	67	106	112	160	168
PERMEATE* (MAX)	m ³ /hr	5	7	10	15	20	25	30	46	55	87	92	131	138
RECOVERY	%	80	80	80	80	80	80	80	70-82	70-82	70-82	70-82	70-82	70-82
INSTALLED POWER	kW	7.5	11	11	15	18.5	22	22	30	37	37	55	110	110

* Flowrates and recovery are feed water quality dependant, please enquire with your local VWT representative

Case study:

Production of highly purified water from Borehole Pharmaceutical Client - Nairobi, Kenya



Process Water Pharmaceuticals

KEY FIGURES

- Capacity: 4 m³/h
- Contract award: August, 2016

PHARMACEUTICAL WATER PURIFICATION AND DISTRIBUTION SYSTEM

Aim of the project

Design, supply, manufacture, delivery, installation, commissioning, testing and upholding during the defects liability period of a new Purified Water distribution system, Nexus.

The plant was built to treat the groundwater from an onsite borehole to pharmaceutical purified water, in accordance with US FDA and European pharmaceutical standards.

Challenges

- Plant Room available: This had a huge influence on the plant design, and in particular the design of the Purified Water distribution skid.
- Raw Water Quality: In particular the high concentration of Silica (90 ppm) in the raw water that required the need for the Osmo-Pack as pretreatment.

The Solution

Due to limited space, the purified water distribution skid's optimised design was ideal for application. VWT was able to supply an efficient pre-treatment in the form of an Osmo-Pack to treat excessive quantities of silica in the feed water before the water went into the pharmaceutical production plant.

Reverse Osmosis systems produce high purity permeate water while removing up to 99% of dissolved inorganics, organics, colloids and solid particles.

The recovery rate of the VWT RO system is adjustable depending on the feed water quality.

