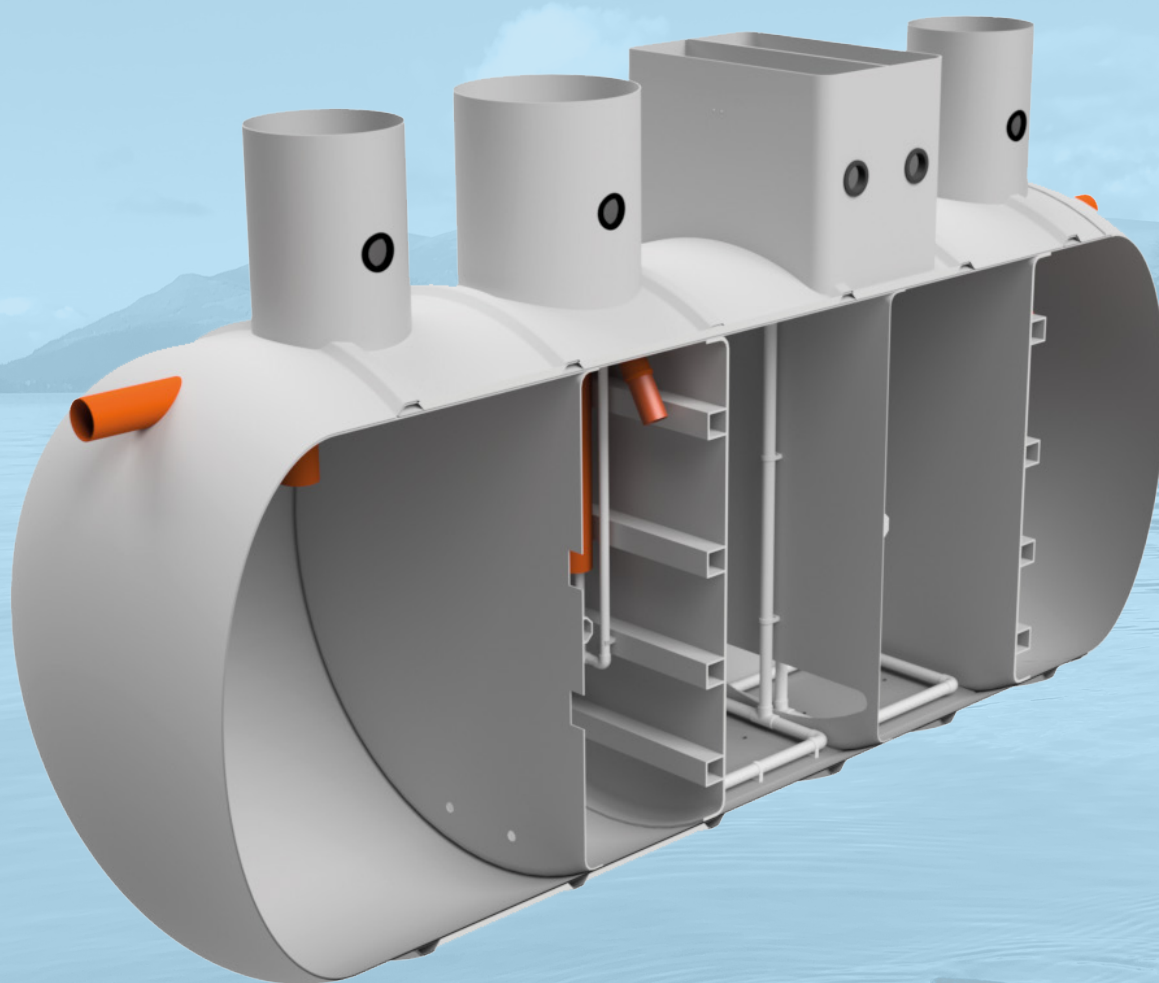


Energy efficient
wastewater treatment
plants

REWATEC[®]

Submerged Aerated Filter (SAF)



Highly efficient wastewater treatment

The Premier Tech range of Rewatec SAF sewage treatment plants, combine energy efficiency with an exceptionally high final effluent quality. Uniquely engineered to cater for a population range of 25 to 600 people equivalent (PE) (larger options are available in bespoke setups), the Rewatec SAF fully meets UK environmental discharge standards and is the perfect solution for both small and large scale projects where access to the main drainage system is unavailable, or if wastewater pre-treatment is required.

The Rewatec SAF range is designed, manufactured and tested in accordance with EN12566-3 for plants below 50PE, EN12255 for plants above 50PE and the British Water Code of Practice for Flows and Loads. It comprises of a primary settlement tank, a biozone-aeration chamber and a final settlement tank, with a range of customisable options in between to meet specific requirements. Flow through all the treatment stages occurs via gravity, integral airlifts or via pumps.

By using biological treatment within the SAF, strict effluent standards and consent from a range of on-site applications can be achieved. This includes a final effluent quality of 20mg/L BOD, 30 mg/L SS and up to 5 mg/L NH₄-N. It can also achieve up to 62% TN removal and up to 50% TP removal. For applications where additional nitrogen (TN) and/or phosphorus (TP) removal is required, a Rewatec Denitrifying Submerged Aerated Filter (DSAF) can be provided. Dosing options are also available to improve both TN and TP removal.

ENERGY OPTIMISATION



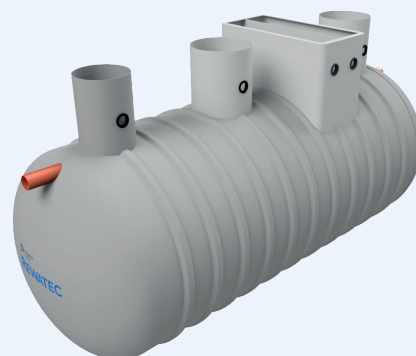
An optional probe can be installed to regulate the air supply in the biozone chamber based upon the incoming wastewater loading. If the occupancy is reduced, the probe will detect the oxygen surplus and the blower will automatically adjust to reduce the air supply.

This provides major benefits in terms of maximising energy efficiency, reducing cost and improving the overall carbon footprint of the plant.

Depending on the site's specific effluent requirements and population requirements, Premier Tech can offer*:

- Single tanks: 25 – 300 PE
- Two tank modular systems: 350 – 500 PE
- Three tank modular systems: 600 PE
- Multi-stream tanks: bespoke designs to meet particular application parameters and larger PE requirements

*all based on N20 effluent discharge consent.



How does the Rewatec SAF work?

Step 1 – In typical installations, wastewater first flows into the primary settlement tank. The purpose of this tank is simple; to balance the flow when subjected to variation and to separate solids from liquids (and store such matter until it is removed via periodic desludging).

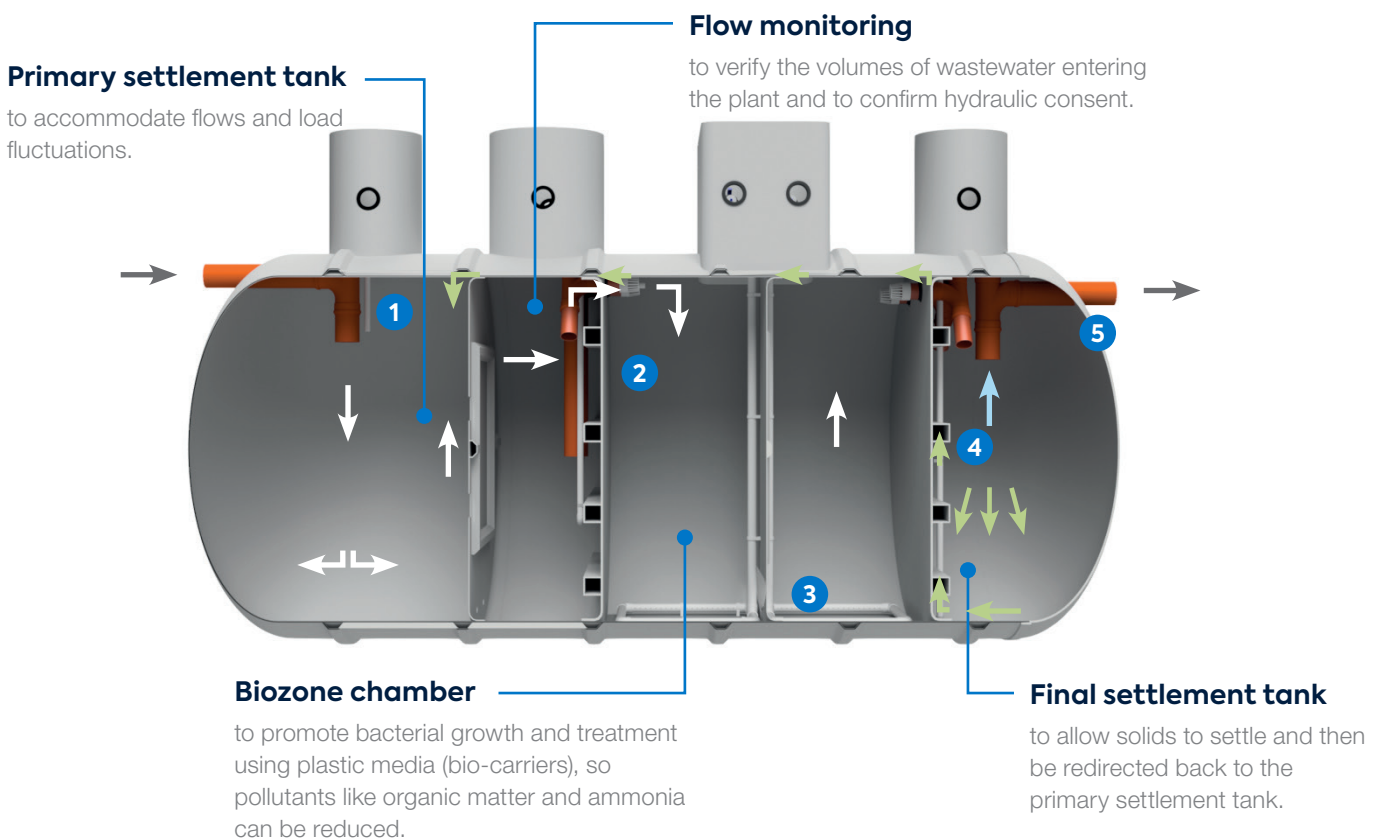
Step 2 – Wastewater flow passes from the primary settlement tank to the biozone chamber. The biozone is designed with two course bubble aeration arrangements to prevent blockages from floating biomass and to increase the efficiency of oxygen being supplied to the chamber. Above each of these legs, plastic bio-media - each shaped with a large surface area to encourage biomass growth, treats the wastewater and minimises the size of the reactor.

Step 3 – A blower, housed in an external kiosk, delivers air to the bottom of the biozone to provide oxygen for the biomass, further stimulating growth to support the oxidation process. The air stream promotes the efficient mixing of wastewater effluent with the bio-media present in the tank.

Step 4 – After treatment, wastewater flows into the final settlement tank. Settled sludge (dead biomass) accumulates at the bottom of the tank before being redirected to the primary settling area via re-circulation (enabling partial nutrients (TN, TP) removal).

Step 5 – The treated wastewater (final effluent) is subsequently discharged from the SAF via the outlet pipe. This can either be via gravity displacement or via an external pump station, depending on the water table and site requirements.

DSAF – The Rewatec DSAF incorporates the same working principles as the Rewatec SAF however it also incorporates pumps in both the primary and final settlement tank. This is to regulate the circulation of the nutrients transformed in the process and to ensure contact between nutrients and microorganisms. At the end of the process, nutrients are converted to inert gases (N_2) or inert solids (Phosphorus-based) and leave the plant as emissions or as sludge.



Rewatec SAF kiosks

All Rewatec SAF sewage treatment plants are delivered with a robust kiosk to house the aeration blowers, timer valves and the electrical control panel.

The control panel can be adapted to accommodate a range of mechanical and electrical devices (such as a final effluent pump station, dosing units, flowmeters, sensors etc.) as well as the standard requirements for commissioning and running the plant.

Each kiosk is fitted with an alarm beacon as standard however it can also be customised to incorporate features such as a variable speed blower (for plants over 50PE) to increase efficiency, reduce costs and lower the carbon footprint of the plant, acoustic lining and GSM and/or BMS communication for remote plant monitoring. Other innovative elements provided as standard include thermostatic cut off controls and a monitored aeration filter to extend the life of the blower.



Typical applications



Whilst also catering for projects that require 24/7 operation, such as residential developments, our range of Rewatec SAF sewage treatment plants can also be engineered to operate efficiently for applications that have seasonal fluctuations.

This includes:

- Caravan parks and camping sites
- Hotels
- Restaurants and cafes
- Schools
- Office buildings
- Leisure facilities
- Care homes
- Industrial sites

Benefits of the Rewatec SAF



COMPACT AND DISCREET

- Minimal visual impact on site
- Bespoke kiosk to house electronic equipment
- Silent and odourless operation



UNRIVALLED PERFORMANCE

- Manage organic and hydraulic load variants
- Reduce carbon footprint
- Bespoke solutions to meet effluent requirements



BUILT TO LAST

- Highly efficient blowers and aeration legs
- Reliable filter design
- Durable GRP shells



SMART INVESTMENT

- Excellent performance to cost ratio
- Adaptable to manage seasonal fluctuations
- Reduce energy bills

Options and accessories

Options	Accessories
Optional probe to increase energy efficiency	Access shafts for deeper inverts
Kiosks (GRP, Acoustic lagging)	Heavy duty / drive-able covers
Sampling chamber	
UV disinfection	
Final effluent pump station	
Single or three phase electrical supply	
Dosing (for additional TP or TN removal)	
Flowmeter (weir or magnetic)	
Duty/standby blower	
Effluent polishing filter (membrane or sand) – large applications	
Effluent polishing filter (Ecoflo wastewater treatment system)	
Variable speed blower	

Rewatec SAF specifications

SINGLE TANK SYSTEM

	Primary settlement/ Biozone/Humus tank			Max load per day		
Product code	Tank Diameter (m)	Overall Length (m)	Dry weather flow (DWF) (m ³ /day)	BOD (kg/day)	NH ₃ (kg/day)	Desludging Interval
Rewatec SAF 25 N20	1.8	4.1	3.8	1.5	0.2	120
Rewatec SAF 30 N20	1.8	4.6	4.5	1.8	0.24	120
Rewatec SAF 35 N20	1.8	5.2	5.3	2.1	0.28	120
Rewatec SAF 40 N20	1.8	5.9	6	2.4	0.32	120
Rewatec SAF 50 N20	1.8	7.3	7.5	3	0.4	120
Rewatec SAF 60 N20	2.5	4.1	9	3.6	0.48	90
Rewatec SAF 60 N10	2.5	4.5	9	3.6	0.48	90
Rewatec SAF 60 N05	2.5	5.3	9	3.6	0.48	90
Rewatec SAF 75 N20	2.5	4.5	11.3	4.5	0.6	90
Rewatec SAF 75 N10	2.5	5.5	11.3	4.5	0.6	90
Rewatec SAF 75 N05	2.5	6	11.3	4.5	0.6	90
Rewatec SAF 100 N20	2.5	6	15	6	0.8	90
Rewatec SAF 100 N10	2.5	7.2	15	6	0.8	90
Rewatec SAF 100 N05	2.5	7.8	15	6	0.8	90
Rewatec SAF 125 N20	2.5	7.2	18.8	7.5	1	90
Rewatec SAF 125 N10	2.5	9	18.8	7.5	1	90
Rewatec SAF 125 N05	2.5	9.6	18.8	7.5	1	90
Rewatec SAF 150 N20	2.5	9	22.5	9	1.2	90
Rewatec SAF 150 N10	2.5	10.6	22.5	9	1.2	90
Rewatec SAF 150 N05	2.5	11.5	22.5	9	1.2	90
Rewatec SAF 200 N20	2.5	10.6	30	12	1.6	90
Rewatec SAF 200 N10	2.5	12.7	30	12	1.6	90
Rewatec SAF 200 N05	3	14.2	30	12	1.6	90
Rewatec SAF 250 N20	2.5	12.7	37.5	15	2	90
Rewatec SAF 300 N20	3	11.4	45	18	2.4	90

TRAINING FOR PROFESSIONALS

At Premier Tech we provide a full range of training programmes to fully meet the requirements of our professional partners. If you require product functionality guidance on the Rewatec SAF or DSAF, or a more detailed training course for installations, we can provide a solution to meet your needs.

COMMISSIONING AND SERVICING

Premier Tech offer commissioning and routine or emergency servicing on all Rewatec SAF sewage treatment plants.

MAINTENANCE

Routine maintenance of the Rewatec SAF is recommended to help preserve the lifespan of the product. If the tanks are well maintained, the lifecycle of the product can exceed 50 years (i.e. the same as the GRP material).

WARRANTY

For over 50 years, we have proudly developed sustainable and long-lasting products that make a real difference for our customers, our professional partners, and above all, our planet.

Our experience in the industry allows us to give you a complete 25-year warranty for our Rewatec SAF and DSAF sewage treatment plants and a 12-month warranty for our kiosks.



Above ground installation

People and Technologies making a difference

Premier Tech brings to life products that help feed, protect, and improve our world.

- **founded in 1923**
- **family business**
- **70 team members in the UK**
- **4,700 team members worldwide**
- **47 factories in 27 countries**

We develop and manufacture solutions for wastewater treatment, rainwater management and liquid storage.

Together, we continuously innovate to create sustainable solutions that are accessible to all.



PT Water and Environment

2 Whitehouse Way,
South West Industrial Estate
Peterlee, Co Durham
SR8 2RA UNITED KINGDOM

+44 (0) 191 5878650
sales.ptwe.uk@premiertech.com
PT-WaterEnvironment.co.uk



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