



Bioliff SBR Mini is a popular technology for treating wastewater from smaller establishments ranging from 10 to 80 heads. The SBR process treats sewage and wastewater producing a high-quality effluent that is clear and odour free providing excellent economy in both investment and operating cost. It is constructed in-ground from concrete or other tank materials such as plastic or fiberglass. A single motorized component, the Linear Air Pump, is installed adjacent to the plant which incorporates an intelligent programmable controller to control plant operation.

The SBR Mini is particularly versatile and can be used in most tank dimensions and shapes. This flexibility allows the system to be easily retrofitted to existing septic/conservancy tanks often without need for any further civil works. Particular application areas include;

- Sites with failing septic tanks, soakaways and leach fields.
- Sites with high groundwater, bedrock levels, poor draining soils e.g. black cotton soils.
- Sites with flooding septic tanks especially during rains.
- Sites suffering from bad septic smells.
- Sites using exhauster truck services.

Benefits of the SBR include;

- Recycling of water for irrigation, carwash, toilet flushing etc.
- Entirely aerobic so does not create odorous gases as septic tanks and anaerobic bio digesters do.
- System treats and stabilises sludge, so potentially will not need exhausting.
- Reduces environment impact and preserves ground water resources.

The purification process includes:-

1. **Charging:** Wastewater continuously enters the system via the sewer line.
2. **Aeration:** Air is forced into the reactor by a low energy Linear Air Pump to provide oxygen to the bacteria (activated sludge). The aeration also mixes the contents of the reactor so oxygen and waste are brought into contact with the bacteria. In this step the waste is removed from the water by the bacteria. The aeration pump controller applies air to the system intermittently during the aeration phase.
3. **Settling:** Aeration is stopped and for a period of 90mins the reactor is still, allowing the activated sludge to settle to the bottom of the reactor tank taking all suspended solids with it. This leaves clear water, or supernatant, in the top section of the reactor tank.
4. **Discharge:** Airlift, run from the air pump, lifts a batch of the clear water out of the system and into storage or discharge to the environment.
5. **Storage (Optional):** The discharged treated water is introduced to Chlorine disinfection within the storage chamber. The treated water is either utilised for irrigation, car wash, wash down etc. or safely discharged to the environment.

EQUIPMENT SPECIFICATION

Model	10PE	20PE	40PE	60PE	80PE
Population Equivalent (PE)	10	20	40	60	80
Flow (m ³ /day)	1.5	3.0	6.0	9.0	12.0
Organic Loading (kg/BOD ₅ /day)	0.6	1.2	2.4	3.6	4.8
Nitrogen Loading (kg/NH ₃ /day)	0.08	0.16	0.32	0.48	0.64
Tank Depth (m)	1.7	2	2	2	2
Total Tank Volume (m ³)	5	9	18	27	36
Installed Power(kW***)	0.058	0.2	0.4	0.6	0.8

* The design and layout is very flexible. For alternative layouts, smaller foot prints, or different depths please enquire.

** Due to the intelligent controller and SBR cycle process the actual power consumption is lower than the installed power would suggest.

SBR Purification results:

BOD: <30mg/l

COD: <50mg/l*

TSS: <30mg/l

TN: <20mg/l

* COD results are dependent on the proportion of non-biodegradable soluble COD in wastewater. If the proportion is too high then further chemo-physio process may be required.