bio O3 ZONE™

Harnessing Nature's Technology

BIOZONE SCHOOL ABLUTION FACILITY

10.5kl per day recycle on site sanitation for school of 300 learners

- **BIOZONE MBBR STU** is a combination of anaerobic / aerobic Moving Bed Biological Reactor. The design concept has proven itself over the last 10 years to be reliable and cost effective.
- The biological process uses bacteria to reduce the BOD load as well as provide nitrification and denitrification of ammonia
- Disinfection is done by introducing our Quantum Disinfection Technology System to ensure safe pathogen free flush water for the toilet cisterns
- The Quantum Disinfection Technology System was developed to overcome the concerns of chemical addition and power consumption. It is chemical-free, power-free, maintenance-free and extremely cost effective and functions as a final disinfection solution for all fluid applications on any scale
- The core of the Quantum Disinfection Technology System is the activated ceramics beads with super-germicidal surfaces.
- The activated ceramic beads have a consistency that resembles large sand particles, which provide final polishing disinfection through a unique and patented cation/electron exchange technology.
- Using a patented manufacturing process, the surface of the ceramic supports is coated with a single layer of titanium dioxide aggregates which is in turn coated with a single layer of silver aggregates.
- The layers give the ceramics very powerful surface properties, which in turn translates to high germicidal capacities.
- This accurate arrangement and combination produce an electronegative exchange, which causes the ceramic surface to have a dense positive charge (cations, e.g. electron acceptors).
- As microorganisms come into direct contact with the activated ceramics, the electrons inside the pathogens are irretrievably attracted by the positively charged surface. This causes the entire structure of the microorganisms to collapse on a molecular scale.

Product image may vary

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BENEFITS

Quantum Disinfection Technology System benefits VS traditional disinfection technologies

- Chemical free, also no chlorine compounds used
- Power free, no energy consumption.
- Low operator input, occasional flushing
- Maintenance free
- No heating of the water occurs
- Typically log 6 removal of bacteria achieved
- 50% Removal of Nitrates.
- 50% Removal of Ammonia
- 40% Removal of Phosphates
- Low life cycle cost
- This allows treated effluent to be safely re-used for toilet flush

Exclusions

- Transport & Delivery to Site
- Offloading of plant at site
- Training and Supervision
- Installation of plant
- All civil work, digging and closing of the pit
- Placement of plant in final position in pit
- All piping from buildings to and from plant
- All piping back to toilet cisterns
- Electricity supply to plant (Single phase, dedicated, surge protected, 60A)
- Water to fill the plant
- Commissioning of Plant

PLANT COMPONENTS

Components Description	Quantity
3.7Kl Smartsan Anaerobic Biological Reactors	4
3.7Kl Smartsan MBBR Aerobic Biological Reactors	2
3.7Kl Clarifier tank	2
3.7Kl Disinfection / toilet flush tank	2
1 x Control room fitted with • 2 x XP200 Aeration blowers • 2 x Recycle pressure pumps • 2 x Quantum Disinfection Technology System • 1 x DB control unit	2
• 100L leach field section	10
All piping associated with the plant	
Warranty Structural on tanks All working parts (air pumps / pressure pumps)	 10 years 12 months

ELECTRICAL SUPPLY

Electrical Supply Requirements			
Volt	220 / 240		
Description	**Quantity**	**Size**	**Total**
Aeration blowers	2	0.210 kw@ 24h	0.42 kw
General electrical	1	1.0 kw@24h	1.00 kw
Pressure pump	2	0.75 kw@24h	1.50 kw
Total approx.			2.92 kw

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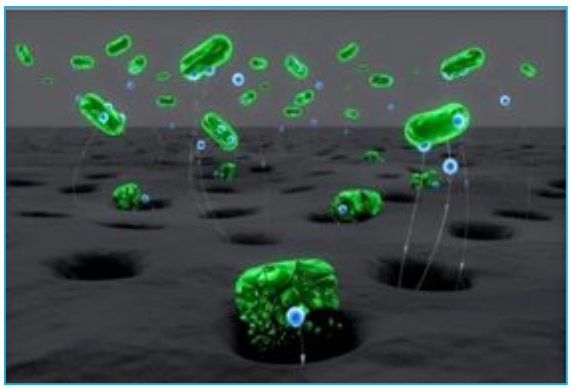
DESIGN FLOW PATTERN

Effluent flows via gravity through a mechanical / static sieve into the MBBR SMARTSAN STU consisting of

1.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	
2.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	
3.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	
4.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	ANAEROBIC ZONE
5.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	
6.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	AEROBIC ZONE
7.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	
8.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	CLARIFIER ZONE
9.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	
10.	1 x 3700L 180Kg	(L) 2580mm x (W) 1550mm x (H)2000mm	RECYCLE TANK

TOTAL 1 800Kg (L)12 900mm x (W) 3 100mm x (H)2000mm



Far from the classical disinfection methods (Chlorine, Alcohol, Bromide, Ozone or UV), the QD ceramic catalysts have discharged surface (a positive quantum field) that attracts electrons. Water simply has to pass over this media and the microorganisms (Negatively charged) are instantly killed.

CONTACT US

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