BIO MICROBICS®

ROLLSAIR®

extended aeration system with LIXOR®

Overhead View

- Simple, pre-engineered, versatile, "Plug-Flow" design
- Manage the aeration, mixing, settling of activated sludge to remove biosolids
- Low cost, non-clogging, extended aeration system

AWARD-WINNING INTEGRATED WATER TECHNOLOGY

EXTENDED AERATION SYSTEM
RESIDENTIAL • COMMERCIAL

BETTER WATER. BETTER WORLD.®

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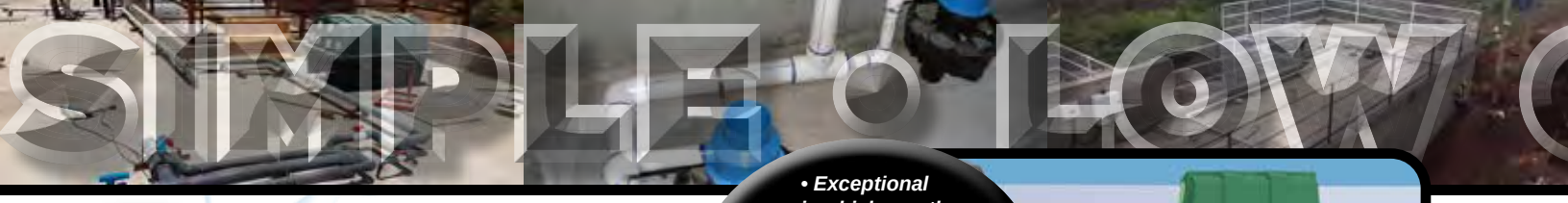
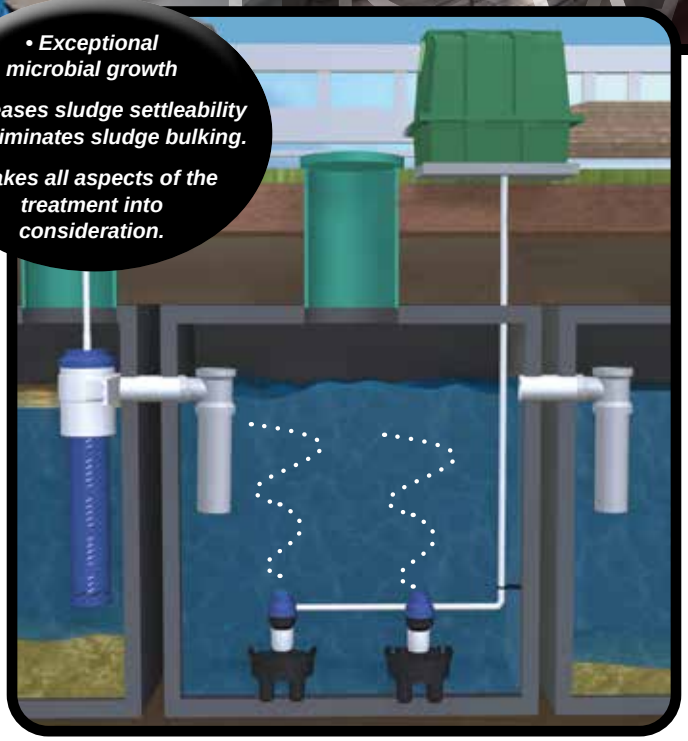


RollsAir®

extended aeration system with LIXOR®

- *Exceptional microbial growth*
- *Increases sludge settleability and eliminates sludge bulking.*
- *Takes all aspects of the treatment into consideration.*



The RollsAIR® Extended Aeration System is pre-engineered with non-corrosive, simple-to-install, easy-to-maintain, proprietary devices. As an "Activated Sludge" treatment system utilizing an aerobic, suspended growth treatment process, it is designed to be the most simple, low cost, robust system of its type.

The complete RollsAIR® System combines the proven robust performance of the LIXOR® supplemental aeration devices with the BioMicrobics patented, clean-in-place screening devices, SaniTEE® and MyTEE® screens in the "headworks" zone, to screen trash and settle grit and in the treatment zone prior to the clarifier(s). The easy maintenance of the MyTEE®'s swab alleviates the need for daily manual raking from non-biological solids.

The RollsAIR® Systems are preengineered with system uses LIXOR® submerged aeration devices to mix and aerate the wastewater, creating the environment for aerobic bacteria and other microorganisms to quickly biodegrade and digest incoming organic matter.

The non-clogging LIXOR® aerators do not require cleaning or replacement at regular intervals. The submerged effluent clarifier weir does not require regular brushing of scum or algae.

Treatment capacity: Individual module capacities are rated based on biological (BOD), hydraulic and other project-specific considerations. All rated capacities are given as guidelines for suggested use. Actual capacity may vary with local conditions and performance goals.

Volume/People per module: Please note that only residential applications or those applications requiring treatment for only sanitary wastewater may be designed from the volume and number of people per module. Actual capacity may vary with local conditions and performance goals.

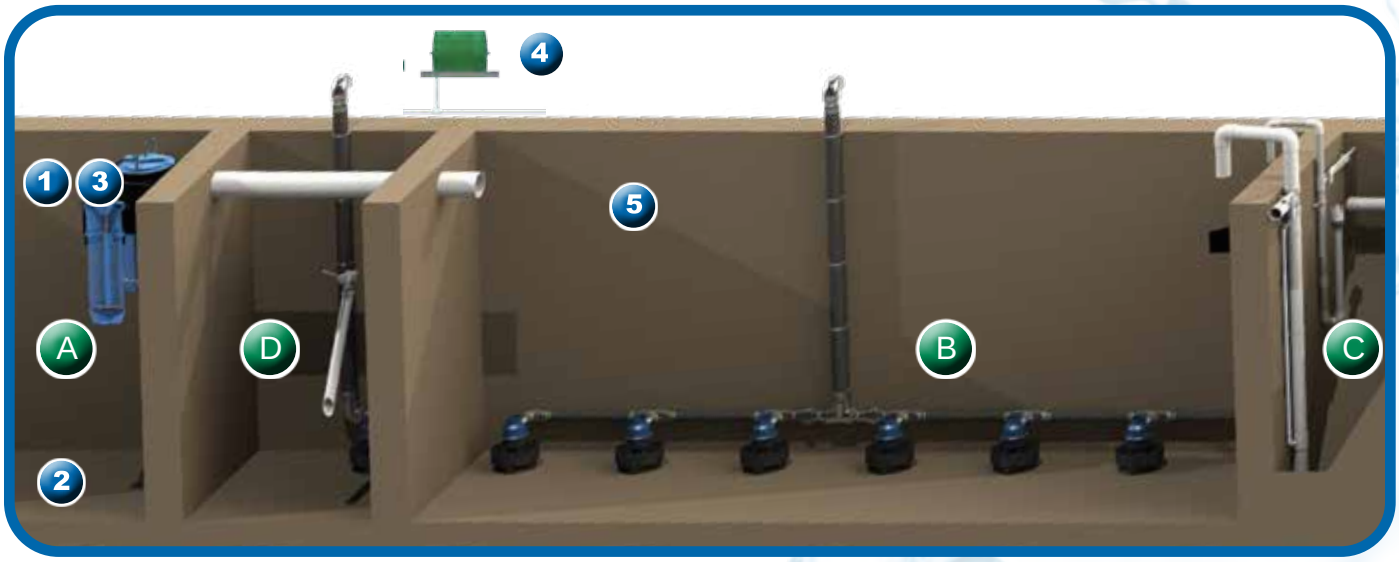
Module dimensions/weight provided only for shipping specifications. Please see design specifications for recommended exterior tankage sizing. Treatment modules shall be installed inside tanks that are locally approved and manufactured using watertight materials.

Electrical Options: Electrical components are available to meet all worldwide electrical specifications (volt/phase/frequency).

RollsAIR® System Sizes

MODEL SIZES	MAXIMUM TREATMENT CAPACITY* Volume	Approximate POP.
RollsAIR® 2.0	0.02 MGD [76 m^3/d]	up to 400
RollsAIR® 3.0	0.03 MGD [114 m^3/d]	up to 500
RollsAIR® 4.0	0.04 MGD [151 m^3/d]	up to 600
RollsAIR® 6.0	0.06 MGD [227 m^3/d]	up to 900
RollsAIR® 8.0	0.08 MGD [303 m^3/d]	up to 1200
RollsAIR® 12.0	0.12 MGD [454 m^3/d]	up to 1900
RollsAIR® 16.0	0.16 MGD [606 m^3/d]	up to 2500
RollsAIR® 20.0	0.2 MGD [7571 m^3/d]	up to 3000
RollsAIR® 30.0	0.3 MGD [1136 m^3/d]	up to 4500
RollsAIR® 40.0	0.4 MGD [1514 m^3/d]	up to 6000
RollsAIR® 50.0	0.5 MGD [1893 m^3/d]	up to 7500
RollsAIR® 60.0	0.6 MGD [2271 m^3/d]	up to 9000
RollsAIR® 70.0	0.7 MGD [2650 m^3/d]	up to 10500
RollsAIR® 80.0	0.8 MGD [3028 m^3/d]	up to 12000
RollsAIR® 90.0	0.9 MGD [3407 m^3/d]	up to 13500
RollsAIR® 100.0	1.0 MGD [3785 m^3/d]	up to 15000
RollsAIR® 120.0	1.2 MGD [4543 m^3/d]	up to 18000
RollsAIR® 140.0	1.4 MGD [5300 m^3/d]	up to 21000
RollsAIR® 160.0	1.6 MGD [6057 m^3/d]	up to 24000
RollsAIR® 180.0	1.8 MGD [6814 m^3/d]	up to 27000
RollsAIR® 200.0	2.0 MGD [7571 m^3/d]	up to 30000

* *Other systems and accessories can be used in parallel and/or series for additional flow or desired treatment levels. Other design factors should be considered and can affect the actual size system required. Please consult factory for assistance.*



HOW IT WORKS!

1. Wastewater enters the treatment system.
2. Natural separation and setting processes occur in the primary setting zone.
3. In the primary setting zone for most large residential and commercial applications, a SaniTEE® device is used to prevent large solids from entering the treatment zone.
4. A remote, above-ground blower introduces air (oxygen) into the treatment module to facilitate a robust circulation of wastewater rolling side to side with plug flow path.
5. Bacteria in the aeration zone become abundant, diverse, self-regulating population of microbes consistently metabolize the incoming waste.
6. Clear, odorless, treated water is ready for standard or innovative dispersal.

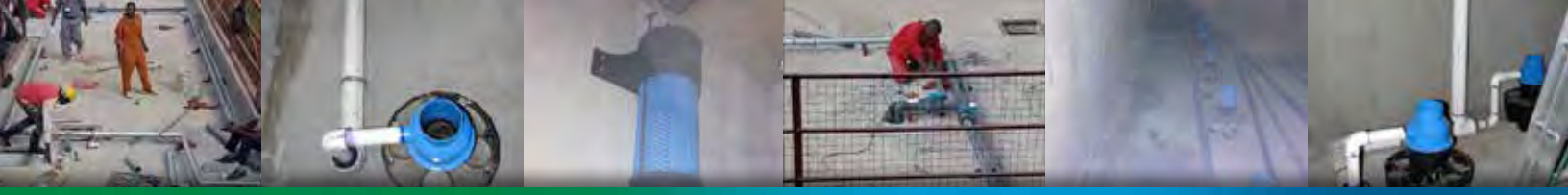

RollsAIR® 4.0 Installation for Shopping Center

A Settling Zone: After the MyTEE® Vault, the waste water flows into the RollsAIR® "Extended Aeration" treatment zone.

B Treatment Zone(s): With simple, robust non-clog LIXOR® aerators, the aeration zone provides large amounts of oxygen and mixing to rapidly grow aerobic bacteria. The mixing action is from one or both sides of the zone creating a "rolling action" movement mixing action. The flow though the length of the aeration zone is "Plug Flow," which begins the treatment process at the front end of the zone continuing as the water flows to the back end of the zone prior to the submerged header leading to the hopper clarifier(s).

C **Clarifier(s):** Promotes "vertical flow" clarification with the upper portion having vertical sides and the lower portion in the form of an inverted pyramid, with the sides at an angle of 60° to the horizontal. The solids settle to the bottom of the hopper clarifier and are pumped into the Sludge Holding Tank.

D Sludge Holding Tank(s): After the clarifiers, the sludge, known as waste-activated sludge, is stored and ready for removal or can be returned to the treatment zone to maintain a healthy population of bacteria in periods of low usage. The sludge holding tank also uses the simple, robust, non-clog LIXOR® aerator to further digest wasted sludge to an inert substance for ease of disposal. Furthermore, the excess water is removed with a "decant" system to be sent back to the treatment zone B.



Established in 1996 to focus on water ecology and technology innovation through three companies, BioMicrobics, SeptiTech, and Scienco/FAST are at the forefront of sustainable design and with more than 80,000 installed systems in over 80 countries. Our systems meet the highest performance standards for treatment of water, greywater, wastewater, stormwater, and more! BioMicrobics has developed a number of innovative products dealing with the treatment of water where centralized infrastructure and drainage are not desired. Our systems are designed and engineered with sustainability and user practicality in mind.

RollsAIR® & RollsAIR® HS-STP®: Offering versatility and consistent high performance for multi-family residential and large commercial properties. RollsAIR® and RollsAIR® HS-STP® offer a cost effective method to treat larger flows for a multitude of applications:

RESIDENTIAL

- Multi-Family Properties
- Clustered Subdivisions
- Housing Developments
- Recreational Facilities
- Apartment Complexes
- Military Facilities
- Communities/Villages
- Small Municipalities

COMMERCIAL

- Restaurants
- Schools/Universities
- RV & Mobile Home Parks
- Office Parks
- Resort Areas/Hotels
- Highway Rest Areas
- Country Club/Golf Courses
- Food/Beverage Facilities
- Grocery stores
- Shopping Centers

INNOVATIVE EXTENDED AERATION SYSTEM

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