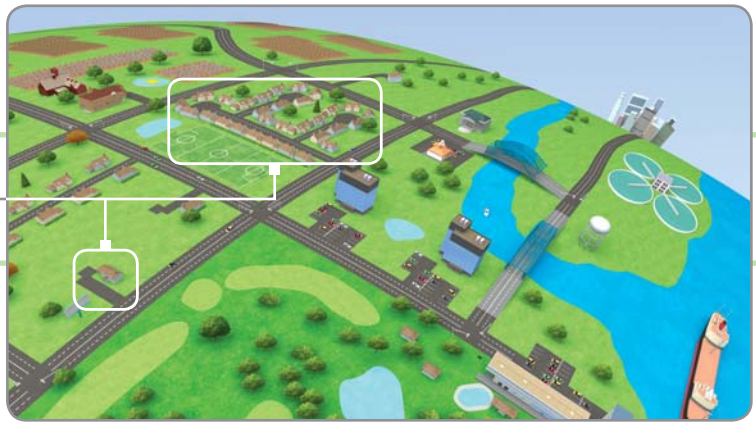
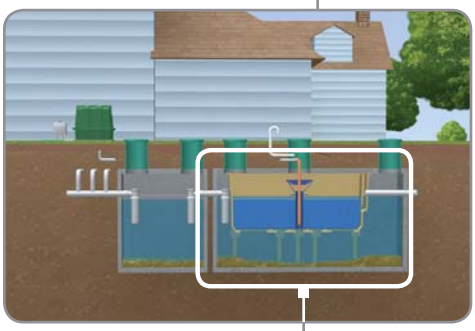
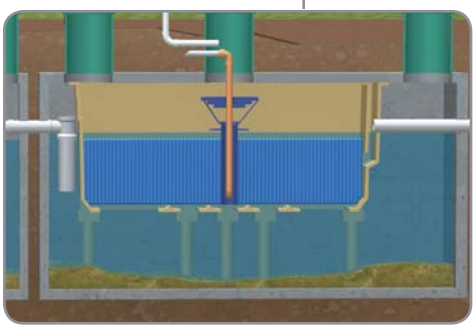
MicroFAST® wastewater treatment systems







Dependable, Affordable...FAST®

MicroFAST® wastewater treatment systems are ideally suited for use in single family dwellings, clustered residential developments and small communities. MicroFAST® modules can also be used to upgrade struggling municipal package plants, providing small communities with innovative, affordable options versus centralized wastewater systems. Proven, Safe, Reliable.

The beauty of this remarkable system is how well it works.

FAST® (Fixed Activated Sludge Treatment) is simply great technology, based on environmentally sound and simple scientific principles. The FAST® process employs a unique hybrid combination of attached and suspended growth in an aerobic, packed bed bioreactor. This proven IFAS (Integrated Fixed-Film Activated Sludge) combination includes the stability of fully-submerged, fixed-film media and the effectiveness of activated sludge treatment, making the innovative, patented FAST® system technologically advanced and extraordinarily reliable.

Nitrogen Reduction

Nitrification and denitrification projects are much easier with FAST® technology. Multiple biological, bio-chemical, chemical and physical processes occur simultaneously within the FAST® wastewater treatment system. MicroFAST® wastewater treatment systems have proven themselves to consistently reduce nitrogen levels – including nitrates and all other nitrogen species - at exceptionally high percentage rates.

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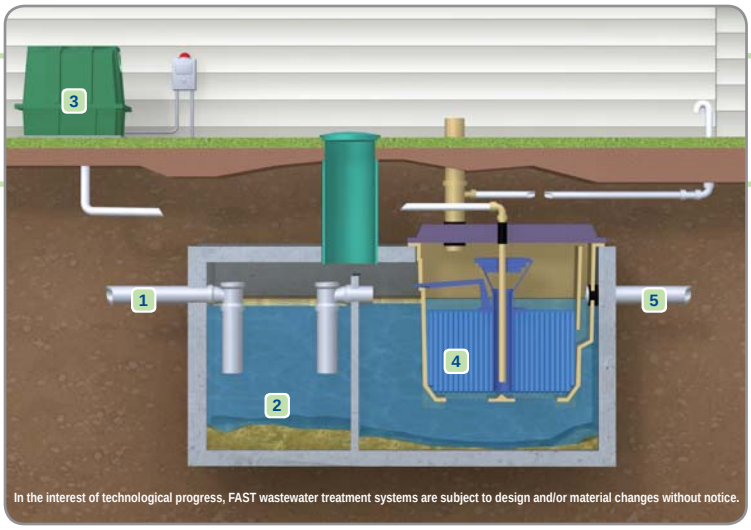

In the interest of technological progress, FAST wastewater treatment systems are subject to design and/or material changes without notice.

How Does It Work?

1. MicroFAST® wastewater treatment systems process all the wastewater from single family homes, clusters of homes, small communities or a portion of wastewater to aid struggling municipal package plants.
2. Natural separation and settling processes occur prior to entering the MicroFAST® treatment module.
3. A remote-mounted, above-ground blower, the system's only moving part, introduces air (oxygen) into the treatment module to facilitate a robust circulation of wastewater through the media's channeled flow path.
4. FAST®'s fixed film media provides a high surface-to-volume ratio to maintain exceptional microbial growth during low, average and peak usage. Bacteria become "fixed" or attached to the stationary media where the abundant, diverse and self-regulating population of microbes is consistently maintained in the aeration zone to metabolize the incoming waste.
5. Clear, odorless, treated water is ready for standard or innovative dispersal.

Technical Specifications

Materials of construction: Made with 100% corrosion resistant materials and contains post-consumer recycled materials.

FAST® Installation: FAST® systems are mounted inside tanks in above ground or below ground applications. Tanks can be made from concrete, fiberglass, steel or plastic materials. Please consult product specifications for specific tank recommendations. Always check local regulations before installing or altering a wastewater system. Contact Bio-Microbics or a dealer near you for more information on the availability of proper tankage in your area.

Capacity: FAST® systems are available in several convenient, affordable sizes and configurations. Multiple FAST® modules, in parallel or in series, can be used to achieve higher flows or treatment capacities. Please contact Bio-Microbics or a dealer near you for more information on the FAST® system that's right for your application.

Dispersal Options: Check your local regulations. The extraordinarily high treatment levels may allow reductions in drain field areas, use of treated water for irrigation or other innovative discharge methods.

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

Maintenance Requirements: Once installed, FAST® systems are virtually maintenance free. The only moving part in the system is an above ground blower placed up to 100 feet (33 m) away. Periodic review of electronic components and residual levels recommended. Residuals will need to be removed when appropriate.

MicroFAST® wastewater treatment systems Specifications

MicroFAST® Application Modules	Maximum Treatment Capacity*		Module Dimensions***	Weight***	
	Volume/Module**	People per Module**		Pounds	Metric
MicroFAST® 0.5	500 GPD (1,893 LPD)	1 to 8 people	59" L (149.9 cm) x 30" W (76.2 cm) x 56" H (142.2 cm)	165 lbs	75 kg
MicroFAST® 0.75	750 GPD (2,839 LPD)	1 to 11 people	60" L (149.9 cm) x 43" W (121.9 cm) x 55" H (144.8 cm)	212 lbs	97 kg
MicroFAST® 0.9	900 GPD (3,407 LPD)	1 to 14 people	59" L (149.9 cm) x 48" W (121.9 cm) x 57" H (144.8 cm)	215 lbs	98 kg
MicroFAST® 1.5	1,500 GPD (5,678 LPD)	6 to 21 people	82" L (208.3 cm) x 55" W (139.7 cm) x 58" H (147.3 cm)	456 lbs	207 kg
MicroFAST® 3.0	3,000 GPD (11,356 LPD)	10 to 42 people	71" L (180.3 cm) x 59" W (149.9 cm) x 81" H (205.7 cm)	725 lbs	329 kg
MicroFAST® 4.5	4,500 GPD (17,034 LPD)	18 to 63 people	145" L (368.3 cm) x 73" W (185.4 cm) x 51" H (129.5 cm)	1,600 lbs	726 kg
MicroFAST® 9.0	9,000 GPD (34,068 LPD)	30 to 126 people	145" L (368.3 cm) x 73" W (185.4 cm) x 76" H (193 cm)	2,300 lbs	1044 kg
Larger Applications>9000 GPD	Multiple FAST® treatment modules can be used in parallel and/or series for additional flow or desired treatment levels.				

*Treatment capacity: Individual FAST® 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).

FAST® Certifications Include:

- UK Department of Trade • European Union (CE) • European Electrical Systems (& Tropical Certification) • Australian Department of Transportation • Royal Australian Navy • Saudi Arabian Standards Organization (SASSO)
- US Coast Guard • International Maritime Organization (IMO) • US Electrical System • Underwriters Laboratories (UL) • Canadian Standards Association (CSA) • Canadian Great Lakes (CGL)
- US Environmental Protection Agency (EPA) Environmental Technology Verification (ETV) for RetroFAST .250 and .375
- National Sanitation Foundation - NSF/ANSI Standard 40 & 245 for MicroFAST 0.5, 0.75, 0.9, and 1.5.

BIO-MICROBICS® INCORPORATED

Better Water. Better World.™

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