

SAVE TIME AND MONEY, GET SUPERIOR ENGINEERING, FLEXIBILITY. MEET THE LATEST DISCHARGE REGULATIONS OR USE EFFLUENT WATER FROM THE EEC HIGH-SPEED BIO SYSTEMS TO IRRIGATE OR TOILET FLUSHING



EEC (USA) Environmental Equipment Consulting & Production Inc.

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Manufacturing:

Worldwide.

Manufactured by EEC LA and Represented by DAS International

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FEATURES

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non-clogging
media with 20
years warranty

10 Times the
Loading in less
than 1/5 the
time

Easy to
Relocate
And Install

Water can be
used for
Irrigation

Fully Automatic
And easy to
Operate

EEC HIGH-SPEED BIO TEC SYSTEM Bio Plants For Sewer / Black and Gray Water



“EEC HIGH SPEED BIO TEC” SYSTEMS CAN HANDLE 10 TIMES THE LOADING IN LESS THAN 1/5 THE TIME

EEC (USA) Inc. "High-Speed Bio Tec" Biological treatment plants. Advantages; extremely compact and efficient compared to regular systems, clog free, handles chock loading, extremely compact, ready to be operated, automatic, skid mounted, and central control. Please find "General Description" below, or visit our web site at: www.aqua-2000.com

GENERAL DESCRIPTION OF THE EEC HS BIO-TEC CONDOMINIUM SEWAGE TREATMENT PLANT

The EEC Condo STP system is based on the **EEC High-Speed Bio-Tec** biodegradation and sedimentation technology, which is unique due to its compactness and performance in respect of volumetric efficiency. These technologies are combined in a prefabricated; skid mounted and standardized tank system with variable length, suitable for overseas transportation in ISO freight containers.

Standard systems are designed for indoor location in closed rooms with draft ventilation. Smaller systems may be placed outdoor under shelter with natural ventilation. Since the systems are excessively aerated, the smell caused by anaerobic rotting is negligible.

1. DIMENSIONAL CRITERIA

Any treatment plant should be based on actual measurements of the waste stream to be treated in respect of hydraulic load, suspended and dissolved organic material, and the applicable local effluent requirements. However, sufficient statistical information is available for small community municipal wastewaters, related to the term "Person equivalents" Pe.

2. CAPACITIES

The Condo STP system is manufactured in lengths of 2 feet increment in order to suit any particular need. The basic 15', 21', 27', 33' and 39' length systems with 3 chambers, have following nominal capacities at a guaranteed effluent of 30 ppm BOD as daily average:

Model	: 15CON3	21CON3	27CON3	33CON3	39CON3
Capacity	: 100 m ³ /d	150 m ³ /d	200 m ³ /d	250 m ³ /d	300 m ³ /d

3. PRE-SEDIMENTATION SYSTEM

It is assumed that the sewage piping system ends in a customer provided three-chamber combined sedimentation/buffer/pump well tank system which separates paper, sanitary binds and settleable solids. The buffer capacity must be sufficient to level out the daily peak flows. The combined holding capacity of the system should be 12-16 hours, depending of the flow profile. 5/8 of the volume is for primary sludge sedimentation, 2/8 of the volume is for secondary sedimentation and 1/8 is for the pump well. The total buffer capacity is 1/2 of the total volume, the remaining is for sludge storing.

4. BIOLOGICAL TREATMENT SYSTEM

The treatment plant will take suction from the pump well by its own feed pump. The pump is level controlled and has a capacity which is 2-3 times the average daily flow. The plant has therefore an intermittent working mode in terms of hydraulic flow, while the air blower supplying air to the bioreactors is continuously running.

The biodegradation reactor comes in one or two stages depending on required cleaning efficiency. Plants with higher cleaning efficiency than 80-85 % need a two-stage system. The bioreactors are degrading the dissolved organic matter by oxidation into carbon dioxide, which escapes to the air, and to produce biomass that acts as activated sludge. A suspended, free floating biofilm carrier medium is providing a large, protected biofilm surface as host for the bacteria and is simultaneously accumulating the active biosludge inside the reactors.

The biodegraded water is flowing into a clarification stage where the suspended solid settles by gravity. The water is directed through a skim well to a plate settler system which provides the final clarification of the effluent for systems with high cleaning efficiency; the sedimentation may be enhanced by addition of polymers.

5. SLUDGE SEPARATION SYSTEM

The sludge pump is activated each time the feed pump stops, with suction from the clarification stage. The pump is discharging through a hydrocyclone with the overflow back to the bioreactor, while the underflow is discharged to the primary sludge storage. When necessary, the sludge is emptied by a vacuum truck and hauled away for external treatment.

6. EQUIPMENT SPECIFICATION

The basic system comes with the following standard equipment:

A mild steel tank consisting of a framework of square pipes and vertically stiffened sides and partitions. The tank is internally coated with tar epoxy and externally painted in white with EEC name and logo in one feet high letters on two sides.

A free floating plastic biofilm carrier medium in each bioreactor. 2/3 filling rate as standard, with 100 square foot biofilm surface per cubic foot reactor volume.

A plate separator system of 60 degree inclined PVC plates in the settling tank. Three plates per foot length, projected area 5 square foot per square foot tank surface.

One separate drive regenerative blower with air header in galvanized steel and air distribution system in stainless steel. Air filter/silencer on the blower inlet, muffler on the outlet for flow regulation.

Two open impeller, stainless steel, close coupled centrifugal process pumps with carbon/ceramic mechanical seal and viton elastomers. Waste water pipes in galvanized steel and/or PVC as required.

One multifunction chemical dosing pump for foam control during start up, pH adjustment or nutrient supply as required. Normally, none of these functions are required when the system is stabilized.

One main electrical switchboard/control panel with start/stop buttons and running lights. Automatic start/stop of process pump on high/low level

7. TECHNICAL DATA

3 CHAMBER SYSTEM

Equipment	Specification	Unit	15CON3	21CON3	27CON3	33CON3	39CON3
Tank Container	Overall Length	Inches	180	252	324	396	468
	Overall Width	Inches	88	88	88	88	88
	Overall Height	Inches	88	88	88	88	88
Bio Medium	Proprietary	m3	6	9	12	15	18
Settling Medium	80 x 40 inch plates	Nos.	12	18	24	30	36
Regenerative Blower	Nominal Capacity	SCFM	40	60	80	100	120
	Back Pressure	In WG	80	82	85	91	99
	Motor effect	HP	3	3,5	4,2	5	6,5
Centrifugal Pumps	Nominal Capacity	GPM	20	30	40	50	60
	Back Pressure	psi	9	9	9	9	9
	Revolutions	RPM	3500	3500	3500	3500	3500
	Motor effect	HP	0,5	0,5	0,75	0,75	1
Hydrocyclone	Nominal Capacity	GPM	20	20	30	30	45
	Press. drop	psi	11	11	11	11	11
Metering Pump	Nominal Capacity	GPH	2	2	2	2	2
	Back pressure	psi	60	60	60	60	60
	Motor effect	HP	0,1	0,1	0,1	0,1	0,1
Electrical System	Installed effect	kW	4	4	5	6	7
Shipping weight	Dry weight	kg	3000	3800	4600	5400	6200
Operation weight	Water filled	kg	18000	26300	34600	42900	51200

Larger models are available upon request. Visit EEC's Web Site for additional information on different systems and solutions for your specific needs.

EEC's Research and Development team is continuously updating our technology and specifications

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