EEC OFFER GLOBAL PRODUCTION AND SERVICES

Bio Plants For Sewage / Black and Gray Water

FEATURES

Self-Cleaning 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

Global Production and Service

EEC Europe – EEC USA – EEC Thailand – EEC India – EEC South America – EEC Australia – EEC Middle East – EEC Global Operation

www.eecusa.com

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FEATURES AND GENERAL DESCRIPTION OF THE EEC HIGH-SPEED BIO TEC SEWAGE TREATMENT PLANT

OPEN THE DOORS AND START SYSTEMS – FULLY AUTOMATIC

EASY TO TRANSPORT, EXPAND AND RELOCATE

EEC SYSTEMS FEATURES

We have made a sincere effort to incorporate our past experience in our offer, which has made it elaborate & comprehensive. We have incorporated several world class, renowned equipment / instruments, which are time, tested, both at home & abroad. An utmost care has been taken for selection of proper material of construction of each component in our package plant system, as we believe that appropriate selection of materials is vital in such a sophisticated system.

- VERY COMPACT & OCCUPY VERY LESS SPACE THAN OTHER SEWERAGE TREATMENT PLANTS.
- LESS MAINTENANCE, LOW CAPITAL & OPERATING COST BENEFITS
- SIMPLE ASSEMBLY AND OPERATED BY ON SITE LABOUR.
- THE SYSTEM IS PREFABRICATED AND MOUNTED IN ISO FREIGHT CONTAINERS AND NO LARGER THAN STANDARD ISO FREIGHT CONTAINERS
- EASILY TRANSPORTABLE TO ANY LOCATION UNLIKE OTHER CONVENTIONAL TREATMENT PLANTS
- THERE IS NO NEED TO ADD MICRO ORGANISM.
- THE SYSTEM WILL OPERATE WITHOUT ANY CHEMICAL ADDITION
- EASY START UP, FULLY AUTOMATIC OPERATION, RELIABLE & ROBUST ONCE STARTED
- ONE CENTRAL CONTROL PANEL FOR EACY OPERATION.
- CLOG FREE AIR DISTRIBUTION SYSTEM AND AMB BIO MEDIA THAT COMES WITH 20 YEARS WARRANTY
- AMMONIA AND NUTRIENT REMOVAL SYSTEMS AWAILBLE UPON REQUEST.

The EEC 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.

EEC offers two standard models from 40 to 400 m3/day :
We manufacture smaller plants from 1 m3 per day and up. Contact us for Quotes or Pamphlets.

EEC CON SERIES are built to fit inside standard ISO and are suitable for indoor and outdoor location. Clients can buy the container optionaly and keep the systems for outdoor applications. All EEC systems are extensively aerated and produce no odor.

Note: If placed indoor, in closed rooms, draft ventilation is recommended.

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.

A system specifically designed for condominiums and smaller residential areas, this plant is based on the following data:

Wastewater flow	Qw	: 200 l/ Pe/ day	53 GPD/Pe
Suspended solids	TSS	: 70 g/Pe/ day	.15 #/day/Pe
Organic matter	BOD	: 65 g/Pe/ day	.14 #/day/Pe
Nitrogen	N	: 9 g/Pe/ day	.02 #/day/Pe
Phosphorous	P	: .6 g/Pe/ day	.001#/day/Pe

CAPACITIES

The Condo STP system is manufactured in lengths of 2 feet increment in order to suit any particular need. The basic from 8' to and 39' length systems with 3 chambers have following nominal capacities at a guaranteed effluent of 30 ppm BOD as daily average:

Equipment	Specifications	Unit	8CON	10CON	15CON	19CON	23CON	30CON	35CON	39CON
Flow		m3/d	40	60	110	150	180	240	300	400
Tank Size	Overall Length	mm	2500	3100	4500	5780	7000	9000	10700	12000
	Overall Width	mm	2192	2192	2192	2192	2192	2192	2192	2192
	Overall Height	mm	2200	2200	2200	2200	2200	2200	2200	2500
Bio media	Proprietary	m3								
Settling media	Tube-dek	m3								
Rotary Blower	Capacity	m3/h								
	Pressure	mm								
	Motor HP									
Transfer Pump	Submersible	m3/h								
	Head	m								
	Motor HP									
Sludge Pump	Capacity	m3/h								
	Head	m								
	Motor HP	m								
Hydrocyclone	Nominal Cap.	m3/h								
	Pressure drop	m								
Shipping Wt.	Without doors	kg	3010	3680	4975	6120	7160	9050	10550	13310
	With Doors		3720	4460	5895	7180	8350	10450	12130	15090
Operating Wt.	Without doors	kg	8350	11000	17765	22800	28170	36980	44470	51070
	With doors	kg	9060	11780	18085	23860	29360	38380	46050	52850

TECHNICAL DETAILS ARE PROVIDED WITH EEC OFFICIAL QUOTES

AMMONIA AND NUTRIENT REMOVAL SYSTEMS AWAILBLE UPON REQUEST.

Systems with additional requirement to effluent removal on, COD, Ammonia, or Nutrient, will normally require longer retention time and will consequently have lesser capacity then above. Such systems will be designed as customized systems based on the customers influent analysis and effluent removal requirements.

Note: Any capacity available outside standard models. See web site for additional information on Upgrades and Retrofit New and Old WWTP Plants. www.eecusa.com

PRE-SEDIMENTATION SYSTEM

It is assumed that the sewage piping system ends in a customer provided three-chamber combined settling/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.

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 biomass that acts as activated sludge. A suspended, free floating biofilm carrier medium is providing a large, protected biofilm surface for the bacteria and is simultaneously accumulating the active biosludge inside the reactors.

SLUDGE SEPARATION SYSTEM

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.

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 disposal.

EQUIPMENT SPECIFICATION

The basic system comes with the following standard equipment:

EEC package plants are fully automatic systems with automatic sludge separation. Main components pre-assembled and tested before shipping:

- Main Bio Reactor Tank with three chambers. Epoxy coated.
- AMB Bio Media™ **Proprietary Media 950 m^2/m^3.** 20 Years warranty. EEC Design.

- SS Course Air Distribution systems with butterfly valves, coarse air, No clogging. EEC Design
- Non-Return valves (Check valves)
- Necessary Cables & Accessories
- Corrugated Plate Settler. EEC Design
- Rotary Displacement Blower.
- Submersible Feed Pump.
- Displacement Sludge / Recycling Pump.
- Automatic sludge separator. EEC Design
- Dosing pump
- Necessary PVC Piping & valves
- Motor Control Panel.
- Complete plant EEC High-Speed Bio Tec as per requirments.

One main electrical switchboard/control panel with start/stop push buttons and running lights.

7. TECHNICAL DATA

ADDITIONAL DETAILS PROVIDED WITH QUOTE

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

EEC GLOBAL OPERATION LLC
THE WORLD LEADER IN WASTEWATER PACKAGE PLANTS - GLOBAL PRODUCTION & SERVICE

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EEC REVERSE OSMOSIS

CONTACT EEC IF YOU NEED RO PLANTS – EVERTYING FROM WELL WATER, BRAKISH, OR SEAWATER CONVERSION TO DRINKING WATER.
EEC PROCIDES ONE STOP SOLUTION TO ALL YOUR WATER / WASTEWATER NEED.