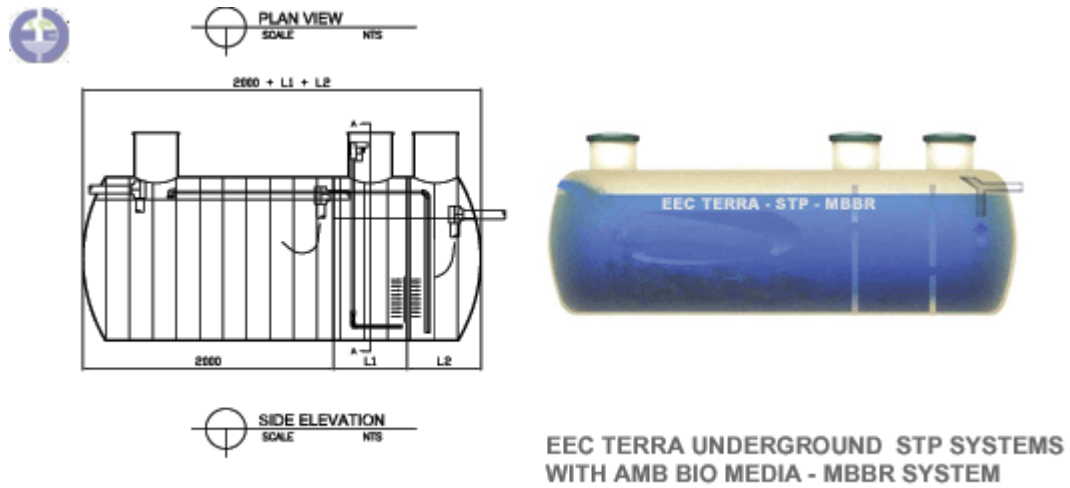


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For information on **above ground package** plants, visit our web.

"High-Speed Bio Tec" Biological treatment plants. Advantages; extremely compact and efficient compared to regular systems, clog free, handles shock loading, extremely compact, ready to be operated, fully automatic, skid mounted, and up front central control. Please find "General Description" below, or visit our web site at: www.eecusa.com



GENERAL DESCRIPTION OF THE EEC TERRA SEWAGE TREATMENT PLANT

The EEC biological treatment system is based on the Assisted Media Biofilm (ABM) process and comes with one moving bed bioreactor for removal of BOD.

The bioreactor is removing the soluble BOD prior to the settling chamber where the particulate BOD is removed.

The aerated bioreactor is filled with "AMB Bio Media" a specially designed biofilm carrier element which is free floating and moving around in the reactor with the flow. The AMB bio medium provides an effective biofilm surface of 500 m² per m³ bulk material. Simultaneously, biomass is trapped inside the carrier elements, providing additional MLSS in the reactors without need for conventional sludge return.

The AMB filling rate may be varied from 33 % to 67 % to fit a specific BOD design load. In this case the filling is 60 % due to high kitchen load.

The bioreactor is aerated through a coarse bubble air distribution system at the bottom of the tank, with air supply from a side channel air blower. The diffuser system is designed and manufactured by EEC in stainless steel and is clog-free.

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.

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

Wastewater flow	Q _w	: 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

2. CAPACITIES

EEC offer two series that offer fixed sludge storage as a part of the complete system. We offer three standard models based on capacity and sludge storage. For larger above ground systems, please visit our web site www.eecusa.com

One series with 8 m³ storage and one with 12 m³ sludge storage, systems are of cylindrical design and suitable for underground installations.

System Capacity	System Dimentions 8 m ³ sludge storage built in.	System Dimentions 12 m ³ sludge storage built in	Diameter all systems
15 m ³ /day	L = 2+0.5+0.5 = 3 m, 60 days	L = 3+0.5+0.5 = 4 m, 90 days	2.2 meter
30 m ³ /day	L = 2+1.0+1.0 = 4 m, 30 days	L = 3+1.0+1.0 = 5 m, 45 days	2.2 meter
45 m ³ /day	L = 2+1.5+1.5 = 5 m, 20 days	L = 3+1.5+1.5 = 6 m, 30 days	2.2 meter

CONSIDERATION. Select systems according to capacity and sludge storage. A good idea is to check your local vacuum truck service and find out sludge capacity on truck, and then select a system.

Partition of internal chambers:

First chamber: Pre-settling & Sludge storage.
 Second chamber: AMB Bio Media - MBBR
 Third Chamber: Final settling & Sludge returned to “pre-settling chamber”.
 Inlet Flow: Gravity.

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

3. GENERAL LAYOUT OF EEC TERRA

- The system will have 3 chambers with a total of 24 m³ volume of which 12 m³ is for septic storage, 6 m³ for aeration and 6 m³ for settling and clarification
- The system is designed for simple access through three extended manholes.
- The system is prefabricated for delivery in 20 ft shipping container and is ready for hook up to power and tie in of influent and effluent piping at site
- The system is to be completely buried with manholes flush with the topsoil
- The system blower is installed in the 2nd access trunk, and no external housing is required

- The septic chamber is ventilated through the influent piping and is air tight to the surroundings. The aeration/clarifier chambers are ventilated through the effluent piping, with blower suction through the access trunk
- The system will operate on 60 or 50 Hz, 400/230 volt 3 phase power.
- The sludge that is produced inside the system will automatically be returned to the septic storage by an air lift pump in the settling tank.
- There is no need to add microorganism. The system will operate without chemical addition.
- The system is fully automated and based on gravity flow. Operators will not be required. Weekly inspections and monthly maintenance is expected.
- The system is warranted to be free from defective material or workmanship for a period of 18 months from date of delivery or 1 year from date of installation, whichever comes first.
- The system will be delivered ex works with freight, unloading and installation excluded.

5. SLUDGE SEPARATION SYSTEM

The biodegraded water flows by gravity into the settling chamber where the suspended solids settle by gravity. The water is directed up flow through the settling chamber to the exit port

The settled sludge is continuously removed from the settling tank and returned to the septic storage by an air lift pump. Sludge that is not settled is re-circulated in the system until settled.

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



www.eecusa.com

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