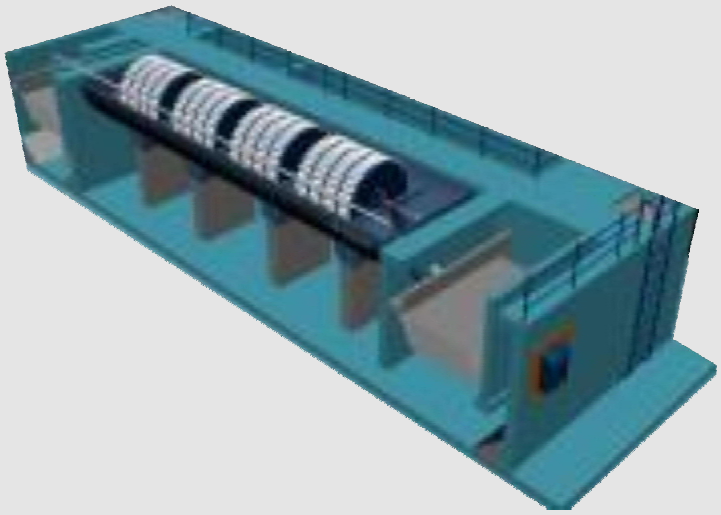
epecoUSA

FIXED FILM ACTIVATED SLUDGE WASTEWATER TREATMENT SYSTEMS

epST *ffc*



for homes, schools, campuses,
resorts, factories, sports stadiums,
theaters and ....more.

epST *ffc*,.....*why*

epST *ffc* plants provide a self-regulating treatment system that produces consistent treated effluent quality, egardless the varying influent characteristics. **epST *ffc*** is the best choice for small applications with low biological contaminants levels and/or suspended solids, as well as large applications with shigh strength contaminants such as leachate from sanitary a hazardous waste landfills. Schools, campuses, resorts, factories, hotels, sports stadiums, theaters and palaces are among the users that produce variable loading and characteristic wastewater.

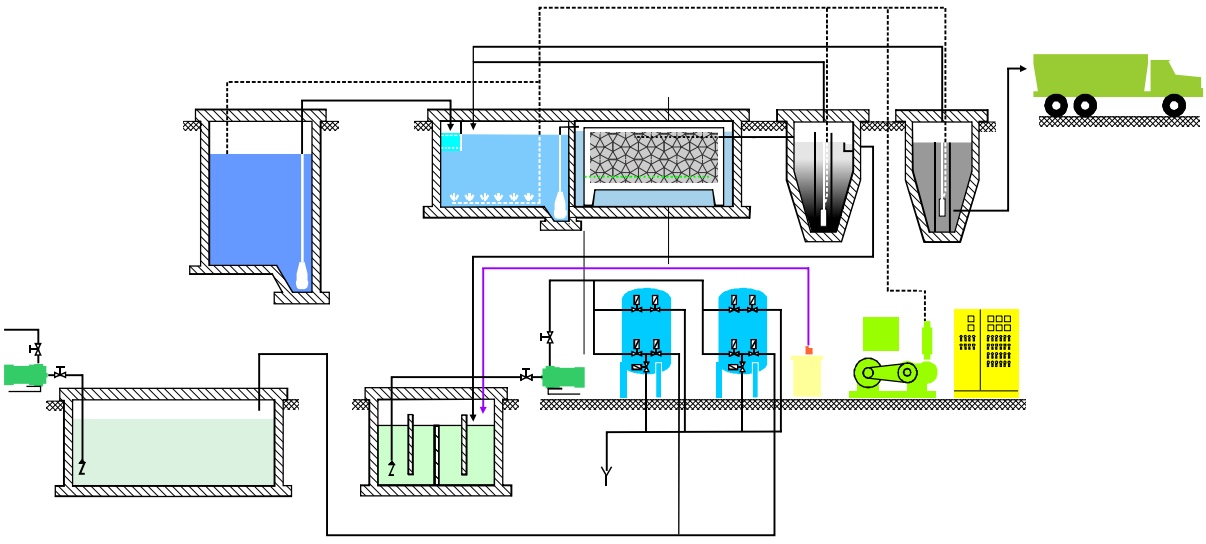
Long sludge age....eliminates the need for sludge reseeding after short flow interruption as in the case of conventional activated sludge; more tolerant of toxic shocks. The built-in "microbial reservoir" will provide the necessary amount of digestive bacteria adequate quantities and in the right time.

Eliminating the clarifier.....for small applications with low biological an /or suspended solids strength. For medium and large applications or applications with high contaminants strength , relatively smaller clarifier can be used due to improved settle-ability of non-digested contaminants.

Compact...much smaller aeration volume, much smaller clarifier (if any) no sludge holding, Due to high **epST *ffc*** compactness, small & medium size ,**epST *ffc*** plants can be build ex factory delivered to site in standard marine ,containers sizes, ready for installation commissioning and start-up..

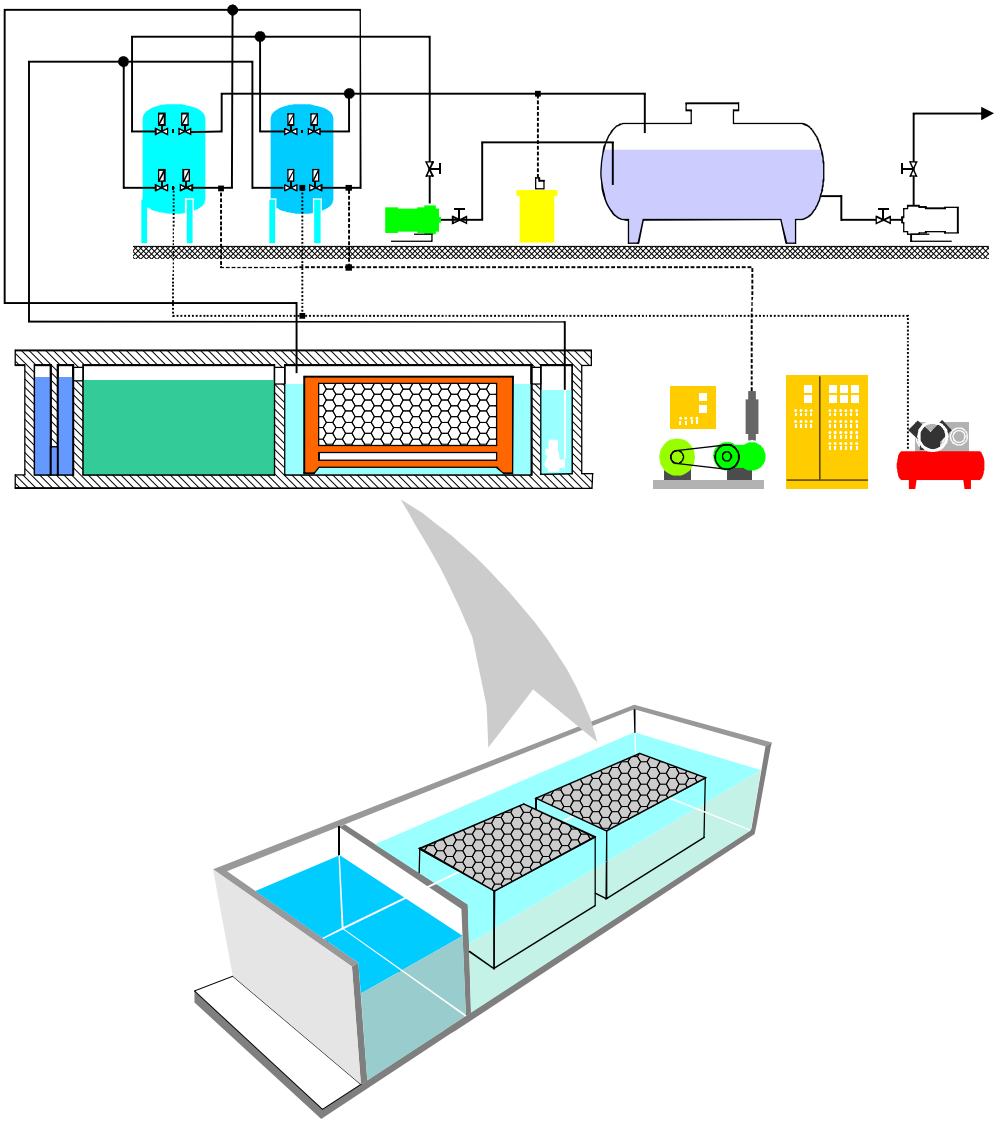
epST *ffc*,.....*flexibility*

epST *ffc* epST ffc plants can be installed on its own to handle small and/or medium applications however it was found effective in enhancing various biological treatment processes headwork for membrane bio reactors, sequence batch reactors, ...etc.. It was found also effective in enhancing the septic tanks performance as post treatment.

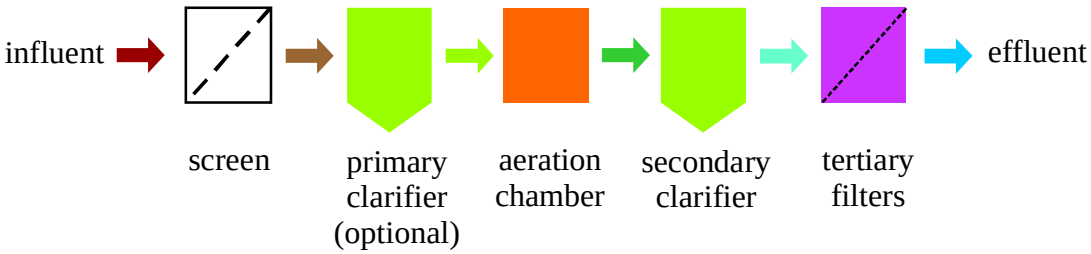


epST *ffc,.....the process*

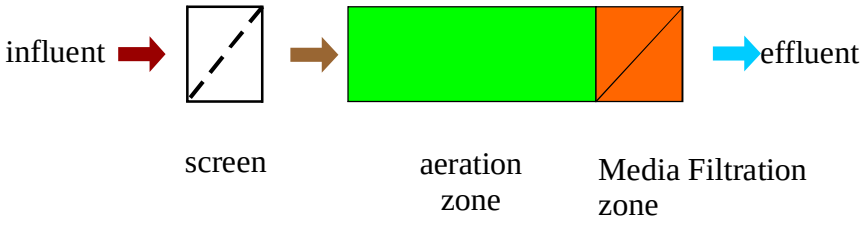
epST *ffc*, the aerobic activated sludge wastewater treatment plants implement the Fixed Film Contactors FFC, which provide a bed to support the biomass film that digests the bi degradable waste material in the wastewater. **epecoUSA** designs for FFC media widely var but fall into two basic geometrical categories. The first is utilizing a monoblock of honeycomb media (or equal hexagonal or corrugated sheets), arranged to allow for opened channels with the maximum contact area for the volume. The second is consisting of ball fixed in a basket forming largest contact area to volume ratio as will. FFC media is static and fully submersed in the wastewater and exposed to the diffused air. A film adhering to the FFC, containing aerobic bacteria will be formed. Bacteria exposed to diffused air and th biomass will be activated and the aerobic digestion will take place.



epST *ffc*, compactness, simplicity & economics?



Conventional WWTP Compartments



epST-ff vs WWTP Compartments

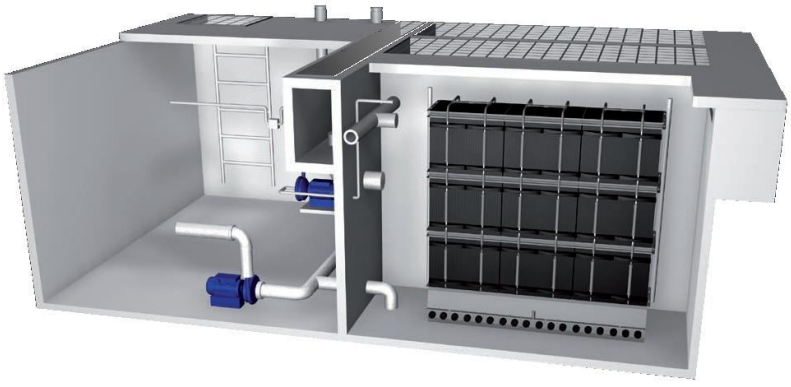
epST *ffc* installation

epST *ffc* plants are delivered to site, factory built, tested and ready for quick installation, commissioning and start-up.

in steel structure for
under ground installation

in polyethylene or fiberglass
tanks for under ground installation

epST *ffc* plants can be custom designed and constructed at site in concrete structure



technical data

model	personal equivalent	capacity (average)	L x W x H[(1)]	Power rating	Weight[(2)] (dry)	(Wet)
	persons	m^3/day	mm	kw	kg	kg
epST 2 *ffc*	8	2	1200 x 2500 x 1500	1	900	3,800
epST 5 *ffc*	20	5	1500 x 2500 x 1500	1 ½	1,000	4,000
epST 10 *ffc*	40	10	2000 x 2500 x 2500	2	1,100	4,200
epST 15 *ffc*	60	15	6000 x 2500 x 2500	4 ½	3,500	30,000
epST 20 *ffc*	80	20	7500 x 2500 x 2500	5 ½	4,000	40,000
epST 30 *ffc*	120	30	9500 x 2500 x 2500	7 ½	4,500	50,000
epST 50 *ffc*[(3)]	200	50	15000 x 2500 x 2500	12 ½	6,700	78,500
epST 75 *ffc*[(3)]	300	75	18000 x 2500 x 2500	15	9,000	112,000
epST 100 *ffc*[(3)]	400	100	24000 x 2500 x 2500	20	12,500	162,000

(1) excluding power supply,equalization tank, clarifier or sludge disposal.
(2) based on steel structure.
(3) delivered to site in 2 pieces.

power supply: 380-415v/3ph/50hz

Performance

		influent	**effluent**
BOD5 (Biochemical Oxygen Demandlids)	mg/l	=250	<30
COD (Chemical Oxygen Demand)	mg/l	=150	<30
TSS (Total Suspended Solids)	mg/l	=250	<30
Turbidity	NTU	=10	<10
TN (Total Nitrogen)	mg/l	=30	<5
TP (Total Phosphorous)	mg/l	=10	<2
CFU (Coliform)	MPN/ml *	=3.0 x 10^5	N.D **
E.Coli	MPN/100 ml	=2.0 x 10^5	N.D

* Maximum Propable Number
** Not Detectable

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