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Sustainability , Environment , Solution

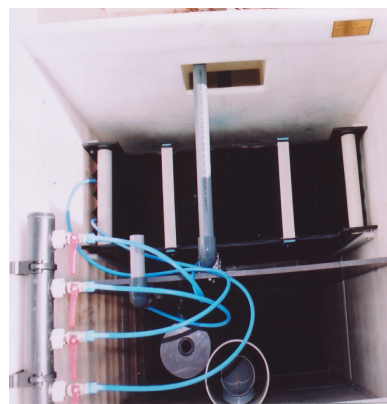
## Waste Water Recycling Units for houses, villas and developments

Decentralized produce requires decentralized treatment with its decentralized reuse



designs waste water treatment systems in full consideration of over time costs. Energy efficiency of waste water treatment technologies is a crucial parameter. The units are designed in accordance with the European Directive 91/271 EWG and the requirements of DIN 4261.2 (Aerated waste water treatment systems). The units fulfill British, US and ATV standards of waste water treatment

Our sophisticated micro bubble aeration systems within the Lifepak™ Bioreactor distributes billions of finest bubbles that are, due to their size, ascending slowly. The extended biologic active surface is produced with minimum energy consumption. Simultaneously the design of the Lifepak™ Bioreaktor forces this bubbles to pass in continuation the biological active surface of the Lifepak™ Bioreaktor. Activated bacteria's built clusters, reduce the amount and pre-stabilize the surplus sludge. The hydrodynamic design of the Lifepak™ Bioreaktor involves a continuous parallel vertical waste water circulation optimizing contact opportunities of the liquid with biological activity.



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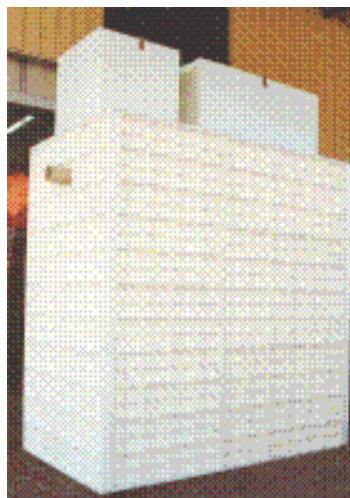


The optimized balance of aerobe and anaerobe conditions, Nitrification and Denitrification, accelerates the biological degradation. More efficient technologies are yet not available.

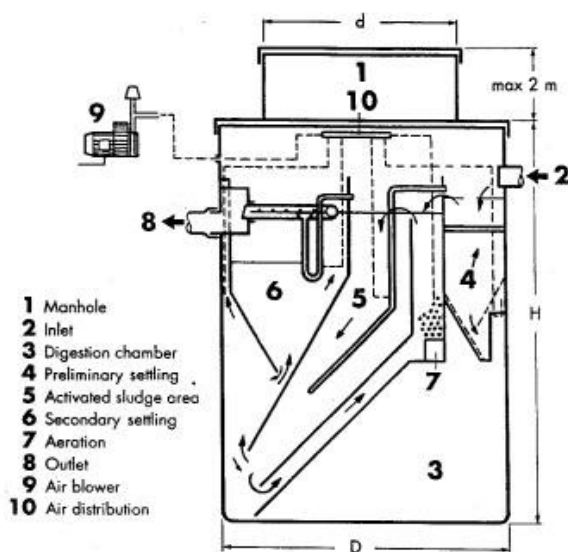
Quality of treated waste water and stabilized sludge is below the international standards

**BOD < 20 mgr / Ltr**

**COD < 80 mgr / Ltr**




The waste water is treated in a aerated hybrid biological treatment system with activated surplus sludge. The body of the units is of strong PPP ( Polypropylene) with a 20 Years product warranty. High solid content settles in the pretreatment chamber. The waste water proceeds to the aeration chamber. Air is distributed through membrane tubes beneath the **Lifepak™** Bioreactor.





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The entire system can be pulled out of the unit for maintenance purposes if necessary. Following the aeration the water runs into the settling chamber. with a Lamella Filter remaining solids are separated and pumped back into the aeration chamber for further treatment. From the settling chamber the treated clean water flows through a chlorination unit (in accordance with the Greek law for reuse of waste water) to the reuse or irrigation system.

### **The units do not contain any corrodible metallic components**

Small Systems from 6 to 100 inhabitants

This biologic mechanic treatment systems are designed for subsurface installation, but can be installed as well on the surface or any other sized place. They are easy to transport.

Parts of the equipment

- Container Unit with pre-settling, aeration, settling and chlorination chamber
- Air compressor
- Membran tube aeration system
- **Lifepak™** Bioreactor
- Mammut sludge pumps operated with aeration compressor
- Lamella filter
- Automatic Nitrification / De-nitrification and pumping
- Chlorination Unit with dosimeter
- Electro mechanic panel
- product documentation

### **Warranty**

20 years full for the body

10 years for the aerationsystem

2 years for the compressor



Measurements 6 – 100 habitants

Τύπος συσκευής	EWG	6	8	12	16	25	30	40	50	75	100
Παροχή λυμάτων στην είσοδο	m <sup>3</sup> /d	0,9	1,2	1,8	2,4	3,75	4,5	6	7,5	11,25	15
Μέγιστη αποδεκτή ποσότητα	m <sup>3</sup> /h	0,08	0,1	0,15	0,2	0,31	0,38	0,5	0,63	0,94	1,25
	kgBSS /d	0,36	0,48	0,72	0,96	1,5	1,8	2,4	3	4,5	6
<b>Διαστάσεις</b>											
Μήκος	m	2,2	2,2	2,4	2,4	2,4	2,4	2,4	3,2	3,4	3,8
Πλάτος	m	1,2	1,2	1,2	2	2	2,4	2,4	2,4	2,4	2,4
Ύψος	m	2,8	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2
Προεπεξεργασία	m <sup>3</sup>	1,5	1,8	2,8	4	4	5	5	5,9	5,9	5,9
Σύμωση, τελική επεξεργασία	m <sup>3</sup>	2	2,2	2,5	3,5	3,5	4,4	4,4	7,9	8,9	10,9
<b>Βερ ισμός</b>											
Απαιτούμενο οξυγόνο	kgO <sub>2</sub> /h	0,8	1,1	1,6	2,2	3,4	4,1	5,4	6,8	10,1	13,5
Παροχή οξυγόνου	kgO <sub>2</sub> /h	1,1	1,8	2,5	2,5	4	6	8	10	12	16
Παροχή αέρα	m <sup>3</sup> /h	2	2,5	2,5	3	5	6	7	9	11	16
Εγκατεστημένη ισχύ κινητήρων	kW	0,12	0,12	0,12	0,25	0,25	0,25	0,37	0,55	0,55	1,1
Κατανάλωση ηλεκτρ. Ενέργειας	kWh	0,08	0,08	0,08	0,18	0,18	0,18	0,26	0,39	0,39	0,78
Διάρκεια λειτουργίας ανεμιστήρα	h/d	17,5	14,7	15,4	21,1	20,4	16,2	16,4	16,2	20,2	16,4
<b>Τύπος</b>											
Προεπεξεργασία		X	X	X	X	X	X	X	X	X	X
Δίχως καθίζηση λάσπης		X	X		X	X	X	X	X	X	X
Με καθίζηση λάσπης				X	X	X	X	X	X	X	X
Επεξεργασία δίχως περσιδοδιαχωριστή		X	X	X	X						
Επεξεργασία με περσιδοδιαχωριστή						X	X	X	X	X	X
Βοχαρισμός		X	X	X	X	X	X	X	X	X	X

