



Aquaco Aerobic MBR Grey Water Systems

Daily output from 2,000 litres per day

Application

- Collects, biologically treats and mechanically filters grey water from wash hand basins, showers and baths.
- Supplies water for WC's, irrigation, and laundry.
- Complete system for plant room installation
- Modular for flexible installation.

Product description

The Aquaco plant room grey water system consists of three main components:

The aerobic treatment and Membrane-Bio-Reactor (MBR) consists of several tanks to collect the grey water from showers, baths and washbasins for biological treatment by means of aeration and a pre-installed filter unit (ultra filtration). Viruses, bacteria and suspended matter are filtered from the grey water. The processed water is transferred into the clear water tank using an efficient, dedicated, permeate pump.

The processed grey water is stored in the clear water tank (CWT). From here it is pumped to the point of use by means of either a packaged Aquaco Master Control Unit (AMCU) or a booster pump set. The latter will require the addition of a Cat 5 mains water top-up system within the CWT, which is included within Aquaco's supply.

A single control panel is bolted to a wall nearby to manage the system. All other components come pre-packed on the MBR tank.

Benefits

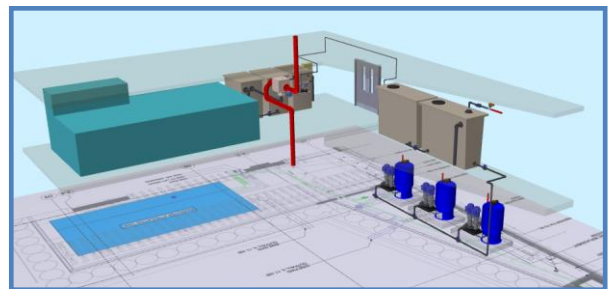
- 20 nanometre membrane filter technology - removes viruses, bacteria and contaminants without the use of chemical treatment.
- Up to 50% savings on water bills
- Designed and Manufactured by Aquaco in the UK.
- Unique automated back flush and air scour sequencing, reducing maintenance and increasing filtration flow rates.
- One of the lowest running costs on the market.
- Low maintenance & installation-friendly components.



Aquaco Aerobic MBR Processing Tank



MBR control panel



Full 3D system drawings for all projects

Technical specification

- Bespoke design and modular manufacture allows for almost infinite throughput.
- High efficiency with up to 100% saving of mains water for WC flushing.
- Water treatment and storage in plant room.
- Peak consumption periods are absorbed by buffer storage within the CWT.
- Operation and control via PLC and HMI offering simple control and parameter adjustment.
- Can be combined with rainwater systems
- Remote maintenance and analyses via Ethernet, or onsite USB flash drive.
- Optional fault notification email.
- All components rated @ 230Volts / 50Hz



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Technical specification overview

Daily output in litres	2,000	4,000	8,000	12,000	24,000	36,000	48,000		
Final steady-state flux (litres per hour)	122.5	245	490	735	1,470	2,205	2,940		
kW/1,000 L (treated water)	3.077	1.54	0.98	0.66	0.66	0.66	0.66		
Aeration Pump(s)	1	1	1	1	2	3	4		
Permeate Pump(s)	1	1	1	1	2	3	4		
Pre-treatment tank	-	-	-	1 x 3,000L	1 x 3,000L	1 x 3,000L	Or GRP Sectional c/w partition	1 x 3,000L	Or GRP Sectional c/w partition
Aerobic treatment tank	-	-	1 x 3,000L	1 x 3,000L	2 x 3,000L	3 x 3,000L		4 x 3,000L	
Membrane bio reactor tank	1 x 3,000L	1 x 3,000L	1 x 3,000L	1 x 3,000L	2 x 3,000L	3 x 3,000L	4 x 3,000L		
Clear water tank	1 x 2,000L	1 x 3,000L	2 x 3,000L	9,000L GRP sectional	18,000L GRP sectional	27,000L GRP sectional	36,000L GRP sectional		
Approx. Plant area required for system	4.5m ²	4.5m ²	8.5m ²	12.75m ²	18m ²	25m ²	31.5m ²		

The above plant layouts are standard design and do not include walkways and safe access - tank volumes can also be modified to suite project-specific requirements.

General Water Quality for MBR Treatment with Potable, BS82525, and EU Bathing Benchmarks:

Parameter	Potable Benchmark 12/1990	Potable Benchmark 05/2003	BS82525-1:2010 (Grey Water Standard) for WC Flushing	EU Bathing Water Benchmark 12/1991	Grey Water	
					Ultra-filtration	
					Input	Output
Temperature (°C)	-	-	-	-	10 - 20	10 - 20
Conductivity	2,000	2,500	-	-	449	572
pH	6.5 – 9.5	6.5 – 9.5	5.0 – 9.5	6.0 – 9.5	7.4	7.0
O ₂ (mg/L)	5	5	-	-	3.3	8.6
Turbidity (NTU)	1.5	1.0	< 10	-	57.0	0.2
COD (mg/L)	-	-	-	-	250 - 400	15
BOD (mg/L)	-	-	-	-	150 - 200	< 5.0
CFU (x/100ml)	100	100	-	-	300,000	1 - 1000
E-Coli (x/100ml)	0	0	250	2000	2,000,000	n.d.
Total Coliforms (x/100ml)	0	0	1,000	10,000	4,000,000	n.d.

n.d. = Not Detectable