



PRODUCT & TECHNICAL SHOWCASE

HOLLOW FIBRE

REINFORCED SUBMERGED
HOLLOW FIBRE

FOR WASTEWATER TREATMENT
APPLICATIONS



HOLLOW FIBRE

MEMBRANE MODULE

The Hollow Fibre MBR was created to offer customers a technologically advanced, economical solution to their wastewater treatment needs. In the interests of minimising whole life costs and maximising performance, a unique and innovative design approach was taken – separating biological treatment and membrane filtration into two distinct zones. This allows each stage of the process to be optimised individually, enabling operating conditions such as aeration rate to be controlled discretely for each stage to minimise cleaning and power costs.

Furthermore, the flexibility this provides allows standard designs to be tailored to suit the specific requirements of particular industrial wastewater types.

The intensive nature of the biological treatment stage combined with the filtration barrier provided by the membrane stage makes the system robust and surprisingly simple to operate, enabling the process to tolerate considerable fluctuations in influent quality.

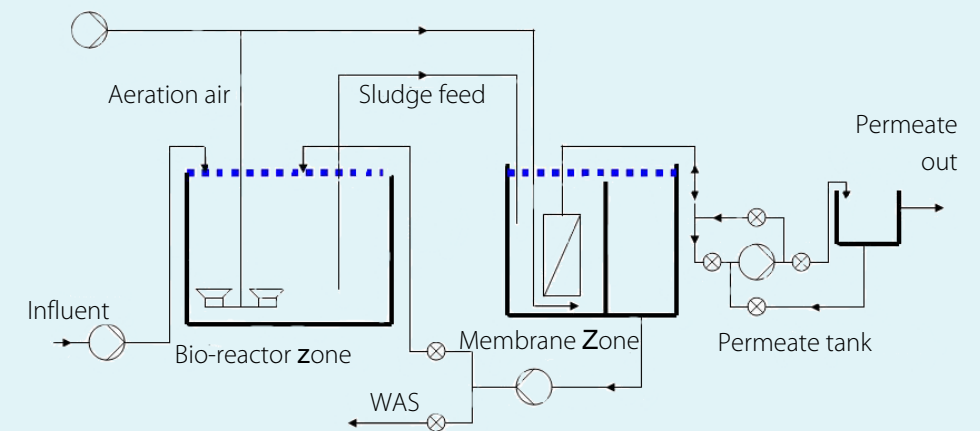
A very high quality of permeate is produced that is suitable for on-site reuse or direct discharge to sensitive receiving waters.

It is also highly suited to polishing processes, such as PCI Membranes' range of Reverse Osmosis systems, which can purify water to almost any standard required.

Systems can be provided either as standard packages or bespoke designs to suit the nature of the wastewater and integration into existing site infrastructure.

HOLLOW FIBRE SERIES BENEFITS:

- LOWEST WHOLE LIFE COST MBR SYSTEM .
- CONSISTENTLY HIGH QUALITY, DISINFECTED PERMEATE SUITABLE FOR REUSE OR DIRECT DISCHARGE.
- INTENSIVE PROCESS PROVIDING RESILIENCE AND MINIMAL FOOTPRINT REQUIREMENTS.
- AVAILABLE IN STANDARD PACKAGES OR BESPOKE DESIGNS FOR INTEGRATION INTO EXISTING INFRASTRUCTURE WHERE INCREASED CAPACITY AND/OR QUALITY IS NEEDED.
- SIMPLE, UNDEMANDING OPERATIONAL AND MAINTENANCE REQUIREMENTS – HIGHLY SUITED TO AUTOMATION
- CAPABLE OF BIOLOGICAL NUTRIENT REMOVAL.
- LOWER SLUDGE PRODUCTION THAN CONVENTIONAL ACTIVATED SLUDGE PROCESSES.
- MODULAR DESIGN PROVIDING PROCESS FLEXIBILITY – SUITED TO A WIDE RANGE OF EFFLUENTS.
- MULTIPLE, INTEGRATED CLEANING TECHNIQUES CAN MAXIMISE PERFORMANCE – REGIMES AND CUSTOMIZATION IS AVAILABLE TO SUIT SPECIFIC EFFLUENT CHARACTERISTICS.



Reinforced submerged hollow fibre membranes are employed in the filtration stage to separate purified permeate from waste compounds. These operate in the ultrafiltration spectrum, providing disinfected permeate of a very high quality.

The unique design of these membranes incorporates braiding to significantly improve the membranes' ability to withstand the harsh operating environment of a Membrane Bioreactor, and thus increase their lifespan.

Each of the membrane fibres is connected to manifold from both ends, thus reducing the amount of pipework required to withdraw permeate and avoiding the mechanical stress. The membranes are mounted in proprietary modules that provide the optimal degree of restraint and system robustness.



High Quality Permeate	
BOD5	< 2mg/l
TSS	<1mg/l
Ammonia	< 1mg/l
Total Nitrogen	< 3mg/l*
Phosphorous	< 0.1mg/l**
Turbidity	< 0.2 NTU

* with anoxic zone ** with coagulant

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