

Benefits

- Small footprint as large clarifier modules are no longer required. This results in reduced civil costs and demand on space.
- Versatility due to the fact that the MBR is designed to operate at mixed liquors from 5,000 to 18,000mg/l. This means that increases in COD/BOD, for example due to seasonal load changes, can be easily accommodated. This flexibility has previously been unachievable with conventional biological treatment systems.
- Higher operating mixed liquor concentrations result in longer sludge age thereby retaining a viable nitrifying bacterial population. This increases the effective conversion of ammonia to nitrate; the first stage of ammonia removal.
- The Mitsubishi Sterapore hollow fibre membrane has a porosity of 0.4 micron which being smaller than the bacterial floc size results in an effluent of zero suspended solids. This cannot be matched by a conventional settlement tank even when followed by sand filtration. Zero solids in the permeate removes the need for UV disinfection when reusing the water.
- Simple operation. The MBR system lends itself to full automation as the system can be controlled by measuring membrane pressures and flow rates. Daily sludge volume index tests are not required.
- Peace of mind. Mitsubishi's pledge of 100% success on all projects gives unrivalled security to plant operators.



Major Applications for Mitsubishi Sterapore SUR Membrane Units

- | | |
|------------------------|-------------------|
| • Municipal wastewater | • Food processing |
| • Abattoirs | • Pharmaceutical |
| • Tank cleaning | |

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MEMBRANE BIO REACTORS FOR WASTEWATER TREATMENT



The Membrane Bio Reactor: at the forefront of modern wastewater treatment technology

A membrane bio reactor (MBR) combines a biological treatment process with sludge separation utilising membrane technology. This combination offers several significant advantages over conventional activated sludge systems, including small footprint, low energy consumption, excellent and consistent effluent quality, reduced sludge production, and easy automatic operation.

Features of the Mitsubishi Sterapore SUR hollow fibre membrane unit:

- Uniform construction capillary fibre of homogeneous polyethylene (PE) giving the membrane high tensile strength and resistance to stretching. The membrane cannot de-laminate thereby allowing higher backpulse pressures than alternative membranes
- Modular design allowing fast and reliable installation.
- Pore size of 0.4 micron results in consistent microfiltration under all conditions. This results in a stable and robust process.
- Hollow fibre technology gives immunity to the effects of any membrane damage.
- Pressurised backpulse and continuous air scour offers unmatched antifouling performance.
- Low chemical cleaning requirement resulting in longer membrane life.
- Over 2000 plants successfully operating worldwide gives peace of mind.

