

Commercial waste water?

The most technically advanced
waste water treatment system available
in New Zealand for commercial applications

THE KUBOTA SUBMERGED MEMBRANE BIOREACTOR SYSTEM

(1 to 50m³ per day Packaged Plants)



From the New Zealand supplier



Kubota

A world leader in
submerged membrane
systems, with a proven
performance track record
over 15 years.

The Kobuta Membrane Installation at Fonterra's Clandeboye Dairy Factory, Timaru.



Typical Performance Data for the Clandeboye installation (To date)

Parameter	Units	Average test figures
BOD ₅	mg/L	< 5
Suspended solids	mg/L	< 5
Faecal coliforms	No/100ml	Typically zero
PH		< 7.4 - 8 range
Total Nitrogen	mg/L	< 5
Total Phosphorus	mg/L	< 5

The Clandeboye installation shown above is designed to handle the waste water generated by a staff in excess of 700.

Installations such as this can be added to as the workforce increases.

Of note is the small area the site requires.

Oasis Clearwater Environment Systems are the approved New Zealand distributors for Packaged Commercial and Domestic Treatment Systems from 1m³ to 50m³ per day. For systems above this, contact the Oasis Clearwater Environment Systems Head Office or Aquatec Maxon PTY Ltd.

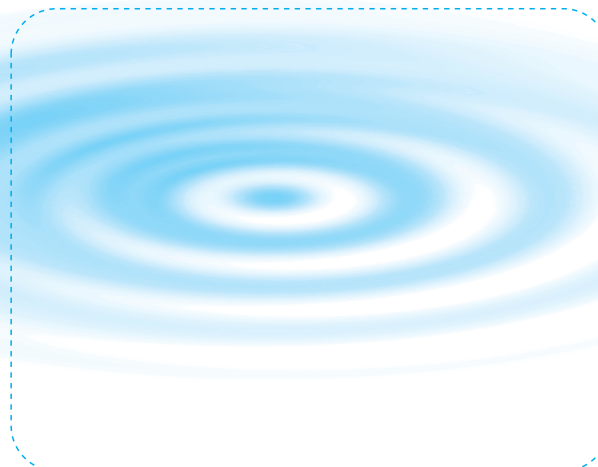


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Your authorised local distributor



The Kubota Membrane technology

The development of the Submerged Membrane Bioreactor technology by Kubota was the result of a Japanese Government initiative to produce compact, high quality effluent treatment plants.

Since producing their first pilot plant in 1989 and then the first commercial plant in 1991, Kubota have installed over 1500 plants, covering a wide range of effluents including sewage, sludge liquors, industrial and food processing waste and greywaters, treating the liquid ready for recycling and reuse.

The Kubota system utilizes a flat sheet membrane panel arrangement.

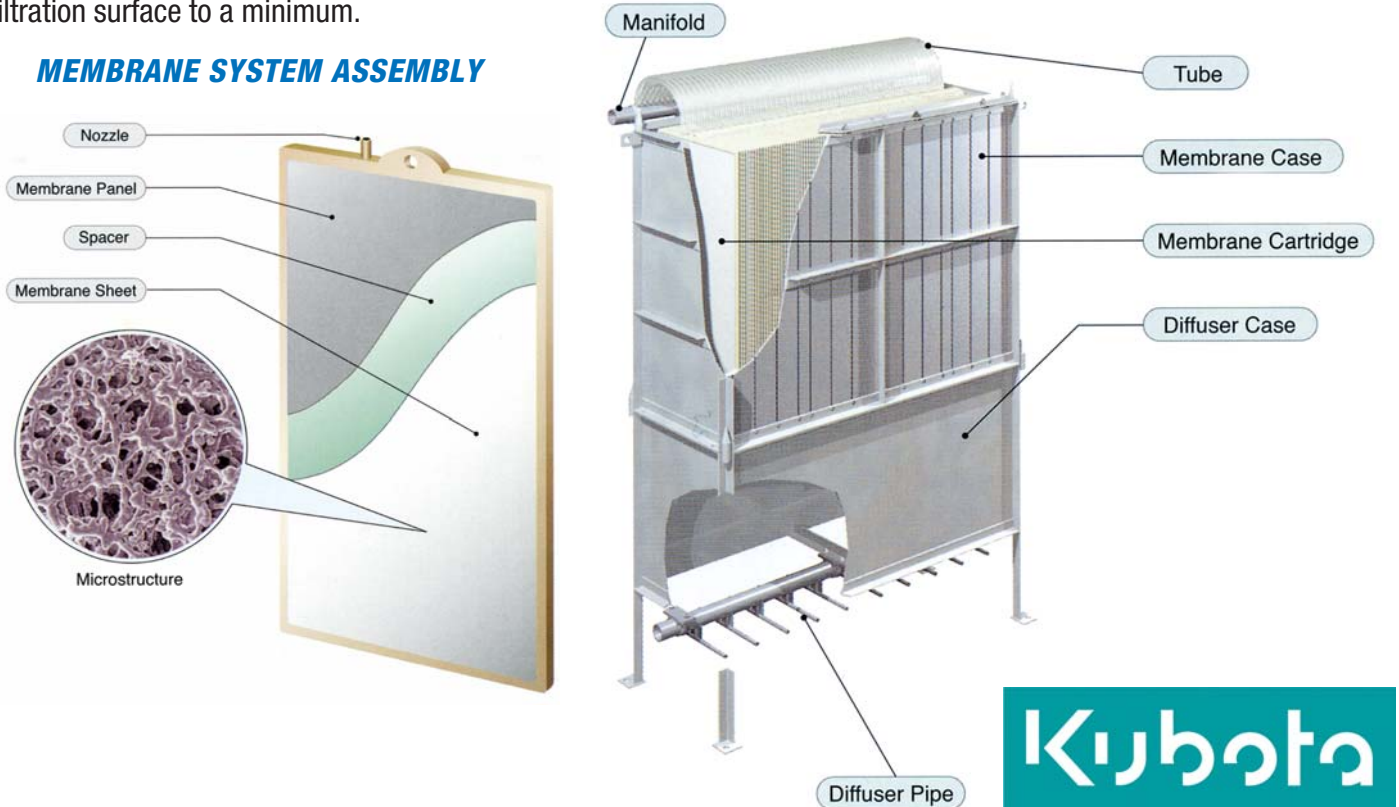
A series of these membranes are submerged within an activated sludge treatment liquor. The system also incorporates an air diffuser located at the base of the membrane, which generates an upward crossflow of air bubbles over the membranes keeping fouling of the filtration surface to a minimum.

The Kubota process utilises varying numbers of membrane units, dependant on the flow for treatment. Each membrane is housed within a rectangular box, with the integral aeration system.

The Kubota Membrane features

- Membrane filtered high quality water - ideal for re-use.
- The Kubota Flat Sheet Membrane is especially designed for waste water application.
- Kubota is the MBR technology world leader with more than 1500 installations worldwide.
- The Kubota system offers a long membrane life with a proven performance record.
- It is simple, compact and more reliable than conventional treatment systems.

MEMBRANE SYSTEM ASSEMBLY



Kubota Membrane Design Advantages

Compact plant

Membrane Bioreactors have a number of inherent advantages. The system does not require flocs to be formed to remove the solids by sedimentation and therefore the biomass can operate at very high levels of Mixed Liquor Suspended Solids (MLSS), generally in order of 10,000-18,000 mg/L. This high concentration of MLSS allows for a small tank volume and the generation of a long sludge age. This reduces sludge volume, which allows for a small plant footprint and a 50% reduction in aeration tank volume.

Easy maintenance control

The process is designed to run without supervision and by using high quality plastics and stainless steel, the membrane panels and cases have long life expectancies. By minimizing the effect of fouling through controlled cross flow velocities over the membrane surface, in situ, membrane cleaning is normally restricted to twice a year.

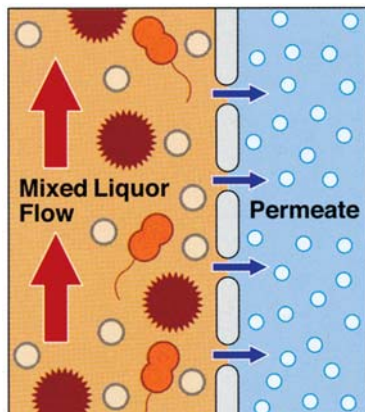
Less excess sludge production

The long sludge age process produces less surplus sludge than conventional treatment processes. Hence, sludge handling and disposal costs are reduced and the sludge is highly stabilized.

Reliable quality of treated water because of membrane separation.

Because of the small pore size of the membrane (0.1-micron effective pore size) **bacteria and most viruses are removed by the process.** High quality of treated water is reliably achieved.

Turbidity of the effluent is less than 0.2 NTU and suspended solids are less than 3mg/l.



Kubota Membrane design features

- The submerged unit comprises cartridges with fine porous membranes fixed to both sides of a supporting plate and tubes for removing treated water from the cartridges.
- The membrane case can store a large number of membrane cartridges, as well as diffusers and a diffuser case in the lower portion.
- The membrane cartridges can be removed one by one for easy inspection and replacement.
- Gravity flow system, no requirement for vacuum abstraction. A negative pressure system is available.
- Robust design and minimal operator intervention.
- Low requirement for regular cleaning – typically twice yearly only.
- No pulsed backwash system required.
- Not clogged by hairs or fibres.
- Rigid design prevents damage through fatigue – membranes do not abrade each other.
- Modular designs for easy upgrade.

Main applications for the Kubota system

- Solid-liquid separation for high concentration activated sludge treatment.
- Domestic and Municipal wastewater treatment.
- Wastewater effluent reuse systems.
- High quality treatment for sensitive areas.
- Industrial wastewater treatment and recycle.

