

PRODUCT DATA SHEET



Moving Bed Bioreactor (MBBR)

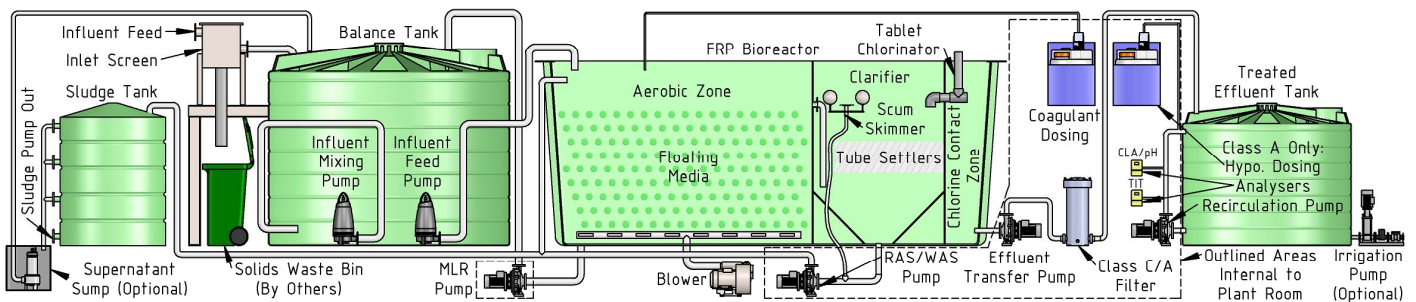
water | wastewater | sewage

OVERVIEW

MAK Water's Moving Bed Bioreactor (MBBR) type packaged sewage treatment plants are designed to treat domestic strength sewage, to achieve "Class C" treated effluent, suitable for reuse in "risk category low" applications or for discharge to environment. With the optional "Class A" upgrade, treated effluent suitable for reuse in "risk category medium" applications is achieved.

The standard treatment process includes influent screening, balance tank mixing, anoxic & aerobic treatment, clarification, effluent sterilization (chlorine tablets) and bag filtration (100 micron). The optional "Class A" upgrade includes an auto-backwashing aseptic glass media filter (5 micron), secondary chlorination via tank recirculation and residual trim hypochlorite dosing, and analyzers for online monitoring of treated effluent turbidity, free chlorine and pH.

MAK Water's MBBR Bioreactors are constructed of corrosion resistant FRP, and are self-contained, modular systems for easy deployment to remote locations.



STANDARD SPECIFICATIONS

Parameter	Units	MBBR-150	MBBR-200	MBBR-350	MBBR-500	MBBR-600	
Treatment capacity (min/max)	m ³ /day	37.5 / 150	50 / 200	87.5 / 350	125 / 500	150 / 600	
*1Balance tank volume (recommended)	m ³	180	243	414	604	736	
*1Treated effluent tank volume (recommended)	m ³	150	200	350	500	600	
Sludge tank volume	m ³	22.5	32	50			
Sludge waste volume (min/max)	m ³ /month	3.0 / 12.2	4.6 / 18.3	6.8 / 27.4	9.1 / 36.5	11.4 / 45.6	
*2Irrigation pump duty	m ³ /hr @ 500 kPa	18.8	25	43.8	62.5	75	
Ambient temperature (min/max)	°C	1 / 43					
Power supply	-	AC 380~450 V, 3 Phase, 50/60 Hz					
Power consumption	Class C (max)	kW	15.5	23.5	30.5	43.5	58.5
	Class A (max)	kW	18.5	26.5	33.5	48.5	63.5
	*2Irrigation pump	kW	5.5	7.5	11	15	22
Footprint	FRP bioreactor(s) & access platform(s)	m	12 x 3.2	12 x 5.6	12 x 5.6	12 x 8.8	12 x 8.8
	Containerised plant room	m	6 x 2.4	*3N/A	6 x 2.4	*3N/A	6 x 2.4

Characteristics	Units	Influent	**Class C effluent	**Class A Effluent
Temperature	°C	15~45	-	
pH	pH units	6.5~8.5	6.5~8.5	
Biological oxygen demand (BOD)	mg/L	150~400	<20	
Suspended solids (TSS)	mg/L	150~300	<30	<10
Oil & grease	mg/L	<10	-	
Total nitrogen (T-N)	mg/L	<50	<40 (or <10 mg/L reduction from influent value)	
Total phosphorus (T-P)	mg/L	<16	4~12 (variable according to coagulant dose rate)	
Total dissolved solids (TDS)	mg/L	<2,000	-	
Turbidity	NTU	-	N/A	<5 (95%ile)
E.Coli	cfu/100 mL	-	<1,000	<10
Free chlorine	mg/L	-	0.2~2	

*1 Sold separately, *2 Optional equipment, *3 Plant room integral to FRP bioreactor, *4 Based on QLD guidelines

STANDARD INCLUSIONS + OPTIONS

✓ = Standard Supply, o = Optional Supply

Equipment		MBBR-150	MBBR-200	MBBR-350	MBBR-500	MBBR-600	
Automatic inlet screen (2 mm)		✓	✓	✓	✓	✓	
Influent mixing pump		✓	✓	✓	✓	✓	
Influent feed pump		✓	✓	✓	✓	✓	
FRP bioreactor(s) with aluminium access platform(s) & ladder(s)	Aerobic zone with floating media, blower & MLR pump	✓	✓	✓	✓	✓	
	Clarifier with tube settler & scum removal system	✓	✓	✓	✓	✓	
	Chlorine contact zone with tablet chlorinator	✓	✓	✓	✓	✓	
	Bioreactor roofing (COLORBOND® steel sheeting)	o	o	o	o	o	
Plant room with air conditioning, overhead lighting & GPO for maintenance	Chemical dosing – coagulant	✓	✓	✓	✓	✓	
	RAS/WAS pump	✓	✓	✓	✓	✓	
	Effluent transfer/filter feed (& backwash) pump	✓	✓	✓	✓	✓	
	Class C	Bag filter (100 µm)	✓	✓	✓	✓	✓
	Class A	Auto-backwashing aseptic glass media filter (5 µm)	o	o	o	o	o
		Treated effluent tank recirculation pump	o	o	o	o	o
		Residual trim hypochlorite dosing	o	o	o	o	o
PLC control system with HMI		✓	✓	✓	✓	✓	
Sludge tank with supernatant sampling points & discharge valves		✓	✓	✓	✓	✓	
Supernatant sump with submersible pump & level control		o	o	o	o	o	
Irrigation pump with level control & mechanical flow totaliser		o	o	o	o	o	
Instrumentation	Standard package	✓	✓	✓	✓	✓	
	Premium package with ClearAccess™ remote monitoring	o	o	o	o	o	

Instrumentation & Controls		Standard package	Premium package
Balance & chlorine contact tank float level switches		✓	-
Chemical dosing & sludge tank float level switches		✓	✓
Pressure switches		✓	✓
Pressure gauges		✓	✓
Class A only	Aseptic glass media filter pressure transmitter	✓	✓
	Treated effluent chlorine & pH analyser	✓	✓
	Treated effluent turbidity analyser	✓	✓
Variable speed drives	Influent feed pump	✓	✓
	MLR pump	✓	✓
	Aeration blower	-	✓
Balance & chlorine contact tank level transmitters		-	✓
Magnetic flow transmitters (influent feed pump & MLR pump)		-	✓
Aerobic tank dissolved oxygen analyser		-	✓
Aerobic tank pH analyser		-	✓
ClearAccess™ remote monitoring & control capabilities		-	✓

MODEL SELECTION

- 150** Capacity – 150 m³/day
- 200** Capacity – 200 m³/day
- 350** Capacity – 350 m³/day
- 500** Capacity – 500 m³/day
- 600** Capacity – 600 m³/day

- C** Treatment to Class C
- A** Treatment to Class A
- X** Roofed bioreactor – without
- R** Roofed bioreactor – included
- X** Supernatant sump – without
- S** Supernatant sump – included
- X** Irrigation pump – without
- I** Irrigation pump – included
- X** Standard instrument package
- P** Premium instrumentation package
- X** Specifications – standard
- C** Specification – custom

MBBR

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NEED A QUOTE?

COMPLETE THIS TABLE AND EMAIL TO...

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