

PRODUCT DATA SHEET

Biocombi Treatment Plant (BCTP)

water | wastewater | sewage



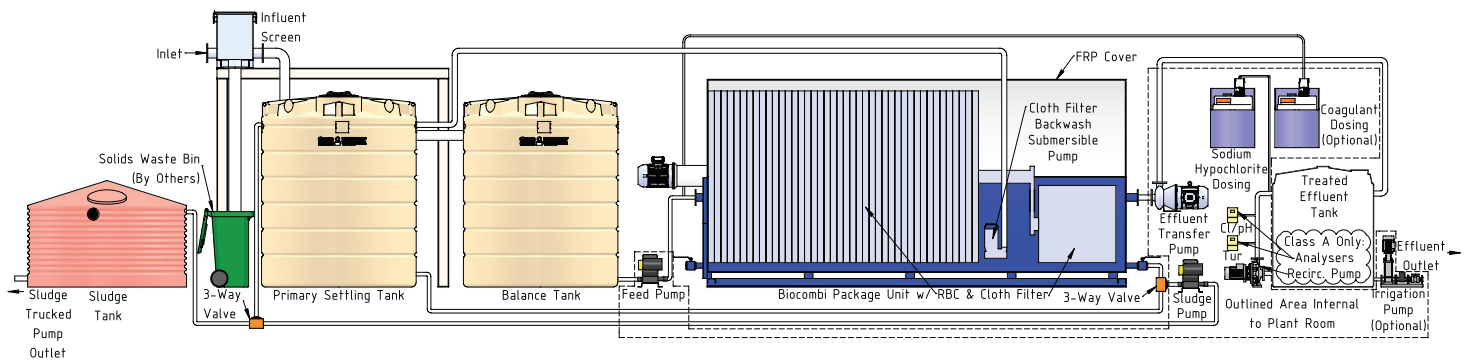
OVERVIEW

MAK Water's Biocombi Treatment Plant (BCTP) is designed to treat domestic strength sewage to achieve "Class C" treated effluent quality suitable for reuse in "risk category low" applications or for discharge to environment. With the optional "Class A" upgrade, treated effluent quality suitable for reuse in "risk category medium" applications is achieved.

Biological treatment in the Biocombi Treatment Plant (BCTP) is provided by the Biocombi equipment that uses Rotating Biological Contactor (RBC) attached growth technology and cloth media filtration for solids separation (clarification) incorporated in a single packaged unit. The standard treatment process includes influent screening, primary settling and flow balancing, Biocombi treatment followed by effluent disinfection with sodium hypochlorite dosing. The optional "Class A" upgrade includes effluent disinfection by dosing sodium hypochlorite and recirculation in treated effluent tank, with analysers for online monitoring of free chlorine, pH and turbidity.



Biocombi package unit



STANDARD SPECIFICATIONS

Parameter		Units	BCTP-25	BCTP-35	BCTP-50	BCTP-70	BCTP-100	BCTP-125	BCTP-150
Treatment capacity		m ³ /day	25	35	50	70	100	125	150
Primary settling tank volume (recommended)		m ³	4500	4500	5300	9000	10500	14000	22500
Balance tank volume (recommended)		m ³	2500	2500	2500	4500	4500	5300	9000
Treated effluent tank volume		m ³	4500	4500	9000	9000	14000	22500	22500
Sludge tank volume		m ³	1000	1000	1000	2500	2500	2500	2500
Thickened sludge waste volume		m ³ /month	0.13	0.19	0.27	0.37	0.53	0.66	0.80
* ₁ Irrigation pump duty		m ³ /hr @ 350 kPa	3.1	4.4	6.3	8.8	12.5	15.6	18.8
Ambient temperature (min/max)		°C	1 ~ 35 (1 ~ 43 with optional plant room air-conditioner) AC 415 V, 3 Phase, 50 Hz						
Power supply		-							
Power consumption	Class C 20mg/L BOD Effluent	kW	2.8	2.9	3.3	3.8	5.2	5.9	7.9
	Class A 10mg/L BOD Effluent	kW	3.1	3.3	4.3	5.5	7.9	7.9	10.6
	Class A upgrade	kW	0.37	0.55	0.55	1.10	1.10	1.50	2.20
	* ₁ Irrigation pump	kW	0.55	0.75	0.75	1.50	2.20	3.00	4.00
	* ₁ Air conditioner	kW	1.50	1.50	1.50	1.50	1.50	1.50	1.50
* ₂ Footprint, Biocombi package system only	20mg/L BOD Effluent	m	4.80 x 2.40	5.75 x 2.40	6.70 x 2.40	7.65 x 2.40	8.07 x 2.80	7.65 x 5.76	7.13 x 6.72
		Model #	BC 10/2	BC 15/2	BC 20/2	BC 25/2	BC 40/4	2xBC 25/2	2xBC 30/4
	10mg/L BOD Effluent	m	6.70 x 2.40	7.65 x 2.40	7.60 x 2.80	7.65 x 5.76	7.60 x 6.72	8.54 x 6.72	7.60 x 10.08
		Model #	BC 20/2	BC 25/2	BC 35/4	2xBC 25/2	2xBC 35/4	2xBC 45/4	3xBC 35/4

*₁ Optional equipment. *₂ Biocombi package only, not entire BCTP.

Characteristics	Units	Influent	Class C Effluent * ₃	Class A Effluent * ₃
Temperature	°C	15~35	-	
pH	pH units	6.5~8.5	6.5~8.5	
Biological oxygen demand (BOD)	mg/L	≤350 * ₄	<20	<10
Suspended solids (TSS)	mg/L	≤350 * ₄	<30	<10
Oil & grease	mg/L	<10	-	
Total nitrogen (T-N)	mg/L	≥20	N/A (no reduction)	
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	-	0.2~2.0	

*₃ Based on QLD guidelines. *₄ Referenced from Metcalf & Eddy (5th Edition, 2014). Typical composition of untreated domestic sewage. Other design values available on request.

STANDARD INCLUSIONS + OPTIONS

Equipment		Units	BCTP-25	BCTP-35	BCTP-50	BCTP-75	BCTP-100	BCTP-125	BCTP-150
Automatic inlet screen (2 mm)			✓	✓	✓	✓	✓	✓	✓
Biocombi package with integrated RBC & Cloth Filter (suitable for external installation)	Materials Standard: Tank in painted carbon steel painted, with C5M external coating, RBC internals galvanised steel, Cloth Filter internals 304SS		✓	✓	✓	✓	✓	✓	✓
	Materials 304SS : Tank, RBC and Cloth Filter internals in 304SS		o	o	o	o	o	o	o
	Materials 316SS : Tank, RBC and Cloth Filter internals in 316SS		o	o	o	o	o	o	o
	Modular cover in GRP		✓	✓	✓	✓	✓	✓	✓
	RBC discs and spacers of isotactic polypropylene		✓	✓	✓	✓	✓	✓	✓
	Biocombi Cloth Filter backwash pump		✓	✓	✓	✓	✓	✓	✓
Plant room with overhead lighting and GPO for maintenance	Biocombi feed pump		✓	✓	✓	✓	✓	✓	✓
	Biocombi Cloth Filter sludge pump / Primary Settling Tank sludge pump (shared duty)		✓	✓	✓	✓	✓	✓	✓
	Biocombi effluent transfer pump		✓	✓	✓	✓	✓	✓	✓
	Irrigation pump		o	o	o	o	o	o	o
	Hypochlorite dosing	Class C and A	✓	✓	✓	✓	✓	✓	✓
	Treated effluent tank recirculation pump	Class A	o	o	o	o	o	o	o
	Chemical dosing – coagulant		o	o	o	o	o	o	o
	PLC control system with HMI		✓	✓	✓	✓	✓	✓	✓
	Plant room air conditioner		o	o	o	o	o	o	o
Instrumentation	Standard package		✓	✓	✓	✓	✓	✓	✓
	Premium package with ClearAccess™ remote monitoring		o	o	o	o	o	o	o

Instrumentation & Controls		Standard Package	Premium Package
Level switches	Balance Tank	✓	-
	Sludge Tank	✓	-
	Treated Effluent Tank	✓	-
	Biocombi Cloth Filter	✓	✓
	Biocombi Effluent Transfer Pump	-	✓
	Chemical dosing tank(s)	✓	✓
Level transmitters	Balance Tank	-	✓
	Sludge Tank	-	✓
	Treated Effluent Tank	-	✓
Flow switches	Biocombi Effluent Transfer Pump	-	✓
	Biocombi Cloth Filter Backwash pump	-	✓
	Treated effluent recirculation pump (Class A)	-	✓
	Irrigation pump (optional)	-	✓
Pressure indicators	Biocombi Feed Pump	✓	✓
	Biocombi Cloth Filter Backwash Pump	✓	✓
	Biocombi Effluent Transfer Pump	✓	✓
	Irrigation Pump (optional)	✓	✓
	Treated Effluent Recirculation Pump (Class A)	✓	✓
Mechanical flow totaliser	Irrigation Pump (optional)	✓	✓
Free chlorine and pH analyser (Class A)		✓	✓
Turbidity analyser (Class A)		✓	✓
ClearAccess™ remote monitoring & control capabilities		-	✓

MODEL SELECTION

025	Capacity - 25 m³/d
035	Capacity - 35 m³/d
050	Capacity - 50 m³/d
075	Capacity - 75 m³/d
100	Capacity - 100 m³/d
125	Capacity - 125 m³/d
150	Capacity - 150 m³/d
	C Treatment to Class C
	A Treatment to Class A
	X Coagulant dosing - without
	C Coagulant dosing - included
	X Biocombi package materials: standard
	4 Biocombi package materials: 304SS
	6 Biocombi package materials: 316SS
	X Plant room AC - without
	A Plant room AC - included
	X Irrigation pump - without
	I Irrigation pump - included
	X Standard instrumentation package
	P Premium instrumentation package
	X Specification - standard
	C Specification - custom

BCTP -

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Biocombi Treatment Plant

NEED A QUOTE?

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info@makwater.com.au

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