



Sequencing Batch Reactor (SBR)

Description SBR Kits

Clearfox SBR Kits operate according to the SBR-Process (Sequencing batch reactor) optional with integrated aerobic sludge stabilisation.

The plant consists of two areas: the pre-sedimentation and the bioreactor. the pre-sedimentation consists of a sedimentation chamber, a sludge storage tank and a buffer. The system is designed dimensioned according to the guidelines of the DWA-A 131 and DWA-A 222 for domestic wastewater.



Cleaning efficiency

The cleaning performance is split into classification "C" and "N"

classification "C"

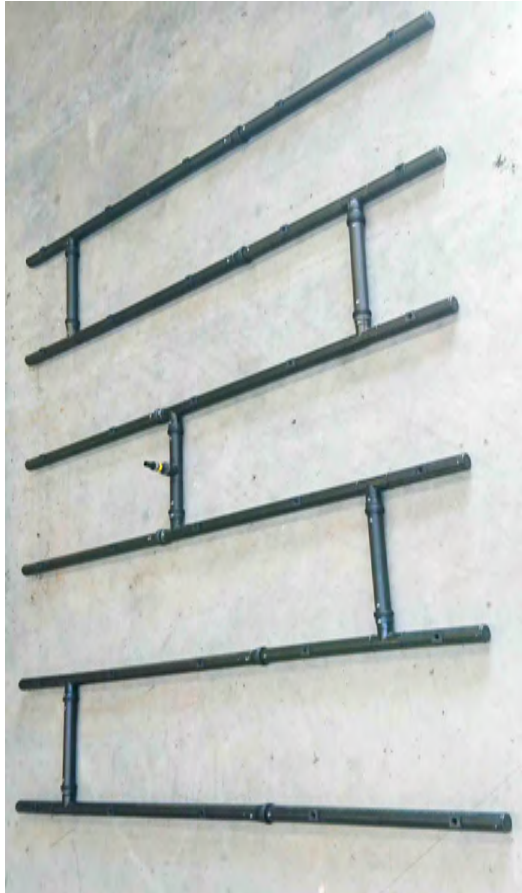
- o COD <150 mg/l
- o BOD <40 mg/l

classification "N"

- o COD <90 mg/l
- o BOD <10 mg/l
- o NH4-N <10 mg/l

Benefits for Clearfox SBR Kits

- No odor
- Low running costs
- High performance with high quality, Made in Germany
- Easy installation and handling
- Sludge stabilization/sludge treatment
- Stable and very robust process technology



Scope of delivery

Clearfox SBR Q1+Kits consist of an aeration system, airlift pumps, an air compressor, an air distribution manifold with electronic/magnetic valves and a control unit.

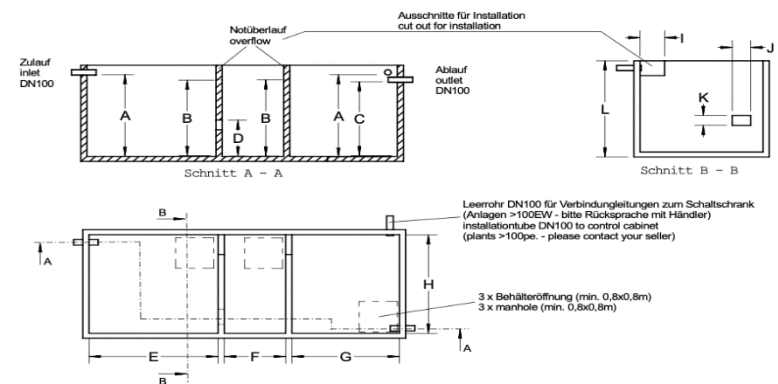
- **Maintenance free disc diffuser mounted on a PE manifold pipe, amount of diffusers and size of manifold according to plant design**
 - EPDM Membrane; $A = 0,55\text{m}^2$; $d=275\text{ mm}$; chemical resistance
 - Mounting material

- **Maintenance free airlift for clearwater, filling and Secondarysludge**
 - Free ball passage from 50 up to 150 mm

- **Standard cabinet**
 - Powder coated steel cabinet 600x600x300 mm
 - Protection class IP 55
 - Lockable, incl. key



- **CF Automation / control unit**
 - Integrated air distributor (up to 4 stepper motors) for operation with diaphragm compressors
 - Pressure sensor-controlled microprocessor technology
 - 5 x 230V outputs, individually fused via microfuses
 - Convenient 6-key operation
 - USB connection with auto-report function (electronic operation diary and faults) and plug-and-play software updates
 - WLAN interface for readout via smartphone
 - Console for indoor and outdoor installation IP 44, compressor socket on top of the housing
 - Dimensions: 320 x 250 x 130 mm (l, w, h); 3 kg
- **Solenoid valve manifold separate for system**
 - 2/2 way, G1 – G2
 - EPDM Membrane -10 to + 140°C
 - 230 VAC, 12 W, 100% ED
- **Maintenance free, two stage side channel air compressor**
 - Capacity according to the dimensioning of the system size
 - Associated silencer



Classification "C"

PE	hydraulic Loading	organic Loading	Primary treatment		Classification "C"	max. water depth	Compressor size	dimension airliftpumps	power consumption	Calculated Sludgeproduction		Cleaningcycles		diameter connecting tube	paletts for transport
			Sludge storage time							COD = 150 mg/l BOD = 40 mg/l	No./day	max. m ³ /cycle			
	3 month*	1 year*	m	KW	Mm	KWh/day	Kg/month	l/day	mm				no.		
	m ³ /day	KG BOD/day	V _{tot} [m ³]	V _{tot} [m ³]	V _{Bio} [m ³]										
60	9,00	3,60	10,50	17,40	6,60	2,00	1,50	75	18,00	61,20	198	3	3,00	25	2
75	11,25	4,50	13,10	21,80	8,30	2,00	1,50	75	18,00	76,50	248	3	3,80	25	2
100	15,00	6,00	17,50	29,00	11,00	2,00	1,50	75	18,00	102,00	330	3	5,00	25	2
125	18,75	7,50	21,90	36,30	13,80	2,00	2,20	100	26,40	127,50	413	3	6,30	32	2
150	22,50	9,00	26,30	43,50	16,50	2,50	2,20	100	26,40	153,00	495	3	7,50	32	2
200	30,00	12,00	35,00	58,00	22,00	2,50	2,20	100	26,40	204,00	660	3	10,00	32	2
250	37,50	15,00	43,80	72,50	27,50	2,50	3,00	100	36,00	255,00	825	3	12,50	38	3
300	45,00	18,00	52,50	87,00	33,00	2,50	3,00	100	36,00	306,00	990	3	15,00	38	3
350	52,50	21,00	61,30	101,50	38,50	2,50	3,00	100	36,00	357,00	1155	3	17,50	38	3
400	60,00	24,00	70,00	116,00	44,00	3,00	3,00	100	36,00	408,00	1320	3	20,00	35	3
450	67,50	27,00	78,80	130,50	49,50	3,00	4,00	150	48,00	459,00	1485	3	22,50	50	4
500	75,00	30,00	87,50	145,00	55,00	3,00	5,50	150	66,00	510,00	1650	3	25,00	50	4

Geschäftsführer:
Dipl.Ing.(FH) Wolfgang U. Pöhnl
Registergericht Bayreuth HRB 4726
USt.-IdNr.: DE259224458

PPU Umwelttechnik GmbH
Carl-Kolb-Str. 6,
95448 Bayreuth,
Germany
Tel. 0921 / 150 63 990,
Fax 0921 / 150 63 999,
E-Mail: info@clearfox.com
www.clearfox.com

Bankverbindung:
HypoVereinsbank Bayreuth
IBAN DE 8877 3200 7200 2542 4794
BIC: HYVEDEMM412

Classification "N"

PE	hydraulic Loading m ³ /day	organic Loading KG BOD/day	Primary treatment		Classification "N"	max. water depth m	Compressor size KW	dimension airlift pumps Mm	power consumption KWh/day	Calculated Sludge production		Cleaning cycles		diameter connecting tube mm	paletts for transport no.
			Sludge storage time							COD = 90 mg/l BOD = 10 mg/l SS = 10 mg/l NH4-N = 10 mg/l	Kg/month	l/day	No./day		
			3 month*	1 year*											
			V _{tot} [m ³]	V _{tot} [m ³]	V _{Bio} [m ³]										
60	9,00	3,60	10,50	17,40	9,00	2,00	1,50	75	18,00	61,20	198	3	3,00	25	2
75	11,25	4,50	13,10	21,80	11,25	2,00	1,50	75	18,00	76,50	248	3	3,75	25	2
100	15,00	6,00	17,50	29,00	15,00	2,00	2,20	100	26,40	102,00	330	3	5,00	32	2
125	18,75	7,50	21,90	36,30	18,75	2,00	2,20	100	26,40	127,50	413	3	6,25	32	3
150	22,50	9,00	26,30	43,50	22,50	2,50	2,20	100	26,40	153,00	495	3	7,50	32	3
200	30,00	12,00	35,00	58,00	30,00	2,50	3,00	100	36,00	204,00	660	3	10,00	38	3
250	37,50	15,00	43,80	72,50	37,50	2,50	3,00	100	36,00	255,00	825	3	12,50	38	3
300	45,00	18,00	52,50	87,00	45,00	2,50	4,00	150	48,00	306,00	990	3	15,00	50	4
350	52,50	21,00	61,30	101,50	52,50	2,50	4,00	150	48,00	357,00	1155	3	17,50	50	4
400	60,00	24,00	70,00	116,00	60,00	3,00	5,50	150	66,00	408,00	1320	3	20,00	50	4
450	67,50	27,00	78,80	130,50	67,50	3,00	5,50	150	66,00	459,00	1485	3	22,50	50	4
500	75,00	30,00	87,50	145,00	75,00	3,00	5,50	150	66,00	510,00	1650	3	25,00	50	4

Geschäftsführer:
Dipl.Ing.(FH) Wolfgang U. Pöhn
Registergericht Bayreuth HRB 4726
USt.-IdNr.: DE259224458

PPU Umwelttechnik GmbH
Carl-Kolb-Str. 6,
95448 Bayreuth,
Germany
Tel. 0921 / 150 63 990,
Fax 0921 / 150 63 999,
E-Mail: info@clearfox.com
www.clearfox.com

Bankverbindung:
HypoVereinsbank Bayreuth
IBAN DE 8877 3200 7200 2542 4794
BIC: HYVEDEMM412



Additional equipment

The **Clearfox SBR** system can be upgraded to any required effluent standard. No matter if it is a phosphorous elimination, disinfection or even persistent/trace substances that must be eliminated.

- **Aluminum Outdoor cabinet RAL 7035**
 - 1200x600x500
 - Protection class IP 55
 - Single-door lockable, incl. key
 - Material Aluminum Sheet powder-coated

- **Aluminum Outdoor cabinet RAL 7035**
 - 1200x800x500
 - Protection class IP 55
 - Single-door lockable, incl. key
 - Material Aluminum Sheet powder-coated

- **Aluminum Outdoor cabinet RAL 7035**
 - 1200x1200x500
 - Protection class IP 55
 - Double-door lockable, incl. key
 - Material Aluminum Sheet powder-coated



- **Technical Room**
 - 2150x2100x1140
 - Galvanized sheet steel
 - Electrical Installation
 - Damp-proof luminaire socket
 - Single-door lockable, incl. key

- **Red alarm light**
 - Complete set with red lamp housing 230 V

- **Modem for CF Automation / control unit**
 - Remote maintenance and remote management possible for customer, maintenance company and manufacturer
 - Integrated modem for network connection
 - Automatic forwarding of faults by e-mail
 - Web portal for access to the control system (display and download of fault messages and operating hours, change of control system parameters depending on authorization, different access levels, system updates)

Geschäftsführer:
Dipl.Ing.(FH) Wolfgang U. Pöhnl
Registergericht Bayreuth HRB 4726
USt.-IdNr.: DE259224458

PPU Umwelttechnik GmbH
Carl-Kolb-Str. 6,
95448 Bayreuth,
Germany
Tel. 0921 / 150 63 990,
Fax 0921 / 150 63 999,
E-Mail: info@clearfox.com
www.clearfox.com

Bankverbindung:
HypoVereinsbank Bayreuth
IBAN DE 8877 3200 7200 2542 4794
BIC: HYVEDEMM412



➤ **Phosphorous elimination**

At the end of the cleaning process a precipitant is added to the reactor.

This takes the phosphate out and store it in the activated sludge.

- Peristaltic dosing pump 0,2 – 4,5 l/h
 - 230 V +/- 10%, 50/60 Hz; 5 VA
 - IP65
 - Capacity adjustable via potentiometer
- Suction lance with level control
- **Chlorine disinfection**

The chlorine disinfection also will be handled with a dosing pump.

The cleaned water will be pumped by the airlift system to a retention tank. During the filling is also the dosing of the chlorine to this tank.

- Peristaltic dosing pump 0,2 – 4,5 l/h
 - 230 V +/- 10%, 50/60 Hz; 5 VA
 - IP65
 - Capacity adjustable via potentiometer
- Suction lance with level control
- Size of the retention tank (customer side)
50% of the daily amount of wastewater

Data Sheet

SBR Kit 60 – 500 PE



- **Connection tube 1"**
 - 50 m roll
 - Pressure hose
 - Size 1" (25mm) 25x4,3mm
 - Stainless steel hose clamps

- **Connection tube 1 ¼ "**
 - 50 m roll
 - Pressure hose
 - Size 1 ¼ " (32mm) 32,4x4,8mm
 - Stainless steel hose clamps

- **Connection tube 1 ½ "**
 - 50 m roll
 - Pressure hose
 - Size 1 ½ " (38mm) 38x4,8mm
 - Stainless steel hose clamps

- **Connection tube 2"**
 - 50 m roll
 - Pressure hose
 - Size 2" (38mm) 50x5mm
 - Stainless steel hose clamps

➤ **Classification "C"**

PE	A	B	C	D	E	F	G	H	I	J	K
	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]
60	2,20	2,00	2,10	1,00	1,80	0,90	1,70	2,00	0,40	0,40	0,40
75	2,20	2,00	2,10	1,00	2,20	1,10	2,10	2,00	0,40	0,40	0,40
100	2,20	2,00	2,10	1,00	2,90	1,50	2,80	2,00	0,40	0,40	0,40
125	2,20	2,00	2,10	1,00	2,90	1,50	2,80	2,50	0,40	0,40	0,40
150	2,70	2,50	2,60	1,20	2,80	1,40	2,60	2,50	0,40	0,40	0,40
200	2,70	2,50	2,60	1,20	3,10	1,60	2,90	3,00	0,40	0,40	0,40
250	2,70	2,50	2,60	1,20	3,90	1,90	3,70	3,00	0,40	0,40	0,40
300	2,70	2,50	2,60	1,20	4,00	2,00	3,80	3,50	0,40	0,40	0,40
350	2,70	2,50	2,60	1,20	4,10	2,00	3,90	4,00	0,40	0,40	0,40
400	3,20	3,00	3,10	1,50	3,90	1,90	3,70	4,00	0,40	0,40	0,40
450	3,20	3,00	3,10	1,50	4,40	2,20	4,10	4,00	0,40	0,40	0,40
500	3,20	3,00	3,10	1,50	4,30	2,20	4,10	4,50	0,40	0,40	0,40

Geschäftsführer:
Dipl.Ing.(FH) Wolfgang U. Pöhnl
Registergericht Bayreuth HRB 4726
USt.-IdNr.: DE259224458

PPU Umwelttechnik GmbH
Carl-Kolb-Str. 6,
95448 Bayreuth,
Germany
Tel. 0921 / 150 63 990,
Fax 0921 / 150 63 999,
E-Mail: info@clearfox.com
www.clearfox.com

Bankverbindung:
HypoVereinsbank Bayreuth
IBAN DE 8877 3200 7200 2542 4794
BIC: HYVEDEMM412

➤ **Classification "N"**

PE	A	B	C	D	E	F	G	H	I	J	K
	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]
60	2,20	2,00	2,10	1,00	1,80	0,90	2,30	2,00	0,40	0,40	0,40
75	2,20	2,00	2,10	1,00	2,20	1,10	2,80	2,00	0,40	0,40	0,40
100	2,20	2,00	2,10	1,00	2,90	1,50	3,80	2,00	0,40	0,40	0,40
125	2,20	2,00	2,10	1,00	2,90	1,50	3,80	2,50	0,40	0,40	0,40
150	2,70	2,50	2,60	1,20	2,80	1,40	3,60	2,50	0,40	0,40	0,40
200	2,70	2,50	2,60	1,20	3,10	1,60	4,00	3,00	0,40	0,40	0,40
250	2,70	2,50	2,60	1,20	3,90	1,90	5,00	3,00	0,40	0,40	0,40
300	2,70	2,50	2,60	1,20	4,00	2,00	5,10	3,50	0,40	0,40	0,40
350	2,70	2,50	2,60	1,20	4,10	2,00	5,30	4,00	0,40	0,40	0,40
400	3,20	3,00	3,10	1,50	3,90	1,90	5,00	4,00	0,40	0,40	0,40
450	3,20	3,00	3,10	1,50	4,40	2,20	5,60	4,00	0,40	0,40	0,40
500	3,20	3,00	3,10	1,50	4,30	2,20	5,60	4,50	0,40	0,40	0,40

Geschäftsführer:
Dipl.Ing.(FH) Wolfgang U. Pöhnl
Registergericht Bayreuth HRB 4726
USt.-IdNr.: DE259224458

PPU Umwelttechnik GmbH
Carl-Kolb-Str. 6,
95448 Bayreuth,
Germany
Tel. 0921 / 150 63 990,
Fax 0921 / 150 63 999,
E-Mail: info@clearfox.com
www.clearfox.com

Bankverbindung:
HypoVereinsbank Bayreuth
IBAN DE 8877 3200 7200 2542 4794
BIC: HYVEDEMM412