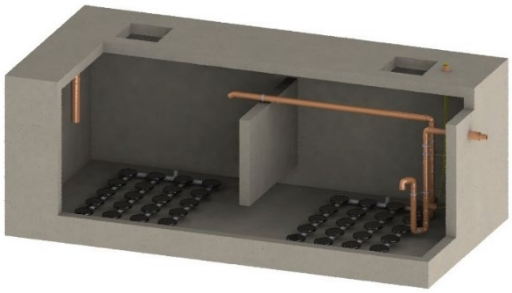
Data Sheet

SBR Kit 60 – 1000 PE

Description SBR Q1+ Kits



Clearfox SBR Q1+Kits operate according to the SBR-Process (Sequencing batch reactor) with integrated aerobic sludge stabilization. Sludge storage and buffer are integrated.

There are different stages of the treatment process (buffer, biological treatment, sludge treatment with storage) integrated within one tank. The cleaning cycle consists of different steps: aeration, sedimentation, backflushing and clearwater. The system operates regardless of the tank material or shape. That process flexibility means that any type of tank can be used for the SBR Q1+.

Only a partial baffle is needed to retain large inorganic particles in the first chamber. This baffle can be open at the bottom.

If there is a mechanical or manual screen at the SBR system inlet, then a baffle is not necessary. A Screen should be used for any system if the system is bigger than 500 PE.

The system is designed dimensioned according to the guidelines of the DWA-A 131 and DWA-A 222. PIA Gmbh, an internationally recognized test facility and certified the system by a cleaning efficiency test equal to the 12566-3 test for small wastewater treatment plants.

Benefits for Clearfox SBR Q1+ Kits

- No odor
- Low running costs
- High performance with high quality, Made in Germany
- Remote monitoring
- Easy installation and handling
- Sludge stabilization/sludge treatment
- Stable and very robust process technology
- Certified to EN12566-3

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

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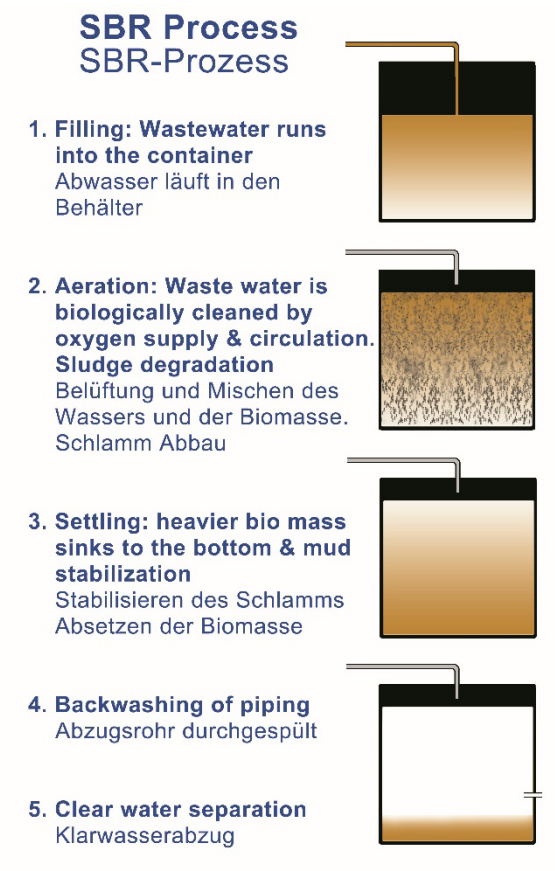
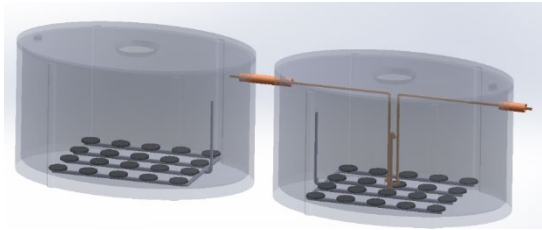


Cleaning efficiency

The cleaning efficiency was approved and certified at PIA GmbH in Aachen (according to the 12566-3 for small wastewater treatment plants). It was tested with domestic wastewater.

-	COD	47 mg/l
-	BOD	6 mg/l
-	NH4-N	0,2 mg/l
-		
-	Nges.	17,9 mg/l
-	SS	11 mg/l



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. T

- **Maintenance free disc diffuser mounted on a PE manifold pipe; amount of diffusers and size of manifold according to plant design**
  - EPDM Membrane; A = 0,55m²; d=275 mm; chemical resistance
  - Mounting material
- **Maintenance free airlift for clearwater and backflushing**
  - Special pre-cleaning function for clearwater airlift to ensure that no solids get out of the system
  - Free ball passage from 50 up to 150 mm
- **Standard cabinet**
  - Powder coated steel cabinet 600x600x300 mm
  - Protection class IP 55
  - Lockable, incl. key

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SBR Kit 60 – 1000 PE

- **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 – G 2
  - 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

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SBR Kit 60 – 1000 PE

PE	hydraulic Loading	organic Loading	tankvolume	max. water	Compressor size	dimension airliftpumps	power consumption	Calculated Sludgeproduction		Cleaningcycles		diameter connecting	palettes for transport
	m³/day	KG BOD/day	m³	m	KW	Mm	KWh/day	Kg/month	m³/day	No./day	max.m³/cycle	mm	no.
60	9	3,6	24	2,0	0,8	75	9,0	100,80	0,32	2	9,00	25	2
75	11,25	4,5	30	2,0	1,1	75	13,2	126,00	0,41	2	11,25	25	2
100	15	6	40	2,0	1,1	75	13,2	168,00	0,54	2	15,00	25	2
125	18,75	7,5	50	2,0	1,5	100	18,0	210,00	0,68	2	18,75	32	2
150	22,5	9	60	2,5	1,5	100	18,0	252,00	0,81	2	22,50	32	2
175	26,25	10,5	70	2,5	1,5	100	18,0	294,00	0,95	2	26,25	32	2
200	30	12	80	2,5	1,5	100	18,0	336,00	1,08	2	30,00	32	2
225	33,75	13,5	90	2,5	3,0	100	36,0	378,00	1,22	2	33,75	40	3
250	37,5	15	100	2,5	3,0	100	36,0	420,00	1,35	2	37,50	40	3
300	45	18	120	2,5	3,0	100	36,0	504,00	1,62	2	45,00	40	3
350	52,5	21	140	3,0	4,5	150	54,0	588,00	1,89	2	52,50	40	3
400	60	24	160	3,0	4,5	150	54,0	672,00	2,16	2	60,00	40	3
450	67,5	27	180	3,0	5,5	150	66,0	756,00	2,43	2	67,50	40	4
500	75	30	200	3,0	5,5	150	66,0	840,00	2,70	2	75,00	40	4
550	82,5	33	220	3,0	6,0	150	72,0	924,00	2,97	2	82,50	40	4
600	90	36	240	3,0	6,0	150	72,0	1008,00	3,24	2	90,00	40	4
650	97,5	39	260	3,0	9,0	150	108,0	1092,00	3,51	2	97,50	40	5
700	105	42	280	3,0	9,0	150	108,0	1176,00	3,78	2	105,00	40	5
750	112,5	45	300	3,0	9,0	150	108,0	1260,00	4,05	2	112,50	40	5
800	120	48	320	3,0	9,0	150	108,0	1344,00	4,32	2	120,00	40	5
850	127,5	51	340	3,0	11,0	150	132,0	1428,00	4,59	2	127,50	40	6
900	135	54	360	3,0	11,0	150	132,0	1512,00	4,86	2	135,00	40	6
950	142,5	57	380	3,0	11,0	150	132,0	1596,00	5,13	2	142,50	40	6
1000	150	60	400	3,0	11,0	150	132,0	1680,00	5,40	2	150,00	40	6

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Data Sheet

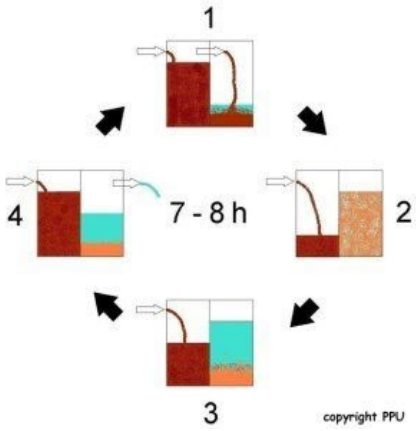
SBR Kit 60 – 1000 PE

Additional equipment

The **Clearfox SBR Q1+** 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

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SBR Kit 60 – 1000 PE

- **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)

- **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

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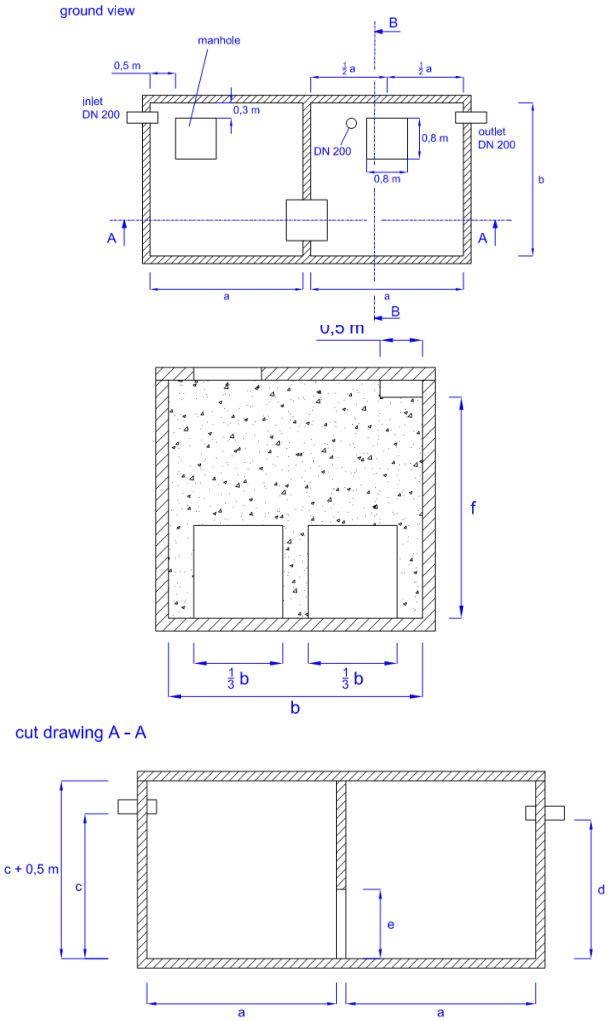

➢ **Chlorine disinfection**

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

➢ **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 hoseclamp

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PE	a	b	c	d	e	f
	m	m	m	m	m	m
60	2,40	2,50	2,20	2,10	1,00	2,30
75	3,00	2,50	2,20	2,10	1,00	2,30
100	3,30	3,00	2,20	2,10	1,00	2,30
125	4,20	3,00	2,20	2,10	1,00	2,30
150	3,40	3,50	2,70	2,60	1,25	2,80
175	4,00	3,50	2,70	2,60	1,25	2,80
200	4,00	4,00	2,70	2,60	1,25	2,80
225	4,50	4,00	2,70	2,60	1,25	2,80
250	4,40	4,50	2,70	2,60	1,25	2,80
300	4,80	5,00	2,70	2,60	1,25	2,80
350	4,70	5,00	3,20	3,10	1,50	3,30
400	5,30	5,00	3,20	3,10	1,50	3,30
450	5,50	5,50	3,20	3,10	1,50	3,30
500	6,10	5,50	3,20	3,10	1,50	3,30
550	6,10	6,00	3,20	3,10	1,50	3,30
600	6,70	6,00	3,20	3,10	1,50	3,30
650	6,70	6,50	3,20	3,10	1,50	3,30
700	7,20	6,50	3,20	3,10	1,50	3,30
750	7,70	6,50	3,20	3,10	1,50	3,30
800	7,10	7,50	3,20	3,10	1,50	3,30
850	7,60	7,50	3,20	3,10	1,50	3,30
900	7,50	8,00	3,20	3,10	1,50	3,30
950	7,90	8,00	3,20	3,10	1,50	3,30
1000	8,30	8,00	3,20	3,10	1,50	3,30

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