



# Wastewater Treatment Solutions



Wastewater Treatment Systems

Septic Tanks

Cesspools

Infiltration

Separators



# Water is our element

Photo copyright: stock.adobe.com © malp  
Cover: © Анна Скорякина

## Solutions to your challenges

GRAF offers an extensive range of products for water resource management. At GRAF, global challenges such as water protection meet the brand quality of "Made In Germany". We provide the solutions to your challenges.

## Global network of sales partners and production facilities!

Sales partners in more than 80 countries help us develop solutions suited to local markets and deliver the customer support needed locally.

The manufacturing process is essential for a top-quality product. GRAF masters the production of plastic products at the highest quality level and with the most modern machines.

## Three strong wastewater technology brands

Every GRAF wastewater product benefits from the experience gained from over 1,000,000 satisfied users and the quality of our established brands in wastewater treatment.

## Fast responses, even when special solutions are needed

Our products are exported around the globe. Intelligent logistics and sufficient stock levels ensure first-class availability of standard solutions, as well as for customised rainwater solutions.

## Plastic – clear benefits over concrete

Concrete tanks are at risk of corrosion through constant contact with wastewater and may require expensive refurbishment. Tanks made of plastic do not react with wastewater and are therefore a durable and reliable solution. Also, because of their low weight, plastic tanks can be installed without heavy equipment. This means that they can be easily transported and installed in locations that are difficult to access.



Manufacturing certified according to  
ISO 9001 and 50001



[www.graf.info](http://www.graf.info)



[www.klaro.eu](http://www.klaro.eu)



[www.biorock.com](http://www.biorock.com)

Title Photo: © F.Cerez via Getty Images



## FOR A GREENER PLANET

Find out what GRAF does in the field of recycling and energy efficient manufacturing

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oneSolution

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oneSepa

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Our oneLines structure

Our **oneLines** portfolio offers wastewater solutions for single & multiple households, holiday lets, hotels, camping sites, offices as well as larger housing developments & commercial developments.

Our extensive range of Cesspools, Septic tanks, Anaerobic treatment systems and fully biological SBR treatment solutions is completed with oneSepa separators.

We focus on wastewater treatment systems utilising GRAF underground tanks with one unified concept.

Special solutions such as retrofitting kits for concrete tanks from 1 – 10,000 inhabitants, container treatment plants and much more are offered through our competence center at the company KLARO GmbH.

A complete range of compact and non-electric residential wastewater treatment plants is offered through BIOROCK.



Enter Webcode in search field



www.graf.info

- Installation instructions and technical drawings
- Detailed product information
- Downloads
- Tender files

Symbols in the catalogue

- Suitable for pedestrian loading
- Suitable for vehicle loading
- Lorry-bearing



# Proven worldwide: GRAF wastewater treatment systems



30 inhabitants (Switzerland)



868 inhabitants (Ireland)



145 inhabitants, Thirsk (United Kingdom)



64 inhabitants (Panama)



4 inhabitants, Perth (Australia)



500 inhabitants (Bulgaria)

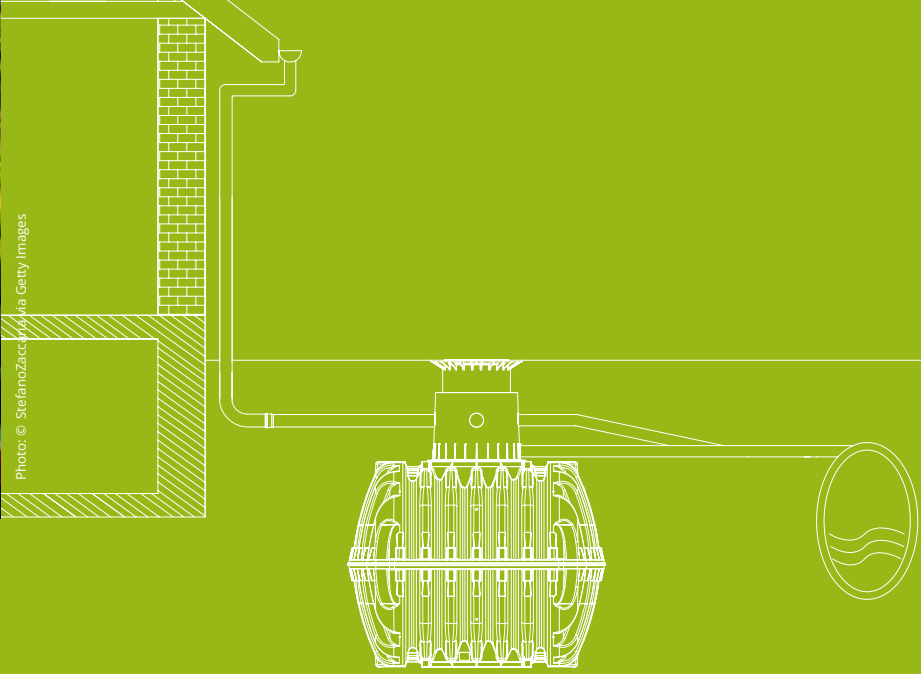




Photo: © StefanoZaccaria/Getty Images

# oneSolution

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# oneTechnology (SBR) – how does it work?



Ordinary treatment plants require several chambers or even tanks to purify the water properly. This makes a system big and complex.

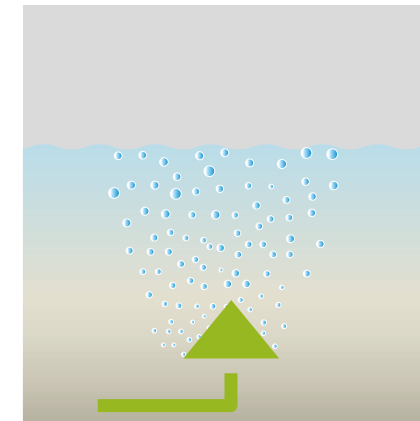
**oneTechnology** SBR wastewater treatment systems clean incoming wastewater over a number of cycles (in different sequences). Fewer chambers and tanks are requested. GRAF chambers achieve a cleaning performance of up to 99 %. In this respect the GRAF **one2clean** / **one2cleanXtra** systems far surpass legal minimum requirements.

## Why use the oneTechnology SBR system?

- **Outstanding cleaning performance**  
Even during load fluctuations and underload
- **Excellent value for money**
- **One tank solutions are extremely space-saving**
- **Produces odourless and clear treated water**
- **Ideal for high nutrient removal requirements**
- **Can be adapted to nearly every request thanks to our +modules**

# 1.

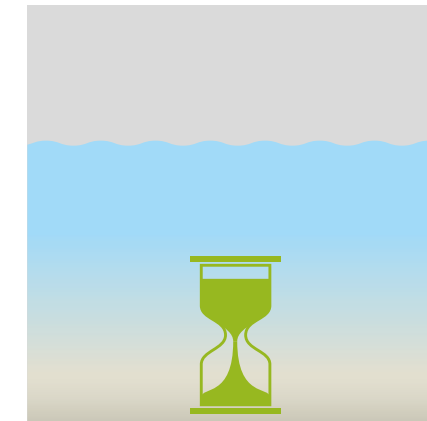
## Aeration phase



The wastewater arrives directly in the biological zone without the need for pumping processes. Aeration of the entire container leads to immediate wastewater activation. The microorganisms begin the biological cleaning process without delay.

# 2.

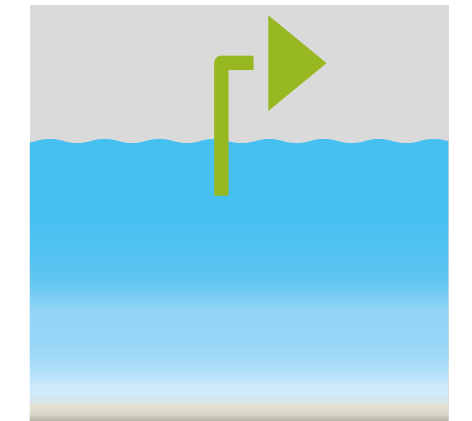
## Settling phase



Aeration is interrupted by the control unit, the activated sludge sinks to the bottom. A clear water zone develops in the upper part of the tank.

# 3.

## Clear water discharging phase



The treated clear water is extracted from the system and the cleaning process can begin once more.

## one2clean / one2cleanXtra – the clever way to produce clear water

Our systems up to 70 PE are ideal for making the most of limited space and where high nutrient removal is required.

## one2clean / one2cleanXtra is odourless

The entire volume of wastewater is activated with oxygen. The system produces an odourless, clear treated water for extraction to soakaway or waterway.

## one2clean / one2cleanXtra already meets the needs of tomorrow

The wastewater treatment systems can achieve sustainable discharge values with an efficiency factor of up to 99 %! This offers high investment security – even if legal requirements become stricter.



# one2clean / one2cleanXtra

up to 70 PE (10,500l/day)

## As much technology as necessary, as little technology as possible.

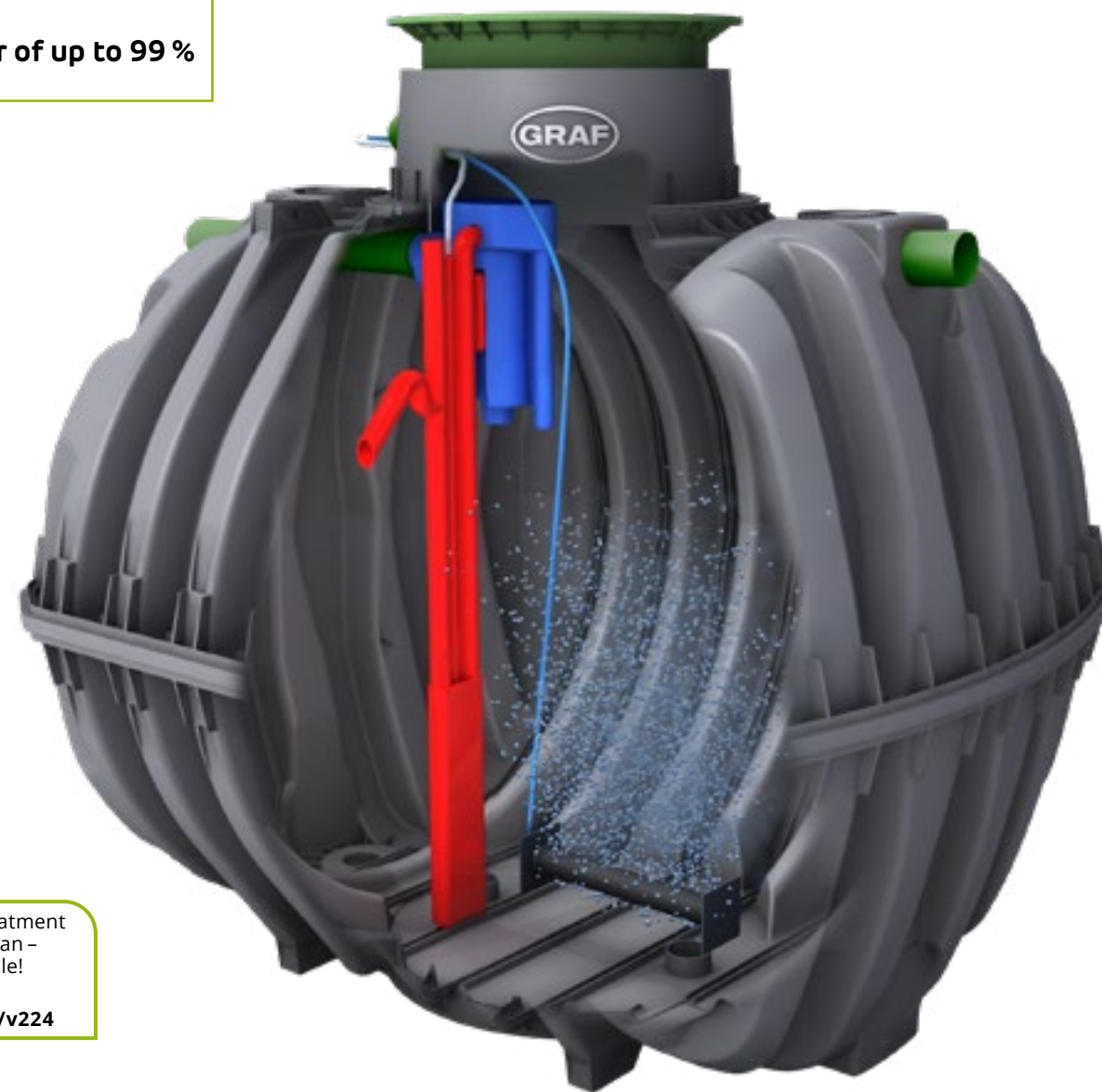
Over the past few years, wastewater treatment systems have experienced impressive technological developments. Today, they are high-tech products equipped with sophisticated controls and various pumps, sensors and valves. Yet this is often of detriment of product reliability. A reliable wastewater disposal system no longer needs to be complicated. one2clean is an advanced development of the proven SBR wastewater treatment technology, with considerable benefits in terms of operating costs and safety.

## Why use the one2clean system?

- **Excellent cleaning performance**  
Even during load fluctuations and underload
- Great value for money
- Double sludge storage volume
- Low sludge removal



**i** Efficiency factor of up to 99 %



Wastewater treatment system one2clean – smart and simple!  
GRAF TV  
[www.graf.info/v224](http://www.graf.info/v224)

## ✓ Incredibly little sewage sludge

Conventional wastewater treatment systems



## ✓ Minimal maintenance costs

one2clean / one2cleanXtra



## ✓ Minimal power consumption



Only 38 kWh per person and per year!

# Components and Benefits



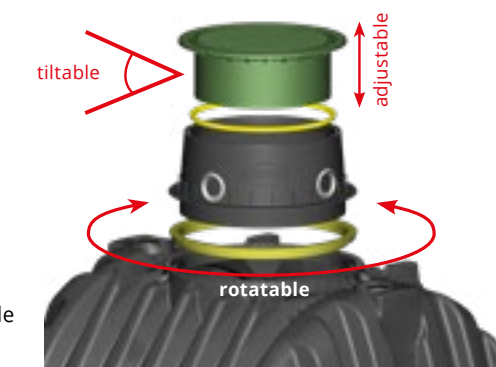
## Covers

- ✓ Suitable for pedestrian or vehicle loading
- ✓ Adjustable in height
- ✓ Inclined up to 5°
- ✓ Enables flush ground installation
- ✓ Discreet cover
- ✓ Allows small corrections of height on-site
- ✓ Reduction of installation cost



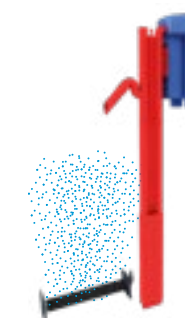
## Wastewater tank

- ✓ State-of-the-art manufacturing for maximum stability
- ✓ 100 % watertight and corrosion-resistant
- ✓ Can be mounted in groundwater
- ✓ Unique fit accuracy of components
- ✓ Self-anchoring saves installation costs
- ✓ Up to 12t load bearing enables flexible choice of installation location (for example car parks)
- ✓ Tank made of 100 % recycled material, environmentally friendly investment



## Installation kit

- ✓ Only one clear water lifter
- ✓ Rugged clear water lifter manufactured in one seamless part
- ✓ Simple maintenance via an integrated, self-cleaning sampling container
- ✓ No electrical part in the tank
- ✓ Fast installation
- ✓ Saves installation costs
- ✓ Keeps service costs to a minimum



## one2clean / one2cleanXtra control cabinets

- ✓ Simple handling thanks to micro-processor control
- ✓ Energy-saving
- ✓ Extremely quiet
- ✓ Incredible cost saving due to very low power consumption
- ✓ System can be easily adjusted if required which will reduce costs for the technician



one2clean

one2cleanXtra

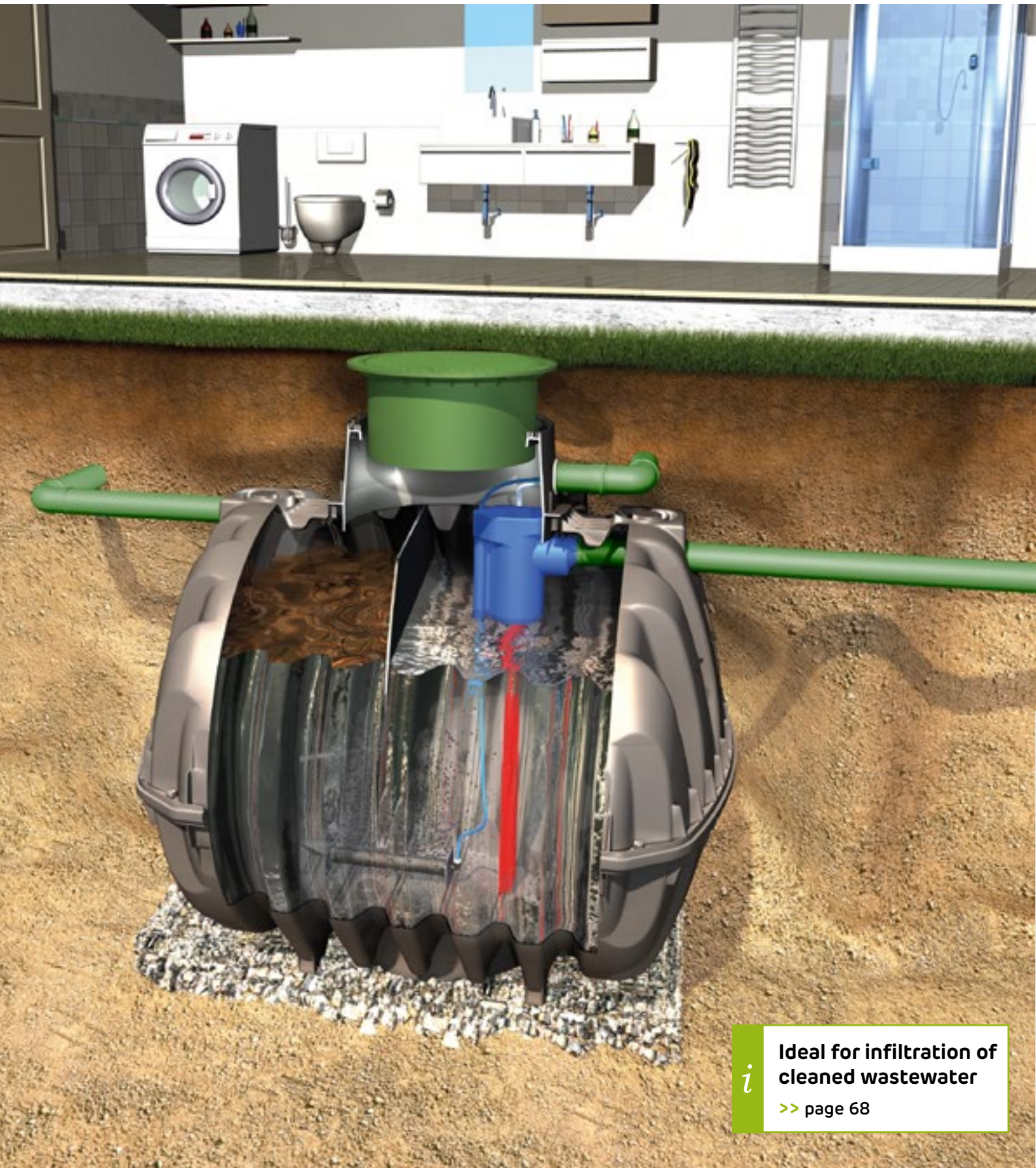
**The GRAF modular system**

>> page 58



one2clean domestic wastewater solutions

3 – 19 PE (450 – 2,850 l/day)



**i** Ideal for infiltration of cleaned wastewater  
>> page 68

One-tank system one2clean

Q WEBCODE G5104

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD <sub>5</sub> /d]	Total volume [l]	Volume [l]	Length* [mm]	Width* [mm]	Height [mm]	Weight [kg]
1 – 3	450	0.18	2,700	2,700	2080	1565	1690	120
4 – 5	750	0.30	3,750	3,750	2280	1755	1880	150
6 – 7	1,050	0.42	4,800	4,800	2280	1985	2110	185
8 – 9	1,350	0.54	6,500	6,500	2390	2190	2390	220
10 – 12	1,800	0.72	8,500	8,500	3500	2040	2375	450
13 – 15	2,250	0.90	10,000	10,000	3520	2240	2575	550
16 – 19	2,850	1.14	13,000	13,000	4000	2420	2755	695

**Scope of supply:** Carat S underground tank, tank dome, telescopic dome shaft 600, one2clean system pack (>> page 58 – the GRAF modular system).  
**Scope of supply for Inhabitants 12/15/19:** Carat XL underground tank, tank dome mini, telescopic dome shaft 600, funky ore-fitted, incl. indoor control cabinet.  
Please order the air hoses separately (>> page 17).  
\*Total measurement

Two-tank system one2clean

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD <sub>5</sub> /d]	Total volume [l]	Volume [l]	Length* [mm]	Width* [mm]	Height [mm]	Weight [kg]
2 – 7	1,050	0.42	5,400	2 x 2,700	4760	1565	1690	240
8 – 10	1,500	0.60	7,500	2 x 3,750	5160	1755	1880	300
11 – 14	2,100	0.84	9,600	2 x 4,800	5160	1985	2110	370
15 – 18	2,700	1.08	13,000	2 x 6,500	5380	2190	2390	440

**Scope of supply:** Carat S underground tanks, tank domes, telescopic dome shafts 600, one2clean system pack (>> page 58 – the GRAF modular system).  
Please order the air hoses separately (>> page 17).  
\*Total measurement

Technical data

System			one2clean
System conformity			EN 12566-3
Purifying technology			fully biological SBR lifting technology
One-tank systems available up to			19 inhabitants   2,850 l/d
Two-tank systems available up to			18 inhabitants   2,700 l/d
Maintenance interval			1 – 2 per year
Upstream fuse			B16A (provided by customer)
Voltage supply			230 V AC ± 20 %, 50 Hz / 60 Hz
Relative air humidity			10 to 95 %
Parameter			
COD (chem ical oxygen demand)			94.8 %      41 mg/l
BOD <sub>5</sub> (biochemical oxygen demand)			98.1 %      7 mg/l
SS (suspended solids)			96.6 %      14 mg/l
NH <sub>4</sub> -N (ammoniacal nitrogen)			98.3 %      0.5 mg/l
N <sub>total</sub> (total Nitrogen)			87.0 %      7.9 mg/l

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik (Testing Institute for Wastewater Technology), Aachen





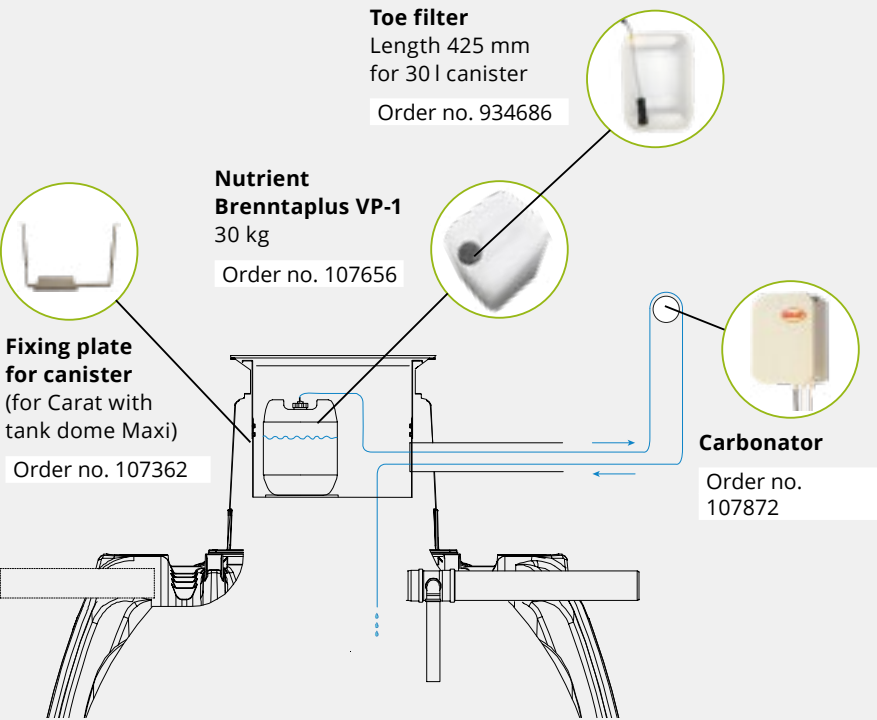
# Accessories for one2clean



The image shows the Outdoor plastic cabinet S for 3 – 19 inhabitants

## Technical data

For air compressors	LA 60-80 / XP60-80, HP 100-200
Upstream fuse	B16A (provided by customer)
Voltage supply	230 V AC ± 20 %, 50 Hz
IP	IP44
Relative air humidity	10 to 95 %
Temperature range	-25°C to +50°C
Total weight	7 kg (15.4 lbs)
Connecting line	via two-pin earthed plug



## Outdoor plastic cabinet S

For 3 – 19 inhabitants (up to 2,850 l/d)

Order no. 107990

### Benefits

- ✓ Flexible application of the proven **one2clean** control cabinet in a plastic outdoor column
- ✓ Weather-resistant plastic
- ✓ Edge seal for complete sealing over the ground
- ✓ High corrosion protection for the electrical parts
- ✓ Good value for money
- ✓ Easy assembly
- ✓ No foundation necessary



## Carbonator

Carbon infeed

Order no. 107872

### Benefits

- ✓ Regardless of system – suitable for other treatment plants (**one2clean** compatible)
- ✓ Individual adjustment of the dosage
- ✓ Low power consumption
- ✓ Fast installation
- ✓ Simple operation

The Carbonator was especially designed to keep wastewater treatment systems with seasonal inflow stable and working correctly, e.g. in holiday homes. The additional Carbonator module automatically feeds the systems with nutrients that keep the microorganisms alive when there is no wastewater inflow.

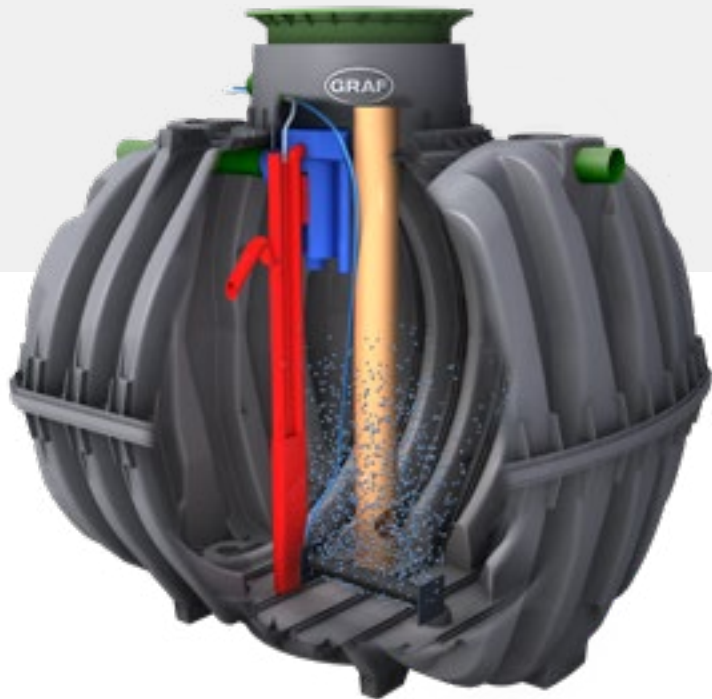
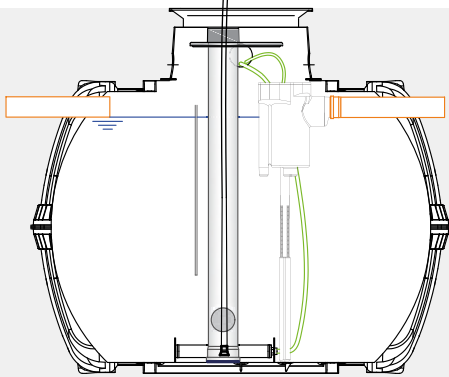
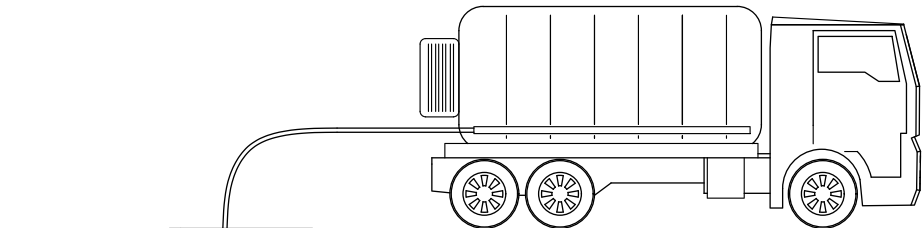
## Sludge removal kit

for **one2clean**

Order no. 106670

### Benefits

- ✓ Removes sludge to guarantee a continuous treatment performance
- ✓ Keeps sufficient sludge necessary for cleaning process
- ✓ Helps to avoid damaging internal components whilst emptying



## Odour-tight empty pipe seal DN110 for systems compatible with SBR-hose packages up to 28 PE

- Ensures no air, humidity or gas escapes from conduit pipe
- No need for PU seals
- Clean and professional solution

Order no. 107887



## SBR hose package

For **one2clean** (one-tank systems)

Includes: 1 x Ø 19 mm and 1 x Ø 13 mm PVC hose; colour-coded

Length: 10 m

Order no. 107686

Length: 20 m

Order no. 107688

Other SBR-hoses on request

## Tank dome Micro

- Weight: 7 kg (15,43 lbs)
- Including green lid
- For shallow excavation
- Earth cover only 90 mm

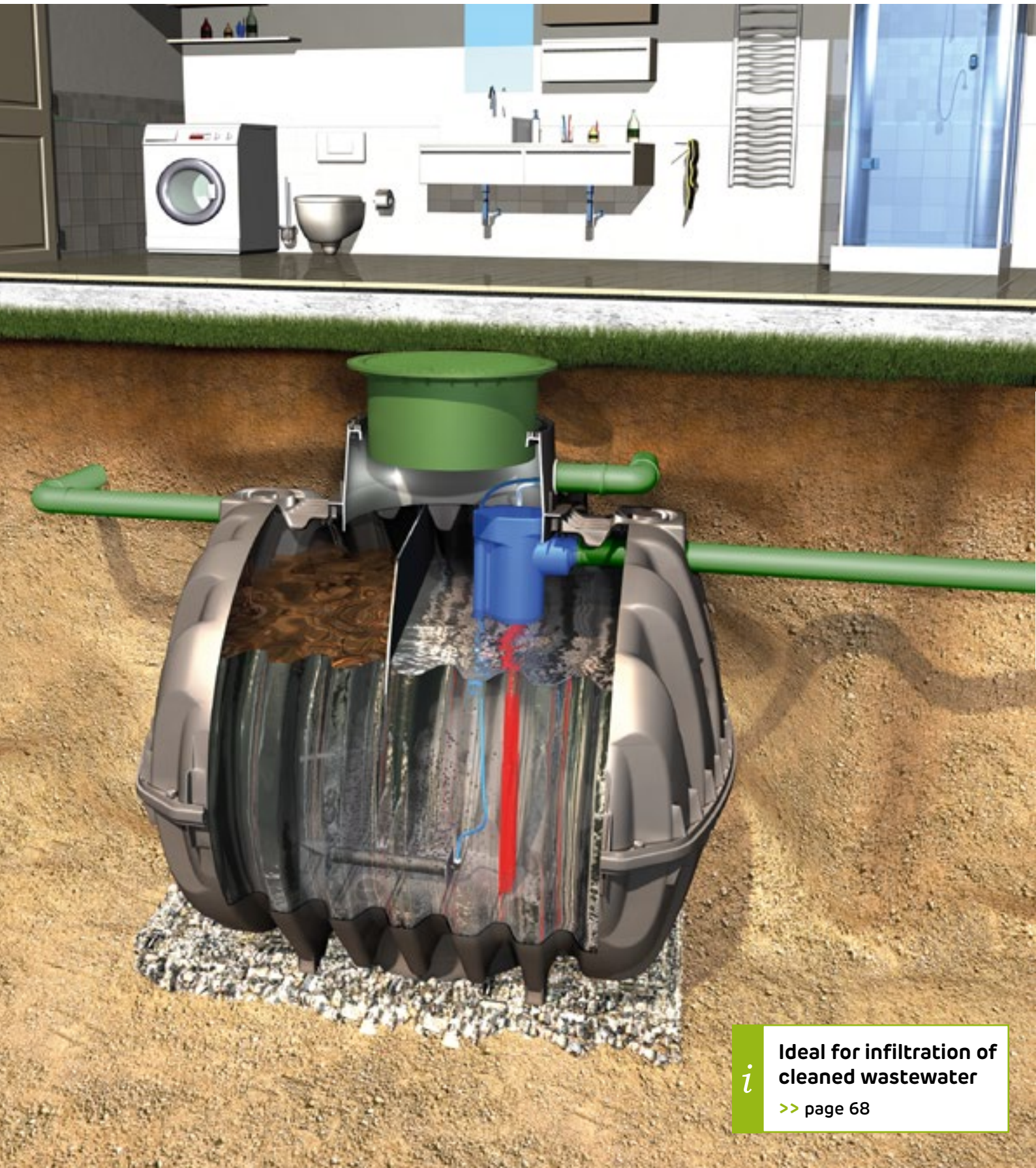
Order no. 371009





one2cleanXtra  
domestic wastewater solutions

3 – 9 PE (450 – 1,350l/day)



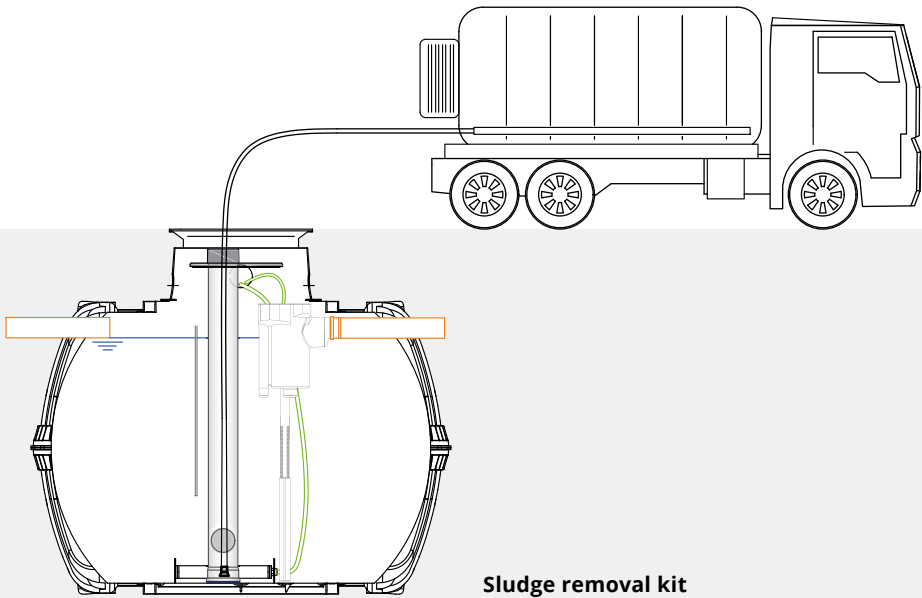
**i** Ideal for infiltration of  
cleaned wastewater  
>> page 68

One-tank system one2cleanXtra

WEBCODE G5126

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD <sub>5</sub> /d]	Total volume [l]	Volume [l]	Length* [mm]	Width* [mm]	Height [mm]	Weight [kg]
1 – 3	450	0.18	2,700	2,700	2080	1565	1690	120
4 – 5	750	0.30	3,750	3,750	2280	1755	1880	150
6 – 7	1,050	0.42	4,800	4,800	2280	1985	2110	185
8 – 9	1,350	0.54	6,500	6,500	2390	2190	2390	220

Scope of supply: Carat S underground tank, tank dome, telescopic dome shaft 600, one2clean system pack (>> page 58 – the GRAF modular system), sludge removal kit (see below). Please order the air hoses separately (>> page 16).  
\*Total measurement



Accessories  
>> page 30

Additional +modules

- +H Hygiene modules
- +R Remote transmission modules
- +P Phosphate removal module
- +C Carbon infed module

>> page 31

Technical data

System	one2cleanXtra	
System conformity	EN 12566-3	
Purifying technology	fully biological SBR lifting technology	
One-tank systems available up to	70 inhabitants   10,500 l/d	
Maintenance interval	1 – 2 per year	
Upstream fuse	B16A (provided by customer)	
Voltage supply	230 V AC ± 20 %, 50 Hz / 60 Hz	
Relative air humidity	10 to 95 %	
Parameter		
COD (chemical oxygen demand)	94.8 %	41 mg/l
BOD <sub>5</sub> (biochemical oxygen demand)	98.1 %	7 mg/l
SS (suspended solids)	96.6 %	14 mg/l
NH <sub>4</sub> -N (ammoniacal nitrogen)	98.3 %	0.5 mg/l
N <sub>total</sub> (total Nitrogen)	87.0 %	7.9 mg/l

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik  
(Testing Institute for Wastewater Technology), Aachen

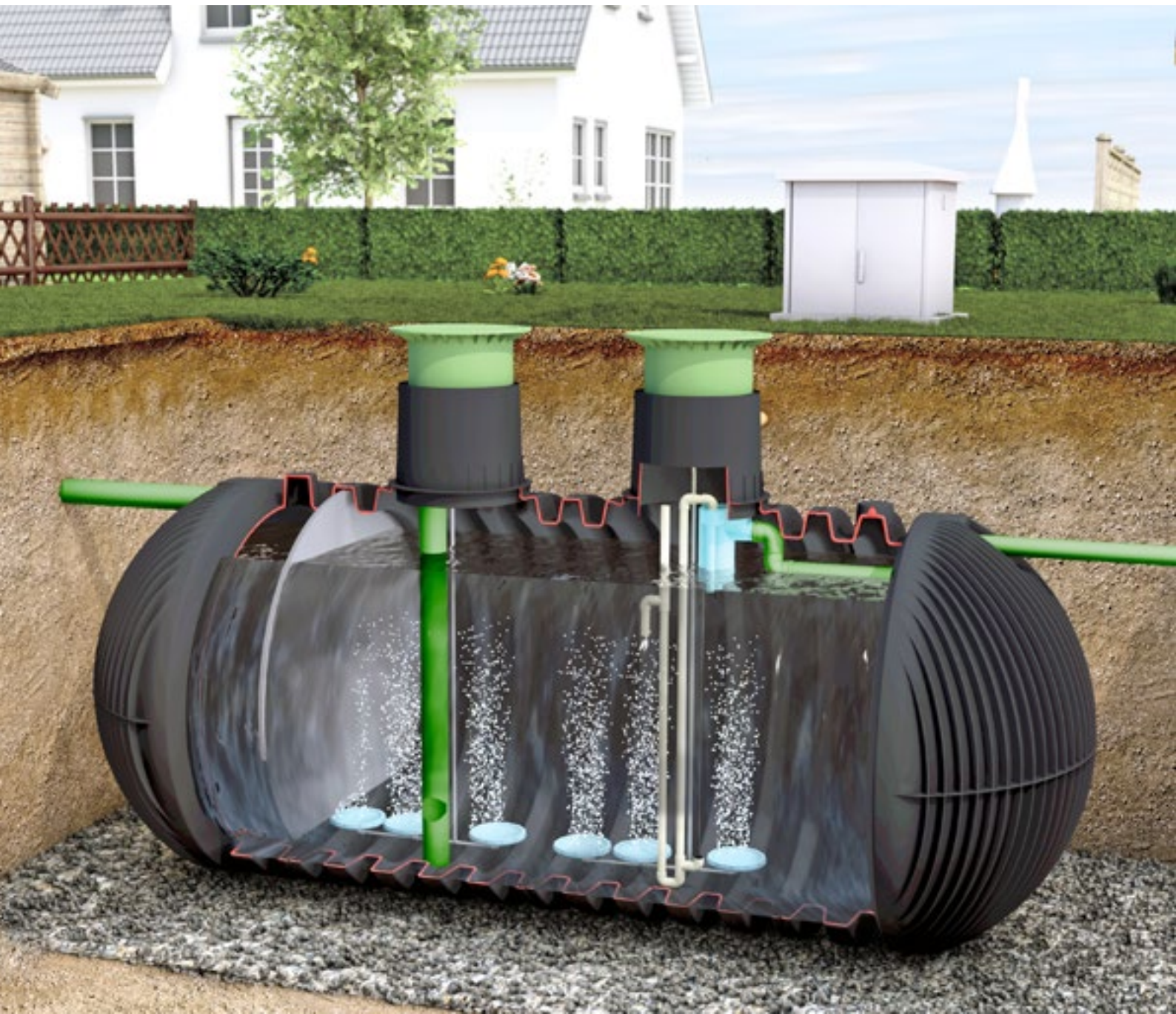




one2cleanXtra  
fully pre-fitted domestic wastewater solutions  
up to 70 PE (up to 10,500l/day)



WEBCODE G5127



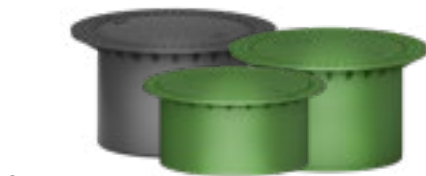
System one2cleanXtra – fully prefitted in the Carat XL/XXL underground tank

Inhabitants [max.]	Volume [litre]	Max. daily flow [l/d]	Max. organic load [kg/BOD <sub>5</sub> /d]	Required air hoses [quantity x Ø mm]	Length* [m]	Width* [m]	Order no.
12	8,500	1,800	0,72	1 x 13, 1 x 19	3.50	2.04	105336
15	10,000	2,250	0,90	1 x 13, 1 x 19	3.52	2.24	105337
19	13,000	2,850	1,14	1 x 13, 1 x 19	4.00	2.42	105338
24	16,000	3,600	1,44	2 x 19	4.66	2.50	105339
32	22,000	4,800	1,92	2 x 19	6.15	2.50	105340
45	32,000	6,750	2,70	2 x 19	8.53	2.50	105341
50	38,000	7,500	3,00	2 x 19	10.01	2.50	105342
60	44,000	9,000	3,60	5 x 19	11.50	2.50	105368
70	48,000	10,500	4,20	5 x 25	12.40	2.50	105369

Scope of supply: Carat XL/XXL underground tank, tank domes maxi, telescopic dome shafts 600, fully pre-fitted technology and indoor control cabinet and sludge removal kit. Air hoses are not included and must be ordered separately.  
\*Total measurements



Sampling point Outdoor DN400, pedestrian  
>> page 30



Covers  
Suitable for pedestrian or car loading  
>> page 60



Outdoor plastic cabinet M for 1 – 24 PE  
>> page 28



Outdoor plastic cabinet L for 32 PE  
>> page 28



Outdoor steel cabinet L for 45 – 50 PE  
>> page 28



Outdoor steel cabinet XL for 60 – 70 PE  
>> page 28

Accessories



Sampling point, internal  
For systems ≤ 60 PE  
Order no. 107170



Sampling point Outdoor DN400  
For systems > 60 inhabitants  
Order no. 107321 pedestrian  
Order no. 107561 vehicle load



Filling granulate for Outdoor plastic cabinet L  
Prevents soil moisture from rising into the cabinet. 1 bag required; 50 l bag  
Order no. 107607

Technical data

System	one2cleanXtra
System conformity	EN 12566-3 ≤ 50 PE / ATV A-122 > 50 PE
Purifying technology	fully biological SBR lifting technology
One-tank systems available up to	70 inhabitants   10,500 l/d
Maintenance interval	1 - 2 per year

Additional +modules

- +H Hygiene modules
- +R Remote transmission modules
- +P Phosphate removal module
- +C Carbon infeed module

>> page 31



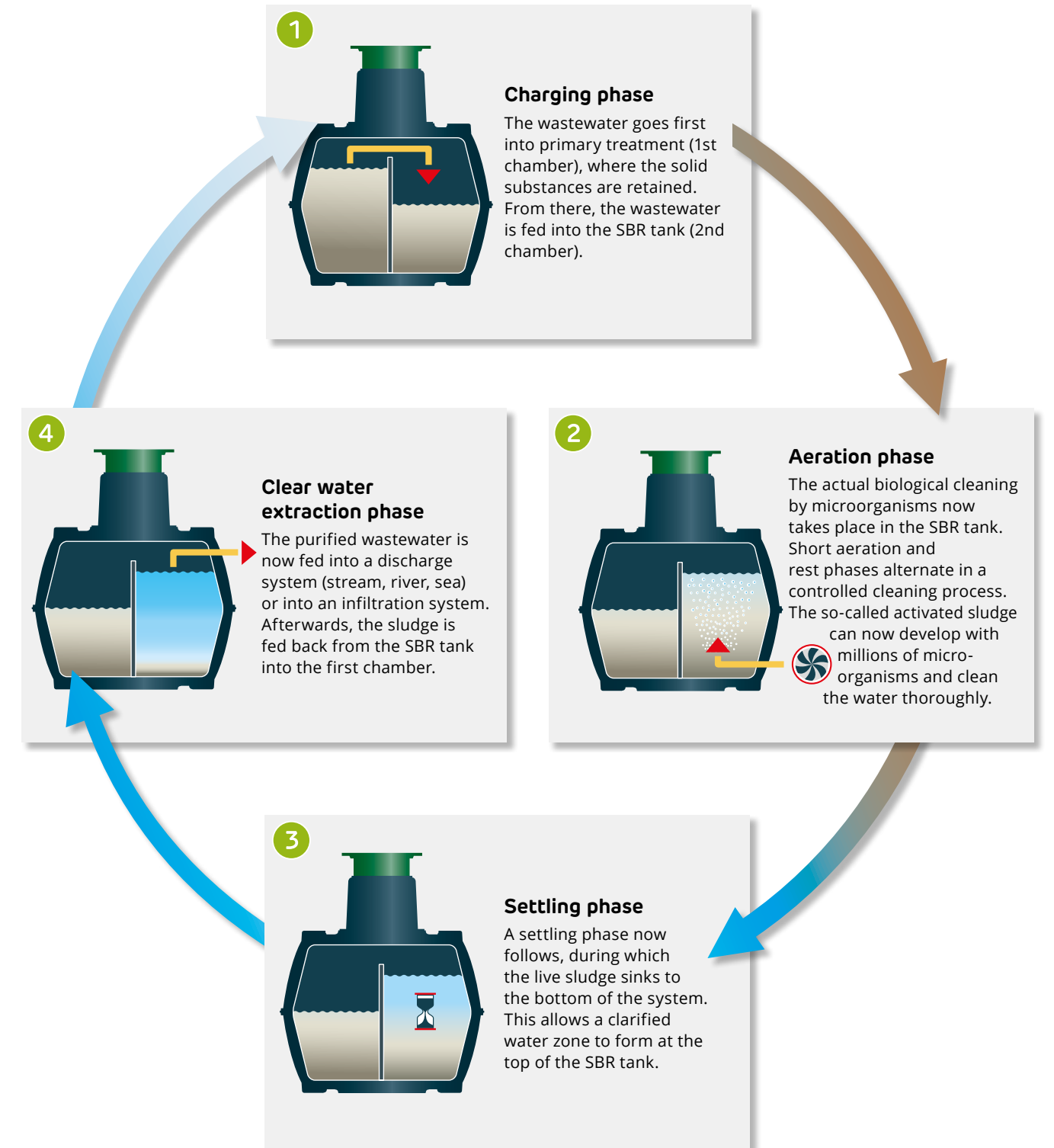
# How does SBR technology work?



**i** Efficiency factor of up to 98 %

## Why use the SBR system?

- ✓ Especially suited to commercial use because of pre-treatment chamber
- ✓ Outstanding cleaning performance even during load fluctuations and underload e.g holiday houses
- ✓ Excellent value for money due to minimal power consumption
- ✓ Only a small tank volume required
- ✓ Can be adapted to every request thanks to our +modules



Function of the SBR wastewater treatment system  
**GRAF TV**  
[www.graf.info/v212](http://www.graf.info/v212)



# oneAdvanced domestic wastewater solutions

10 – 90 PE (1,500 – 13,500l/day)



**i** Ideal for infiltration of cleaned wastewater  
>> page 68

## oneAdvanced domestic

WEBCODE G5113

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD5/d]	Total volume [l]	Primary treatment [capacity in l]	SBR tank [capacity in l]	Length* [mm]	Width* [mm]	Height [mm]	Weight [kg]
8 – 10	1,500	0.60	4,800	–	4,800	2280	1985	2110	185
10 – 14	2,100	0.84	6,500	–	6,500	2390	2190	2390	220
12 – 16	2,400	0.96	7,500	1 x 3,750	1 x 3,750	2280	1755	1880	150
16 – 22	3,300	1.32	9,600	1 x 4,800	1 x 4,800	5160	1985	2430	185
20 – 28	4,200	1.68	13,000	1 x 6,500	1 x 6,500	5380	2190	2710	220
25 – 32	4,800	1.92	15,000	2 x 3,750	2 x 3,750	11000	1800	2200	300
32 – 44	6,600	2.64	19,200	2 x 4,800	2 x 4,800	11000	2000	2430	370
42 – 50	7,500	3.00	26,000	2 x 6,500	2 x 6,500	11360	2200	2710	1060
51 – 60	9,000	3.60	26,000	2 x 6,500	2 x 6,500	11360	2200	2710	1060
61 – 90	13,500	5.40	32,500	2 x 6,500	3 x 6,500	8370	5000	2710	1325

Scope of supply: Carat S underground tanks, tank domes, telescopic dome shafts 600, oneAdvanced system pack (>> page 58 – the GRAF modular system). Please order the air hoses separately (>> page 30).  
\*Total measurement

### Accessories

>> page 30

### Additional +modules

>> page 31

## Technical data

System	oneAdvanced
System conformity	EN 12566-3 ≤ 50 PE / ATV A-122 > 50 PE
Purifying technology	fully biological SBR lifting technology
Multitank systems available up to	90 inhabitants   13,500 l/d
Maintenance interval	1 – 4 per year

Parameter		
COD (chemical oxygen demand)	91.9 %	51 mg/l
BOD5 (biochemical oxygen demand)	95.9 %	12 mg/l
SS (suspended solids)	94.4 %	20 mg/l
NH4-N (ammoniacal nitrogen)	65.6 %	12 mg/l
Ntotal (total Nitrogen)	62.0 %	21.1 mg/l
Ptotal (with +P Modul)	94.4 %	0.4 mg/l
eColi-H (with +H Modul)	99.9 %	99.9 %

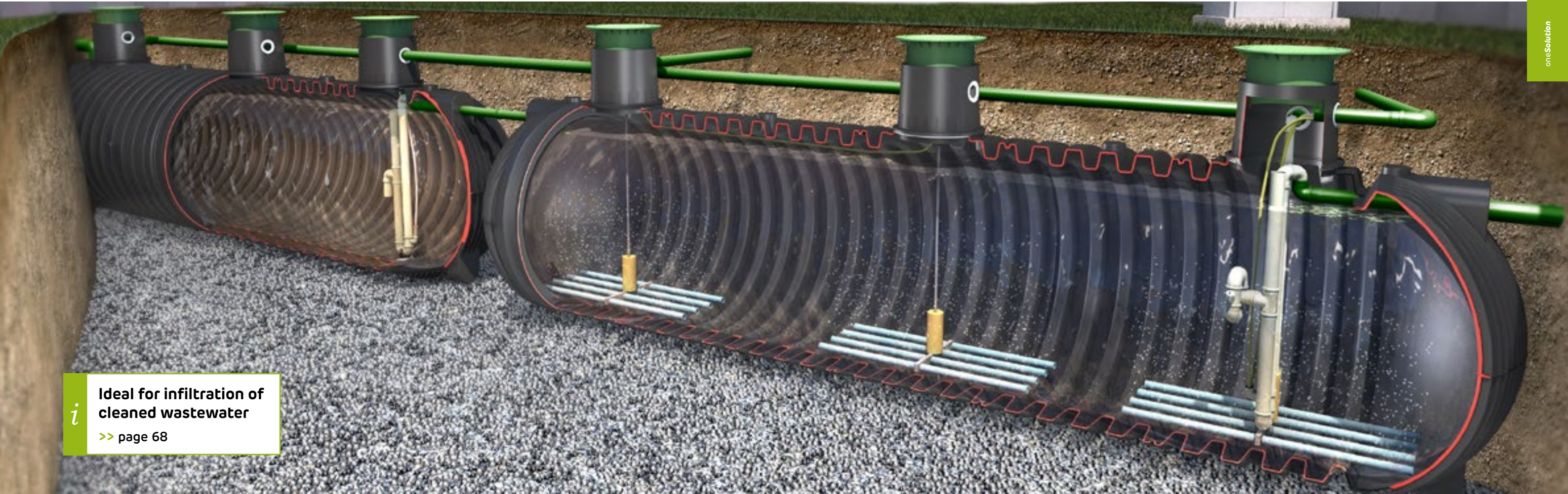
Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik (Testing Institute for Wastewater Technology), Aachen





oneAdvanced commercial wastewater solutions

up to 1000 PE (150,000l/day)



i Ideal for infiltration of cleaned wastewater  
>> page 68

oneAdvanced commercial system – fully prefitted in the Carat XL/XXL underground tank

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD <sub>5</sub> /d]	Primary treatment [capacity in l]	SBR tank [capacity in l]	Required air hoses [quantity x Ø mm]	Length* [m]	Width* [m]	Order no.
38	5,700	2,28	1 x 8,500	1 x 8,500	3 x 13, 1 x 19			107755
46	6,900	2,76	1 x 10,000	1 x 10,000	3 x 13, 1 x 19			107756
60	9,000	3,60	1 x 13,000	1 x 13,000	3 x 19, 1 x 25			105346
75	11,250	4,50	1 x 16,000	1 x 16,000	3 x 19, 1 x 25	9.90	2.50	106125
100	15,000	6,00	1 x 22,000	1 x 22,000	5 x 19	12.90	2.50	106404
125	18,750	7,50	1 x 26,000	1 x 26,000	5 x 25	16.20	2.50	106126
150	22,500	9,00	1 x 32,000	1 x 32,000	6 x 25	17.70	2.50	106106
175	26,250	10,50	1 x 38,000	1 x 38,000	6 x 25	21.60	2.50	105220
200	30,000	12,00	2 x 22,000	2 x 22,000	10 x 25	26.40	2.50	106970
220	33,000	13,20	1 x 44,000	1 x 44,000	9 x 25	23.50	2.50	105221
250	37,500	15,00	1 x 32,000 1 x 16,000	2 x 26,000	10 x 25	30.50	2.50	106049
275	41,250	16,50	1 x 52,000	2 x 32,000	12 x 25	13.30	8.70	105222
300	45,000	18,00	1 x 52,000	2 x 32,000	12 x 25	13.30	8.70	106050
350	52,500	21,00	3 x 22,000	2 x 38,000	12 x 25	19.90	5.60	106492
400	60,000	24,00	2 x 26,000	2 x 44,000	18 x 25	21.40	5.60	105266
500	75,000	30,00	3 x 22,000	4 x 26,000	24 x 25	27.50	5.60	105224
600	90,000	36,00	3 x 26,000	4 x 32,000	24 x 25	16.20	11.80	105225
700	105,000	42,00	1 x 42,000 2 x 32,000	4 x 38,000	24 x 25	27.50	5.60	105226
800	120,000	48,00	1 x 38,000 3 x 22,000	3 x 54,000	30 x 25	26.20	8.70	105227
900	135,000	54,00	1 x 54,000 3 x 22,000	3 x 54,000	30 x 25	29.10	8.70	105228
1,000	150,000	60.00	1 x 54,000 3 x 22,000	6 x 38,000	36 x 25	30.50	8.70	105229

Scope of supply: Carat XL / XXL underground tank, tank domes maxi, telescopic dome shafts 600, factory pre-fitted technology and control cabinet for indoor fitting.  
The air hoses from the underground tanks to the control panel are not included.  
\*Total measurements

Q WEBCODE G5114

Technical data

System	oneAdvanced
System conformity	EN 12566-3 ≤ 50 PE / ATV A-122 > 50 PE
Purifying technology	fully biological SBR lifting technology
Multi-tank systems available up to	1,000 inhabitants   150,000 l/d
Maintenance interval	3 – 4 per year

Accessories

>> page 30

Additional +modules

>> page 31



# Outdoor Cabinets

for one**Advanced** / one**2clean**Xtra



### Outdoor plastic cabinet M

- Easy access for the maintenance fitter
- Function checking is simple as the control unit is located immediately next to the system
- Ideal solution for large distances from the house (> 20 m)
- Flexible use of the proven GRAF Indoor PP control cabinet in the Outdoor plastic cabinet M (size 3 – 28 inhabitants)
- Lockable housing in sturdy, weather-resistant plastic
- Integrated double power socket for easy maintenance
- No foundation necessary



### Outdoor plastic cabinet L

- Easy access for the maintenance fitter
- Maintenance engineer
- Function checking is simple as the control unit is located immediately next to the system
- Lockable housing (simultaneous locking) in sturdy, weather-resistant plastic
- Hose connections colour-coded
- No foundation necessary



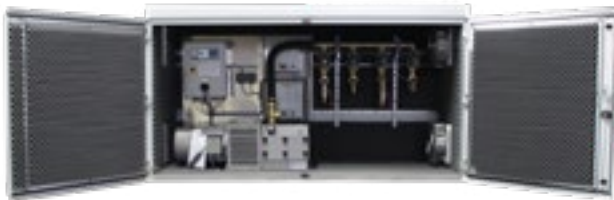
### Outdoor steel cabinet L\*

- Particularly robust design of powder coated steel sheet (1.5 mm / 0.005")
- Spray proof (IP 44)
- Lockable housing
- Hose connections colour-coded



### Outdoor steel cabinet XL\*

- Particularly robust design of powder coated steel sheet (1.5 mm / 0.005")
- Spray proof (IP 44)
- Lockable housing
- Hose connections colour-coded



### Outdoor steel cabinet XXL\*

- Particularly robust design of powder coated steel sheet (1.5 mm / 0.005")
- Spray proof (IP 44)
- Lockable housing
- Hose connections colour-coded

## Technical data

Inhabitants	For 3 – 28 inhabitants (up to 4,200 l/d)	For 32 – 46 inhabitants (up to 6,900 l/d)	For 42 – 60 inhabitants (up to 9,000 l/d)	For 60 – 175 inhabitants (up to 9,000 l/d)	For 200 – 1,000 inhabitants (up to 150,000 l/d)
For air compressors	LA 80, XP 80, HP 100 – 200	DT 4.16	2 x HP 200	R30-MD, R40-MD, KDT 3.80	KDT 3.100, 3.140
Upstream fuse	B16A (provided by customer)	B16A (provided by customer)	B16A (provided by customer)	B16A (provided by customer)	B16A (provided by customer)
Voltage supply	230 V AC ± 20 %, 50 Hz	230 V AC ± 20 %, 50 Hz	230 V AC ± 20 %, 50 Hz	380 VAC, 3~, 50 Hz	380 VAC, 3~, 50 Hz
IP	IP44	IP 44	IP 44	IP 44	IP 44
Relative air humidity	10 to 95 %	10 to 95 %	10 to 95 %	10 to 95 %	10 to 95 %
Temperature range	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C
Total weight	10 kg (22 lbs)	–	100 kg	140 kg	210 kg
Connecting line	via two-pin earthed plug	via two-pin earthed plug	via two-pin earthed plug	via four-pin earthed plug	via four-pin earthed plug
Air compressor	230 V	230 V	230 V	380 V	380 V
Stepped motors	24 V	24 V	24 V	24 V	24 V
Outdoor surfaces	Plastic	Plastic	Steel sheet 1.5 mm, powder coated	Steel sheet 1.5 mm, powder coated	Steel sheet 1.5 mm, powder coated
Lock	Cam lock	Espagnolette lock (simultaneous locking), pivoted lever, lock incl. profile half cylinder	Espagnolette lock (simultaneous locking), pivoted lever, lock incl. profile half cylinder	Espagnolette lock (simultaneous locking), pivoted lever lock incl. profile half cylinder	Espagnolette lock (simultaneous locking), pivoted lever lock incl. profile half cylinder
Dimensions (W x H x D)	450 x 1420 x 400 mm	480 x 1750 x 340 mm	800 x 880 x 675 mm	1140 x 1080 x 720 mm	2000 x 1100 x 900 mm
Order No.	106589	On request	On request	On request	On request

## Accessories

**Cooling ventilation fan for Outdoor Plastic cabinet M**  
Order no. 105954

**Warning lamp for Outdoor plastic cabinet M**  
Order no. 105955



**Warning light**  
LED warning light pre-assembled on an Outdoor cabinet L, XL, XXL  
Order no. 105956



**Filling granulate for Outdoor plastic cabinet L**  
Prevents soil moisture from rising into the cabinet. 1 bag required; 50 l bag  
Order no. 107607



**Outdoor air intake filter**  
For air compressor R30-MD and R40-MD  
Order no. 105379

\* Solid foundation must be provided on-site.



# Accessories for one*Advanced* / one*2clean*Xtra

**Odour-tight empty pipe seal DN110 for systems compatible with SBR-hose packages up to 28 PE** 107887

- Ensures no air, humidity or gas escapes from conduit pipe
- No need for PU seals
- Clean and professional solution



**SBR hose package**  
For 3 – 19 PE (one-tank systems)  
Includes: 1 x Ø 19 mm and 1 x Ø 13 mm PVC hose; colour-coded

Length: 10 m	107686
Length: 20 m	107688
Other SBR-hoses	on request



**SBR hose package**  
For 10 – 28 PE  
Includes: 1 x Ø 19 mm and 3 x Ø 13 mm PVC hose; colour-coded

Length: 10 m	107190
Length: 20 m	107192
Other SBR-hoses	on request



**Extention 300 mm** 371003  
To achieve earth covering of up to 1,5 m



**Accessories for** **+C** **+P**

**Fixing plate for canister**  
Convenient positioning of the precipitant canister inside the tank dome (maxi tank dome required) on request



**Sampling point, indoor** 107170  
For one*2clean*Xtra up to 32 PE  
For one*Advanced* up to 60 PE



**Sampling point Outdoor DN400 / For systems**  
For one*2clean*Xtra up to 45 PE  
For one*Advanced* up to 1000 PE

pedestrian	107321
vehicle load	107561



# Available +modules



+module	Order no.
<b>+D Denitrification module</b> The +D module for denitrification (removal of nitrogen) results in the clarified water quality satisfying very strict requirements. The GRAF systems thereby attain a Ntotal value (total parameters of inorganic nitrogen compounds) of less than 25 mg/l.	on request
<b>+P Phosphate removal module</b> Phosphate in water results in a massive build-up of algae. The GRAF +P module ensures the safe removal of phosphate and therefore great water quality.	105958*
<b>+C Carbon infeed module</b> <b>Solution for weekend homes</b> The addition of carbon as a nutrient allows the purification process to continue and prevents the biology from dying off.	105946*
<b>+O Pump-operated outlet module</b> Lifts the clear water when the outlet pipe is lower than the water course.	on request
<b>+B Module buffer pump for short-term peak loads</b> Only suitable for one <i>Advanced</i>	107406
<b>+R Remote transmission modules</b> Remote monitoring allows error messages to be transmitted to mobile phones and operating data to be queried by text message. Convenient remote wastewater treatment system controlled by mobile network or LAN is also possible. <ul style="list-style-type: none"><li>• Greater efficiency</li><li>• Greater operating reliability</li><li>• Optimised service intervals</li><li>• Greater customer benefit thanks to monitoring service</li><li>• Low-cost remote diagnosis in the event of a fault without the service fitter having to come on site</li></ul>	on request
<b>+H Hygiene module – Disinfection</b> Disinfection using the +H module (by chlor or UV) satisfies even the most stringent of purity requirements for a GRAF wastewater treatment system. It reliably kills off germs and microorganisms. The clarified water therefore complies with the EU Bathing Water Directive. <ul style="list-style-type: none"><li>• Easy to operate</li><li>• Maintenance-friendly thanks to easy-to-remove module</li><li>• Fitted in downstream shaft</li><li>• Controllable chlorine dosing for chlor module</li></ul>	on request

**Sand filtration**  
In case of strict effluent quality requirements or high influent load variations, the GRAF sand filtration module is recommended to enhance and stabilize the purification performance of your sewage treatment system. The self cleaning dual media filtration system reduces suspended solids, COD and BOD of the secondary clarified effluent and may also serve to prevent debris in downstream installed storage or collection tanks for the re-use of wastewater.

<ul style="list-style-type: none"><li>• Patented, simple and valve-free setup with automatic gravitationally driven backwash for minimal maintenance requirements</li><li>• Certified performance according to EN 12566-7</li><li>• Prefabricated plug and play system guarantees minimal work for piping and installation on site</li><li>• Robust UV- and waterproof housing with lock for outside installation</li></ul>	106389
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\* For systems up to 50 PE



# Available +modules

## Bluecycle module (chlorination & sand filter)

Avoid the wastage of precious fresh water resources through the re-use of highly treated wastewater for outdoor purposes like gardening. We recommend you combine the benefits of GRAF sand filtration and GRAF chlorination subsequent to your GRAF biological sewage treatment plant for the safe re-use and storage of your treated wastewater.

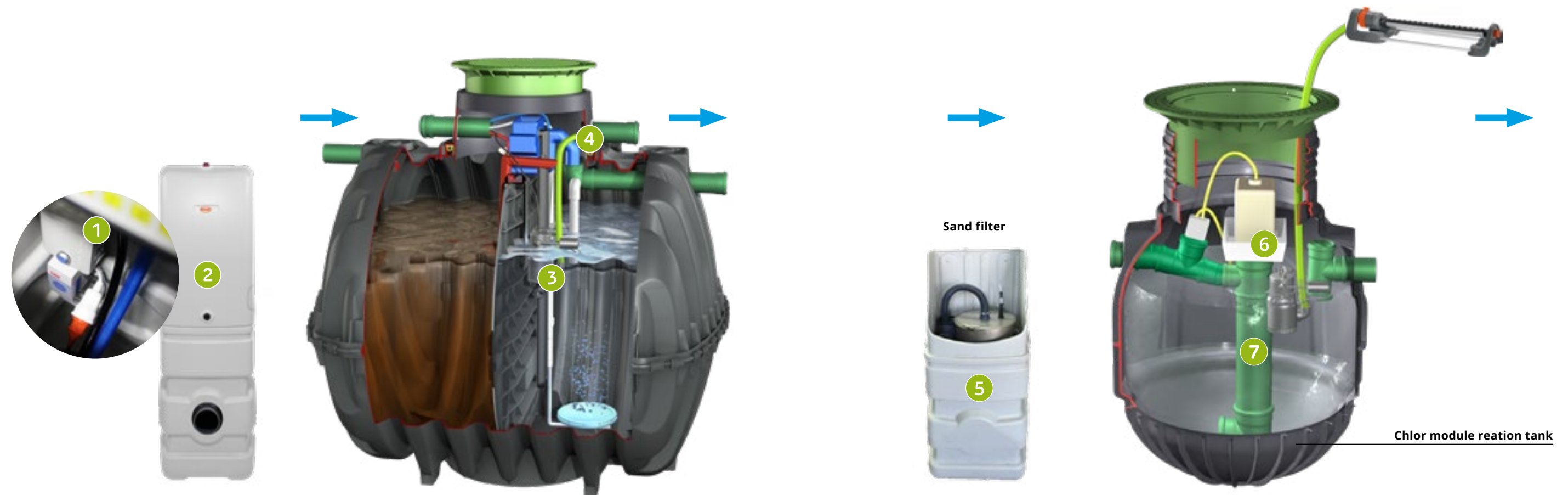


### Re-use for:

- Watering lawn and flowers
- Watering fruit and vegetable garden
- Clean your car
- General cleaning

### Benefits

- ✓ Chlorination widely available liquid sodium hypochlorite solution
- ✓ Prevention of pathogen regrowth and fouling in water hoses and irrigation systems through the long-term effect of chlorine
- ✓ Certified performance according to EN 12566-7
- ✓ Controllable chlorine dosing
- ✓ Safe and simple handling of the disinfection chemical



### Bluecycle components

- |   |                              |  |
|---|------------------------------|--|
| 1 Dosing pump with auxiliary control for Chlorine   | 3 Oxylift clearwater pump    | 6 Tray for Chlorine canister           |
| 2 Outdoor plastic cabinet M with auxiliary control and dosing with pump for chlorine module | 4 5 m Clearwater hose 1 1/4" | 7 Reaction tank for tertiary treatment |
|   | 5 Sand filter                |  |

### bluecycle - re-use your treated water

For one2cleanXtra up to 12 PE  
For oneAdvanced up to 22 PE  
Order no. 106390

For one2cleanXtra up to 15 PE  
For oneAdvanced up to 32 PE  
Order no. 106574

For one2cleanXtra / oneAdvanced up to 40 PE  
Order no. 106571

### Performance Results bluecycle

eColi	99.9 %
Total coliforms	99.9 %

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik (Testing Institute for Wastewater Technology), Aachen

WEBCODE G5123



# oneUp Wastewater Treatment System

The special solution for above ground installation



## The special solution for above ground installation

Fully biological wastewater treatment system for treating all domestic sewage with advanced **oneTechnology** (SBR). Different tank sizes and system variants possible depending on requirements.

- Sewage treatment tank made from HDPE
- Above-ground installation
- Can be used in very confined spaces
- For low volume of sewage
- Cost-effective

## Application areas

- Alternative if underground installation not possible
- Small businesses
- Retrofitting of existing above-ground systems
- For temporary use
- Test sewage treatment system



## Technical data

Control unit	KLcontrol.S
Power failure detection	•
Holiday / power saving mode	•
Backflow monitoring	•
Operation	cursor pad
Display size	56,4 x 42,5 mm (2,8")
Logbook function	•
USB port for data exchange and for software updates	•
Remote monitoring module (Webmonitor (4G module/LAN))	•
Connection option for additional modules	1 x 24 VDC / 1 x 230 VAC

## oneUp

Small single-tank compact system



PE	Qd [l/d]	Bd [g/d]	L [mm]	W [mm]	H [mm]	Tank [l]	Order no.
3	450	180	2070	720	1740	2,000	160470
6	900	360	2430	995	2000	4,000	160471


WEBCODE G5120



i

Find your  
wastewater solution

>> [www.graf.info/  
wastewater-advisor](http://www.graf.info/wastewater-advisor)



	TOPSELLER	PREMIUM	PREMIUM	FOR ABOVE GROUND
				
System	one2clean	one2cleanXtra	oneAdvanced	oneUP
Example applications	domestic & small commercial	single houses, townhouses, small communities	domestic & commercial (hotels, companies, small communities), for projects with higher demands on nutrients removal	domestic & commercial (single houses, small communities)
Page	12	12	24	34
System conformity	EN 12566-3	EN 12566-3	EN 12566-3 / ATV A-122	–
Purifying technology	fully biological SBR lifting technology	fully biological SBR lifting technology	fully biological SBR lifting technology	fully biological SBR lifting technology
One-tank systems available up to	19 inhabitants 2,850 l/d	70 inhabitants 10,500 l/d	14 inhabitants 2,100 l/d	6 inhabitants 900 l/d
Multitank systems available up to	–	–	1000 inhabitants 150,000 l/d	–
Maintenance interval	1 – 2 per year	1 – 2 per year	1 – 4 per year	1 – 2 per year
Control				
Holiday / economy mode (underload detection)	—	●	●	●
+R Remote transmission controlled by GSM or LAN	—	○	○	○
+P Phosphate removal	—	○	○	○
+C Carbon infeed	—	○	○	○
+H Hygiene package (Disinfection)	—	○	○	○
+D Removal of nitrogen	●	●	○	●
+B Buffer pump for short-term peak loads	—	—	○	—
+O Outlet with clear water pump	—	○	○	○
Control power failure recognition	—	●	●	●
Temperature sensor to protect against overheating	—	●	●	●
Logbook function	●	●	●	●
USB-Slot for display size an logging	—	●	●	●
Outdoor control cabinet for installing control unit outdoors	○	○	○	○
Annual power consumption	358 kWh (5 inhabitants   750 l/d)	289 kWh (5 inhabitants   750 l/d)	289 kWh (5 inhabitants   750 l/d)	237 kWh (5 inhabitants   750 l/d)
● Standard equipment   ○ Available as options   — not available				
Parameter cleaning performance				
COD (chemical oxygen demand)	94.8 %	94.8 %	91.9 %	94.8 %
BOD <sub>5</sub> (biochemical oxygen demand)	98.1 %	98.1 %	95.9 %	98.1 %
SS (suspended solids)	96.6 %	96.6 %	94.4 %	96.6 %
NH <sub>4</sub> -N (ammoniacal nitrogen)	98.3 %	98.3 %	65.6 %	98.3 %
N <sub>total</sub> (total nitrogen)	87.0 %	87.0 %	62.0 %	87.0 %
P <sub>total</sub> (with +P Modul)	–	95.1 %	94.5 %	95.1 %
eColi (with +H Modul)	–	99.9 %	99.9 %	99.9 %

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik  
(Testing Institute for Wastewater Technology), Aachen



# KLAROMAX

Retrofitting systems for concrete tanks from 1,000 PE (150,000 l/d) upwards

# KLAROcontainer

Containerized wastewater treatment plant

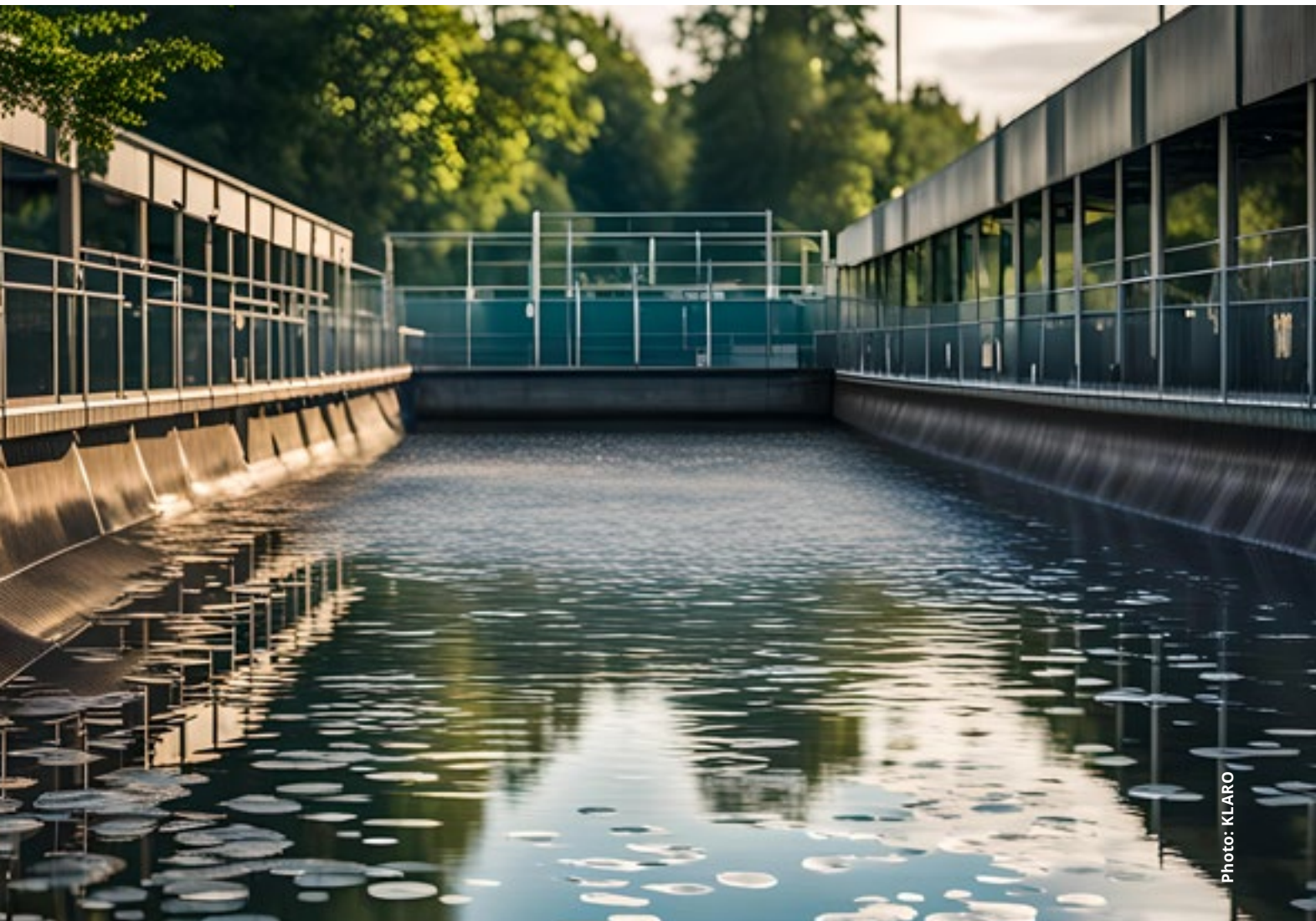


Photo: KLARO



*i* You can find more products  
on the following website  
>> [www.klaro.eu](http://www.klaro.eu)

## KLAROMAX Customised solution for the efficient treatment of large volumes of wastewater

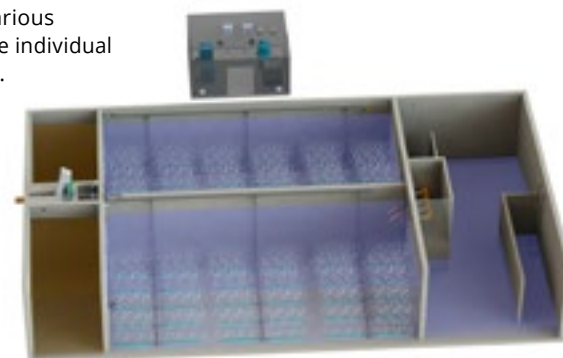
Q WEBCODE G5206

Specially designed for applications with a daily wastewater volume of 150 m<sup>3</sup> or more per day, the KLARO MAX wastewater treatment plant is a reliable solution for a wide variety of locations worldwide.

Our systems are characterised by their impressive performance and versatility. The KLARO MAX wastewater treatment technology is designed to be very safe and robust, and is also extremely flexible when it comes to adapting to the specific requirements of a wide range of applications. From industrial plants to municipal facilities – KLARO MAX sets new standards in wastewater treatment. The efficiency of KLARO MAX is the result of state-of-the-art technology and many

years of experience in the development of wastewater treatment plants. We also offer the option of further optimising the system with various additional modules to meet the individual requirements of our partners.

- Robust technology
- Individual planning
- Energy-efficient treatment process
- Reliable safety principle



Example: Two-line system from 5,000 PE

## KLAROcontainer The intelligent mobile wastewater solution

Q WEBCODE G5116

KLAROcontainer is the mobile wastewater treatment plant in the standard 20 feet or 40 feet container. The plant was designed to be easily assembled and disassembled (plug-and-play principle). This makes the container plant particularly suitable for temporary use. It can be used in a wide variety of areas, such as traveling construction sites, worker camps, quarries or production sites with many workers. It is also suitable for remote locations such as research, tourist or military camps. Due to the installation in the container, the technology is optimally protected against all weather conditions and additionally easy to transport.

KLAROcontainer is a fully biological wastewater treatment plant that operates according to the proven KLARO SBR concept.

- Easy to transport (standard 20 ft container)
- Refabricated and expandable construction
- Quick assembly and disassembly (plug-and-play)
- Low power consumption (13 kWh/d – 20 ft container)
- Designed for 15 m<sup>3</sup> (20 ft container) per day resp. 34,5 m<sup>3</sup> (40 ft)
- Modularly expandable for larger wastewater volumes





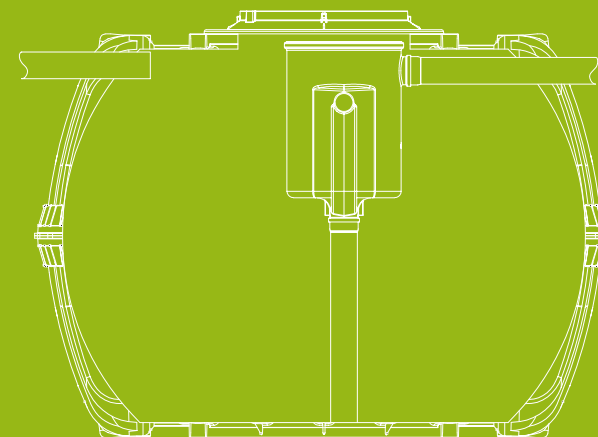


Photo copyright: stock.adobe.com: © pure-life-pictures

## oneZero

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- |                       |         |
|-----------------------|---------|
| > easy <b>Compact</b> | Page 42 |
| > Anareobix           | Page 46 |
| > Septic tank         | Page 48 |
| > Cesspools           | Page 50 |
| > System comparison   | Page 52 |





## The compact small wastewater treatment system

The easy**Compact** was specifically designed for properties with very little or irregular inflow.

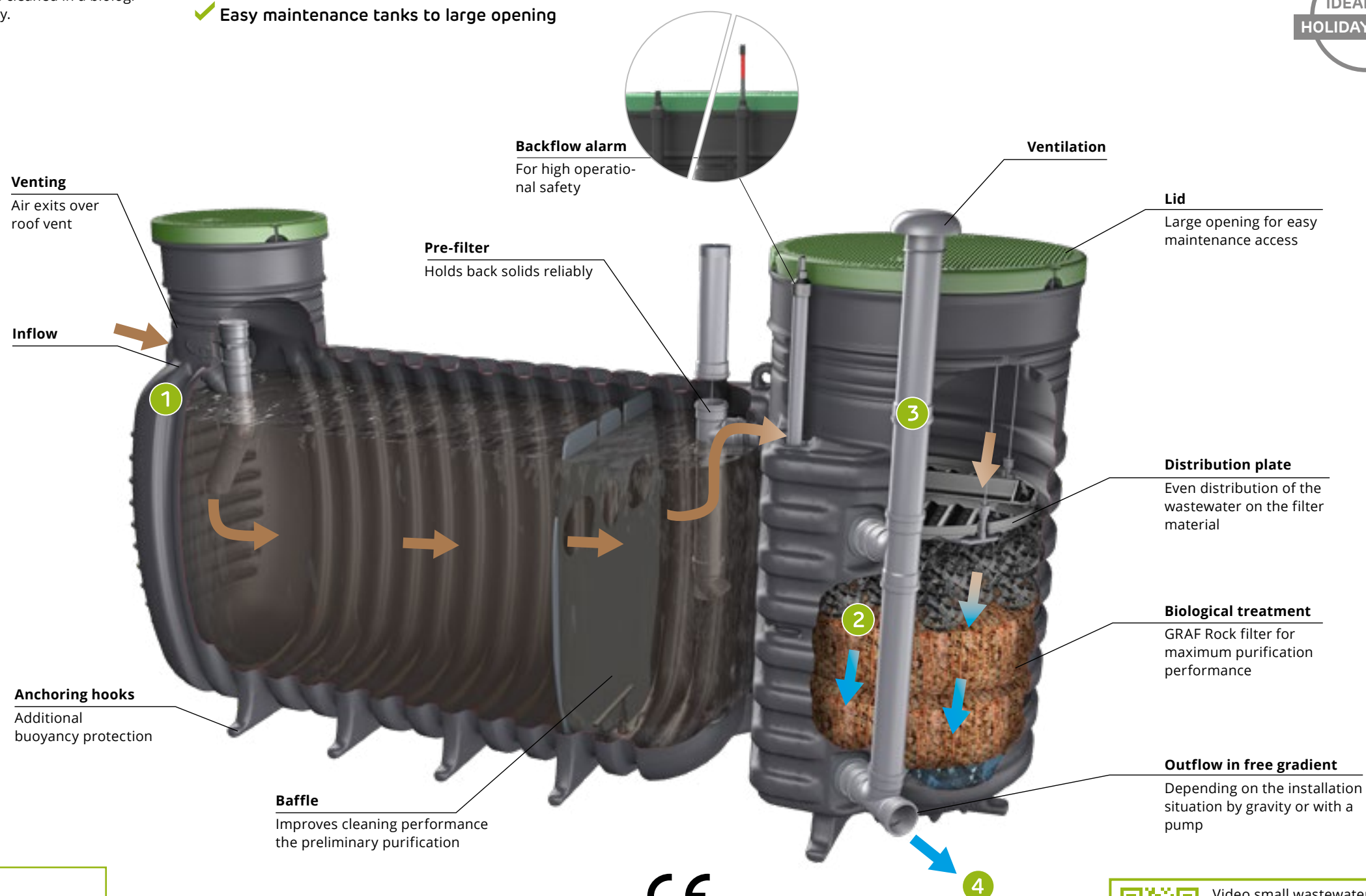
Thanks to the revolutionary GRAF Rock filters, the water is cleaned in a biological and natural way.

## Benefits

- ✓ Compact: minimal space needed
- ✓ Simple handling due to low weight
- ✓ Easy installation with completely telescopic and tiltable attachments
- ✓ Suitable for all types of holiday lets
- ✓ Easy maintenance thanks to large opening

**Biorock**  
You can find more products on the following website  
>> [www.biorock.com](http://www.biorock.com)

IDEAL FOR  
HOLIDAY HOMES

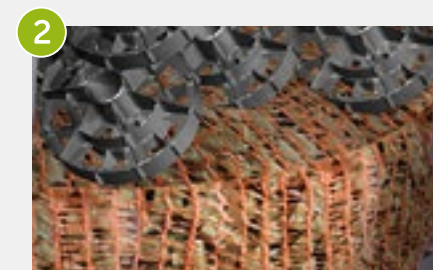


**Drainage class C**

## How does the easy**Compact** work

### 1 Preliminary clarification

The wastewater goes into the first treatment chamber in which fats and other floating substances on the surface are deposited while the solids settle.

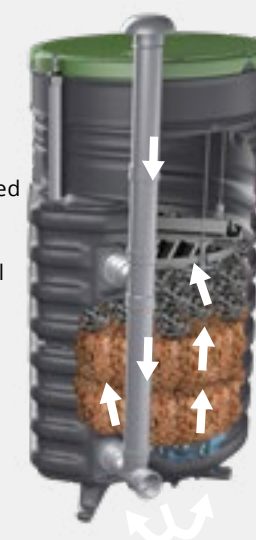


### 2 Biological treatment

The pretreated water then flows into the distribution system that the various layers of filters optimally supply. The mineral contained in GRAF Rock is a very efficient carrier material for biological treatment of the water.

### 3 Continuous ventilation

The sophisticated ventilation principle ensures optimal oxygen supply for biological purification.



### 4 Derivation of the purified water

Depending on the circumstances of the site, the purified wastewater flows through the system in a free gradient or with a pump.

Video small wastewater treatment system easy**Compact**  
**GRAF TV**  
[www.graf.info/v226](http://www.graf.info/v226)



oneZero

easy**Compact** with outflow via gravity



Inhabitants	Volume [l]	Length [mm]	Width [mm]	Height [mm]	Order no.
4	2000	2800	1150	1825 – 2020	169210
5	3000	3800	1150	1825 – 2020	169212
6	3000	3800	1150	1825 – 2020	169214

**Scope of delivery:** Pre-assembled small sewage treatment plant consisting of primary clarification and treatment unit, with completely telescopic tank domes, covers (Ø 600 mm for primary clarification and Ø 1000 mm for treatment unit). Pre-filter, backflow alarm, Turbovent deaeration ventilator. Other sizes available on request!

 **WEBCODE** G5124

Accessories

Extension kit easy**Compact**

- 2 extensions that can be cut to size (1 x Ø 600 mm + 1 x Ø 1000 mm), usable height: 410 mm
- Extension of the pre-filter, the air inlet and the alarm device

Order no. 169250

Pipe ventilator DN110

Electric 220V, optional, if ventilation cannot be implemented according to the installation instructions

Order no. 169138

Extension kit easy**Compact** with pump shaft

- 3 extensions that can be cut to size (1 x Ø 1000 mm + 1 x Ø 600 mm + 1 x 300 mm), usable height: 410 mm
- Extension of the pre-filter, the air inlet, the alarm device and the pump shaft

Order no. 169251

Sampling point 400

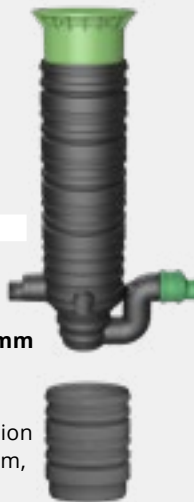
Pedestrian loading with plastic cover, child-proof

Order no. 169263

Extension 400, length 600 mm for sampling shaft

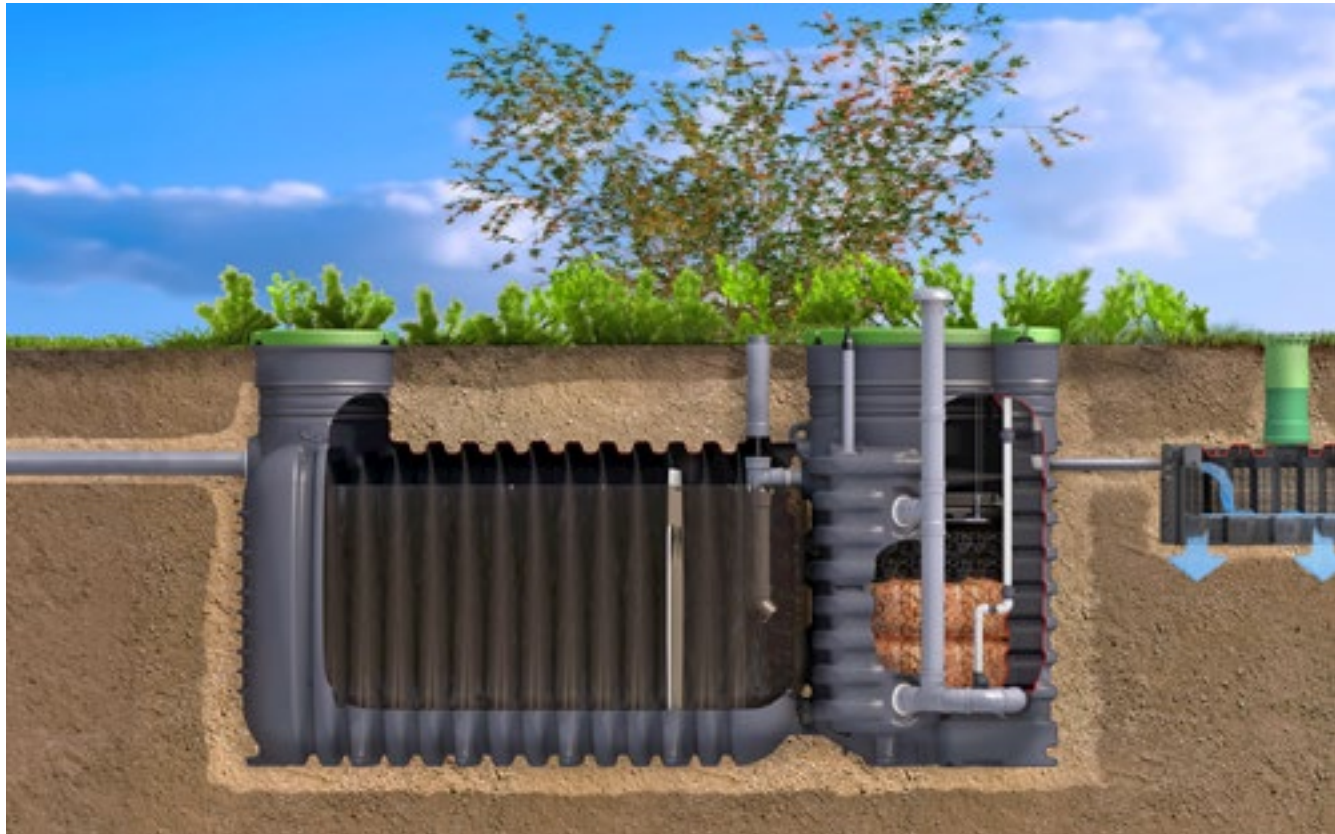
Including profile seal; for implementing larger installation depths, usable length: 500 mm, can be shortened to 250 mm

Order no. 330341



oneZero

easy**Compact** with pumped outflow



Inhabitants	Volume [l]	Length [mm]	Width [mm]	Height [mm]	Order no.
4	2000	2800	1150	1825 – 2020	169211
5	3000	3800	1150	1825 – 2020	169213
6	3000	3800	1150	1825 – 2020	169215

**Scope of delivery:** Pre-assembled small sewage treatment plant consisting of primary clarification and treatment unit, with telescopic tank domes, covers (Ø 600 mm for primary clarification and Ø 1000 mm for the treatment unit, Ø 300 mm for the lifting system). Pre-filter, backflow alarm, lifting system with pre-assembled pump, Turbovent deaeration ventilator. Other sizes available on request!

 **WEBCODE** G5125

Technical data

CE label

Applied norm	EN 12566-3
Number of performance declaration	64

Installation conditions

Connection dimensions:*	
Inlet	425 – 620 mm
Outlet	1555 – 1750
Drain with pump shaft	375 – 570 mm
Connection	DN110
Installation depth <sup>1)</sup>	1800 – 2000 mm
Earth cover	max.1000 mm
Groundwater installation <sup>2)</sup>	Installation depth max. 1300 mm

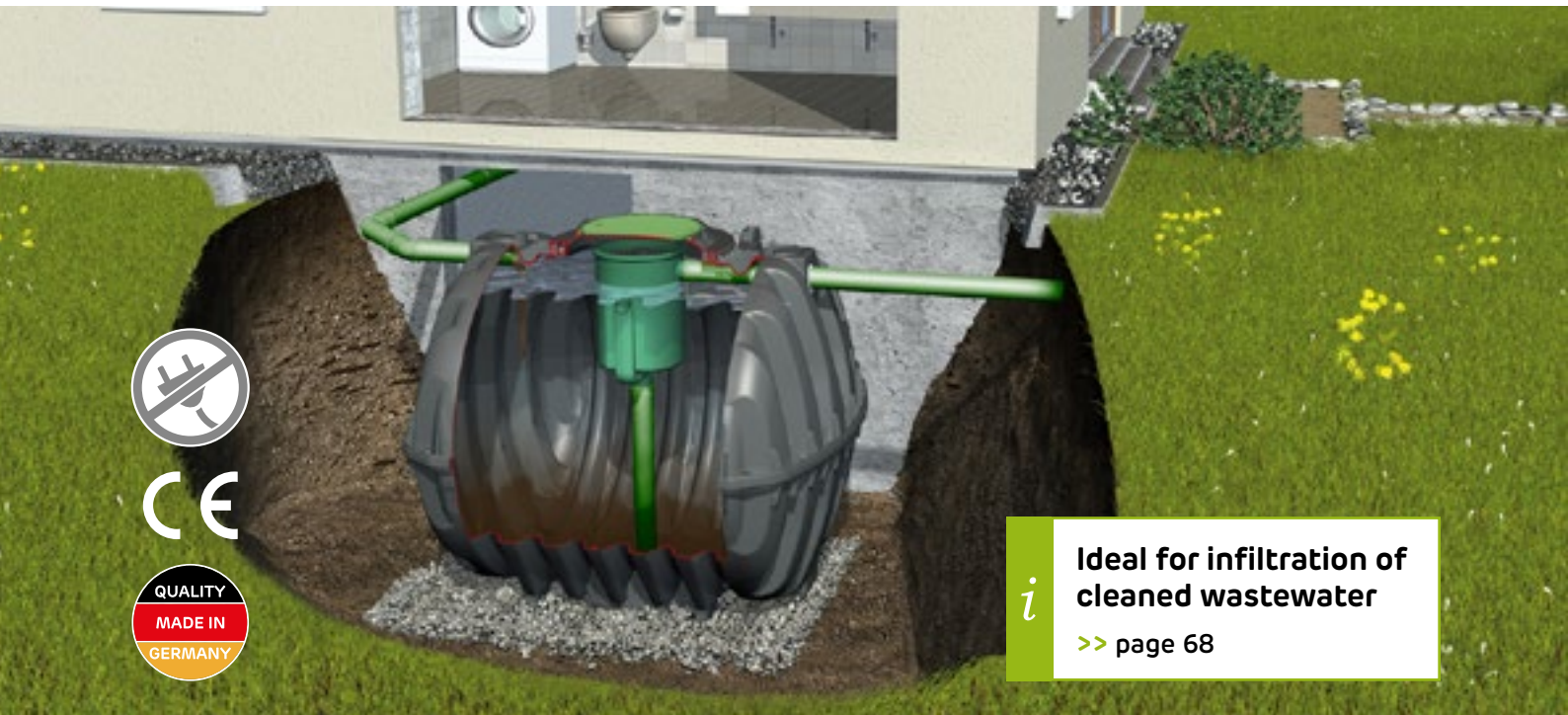
\* from ground level to pipe bottom

<sup>1)</sup> Installation depth can be increased by 410 mm with the extension kit / <sup>2)</sup> Please note the installation conditions in the installation instructions



# Anaerobix

GRAF Wastewater Treatment System with Biological Filter



**i** Ideal for infiltration of cleaned wastewater  
>> page 68

### Simple and low-cost

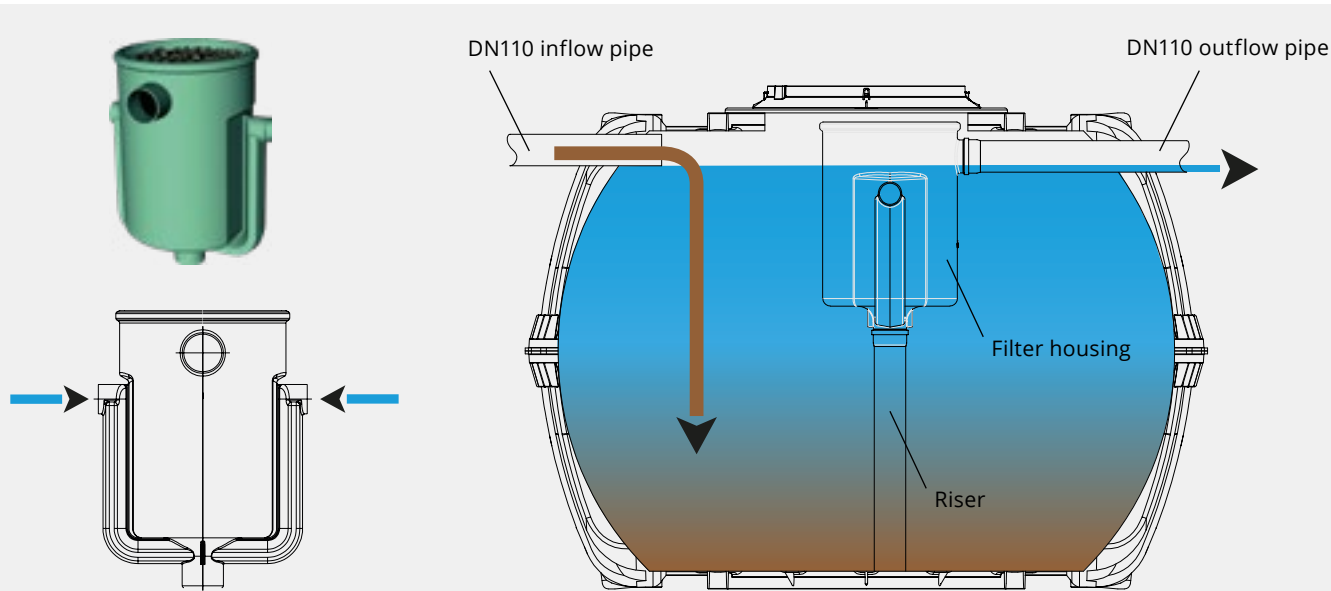
Anaerobix is the low-cost anaerobic filter system for GRAF wastewater tanks. Filled with the carrier material supplied, it increases the cleaning performance of a wastewater tank several times over. The large surface of the recyclable plastic carrier material (141 m<sup>2</sup>/m<sup>3</sup>) allows the biofilm responsible for the cleaning process to cover a large area.

### The benefits of the Anaerobix system at a glance

- ✓ Very good cleaning performance: efficiency over 90 %, PIA-tested (Testing Institute for Waste Water Technology)
- ✓ No electric or mechanical components in tank
- ✓ Largely maintenance-free
- ✓ Installation in proven GRAF tanks
- ✓ Easy to install with standard DN 110 pipes
- ✓ Very good value for money



PIA, independent testing institute in Aachen



### Anaerobix filter for GRAF underground tanks

Q WEBCODE G5503

Inhabitants [max.]	Max. daily flow [l / day]	Tank	Anaerobix filter type [l]
1 - 5	300	Herkules 1,600 l	integrated
1 - 2	150 - 300	Saphir 600 l	30
2 - 3	150 - 450	Saphir 900 l	30
2 - 3	300 - 450	Cesspool 1,000 l	30
2 - 3	300 - 600	Saphir 1,200 l	30
3 - 4	450 - 750	FLAT 1,500 l	30
4 - 5	450 - 750	Cristall 1,600 l	40
5 - 8	750 - 1,200	Cristall 2,650 l	40
8 - 9	750 - 1,350	Carat S 2,700 l*	60
10 - 12	1,050 - 1,800	Carat S 3,750 l*	60
12 - 16	1,350 - 2,400	Carat S 4,800 l*	60
16 - 21	1,950 - 3,150	Carat S 6,500 l*	60

Scope of supply: GRAF wastewater tank (tank dome and telescopic dome shaft 600), Anaerobix filter. >> page 58 – The GRAF modular system

### Anaerobix XL

Q WEBCODE G5505

Inhabitants [max.]	Max. daily flow [l/d]	Anaerobix filter tank [l]	Required vol. for pretreatment septic tank [l]	Carrier material [m <sup>3</sup> ]	Qty. of bags [0,05 m <sup>3</sup> / bag]	Order no.
22 - 33	4,950	Underground tank 1,000 l	10,000	0,75	15	107696
33 - 53	7,950	Cristall 1,600 l	16,000	1,5	30	107697
53 - 88	13,200	Cristall 2,650 l	32,000	2,4	48	107698

Scope of supply: Pre treatment septic tank as required + Fully pre-fitted Anaerobix tank incl. cover

### Anaerobix XXL

Q WEBCODE G5506

Inhabitants [max.]	Max. daily flow [l/d]	Anaerobix filter tank [l]	Required vol. for pretreatment septic tank [l]	Carrier material [m <sup>3</sup> ]	Qty. of bags [0,05 m <sup>3</sup> / bag]	Order no.
200	30,000	Carat S 1 x 6,500 l	60,000	6	100	on request
400	60,000	Carat S 2 x 6,500 l	120,000	12	200	on request
600	90,000	Carat S 3 x 6,500 l	180,000	18	300	on request
800	120,000	Carat S 4 x 6,500 l	240,000	24	400	on request

Scope of supply: Carat S underground tanks, tank domes telescopic dome shafts, accessory set for pre treatment septic tanks, accessory set for Anaerobix filter XXL and carrier material.

### The GRAF modular system

>> page 58

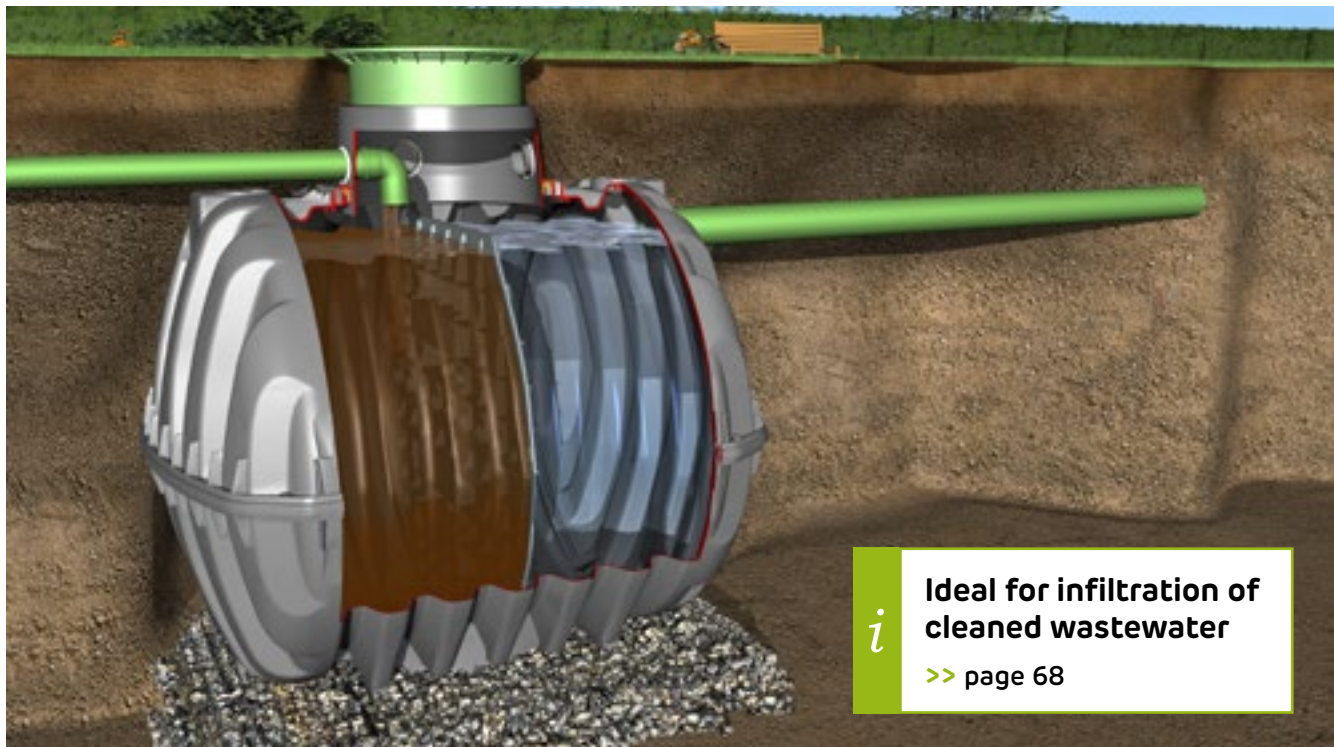
### Technical data

System Anaerobix	Herkules	30 l   40 l   60 l	XL/XXL
Purifying technology	Anaerobic system	Anaerobic system	Anaerobic system
Systems available up to	300 l/d	3,150 l/d	up to 150,000 l/d
Maintenance interval	1 - 2 per year	1 - 2 per year	1 - 4 per year

Limit values	Herkules	30 l   40 l   60 l	XL/XXL
BOD <sub>5</sub> (biochemical oxygen demand)	56,6 %	75 %	-
SS (suspended solids)	81 %	90 %	82 %



# Septic Tank



*i* **Ideal for infiltration of cleaned wastewater**  
**>> page 68**

## Who needs septic tanks?

Septic tanks are still the most common treatment systems being used for private houses worldwide. Floating and removable material is extracted from domestic wastewater in mechanical wastewater tanks. This is purely mechanical cleaning. GRAF offers a versatile range of septic tank solutions. GRAF tanks can be upgraded to fully-biological treatment plants or rainwater harvesting systems.

## Benefits

- ✓ Stability tested according to European standard (DIN EN 12566-1)
- ✓ Fast tank fitting with profile seal and fast connectors
- ✓ Tanks can be used for rainwater harvesting systems after thorough cleaning
- ✓ Low weight: can also be installed in difficult local conditions without a crane
- ✓ Low maintenance: maintenance or cleaning work can be performed through the shafts
- ✓ Tanks can be used as rainwater harvesting systems after thorough cleaning



Presenting the Carat septic tank  
**GRAF TV**  
**www.graf.info/v213**

*i*

**12566-1\***  
**Hydraulic efficiency 99.9 %**

\*Refer to the installation instructions for CE-compliant Septic tanks

## Accessories

**Inspection end DN200**  
For Carat S 4,800 l and 6,500 l  
Order no. 340527



**Deaeration end DN110**  
Order no. 369017



## Septic

**WEBCODE G5508**

Volume [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]	Order no.
2,000	1715	1240	1380	75	105150
3,000	2450	1215	1450	100	105152
4,000	3250	1240	1380	135	105153
5,000	4007	1240	1380	165	105154

**Scope of supply:** Septic tank with 2 telescopic dome shafts 400, pre-drilled inflow and outflow with sealing DN110



## Herkules

For overground and underground installation

**WEBCODE G5406**

Total volume [l]	Volume [l]	Chambers	Height [mm]	Ø max. [mm]	Weight [kg]	Order no.
1,600	1,600	as desired	1600	1350	60	320001



## Carat S

Three chambers / Two chambers / One chamber

**WEBCODE G5504**

Inhabitants [max]	Total volume [l]	Capacity [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
5	2,700	2,700	2080	1565	2010	145
7	3,750	3,750	2280	1755	2200	175
9	4,800	4,800	2280	1985	2430	220
13	6,500	6,500	2390	2190	2710	260

**Scope of supply:** Carat S underground tank with baffle. Also available without baffle as a one-chamber wastewater tank. (>> page 60 – suitable covers >> page 62 – different baffle position)

**The GRAF modular system**  
**>> page 58**



Cesspools



Who needs wastewater cesspools?

Our wastewater cesspools are the ideal solution for all properties without a sewer connection and with little or irregular wastewater volume. For example:

- Allotments or weekend houses
- Residential houses as a temporary solution until a sewer connection can be made

Benefits

- ✓ Can be installed in groundwater
- ✓ Shallow installation
- ✓ Easy installation due to low net weight (Platin)
- ✓ The tank can also be used as a rainwater collection tank after cleaning
- ✓ Self-anchoring (only Carat S)

*i*

Find your cesspool solution

>> [www.graf.info/cesspool-advisor](http://www.graf.info/cesspool-advisor)

Accessories

Overflow guard

Emits visual and audio alarm, battery-operated (9 V).

Order no. 351017



Odour filter for ventilation shaft

Reliably filters out unpleasant odours.

Order no. 104018



Special seal DN110 (not for XL/XXL)

For connections

Order no. 332033

Drill DN110

With view shaft

Order no. 202003



Herkules

For overground and underground installation

WEBCODE G5406

Total volume [l]	Volume [l]	Chambers	Height [mm]	Ø max. [mm]	Weight [kg]	Order no.
1,600	1,600	as desired	1600	1350	60	320001



Platin

WEBCODE G5411

Volume [l]	Width B [mm]	Length L [mm]	Height H [mm]	Height H <sup>tot</sup> [mm]	Height of dome shaft ht [mm]	Indoor Ø of dome shaft [mm]	Weight [kg]
1,500	1250	2100	700	1015	315	650	82
3,000	2100	2450	735	1050	315	650	180
5,000	2300	2890	950	1315	315	650	250
7,500	2250	3600	1250	1565	315	650	380



Carat

WEBCODE G5408

Tank	Volume [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
Carat S	2,700 – 6,500	2080 – 2390	1565 – 2190	2710	120 – 220
Carat XL	8,500 – 13,000	3500 – 4000	2040 – 2420	3075	380 – 600
Carat XXL	16,000 – 122,000	4660 – 28600	2500 – 2500	2550	805 – 4870

The GRAF modular system  
>> page 58



*i*

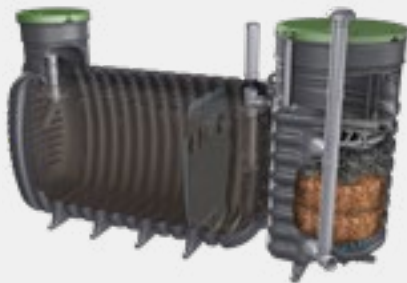
Find your  
wastewater solution

>> [www.graf.info/cesspool-advisor](http://www.graf.info/cesspool-advisor)





oneZero



System	easy <b>Compact</b>	Herkules Anaerobix	Anaerobix filter	Anaerobix XL/XXL	Septic tank
Example applications	Holiday homes	Single houses / holiday homes	Single houses / holiday homes	Domestic & commercial (single houses / small communities)	Domestic & commercial (single houses / small communities)
Page	42	46	47	47	48
System conformity	EN 12566-3	PIA	PIA	PIA	PIA
Purifying technology	Fully biological, aerated biofiltration	Anaerobic system	Anaerobic system	Anaerobic system	Mechanical separation
Available up to	6 PE   600 l/d	300 l/d	3,150 l/d	150,000 l/d	
Maintenance interval	1 – 2 per year	1 – 2 per year	1 – 2 per year	1 – 4 per year	1 time per year
<b>Parameter cleaning performance</b>					
COD (chemical oxygen demand)	84,5 %	56,6 %	75,0 %	–	–
BODs (biochemical oxygen demand)	92,0 %	81,0 %	90.0 %	82,0 %	–
SS (suspended solids)	93,0 %	–	–	–	–

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik (Testing Institute for Wastewater Technology), Aachen



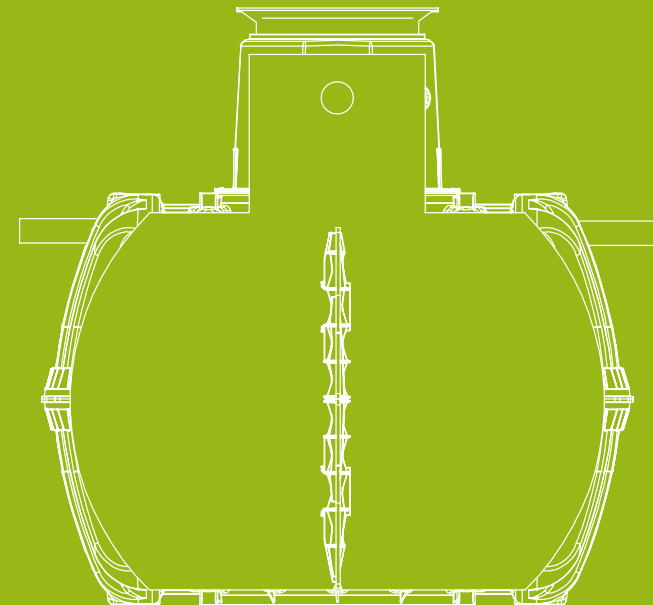


Photo: © VisualStories via Getty Images

## oneTank

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- |                            |         |
|----------------------------|---------|
| > Carat S Underground Tank | Page 56 |
| > The GRAF Modular System  | Page 58 |
| > Carat XL                 | Page 64 |
| > Carat XXL                | Page 65 |

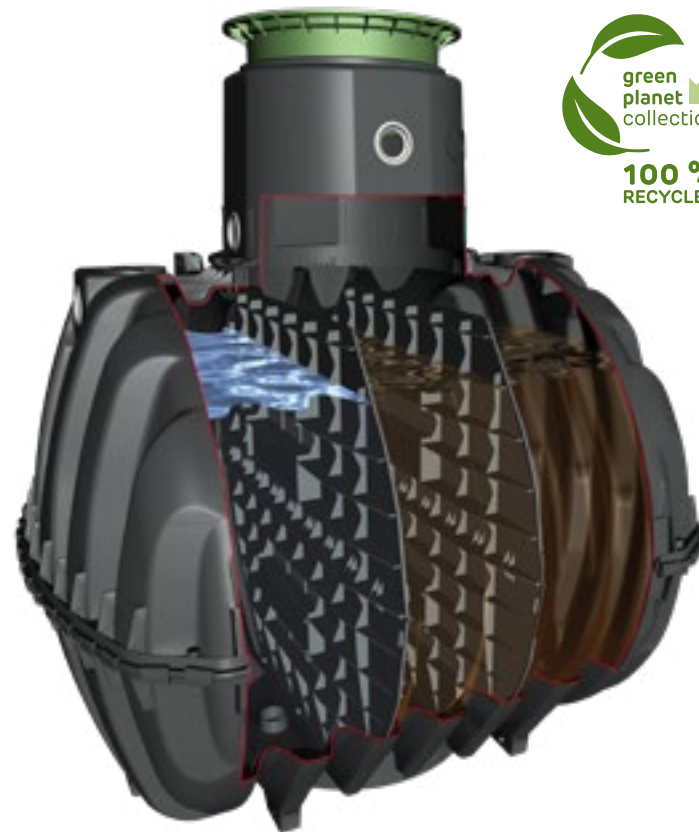




# Carat S Underground Tank

## Benefits

- ✓ Unrivalled fitting accuracy
- ✓ Ribbed tank base
- ✓ Steady in groundwater thanks to extremely stable construction thanks to its extremely stable construction
- ✓ Very high stability thanks to modern production methods
- ✓ Made of 100 % recycling material
- ✓ Easy to transport, 5 – 9 tanks per pallet
- ✓ Up to 36 complete wastewater systems or 45 wastewater tanks per lorry



Carat S: Reduce freight costs by up to 80 %

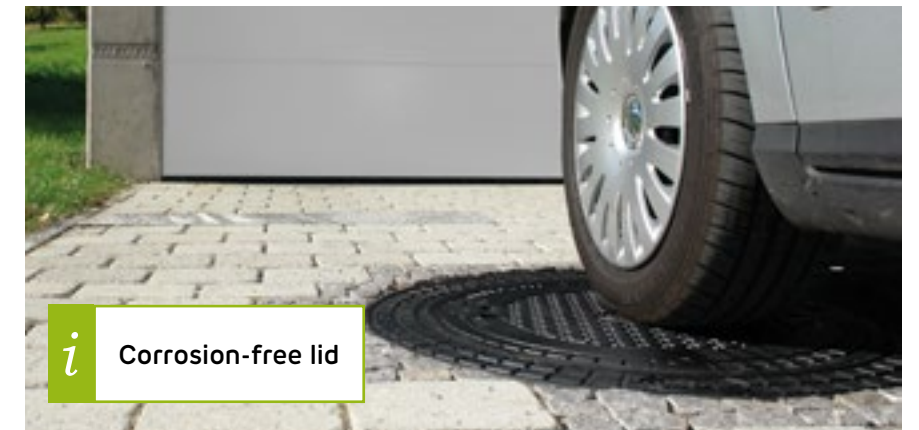
GRAF TV  
[www.graf.info/v208](http://www.graf.info/v208)



Up to 8 times more tank volume per truck / container

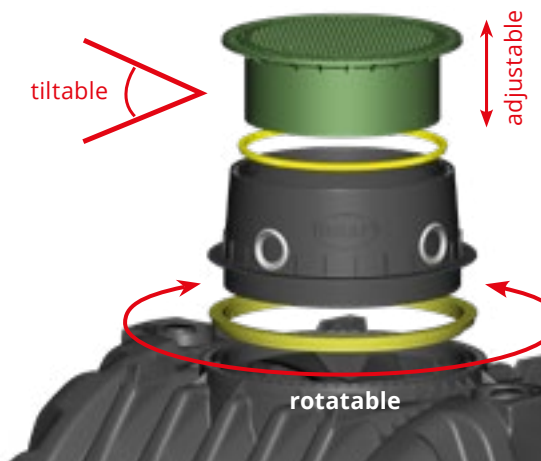
## Flush with ground level

- Unique fit accuracy of the components
- Suitable for vehicle loading (when combined with the adequate telescopic dome shaft)
- Numerous seals to effectively stop dirt getting into the tank
- The height of the telescopic tank dome can be smoothly adjusted
- The telescopic tank dome can additionally be inclined by 5° to suit the local conditions
- Impact-resistant



Corrosion-free lid

Telescopic dome shaft 600 car suitable for vehicles



## Additional +modules

>> page 59

## Easy and safe assembly



Assembly of Carat S underground tank

GRAF TV  
[www.graf.info/v207](http://www.graf.info/v207)





# The GRAF Modular System

Choose your system from four different modulars

## Tank page 59



Carat S 2,700 – 6,500 litres



## Tank cover page 60



Telescopic dome shaft 600 Mini and 600 Maxi



Telescopic dome shaft 600 cast iron



Extension



Tank dome Micro for Carat S



Telescopic dome shaft 600 car



Telescopic dome shaft 600 universal



Tank dome Mini for Carat S

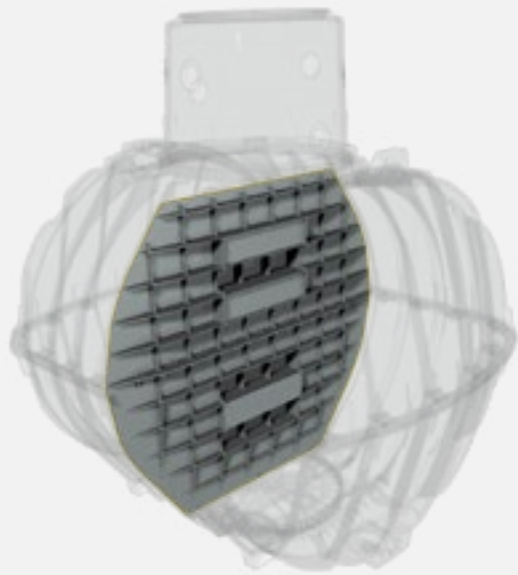


Tank dome Maxi for Carat S

## Baffles page 62



Baffles – Carat S 2,700 – 6,500 litres



## System packs page 63



one2clean



Anaerobix



one2cleanXtra  
3 – 18 PE



oneAdvanced  
10 – 1,000 PE



# Carat S Underground Tank

Choose your tank size



## Carat S underground tank Suitable for vehicle loading

Size 2,700 – 6,500 litres. Designed to be used in conjunction with the vehicle loading telescopic tank dome. The access dome is designed in accordance with DIN testing.



Illustration shows 4,800 litre tank with telescopic dome shaft 600 for pedestrian loading

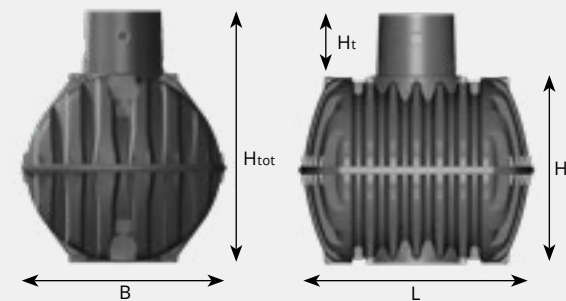
## Dimensions

WEBCODE G5305

Volume [l]	Width B [mm]	Length L [mm]	Height H [mm]	Height H <sup>tot</sup> [mm]	Height of tank dome H <sub>t</sub> [mm]	Inner Ø of tank dome [mm]	Weight [kg]	Order no.
2,700 (700 US gal.)	1565 (61.6")	2080 (81.9")	1400 (55.1")	2010 (79.1")	610 (24.0")	650 – 800 (25.6 – 31.5")	120 (265 lbs)	372024
3,750 (1,000 US gal.)	1755 (69.1")	2280 (89.8")	1590 (62.6")	2200 (86.6")	610 (24.0")	650 – 800 (25.6 – 31.5")	150 (331 lbs)	372025
4,800 (1,250 US gal.)	1985 (78.2")	2280 (89.8")	1820 (71.6")	2430 (95.7")	610 (24.0")	650 – 800 (25.6 – 31.5")	185 (408 lbs)	372026
6,500 (1,700 US gal.)	2190 (86.2")	2390 (94.1")	2100 (82.7")	2710 (106.7")	610 (24.0")	650 – 800 (25.6 – 31.5")	220 (485 lbs)	372027

## Technical data

Max. earth covering (without groundwater vehicle loading)	1500 mm (59.1")
Max. vehicle weight	12 to (26456 lbs)
Earth covering required for vehicle loading	800 – 1500 mm (31.5 – 59.1")
Groundwater stability	Up to tank equator
Earth covering required for groundwater stability	800 – 1500 mm (31.5 – 59.1")
Connection	DN110 / DN160 / DN200 on top







# Carat S Underground Tank

Choose your tank domes and covers



## Tank dome Micro

- Weight: 7 kg (15,43 lbs)
- Including green lid
- For shallow excavation
- Earth cover only 90 mm

Order no. 371009



## Tank dome Mini

- Weight: 11 kg (24 lbs)
- For especially flat installation
- Incl. 3 edge seals
- For systems up to 2 tanks

Order no. 371041



## Tank dome Maxi

- Weight: 15 kg (33 lbs)
- For large earth coverings (loading capacity)
- Incl. 5 edge seals
- For multi tank systems  $\geq 4$  tanks

Order no. 371040



## Extension

- Weight: 6 kg (13 lbs)
- The earth covering can be raised 300 mm using the extension

Order no. 371003



## Telescopic dome shaft 600 Mini

- With PP lid
- Suitable for pedestrian loading
- Weight: 9 kg (19 lbs)
- Adjustable earth covering across upper tank surface

plus 140 – 340 mm (5.51 – 13.4") earth covering

Order no. 371010



## Telescopic dome shaft 600 Maxi

- With PP lid
- Suitable for pedestrian loading
- Weight: 15 kg (33 lbs)
- Adjustable earth covering across upper tank surface

plus 140 – 440 mm (5.51 – 17.3") earth covering

Order no. 371011



## Telescopic dome shaft 600 cast iron

- Suitable for vehicle loading – with childproof cast iron cover up to 3.5 t (7716 lbs)
- Weight: 55 kg (121 lbs)
- Adjustable earth covering across upper tank surface

plus 140 – 440 mm (5.51 – 17.3") earth covering

Order no. 371020



## Telescopic dome shaft 600 universal

- Suitable for vehicle/ lorry-bearing
- Weight: 11 kg (24 lbs)
- Cover to be provided on site
- Adjustable earth covering across upper tank surface
- For commercially available concrete rings/covers (to be provided on site)

plus 140 – 440 mm (5.51 – 17.3") earth covering

Order no. 371021



## Telescopic dome shaft 600 car

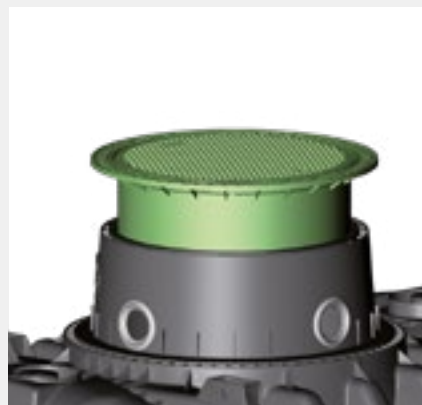
- Suitable for vehicle loading – with childproof plastic lid cover up to 3.5 t (7716 lbs)
- Weight: 22,5 kg (50 lbs)
- Adjustable earth covering across upper tank surface
- Perfect fitting accuracy
- Corrosion free, childproof plastic cover

plus 140 mm – 440 mm (5.51 – 17.3") earth covering

Order no. 371052



Tank dome Micro



Tank dome Mini



Tank dome Maxi



Telescopic dome shaft 600 Mini suitable for pedestrian loading



Telescopic dome shaft 600 cast iron suitable for vehicles



Telescopic dome shaft 600 car suitable for vehicles

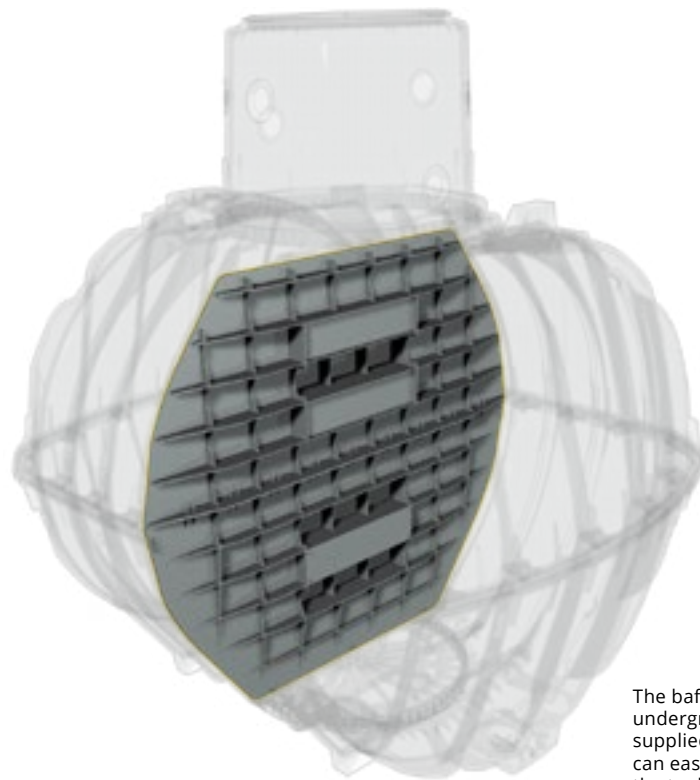
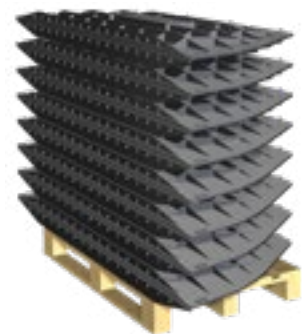




# Carat S Underground Tank

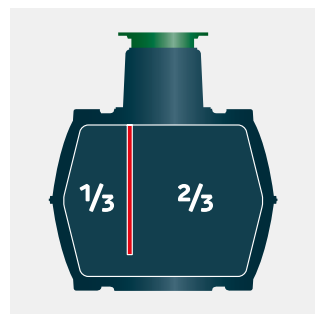
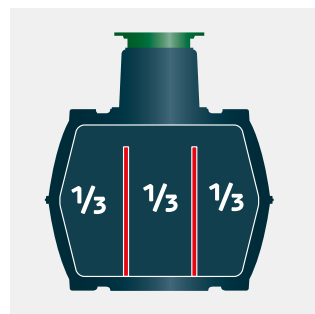
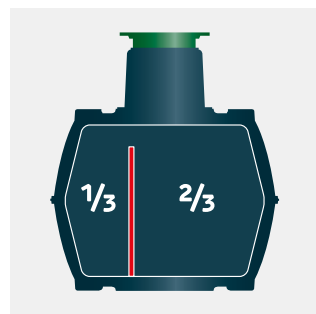
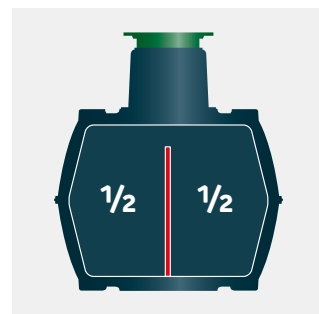
Choose your baffle position

The baffle separates the Carat S underground tank into two or three chambers as desired. It consists of two halves and is simple to insert when assembling the second tank half of the Carat S. A profile seal provides reliable and permanent separation of the chambers. The Carat S underground tank with baffle is ready for use as a multichamber tank. This can then be expanded by means of a system pack to create a wastewater treatment system (>> page 58). The system pack is simply fitted to the baffle and the control unit is installed in the house – and the wastewater treatment system is ready to go.



The baffles of the Carat S underground tank are supplied on pallets and can easily be inserted in the tanks as needed.

## Flexible baffle positions



Examples of different baffle positions.

## Baffle for Carat S tank

Volume [l]	pcs/pal	Positions	Weight [kg]	Order no.
2,700 (700 US gal.)	9	1/2	20 (44 lbs)	375067
2,700 (700 US gal.)	9	1/3	20 (44 lbs)	375077
3,750 (1,000 US gal.)	7	1/2	25 (55 lbs)	375025
3,750 (1,000 US gal.)	7	1/3	25 (55 lbs)	375080
4,800 (1,250 US gal.)	5	several positions	35 (77 lbs)	375026
6,500 (1,700 US gal.)	5	several positions	45 (99 lbs)	375027



# Carat S Underground Tank

Choose your system pack



## System pack one2clean / one2cleanXtra

The system pack one2clean / one2cleanXtra (>> page 12) works according to the SBR air lift pump process. This requires a wastewater tank with a scum baffle.

**Scope of supply:**  
control cabinet with air compressor for indoor mounting, one2clean / one2cleanXtra system pack comprising air lift pumps and tube diffuser. Air hose not included.

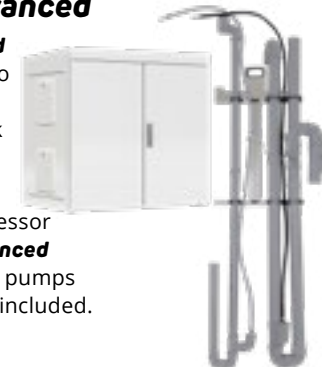


Inhabitants [max.]	Tank volume [l]	one2clean [Order no.]	one2cleanXtra [Order no.]
<b>One tank system</b>			
3	2,700	106850	106413
5	3,750	106851	106414
7	4,800	106852	106415
9	6,500	106853	106416
<b>Two tank system</b>			
7	2 x 2,700	106854	—
10	2 x 3,750	106855	—
14	2 x 4,800	106856	—
18	2 x 6,500	106857	—

## System pack oneAdvanced

The system pack oneAdvanced (>> page 24) works according to the SBR air lift pump process. This requires a wastewater tank with two chambers.

**Scope of supply:**  
control cabinet with air compressor for indoor mounting, oneAdvanced system pack comprising air lift pumps and disk diffuser. Air hose not included.



Inhabitants [max.]	Tank volume [l]	System packs [Order no.]
10	4,800	106572
14	6,500	106841
16	2 x 3,750	106847
22	2 x 4,800	106931
28	2 x 6,500	106943
32	4 x 3,750	106949
44	4 x 4,800	106952
50	4 x 6,500	106955
60	4 x 6,500	372710
90	5 x 6,500	372711

## Anaerobix

The filter system Anaerobix (>> page 46) is an anaerobic filter system (filled with carrier material) for GRAF wastewater tanks. It increases the cleaning performance of a wastewater tank several times over.



Inhabitants [max.]	Volume [l]	Anaerobix 60 l [Order no.]
8 – 9	Carat S 2,700 l	107600
10 – 12	Carat S 3,750 l	107600
12 – 16	Carat S 4,800 l	107600
16 – 21	Carat S 6,500 l	107600

Further sizes on request

## Accessories

### SBR hose package for 3 – 19 PE (one2clean and one2cleanXtra one-tank-system)

Includes: 1 x Ø 19 mm and 1 x Ø 13 mm PVC hose; colour-coded

10 m	Order no. 107686
20 m	Order no. 107688

### SBR hose package for 10 – 28 PE (oneAdvanced)

Includes: 1 x Ø 19 mm; 3 x Ø 13 mm, PVC hose; colour-coded

10 m	Order no. 107190
20 m	Order no. 107192



# Carat XL Underground Tank

up to 13,000 litres

## Benefits

- ✓ Suitable for loading up to 12 t
- ✓ Can be mounted in groundwater
- ✓ Lower weight than concrete and steel
- ✓ Various connection surfaces  
DN110 / 160 / 200



WEBCODE G5303



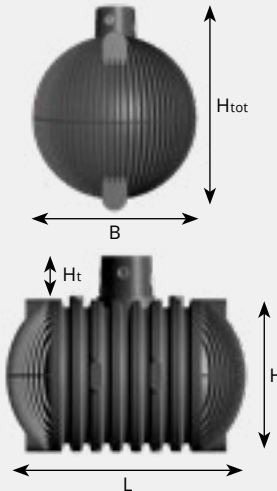
Illustration shows 10,000 litre tank with telescopic dome shaft 600 with cast iron lid, suitable for vehicle loading.

## Dimensions

Volume [l]	Width B [mm]	Length L [mm]	Height H [mm]	Height H <sub>tot</sub> [mm]	Height of dome shaft H <sub>t</sub> [mm]	Indoor Ø of dome shaft [mm]	Weight [kg]
8,500	2040	3500	2085	2695	610	650	380
10,000	2240	3520	2285	2895	610	650	455
13,000	2420	4000	2470	3080	610	650	600

## Technical data

Max. earth covering (without groundwater vehicle loading)	2000 mm (6' 6.7")
Max. axle load	3.5 to (7716 lbs) with 2.2 to cast iron cover, 12 to (26456 lbs) with telescopic dome shaft 600 lorry
Max. total weight	12 to (26456 lbs)
Earth covering required for vehicle loading	800 mm – 2000 mm (31.5" – 6' 6.7")
Groundwater stability	up to middle of tank
Earth covering required for groundwater stability	800 mm – 1800 mm (31.5" – 5' 10.9")
Connection	5 x DN160 (6") + 2 x DN200 (8") (on top)



# Carat XXL Underground Tank

up to 122,000 litres

## Benefits

- ✓ Suitable for loading up to 40 t
- ✓ Can be mounted in groundwater
- ✓ Lower weight than concrete and steel
- ✓ Various connection surfaces  
DN110 / 160 / 200
- ✓ Available with DN315 connection as an option
- ✓ Available with a second tank dome as an option

DN315 connection on end face on request

WEBCODE G5304



Illustration shows Carat XXL 46,000 l with telescopic dome shaft 600 suitable for loading up to 40t.

## Dimensions

Volume [l]	Width W [mm]	Length L [mm]	Height H [mm]	Height H <sub>tot</sub> [mm]	Height of dome shaft H <sub>t</sub> [mm]	Indoor Ø of dome shaft [mm]	Weight [kg]
16,000	2500	4590	2550	3160	610	650	770
22,000*	2500	6230	2550	3160	610	650	1025
26,000*	2500	7200	2550	3160	610	650	1125
32,000*	2500	8440	2550	3160	610	650	1405
36,000*	2500	9410	2550	3160	610	650	1500
42,000*	2500	10680	2550	3160	610	650	1795
46,000*	2500	11650	2550	3160	610	650	1890
52,000*	2500	12920	2550	3160	610	650	2185
56,000*	2500	13890	2550	3160	610	650	2280
62,000*	2500	15160	2550	3160	610	650	2580
66,000*	2500	16130	2550	3160	610	650	2670
72,000*	2500	17400	2550	3160	610	650	2965
76,000*	2500	18370	2550	3160	610	650	3060

\*with a second tank dome

Covers  
>> page 60



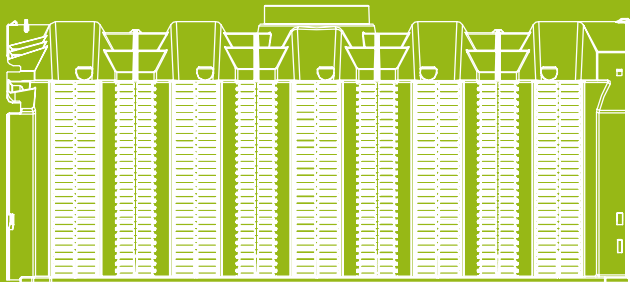


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# Infiltration

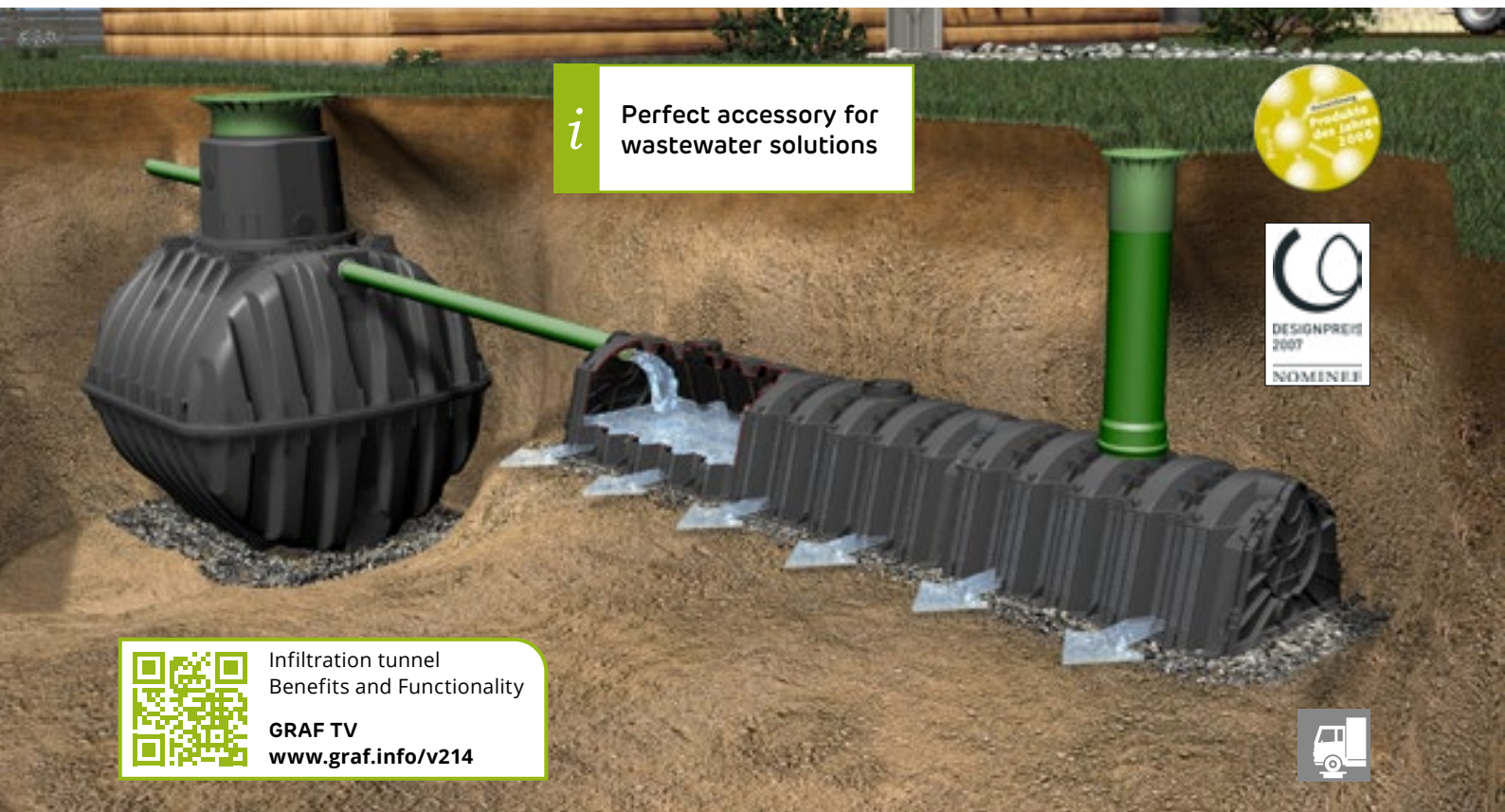
> Infiltration Tunnel

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# Infiltration Tunnel



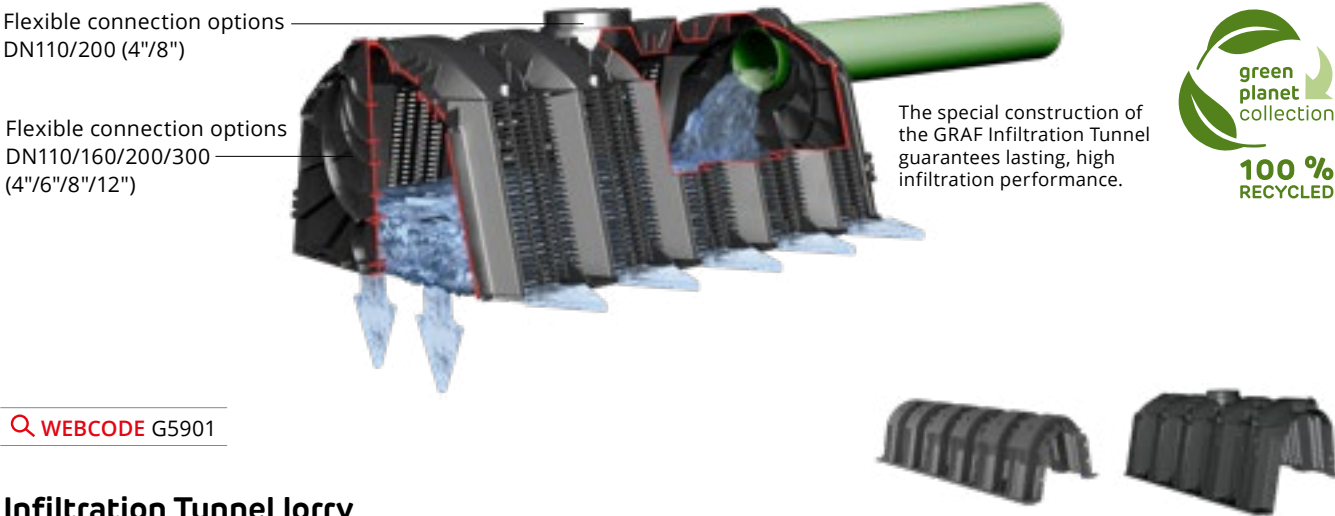
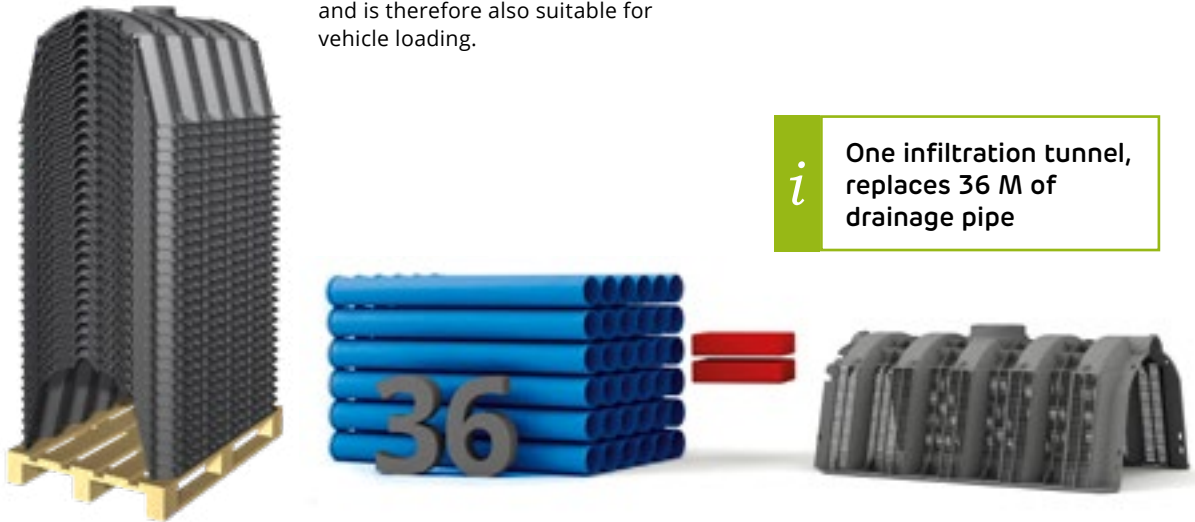
The Graf Infiltration Tunnel has been mainly designed for the use in private and rural areas. The system, which consists of one or more tunnel modules and two end plates, can be extended as desired. The tunnel is laid in one or more lines of the same level. As the weight of one module is only 11 kg, the handling of the Infiltration Tunnel is excellent. The surface above the tunnels is suitable for vehicle loading, offering varied possibilities for use.

**Up to 12,000 litres infiltration volume per pallet**  
Thanks to its special design, the GRAF Infiltration Tunnel can be stacked easily. Consequently, the shipment of up to 40 Infiltration Tunnels on one pallet saves considerable transport and storage costs.

**Vehicle loading**  
For versatility, the surface above the infiltration tunnels can withstand a continuous load of up to 100 kN/m<sup>2</sup> and is therefore also suitable for vehicle loading.

**Easy installation**  
The GRAF Infiltration Tunnels are laid in lines and can be flexibly adapted to specific conditions and to the individual storage volume requested. The installation of the modules is easy, quick and variable. Installation is possible without heavy equipment, as one Infiltration Tunnel weighs just 11 kg. The tunnel modules are simply joined together in a line and two end plates are fitted per line.

**One infiltration tunnel, replaces 36 M of drainage pipe**



WEBCODE G5901

## Infiltration Tunnel lorry

Volume	Length	Width	Height	Weight	Colour	Order no.
130 l (34 US gal.)	1190 mm (3'10")	490 mm (19.3")	320 mm (12.6")	5 kg (9,9 lbs)	black	410200
300 l (79 US gal.)	1160 mm (45.7")	800 mm (31.5")	510 mm (20")	11 kg (24.4 lbs)	black	230010

## End plates (Set of 2 units) for Infiltration Tunnel

Volume	Length	Width	Height	Weight	Colour	Order no.
130 l (34 US gal.)	415 mm (1' 4.4")	205 mm (8.1")	295 mm (11.6")	1,8 kg (4,0 lbs)	black	410203
300 l (79 US gal.)	674 mm (2' 2.5 ")	64 mm (2.5 ")	480 mm (1.9 ")	3,2 kg (7 lbs)	black	231004

## Accessories

- GRAF-Tex geotextile**  
For an Infiltration Tunnel size of 2.50 x 2.50 m (8' 2.4" x 8' 2.4")  
Order no. 231006
- Roll width 5 m (16' 4.8")**  
Order no. 231002
- Deaeration end DN110 (4")**  
Order no. 369017
- Inspection end DN200 (8")**  
Order no. 340527

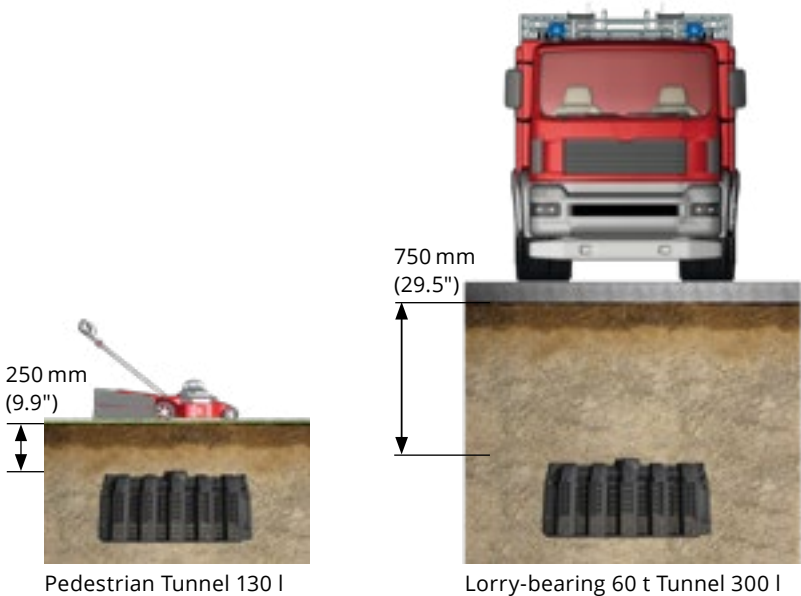






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## oneSepa

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> System at a glance

Page 72

> oneSepa Grease

Page 74

> oneSepa Oil

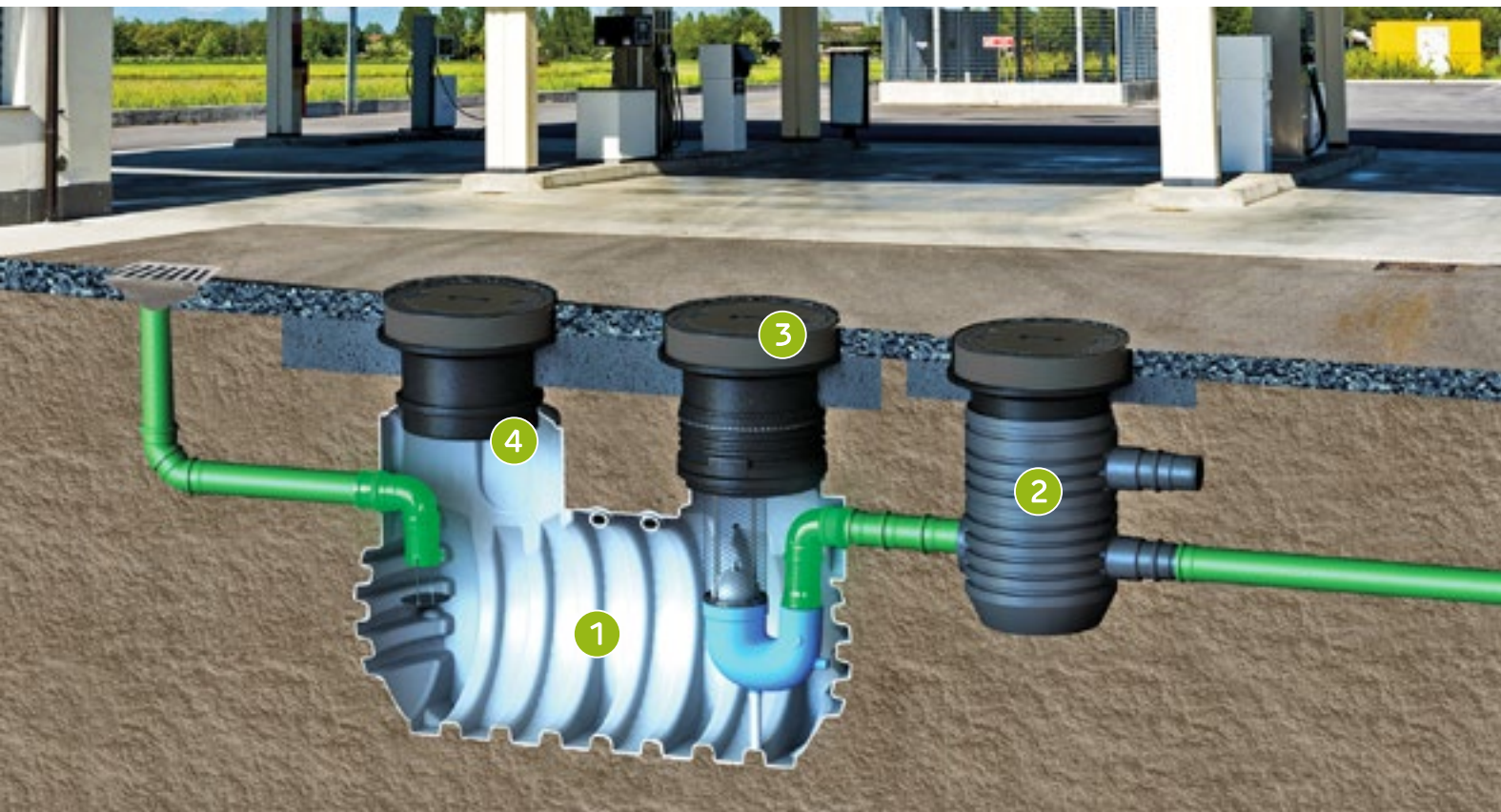
Page 82





# oneSepa separators

System at a glance



## oneSepa separator systems

One of the biggest dangers for water is pollution from mineral liquids (such as petrol, oil, grease, ...). Just a single drop of petrol is enough to pollute 1 m<sup>3</sup> of pure water.

To prevent environmental damage caused by the uncontrolled discharge of oil contaminated surface water runoff, effective and safe methods of separation technology must be used everywhere where light liquids come into contact with water.

With the light fluid separator oneSepa Oil – as well as the grease separator oneSepa Grease – GRAF offers sophisticated separation systems.

### Where to use which separator?

oneSepa Grease is the perfect add on for GRAF treatment plants. When a kitchen (restaurant) is connected to a fully biological treatment, a grease separator should be installed in front of the system. oneSepa Oil is the ideal solution for Stormwater water management systems. If rainwater from gas stations, car washes or car parks feeds into a drainage or attenuation system (e.g. GRAF EcoBloc), a Light fluid separator is recommended.

### Plastic – clear benefits over concrete

Because of their low weight, separators made of plastic can be installed without heavy equipment. This allows easy transport and installation even in places that are difficult to access.

### Ready for connection

All the components of GRAF separators are pre-fitted ready for connection, allowing time to be saved during on-site installation.

### Maximum water pollution control

Pure, clean water is one of the essential things in life, yet it's exposed to a large number of pollutants. One of the greatest hazards is contamination with light mineral liquids. A single drop of petrol is enough to contaminate one cubic metre of water.

GRAF separators offer maximum safety and protect the environment. The focus is of course in compliance with stipulated limit values.

### Tested safety – with approval

GRAF separators are made of particularly robust and tough plastic. The fact that it is sealed up to the ground surface is a major advantage of plastic as a material.

### No need to refurbish

Since they come into constant contact with highly aggressive wastewaters, concrete separators are at risk of corrosion and may require expensive refurbishment. Plastic separators, on the other hand, have smooth inner surfaces that will not corrode.

## 1 Separators

### oneSepa Grease Saphir

NS 1 – NS 4  
>> page 76



### oneSepa Grease Diamant

NS 4 – NS 15  
>> page 78



## 2 Outdoor sampling shaft

### Outdoor sampling shaft

DN160 Order no. 107975  
DN200 Order no. 107982  
>> page 80



## 3 Covers and Telescopic dome shaft

### Concrete cover Grease separators

Class B Order no. 107910  
Class D Order no. 107911  
>> page 80



### Concrete cover sampling shaft

Class B Order no. 107983  
Class D Order no. 107984  
>> page 80



### Telescopic dome shaft for grease separator and sampling shaft

Order no. 107974  
>> page 80



## 4 Accessories

### Warning sensors for oneSepa Grease

>> page 81

Warning system Typ 1:  
Grease film thickness  
Order no. 106513



Warning system Typ 2:  
Grease film thickness  
and fluid level  
Order no. 106514



### oneSepa Oil Class I+II Saphir

NS 3 – NS 6  
>> page 84



### Bypass for oneSepa Oil Saphir

>> page 84



### oneSepa Oil Class I+II Diamant

NS 6 – NS 15  
>> page 86



### Outdoor sampling shaft

DN160 Order no. 107975  
DN200 Order no. 107982  
>> page 88



### Concrete cover Light fluid separators

Class B Order no. 107967  
Class D Order no. 107968  
>> page 88



### Concrete cover sampling shaft

Class B Order no. 107983  
Class D Order no. 107984  
>> page 88



### Telescopic dome shaft for light fluid separator and sampling shaft

Order no. 107974  
>> page 88



### Warning sensors for oneSepa Oil

>> page 89

Type 1:  
Oil film thickness alarm  
Order no. 107964

Type 2:  
Build-up alarm  
Order no. 107965

Type 3:  
Oil film thickness and  
build-up alarm  
Order no. 107966





# System overview oneSepa Grease

## Areas of application

Grease separators are needed wherever water is contaminated with fats and oils of natural origin. This concerns for example the following operations:

- Kitchen facilities and industrial kitchens (restaurants, hotels, etc.)
- Food distribution points with returnable dishes
- Meat and sausage processing plants (e.g. slaughterhouses, butcheries)
- Oil processing plants (e.g. oil mills)
- Plants for the production of ready meals

## Two tank domes

From size NS4, GRAF grease separators have two tank domes. Inlet and outlet are therefore easily accessible for easier inspection.

## Flexible tank dome:

- Sealed up to the ground surface
- Easy adjustment to the ground surface thanks to telescopic/tiltable dome shaft
- Compatible with standard concrete rings and covers

## HGV trafficable

In conjunction with HGV trafficable Class D cover

>> page 80



Video grease separator

GRAF TV  
[www.graf.info/v218](http://www.graf.info/v218)

## Sizing

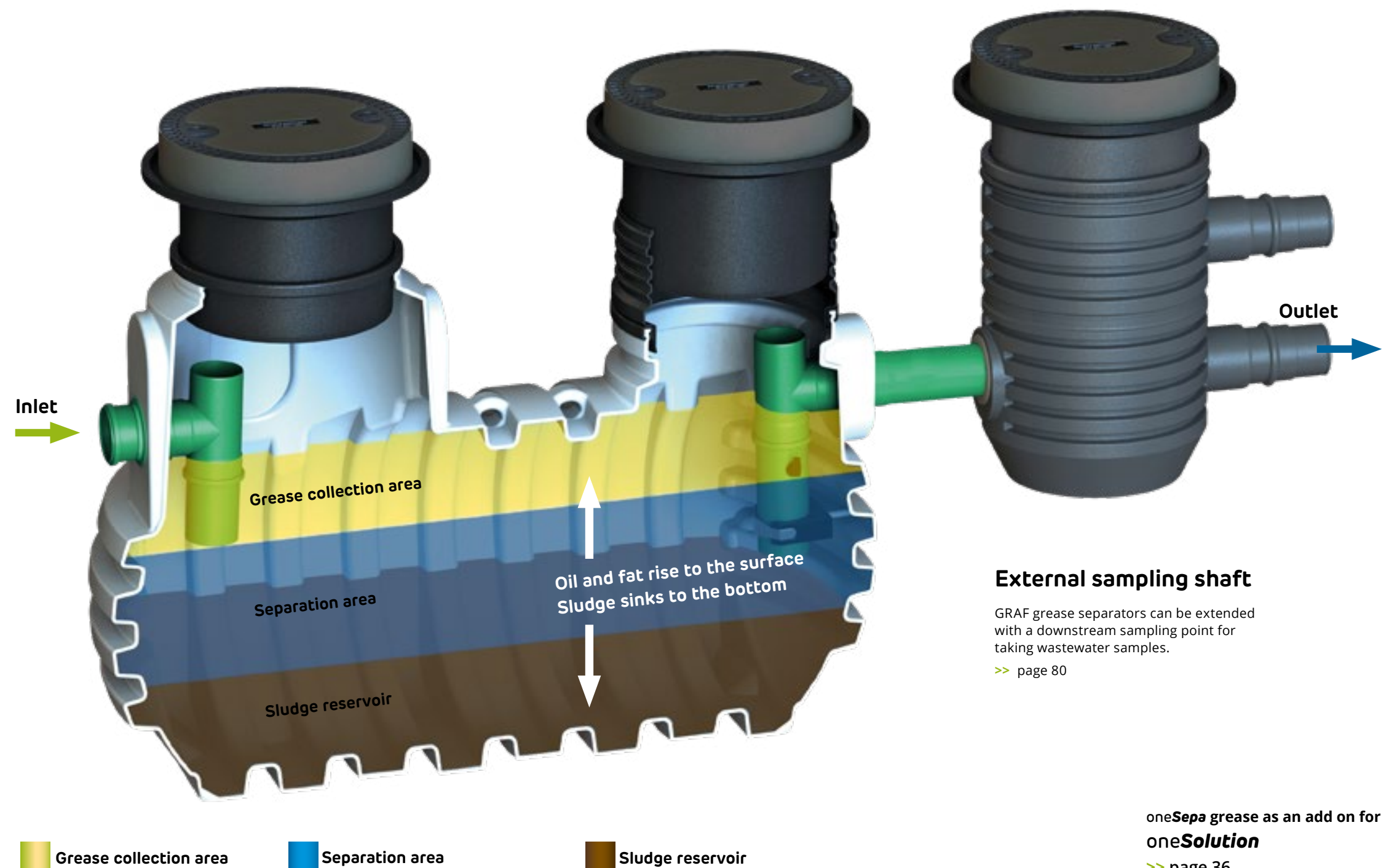
Separator systems are classified by NS (nominal size). The choice of nominal size for the separator is specified in Part 2 of EN 1825. Furthermore, the requirements of the respective competent authority must be observed. A free calculation service for sizing according to EN 1825 is available on request.

## Functional principle

A grease separator system works according to the physical principle of gravity. This means that heavy components in the wastewater, such as sludge, can settle at the bottom of the tank. In contrast, light components such as fats and oils rise to the surface of the water.

## Benefits

- ✓ Low weight of the tank means no need for heavy equipment, compared to concrete systems
- ✓ Easy transport and installation, even in places that are difficult to access
- ✓ System is delivered pre-fitted
- ✓ Smooth and corrosion-free inner surfaces thanks to high-quality plastic



## External sampling shaft

GRAF grease separators can be extended with a downstream sampling point for taking wastewater samples.

>> page 80

oneSepa grease as an add on for oneSolution

>> page 36



oneSepa Grease Saphir

NS 1 – 4

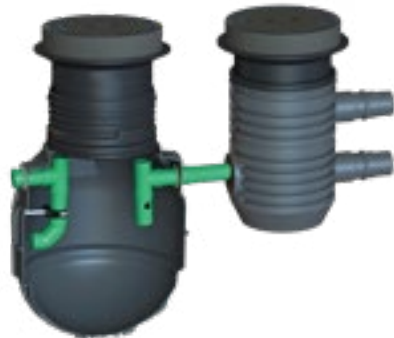


Scope of supply

- 1 Saphir tank
- 2 Pre-assembled components of grease separator

Not included in the scope of supply:

- 3 Telescopic dome shaft separator >> page 80
- 4 Concrete cover for grease separator >> page 80



Saphir grease separator with Outdoor sampling shaft >> page 80

oneSepa Grease Saphir

Q WEBCODE G5605

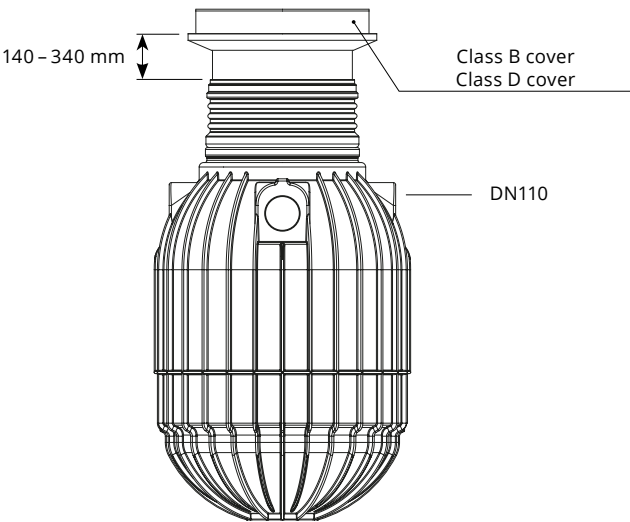
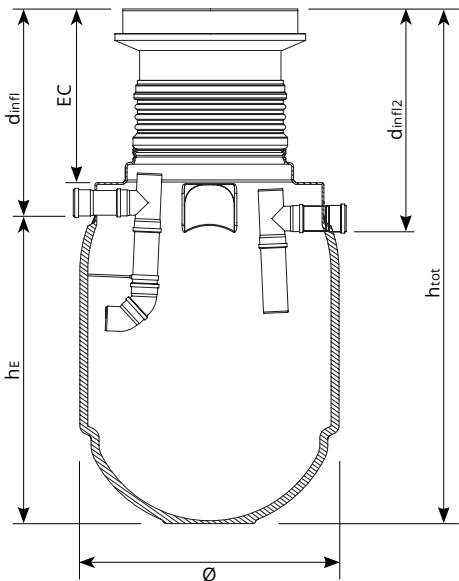
NS [l/s]	Connection [DN]	Grease [litres]	Sludge [litres]	Total [litres]	Order no. <sup>1)</sup>
1	110	200	200	500	108000
2	110	200	200	500	108001
2	110	300	200	730	108002
2	110	200	400	730	108003
2	110	300	500	1.025	108004
4	110	300	500	1.025	108005

Effectiveness tested by TÜV Rheinland according to EN 1825. <sup>1)</sup> Telescopic dome shaft and cover not included

Technical data

Max. earth covering:	1200 mm
Max. axle load:	10 t (in conjunction with a load distribution plate)
Max. vehicle weight:	60 t (in conjunction with a load distribution plate)
Required earth covering for trafficability:	700 – 1200 mm above tank shoulder
Groundwater stability:	500 l, 730 l immersion depth max. 430 mm, 1,025 l immersion depth max. 550 mm
Required earth covering with groundwater installation:	700 – 1200 mm above tank shoulder
Connection:	DN 110

Installation dimensions



Class B cover (up to 12,5 to)

NS [l/s]	Connection [DN]	h <sub>E</sub> [mm]	d <sub>infl</sub> [mm]	d <sub>infl2</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]	Ø [mm]	Weight [kg]
1	110	835	800 – 980	870 – 1050	1620 – 1800	700 – 1200	1125	41
2	110	835	800 – 980	870 – 1050	1620 – 1800	700 – 1200	1125	41
2	110	1050	860 – 1040	930 – 1110	1900 – 2080	700 – 1200	1155	70
2	110	1050	860 – 1040	930 – 1110	1900 – 2080	700 – 1200	1155	70
2	110	1375	870 – 1070	940 – 1140	2220 – 2400	700 – 1200	1155	100
4	110	1375	870 – 1070	940 – 1140	2220 – 2400	700 – 1200	1155	100

Class D cover (up to 40 to)

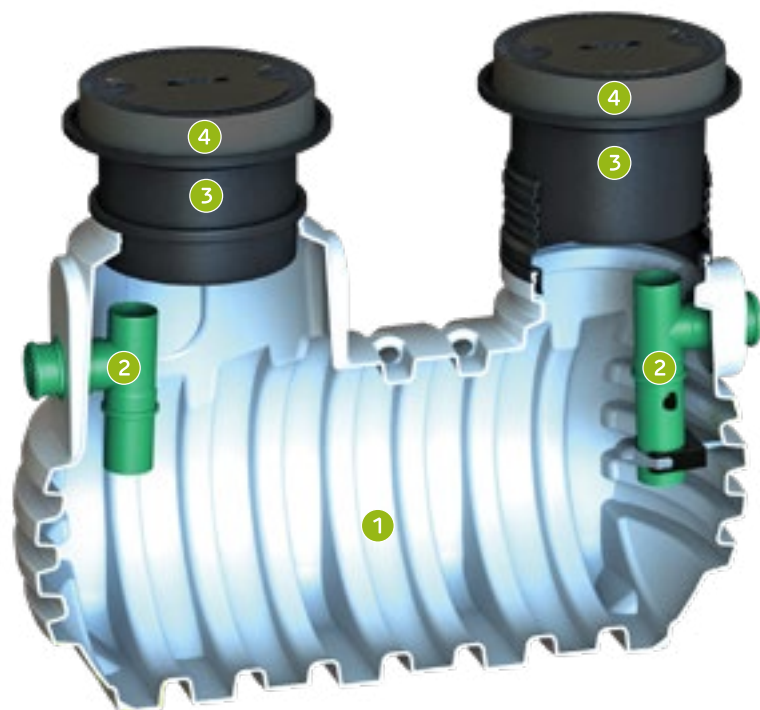
NS [l/s]	Connection [DN]	h <sub>E</sub> [mm]	d <sub>infl</sub> [mm]	d <sub>infl2</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]	Ø [mm]	Weight [kg]
1	110	835	830 – 1010	900 – 1080	1650 – 1830	700 – 1200	1125	41
2	110	835	830 – 1010	900 – 1080	1650 – 1830	700 – 1200	1125	41
2	110	1050	890 – 1070	960 – 1040	1930 – 2110	700 – 1200	1155	70
2	110	1050	890 – 1070	960 – 1040	1930 – 2110	700 – 1200	1155	70
2	110	1375	910 – 1090	980 – 1160	2260 – 2440	700 – 1200	1155	100
4	110	1375	910 – 1090	980 – 1160	2260 – 2440	700 – 1200	1155	100

Accessories

>> page 80



oneSepa Grease Diamant  
NS 4 – 15

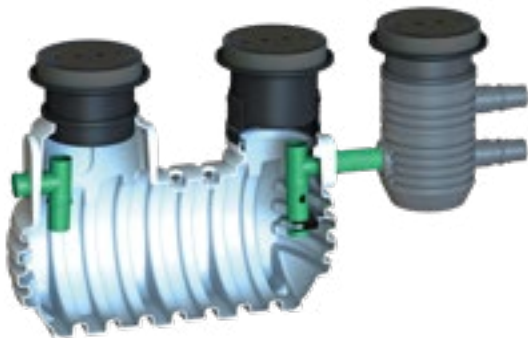


Scope of supply

- 1 Diamant tank incl. 1 extension piece as a tank dome
- 2 Pre-assembled components of grease separator

Not included in the scope of supply:

- 3 Telescopic dome shaft separator >> page 80
- 4 Concrete cover for grease separator >> page 80



Diamant grease separator with Outdoor sampling shaft  
>> page 80



oneSepa Grease Diamant

Q WEBCODE G5606

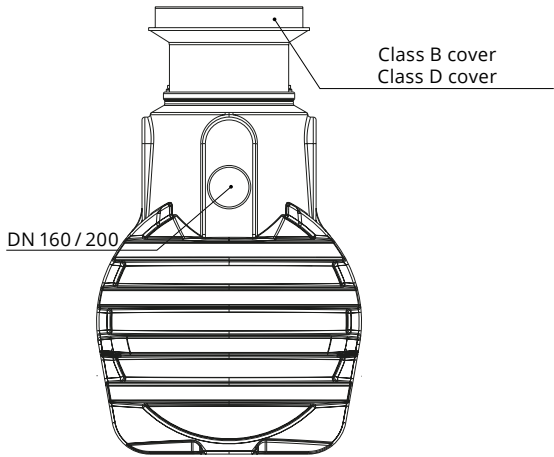
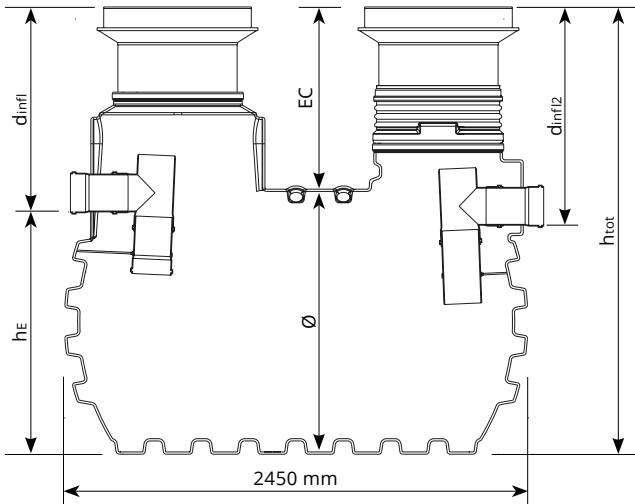
NS [l/s]	Connection [DN]	Grease [litres]	Sludge [litres]	Total [litres]	Order no. <sup>1)</sup>
4	160	350	700	2.070	108006
7	160	350	700	2.070	108007
10	200	600	1.500	3.160	108008
15	200	600	1.500	3.160	108009

Effectiveness tested by TÜV Rheinland according to EN 1825. <sup>1)</sup> Telescopic dome shaft and cover not included

Technical data

Max. earth covering:	910 mm
Max. axle load:	10 t (in conjunction with a load distribution plate)
Max. vehicle weight:	60 t (in conjunction with a load distribution plate)
Required earth covering for trafficability:	700 – 910 mm above tank shoulder
Groundwater stability:	Type 2 2,070 l immersion depth max. 575 mm Type 3 3,160 l immersion depth max. 700 mm
Required earth covering with groundwater installation:	700 – 910 mm above tank shoulder
Connection:	DN 160 / DN 200

Installation dimensions



Class B cover (up to 12,5 to)

NS [l/s]	Connection [DN]	h <sub>E</sub> [mm]	d <sub>infl</sub> [mm]	d <sub>infl2</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]	Ø [mm]	Weight [kg]
4	160	1080	880 – 1060	950 – 1130	1960 – 2240	700 – 910	1150	165
7	160	1080	880 – 1060	950 – 1130	1960 – 2240	700 – 910	1150	165
10	200	1280	930 – 1110	1000 – 1180	2210 – 2390	700 – 910	1400	250
15	200	1280	930 – 1110	1000 – 1180	2210 – 2390	700 – 910	1400	250

Class D cover (up to 40 to)

NS [l/s]	Connection [DN]	h <sub>E</sub> [mm]	d <sub>infl</sub> [mm]	d <sub>infl2</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]	Ø [mm]	Weight [kg]
4	160	1080	920 – 1100	990 – 1170	2000 – 2180	700 – 910	1150	165
7	160	1080	920 – 1100	990 – 1170	2000 – 2180	700 – 910	1150	165
10	200	1280	970 – 1150	1040 – 1220	2250 – 2430	700 – 910	1400	250
15	200	1280	970 – 1150	1040 – 1220	2250 – 2430	700 – 910	1400	250

Accessories

>> page 80

*i* Looking for a larger separator solution?  
Enquire about our EcoPrimo products  
which can handle approx. up to 400 l/s



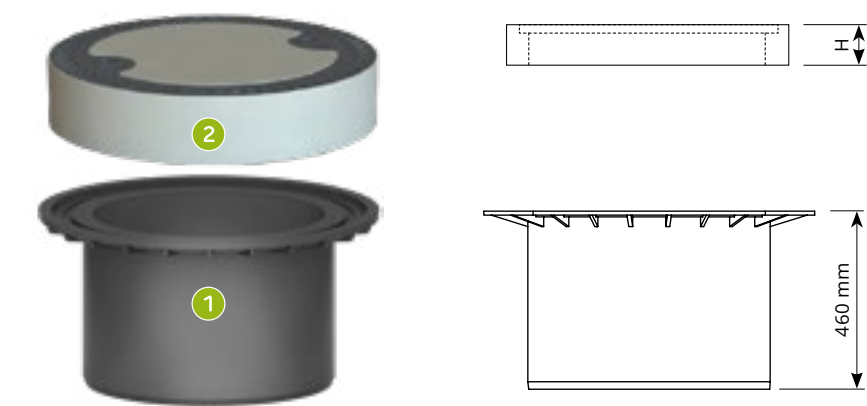
# Accessories for oneSepa Grease

## Covers

Covers for **oneSepa** Grease, screwed, with inscription "Separator/Separador/Séparateur/Separatorer"

Cover	Ø [mm]	Height H [mm]	Effective height [mm]	Weight [kg]	Order no.
Extention Length 400 mm	600	400	300	6	371039
Extention Length 1100 mm	600	1210	1000	22	371061
1 Telescopic dome shaft, separators	855	460	340	11	107974
2 Class B concrete cover for grease separators	780	135	115*	120	107967
2 Class D concrete cover for grease separators	780	160	140*	180	107968
2 Class B concrete cover for sampling shaft	730	125	105*	97	107983
2 Class D concrete cover for sampling shaft	730	165	145*	174	107984
Lifting key for covers					934790

\*Height less 20 mm, which the concrete cover protrudes into the telescopic dome shaft



## Dome structure

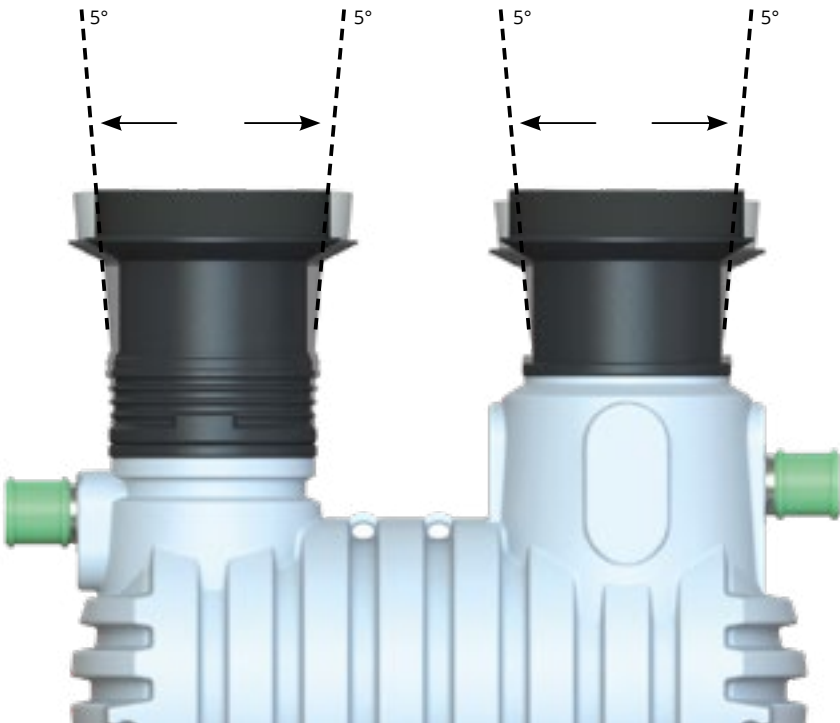
- Including NBR lip seals for smooth connection
- Sealed up to the ground surface
- Easy adjustment to the ground surface thanks to telescopic/tilting dome shaft
- Can be driven over by cars or trucks – for standard concrete rings/covers
- Infinitely adjustable earth covering across upper tank surface, tilts 5° (ideal for asphalt surfaces)

## Height adjustable and tiltable

The dome structures can be adjusted in height and inclination (up to 5 %), allowing greater flexibility during installation.



**Please note:** A load-distributing reinforced concrete slab is required to permanently ensure trafficability for cars and trucks. Further information can be found in our installation instructions.



## External sampling shaft

The separator systems can be extended with an external sampling point. The sampling shaft is connected downstream from the separator tank. In addition to taking wastewater samples in accordance with the regulations, it is also used to check and maintain the system.

### Scope of supply

- 1 Sampling shaft

### Not included in the scope of supply:

- 2 Telescopic dome shaft, separators
- 3 Concrete cover sampling shaft

Connection [DN]	Ø [mm]	Order no.
160	600	107975
200	600	107982



External sampling with DN160/200 Connection, difference inlet and outlet of 30 mm

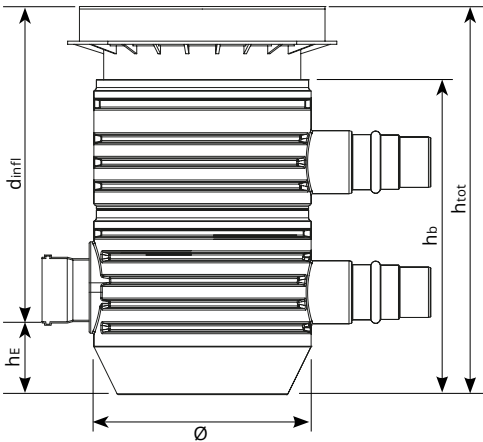
## Installation dimensions

### Class B cover (up to 12,5 to)

h <sub>E</sub> [mm]	h <sub>b</sub> [mm]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	Weight [kg]
285	1000	975 – 1155	1260 – 1440	19
260	1000	1000 – 1180	1260 – 1440	19

### Class D cover (up to 40 to)

h <sub>E</sub> [mm]	h <sub>b</sub> [mm]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	Weight [kg]
285	1000	1015 – 1195	1300 – 1480	21
260	1000	1040 – 1220	1300 – 1480	21



### Warning system Typ 1

Grease film thickness, incl. 10 m cable (other cable lengths on request)

Order no. 106513

### Warning system connection set

Incl. wall duct, seal, drill hole on the tank on the desired side

Order no. 106869

### Wall duct

with NBR seal, for separator

Order no. 106515

### Warning system Type 2

Visual and acoustic warning when the grease film thickness is reached or is overflowing, incl. 5 m cable (other cable lengths on request)

Order no. 106514



# System overview oneSepa Oil

## Procedure and structure

### Areas of application

A light fluid separator is needed wherever water is contaminated with petrol, mineral oils or greases. This concerns for example the following operations:

- Petrol stations
- Car washes
- Garages
- Large/public parking areas (if required by the authorities)

### Sizing

Separator systems are classified by NS (nominal size). The choice of nominal size for the separator is specified in Part 2 of EN 858. Furthermore, the requirements of the respective competent authority must be observed. A free calculation service for sizing according to EN 858 is available on request.

**Separation efficiency\***  
 Class I  $\leq 5$  mg/l residual oil  
 Class II  $\leq 100$  mg/l residual oil  
 \*under test conditions

### Functional principle

A light fluid separator system works according to the physical principle of gravity. This means that heavy components in the wastewater, such as sludge and sand, can settle in the optional sludge trap and / or in the sludge trap integrated in the separator. In contrast, light components such as fats and oils rise to the surface of the water. An optional coalescence unit improves the separation efficiency of a light fluid separator.

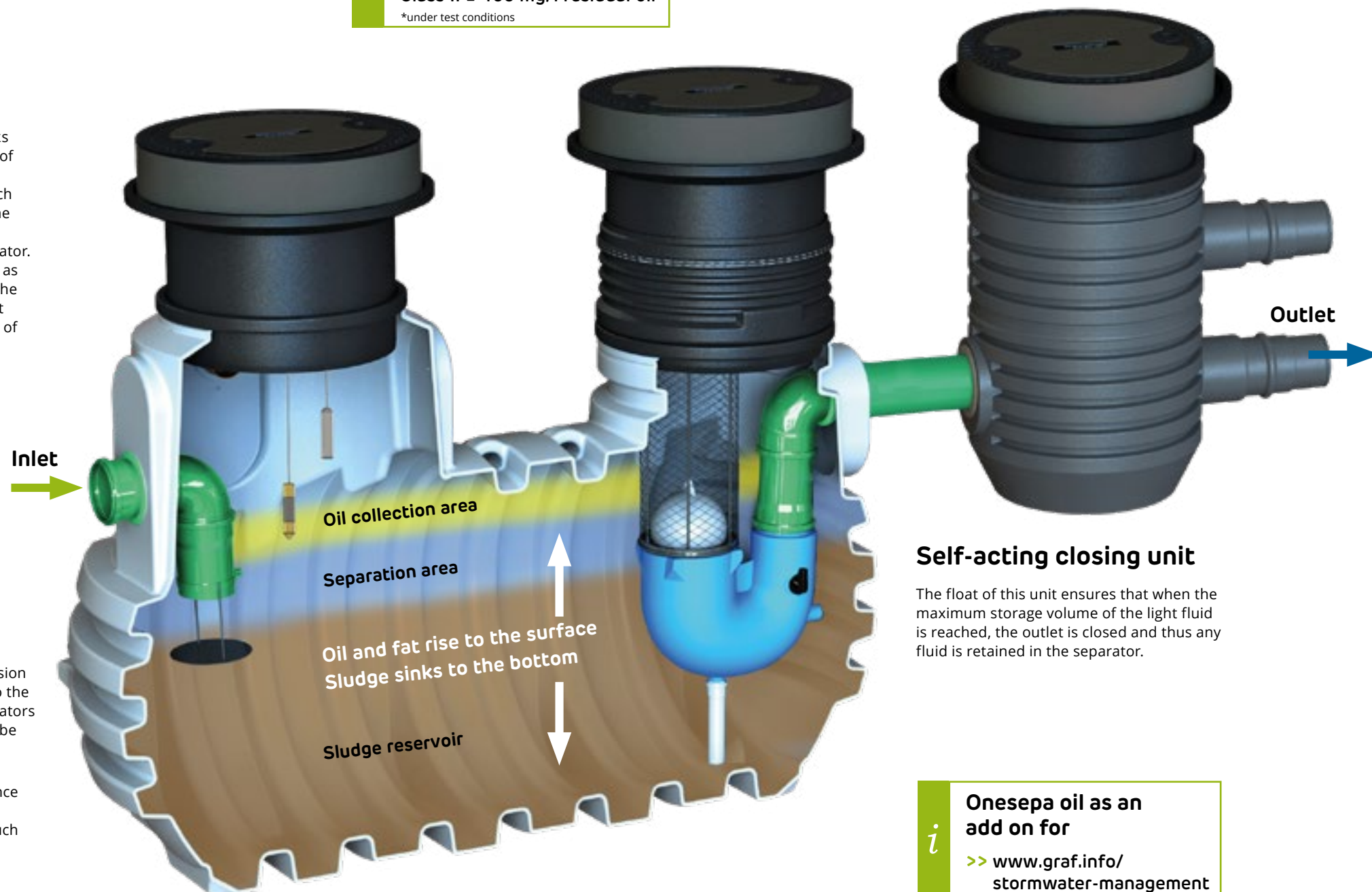
#### Optional coalescence unit

- No wear and tear
- Easy to clean
- Low weight

### Class II and Class I

The Class II system is the basic version of the light fluid separators. Due to the amount of oil they store, the separators are designed so that they can also be used at petrol stations with high-performance fuel pumps.

The Class I separator is a coalescence separator. It features an additional coalescence unit that enables a much higher degree of separation.

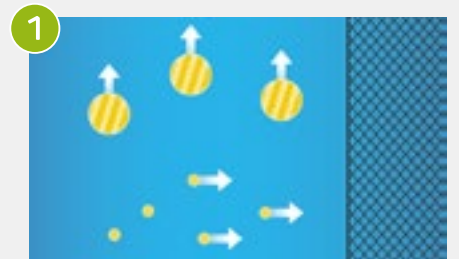


### Benefits

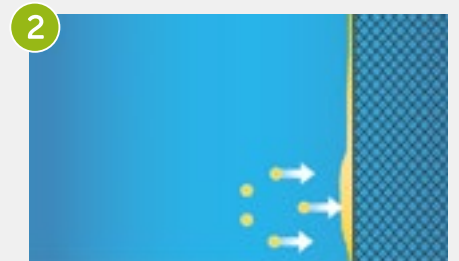
- ✓ Undemanding, low-waste maintenance of the coalescence unit
- ✓ Stainless steel mesh for coalescence unit (systems  $\geq 6$ ) can be easily removed and cleaned
- ✓ Small internal sampling point pin available (saves additional cost of an external sampling shaft)
- ✓ Low weight of the tank means no need for heavy equipment, compared to concrete systems
- ✓ System is delivered pre-fitted
- ✓ Smooth and corrosion-free inner surfaces thanks to high-quality plastic



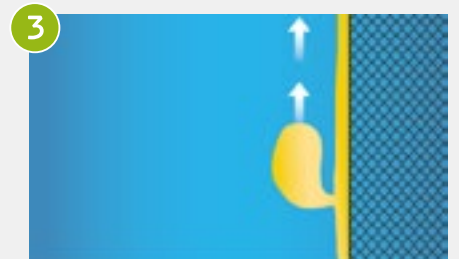
### What does a coalescence unit do?



In addition to large oil droplets that can be easily separated, very small oil droplets also occur in a light fluid separator. Large oil droplets have a high difference in density to water, these rise. Small oil droplets have a small difference in density to water, these remain under the water surface.



To allow these small oil droplets to rise, the Class I light fluid separator features a coalescence unit where the small oil droplets can collect.



If enough small oil droplets have collected on the coalescence unit, large oil drops will be formed there. These rise and can be separated.

Petrol, oils

### Self-acting closing unit

The float of this unit ensures that when the maximum storage volume of the light fluid is reached, the outlet is closed and thus any fluid is retained in the separator.

**Onesepa oil as an add on for**  
 >> [www.graf.info/stormwater-management](http://www.graf.info/stormwater-management)



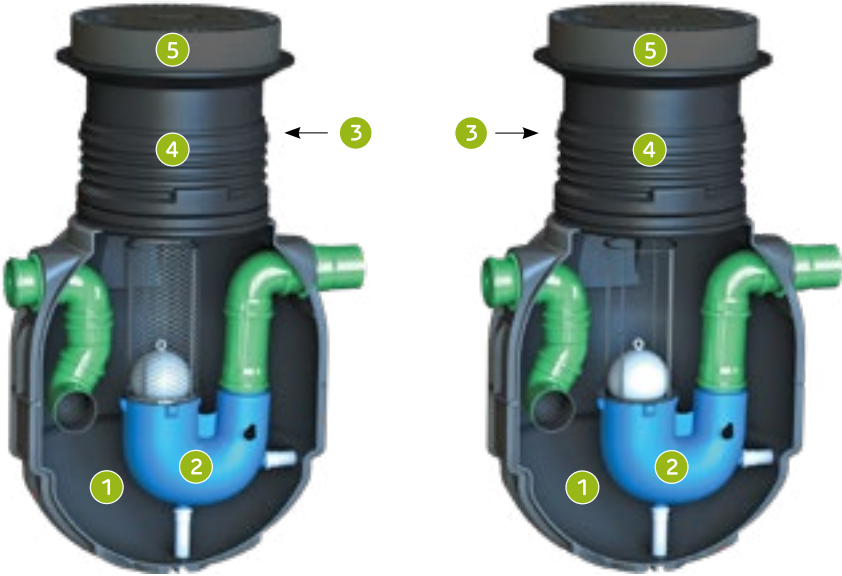
oneSepa Oil Saphir

NS 3 – 6



Class I  
coalescence separator

Class II  
fuel separator



- Scope of supply**
- 1 Saphir tank
  - 2 Pre-assembled components of light fluid separator
- Not included in the scope of supply:**
- 3 Extension piece as tank dome >> page 88
  - 4 Telescopic dome shaft separator >> page 88
  - 5 Concrete cover for light fluid separator >> page 88
  - 6 Bypass up to 30 l/s



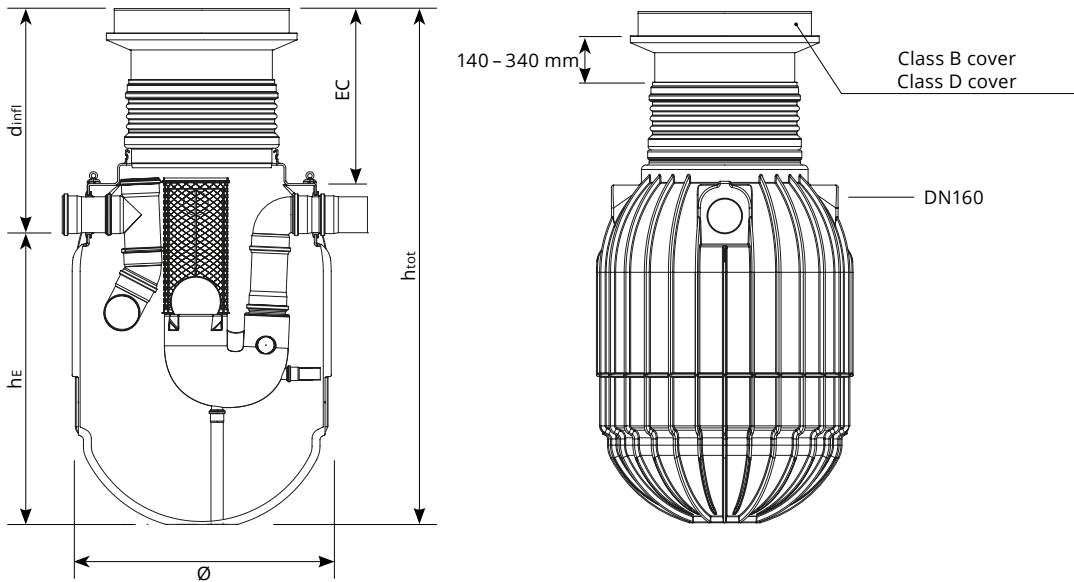
oneSepa Oil Saphir

NS [l/s]	Connection [DN]	Light fluid [litres]	Sludge [litres]	Total [litres]	Order no. Class II	Order no. Class I
3	160	300	300	770	108100	108101
3	160	500	400	1.100	108102	108103
3	160	300	600	1.080	108104	108105
6	160	300	600	1.080	108106	108107

Technical data

Max. earth covering:	1200 mm
Max. axle load:	10 t (in conjunction with a load distribution plate)
Max. vehicle weight:	60 t (in conjunction with a load distribution plate)
Required earth covering for trafficability:	700 – 1200 mm above tank shoulder
Groundwater stability:	700 l immersion depth max. 430 mm, 1,080 l; 1,100 l immersion depth max. 550 mm
Required earth covering with groundwater installation:	700 – 1200 mm above tank shoulder
Connection:	DN 160

Installation dimensions



Class D cover (up to 12,5 to)

NS [l/s]	Connection [DN]	h <sub>E</sub> [mm]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]	Ø [mm]	Weight [kg]
3	160	1000	905 – 1105	1905 – 2105	700 – 1200	1155	80
3	160	1320	910 – 1110	2230 – 2430	700 – 1200	1155	110
6	160	1000	905 – 1105	1905 – 2105	700 – 1200	1155	80
6	160	1320	910 – 1110	2230 – 2430	700 – 1200	1155	110

Class D cover (up to 40 to)

NS [l/s]	Connection [DN]	h <sub>E</sub> [mm]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]	Ø [mm]	Weight [kg]
3	160	1000	930 – 1130	1930 – 2130	700 – 1200	1155	80
3	160	1320	935 – 1135	2255 – 2455	700 – 1200	1155	110
6	160	1000	930 – 1130	1930 – 2130	700 – 1200	1155	80
6	160	1320	935 – 1135	2255 – 2455	700 – 1200	1155	110

Accessories

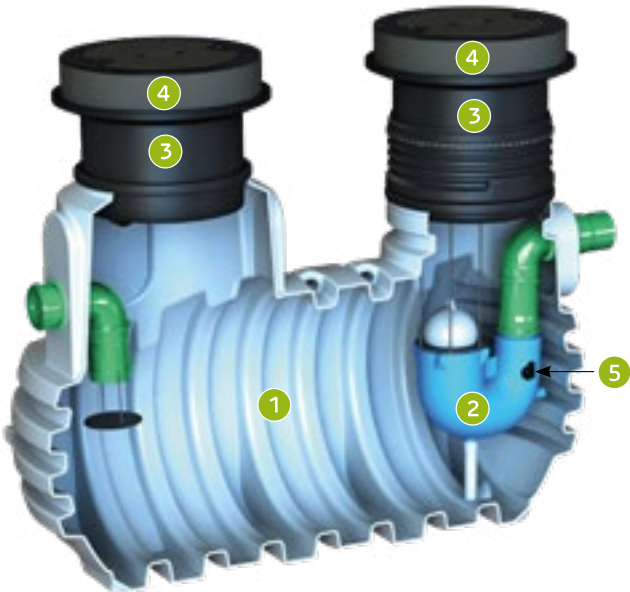
>> page 88



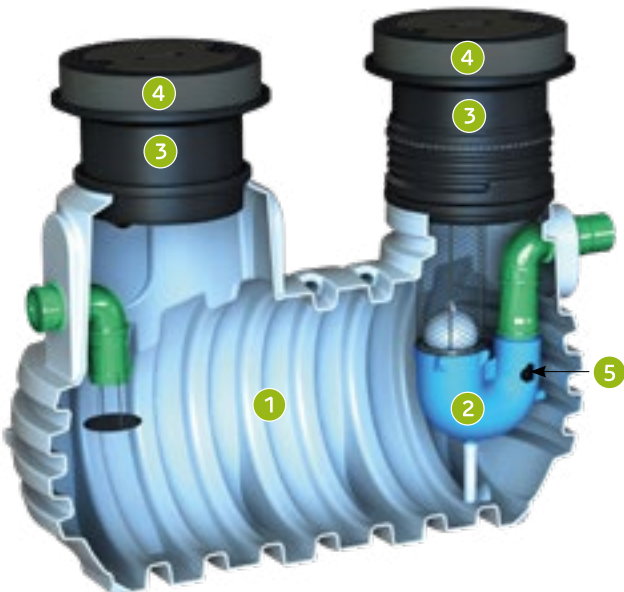
oneSapa Oil Diamant  
NS 6 – 15



Class II fuel separator



Class I coalescence separator



Scope of supply

- 1 Diamant tank incl. 1 extension piece as tank dome
- 2 Pre-assembled components of light fluid separator

Not included in the scope of supply:

- 3 Telescopic dome shaft separator >> page 88
- 4 Concrete cover for light fluid separator >> page 88
- 5 Indoor sampling connection point >> see below



oneSapa Oil Diamant

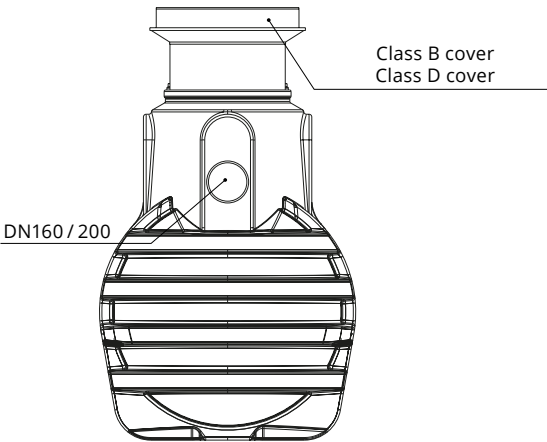
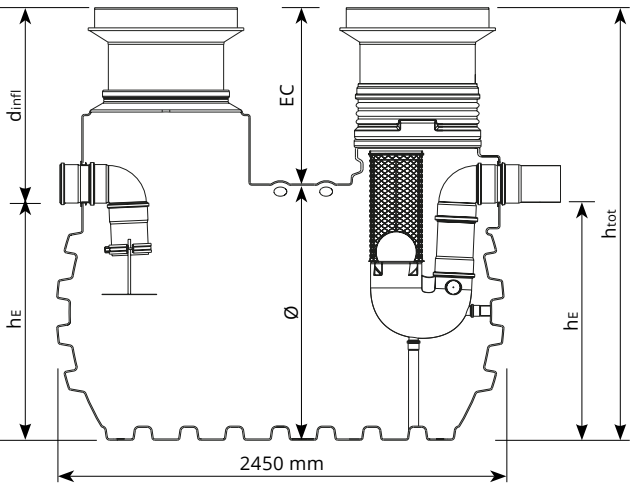
NS [l/s]	Connection [DN]	Light fluid [litres]	Sludge [litres]	Total [litres]	Order no. Class II	Order no. Class I
6	160	500	1.300	2.210	108108	108109
10	160	500	1.300	2.210	108110	108111
10	200	660	2.000	3.330	108112	108113
15	200	660	2.000	3.330	108114	108115

WEBCODE G5608

Technical data

Max. earth covering:	910 mm
Max. axle load:	10 t (in conjunction with a load distribution plate)
Max. vehicle weight:	60 t (in conjunction with a load distribution plate)
Required earth covering for trafficability:	700 – 910 mm above tank shoulder
Groundwater stability:	2,210 l immersion depth max. 575 mm 3,330 l immersion depth max. 700 mm
Required earth covering with groundwater installation:	700 – 910 mm above tank shoulder
Connection:	DN 160 / DN 200

Installation dimensions



Class B cover (up to 12,5 to)

NS [l/s]	Connection [DN]	hE [mm]	dinfl [mm]	htot [mm]	EC [mm]	Ø [mm]	Weight [kg]
6	160	1090	790 – 1080	1880 – 2170	700 – 910	1150	165
10	160	1090	790 – 1080	1880 – 2170	700 – 910	1150	165
10	200	1280	855 – 1145	2135 – 2425	700 – 910	1400	250
15	200	1280	855 – 1145	2135 – 2425	700 – 910	1400	250

Class D cover (up to 40 to)

NS [l/s]	Connection [DN]	hE [mm]	dinfl [mm]	htot [mm]	EC [mm]	Ø [mm]	Weight [kg]
6	160	1090	815 – 1105	1905 – 2195	700 – 910	1150	165
10	160	1090	815 – 1105	1905 – 2195	700 – 910	1150	165
10	200	1280	880 – 1170	2160 – 2450	700 – 910	1400	250
15	200	1280	880 – 1170	2160 – 2450	700 – 910	1400	250

*i* Looking for a larger separator solution?  
Enquire about our EcoPrimo products  
which can handle approx. up to 400 l/s



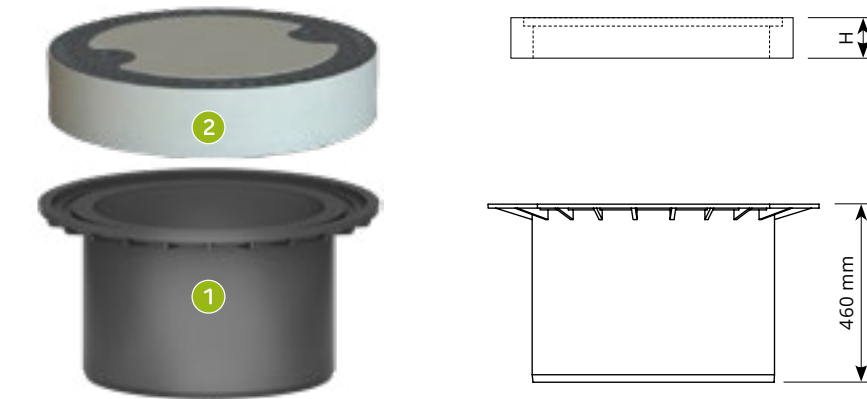
# Accessories for oneSepa Oil

## Covers

Covers for **oneSepa** Oil with inscription "Separator/Separador/Séparateur/Separatorer"

Cover	Ø [mm]	Height H [mm]	Effective height [mm]	Weight [kg]	Order no.
Extention Length 400 mm	600	400	300	6	371039
Extention Length 1100 mm	600	1210	1000	22	371061
1 Telescopic dome shaft, separators	855	460	340	11	107974
2 Class B concrete cover for oneSepa Oil	780	135	115*	120	107967
2 Class D concrete cover for oneSepa Oil	780	160	140*	180	107968
2 Class B concrete cover for sampling shaft	730	125	105*	97	107983
2 Class D concrete cover for sampling shaft	730	165	145*	174	107984
Lifting key for covers					934790

\*Height less 20 mm, which the concrete cover protrudes into the telescopic dome shaft



## Dome structure

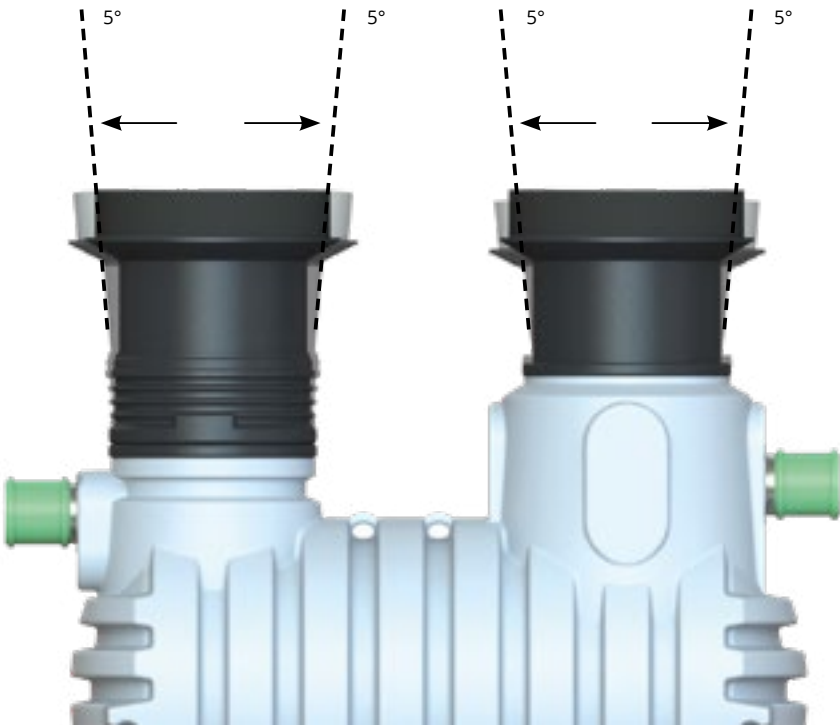
- Including NBR lip seals for smooth Connection
- Sealed up to the ground surface
- Easy adjustment to the ground surface thanks to telescopic/tilting dome shaft
- Can be driven over by cars or trucks – for standard concrete rings/covers
- Infinitely adjustable earth covering across upper tank surface, tilts 5° (ideal for asphalt surfaces)

## Height adjustable and tiltable

The dome structures can be adjusted in height and inclination (up to 5 %), allowing greater flexibility during installation.



**Please note:** A load-distributing reinforced concrete slab is required to permanently ensure trafficability for cars and trucks. Further information can be found in our installation instructions.



## Outdoor sampling shaft

The separator systems can be extended with an outdoor sampling point. The sampling shaft is connected downstream from the separator tank. In addition to taking wastewater samples in accordance with the regulations, it is also used to check and maintain the system.

### Scope of supply

- 1 sampling shaft

### Not included in the scope of supply:

- 2 Telescopic dome shaft, separators
- 3 Concrete cover sampling shaft

Connection [DN]	Ø [mm]	Order no.
160	600	107975
200	600	107982

Outdoor sampling with DN160/200 Connection, difference inlet and outlet of 30 mm



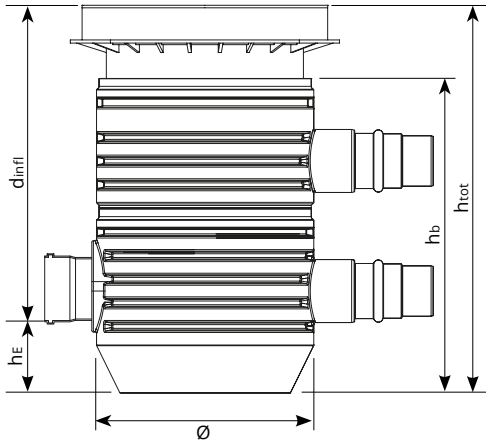
## Installation dimensions

### Class D cover (up to 12,5 to)

h <sub>E</sub> [mm]	h <sub>b</sub> [mm]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	Weight [kg]
285	1000	975 – 1155	1260 – 1440	19
260	1000	1000 – 1180	1260 – 1440	19

### Class D cover (up to 40 to)

h <sub>E</sub> [mm]	h <sub>b</sub> [mm]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	Weight [kg]
285	1000	1015 – 1195	1300 – 1480	21
260	1000	1040 – 1220	1300 – 1480	21



### Maintenance kit

The maintenance kit for separator systems contains everything you need to carry out the monthly self-checks.

Order no. 106619



### Warning system connection set

Incl. wall duct, seal, drill hole on the tank on the desired side

Order no. 106869

### Wall duct

with NBR seal, for separator  
Order no. 106515



### Warning sensors

Incl. 10 m cable

Type 1:  
Oil film thickness alarm  
Order no. 107964

Type 2:  
Build-up alarm  
Order no. 107965

Type 3:  
Oil film thickness and build-up alarm  
Order no. 107966





# Optional sludge trap oneSapa Oil



All separator systems can be extended with an upstream sludge trap. An additional sludge trap serves to retain coarse floating matter and dirt, which settle on the bottom of the sludge trap as sediment. Subsequently, the now pre-treated wastewater is discharged into the separator. Additional sludge traps are useful and necessary if there is an increased amount of dirt in the oily wastewater, e.g. washing areas for construction site vehicles, construction machinery, agricultural machinery, truck wash stands and automatic vehicle washing systems, e.g. gantry car washes or car wash tunnels.

### Scope of supply

- 1 Saphir or Diamant tank with pre-assembled components, sludge trap

- Not included in the scope of supply:**
- 2 Extension piece as tank dome
  - 3 Telescopic dome shaft, separators
  - 4 Concrete cover for light fluid separators



Picture shows Saphir tank incl. extension piece as tank dome

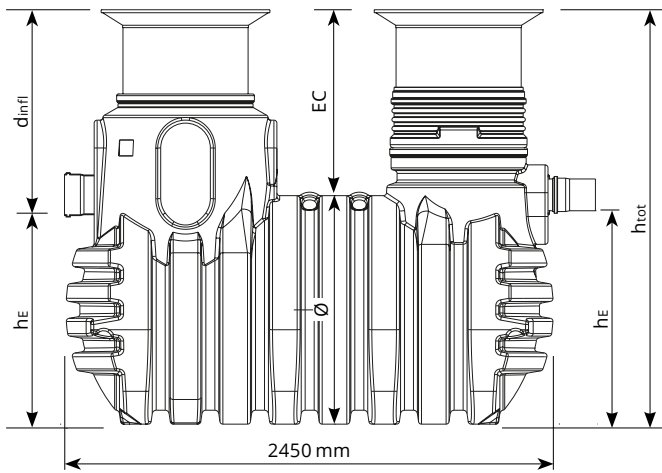
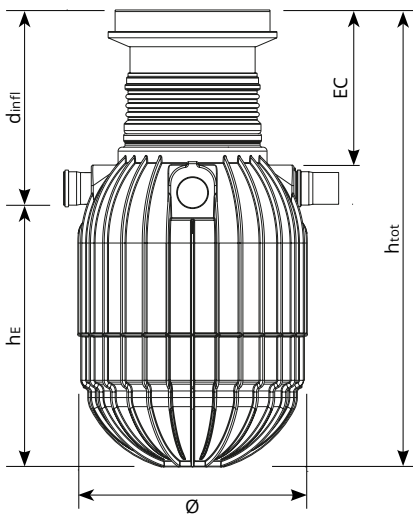


Picture shows Diamant tank incl. 1 extension piece as tank dome

### Saphir/Diamant sludge trap

Volume [litres]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]	Order no. [DN160 connection]	Order no. [DN200 connection]
1.000	1160	1160	1670	110	107969	–
2.100	2450	1150	1660	165	107970	107992
3.200	2450	1400	1900	240	107971	107993
4.600	2450	1700	2200	370	107972	107994

# Installation dimensions



### Class B cover (up to 12,5 to)

Volume [litres]	Connection [DN]	h <sub>E</sub> [mm]	Ø [mm]	Weight [kg]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]
1.000	160	1325	1155	110	905 – 1105	2230 – 2430	700 – 1200
2.100	160	1110	1150	165	800 – 1060	1880 – 2170	700 – 910
3.200	160	1360	1400	240	800 – 1060	2160 – 2420	700 – 910
4.600	160	1650	1700	370	800 – 1060	2455 – 2715	700 – 910
2.100	200	1090	1150	165	820 – 1080	1880 – 2170	700 – 910
3.200	200	1340	1400	240	820 – 1080	2160 – 2420	700 – 910
4.600	200	1630	1700	370	820 – 1080	2455 – 2715	700 – 910

### Class D cover (up to 40 to)

Volume [litres]	Connection [DN]	h <sub>E</sub> [mm]	Ø [mm]	Weight [kg]	d <sub>infl</sub> [mm]	h <sub>tot</sub> [mm]	EC [mm]
1.000	160	1325	1155	110	930 – 1130	2255 – 2455	700 – 1200
2.100	160	1110	1150	165	825 – 1085	1905 – 2195	700 – 910
3.200	160	1360	1400	240	825 – 1085	2185 – 2445	700 – 910
4.600	160	1650	1700	370	825 – 1085	2480 – 2740	700 – 910
2.100	200	1090	1150	165	845 – 1105	1905 – 2195	700 – 910
3.200	200	1340	1400	240	845 – 1105	2185 – 2445	700 – 910
4.600	200	1630	1700	370	845 – 1105	2480 – 2740	700 – 910

### Accessories

>> page 88





for a greener planet

# for a greener planet

Climate change. Our world is currently facing huge challenges. In these trying times, the world needs good role models. Or rather: initiators that are not only preaching sustainability, but put it into practice. Just as we at GRAF are already making an important contribution. After all, it is not only our solutions for rainwater management and other applications related to our water that are thoroughly sustainable, but also the plastic we use to make our products.

For example, we turn short-lived food packaging into EcoBloc infiltration modules, with a lifespan that spans generations. In this way, we can make our cities a little safer against increasing heavy rainfalls. Or rainwater tanks allow us to water our gardens with a clear conscience even during hot spells. Along the way, recycling saves us about 100,000 tonnes of CO<sub>2</sub> every year, which is almost as much as the emissions of over 60,000 cars.

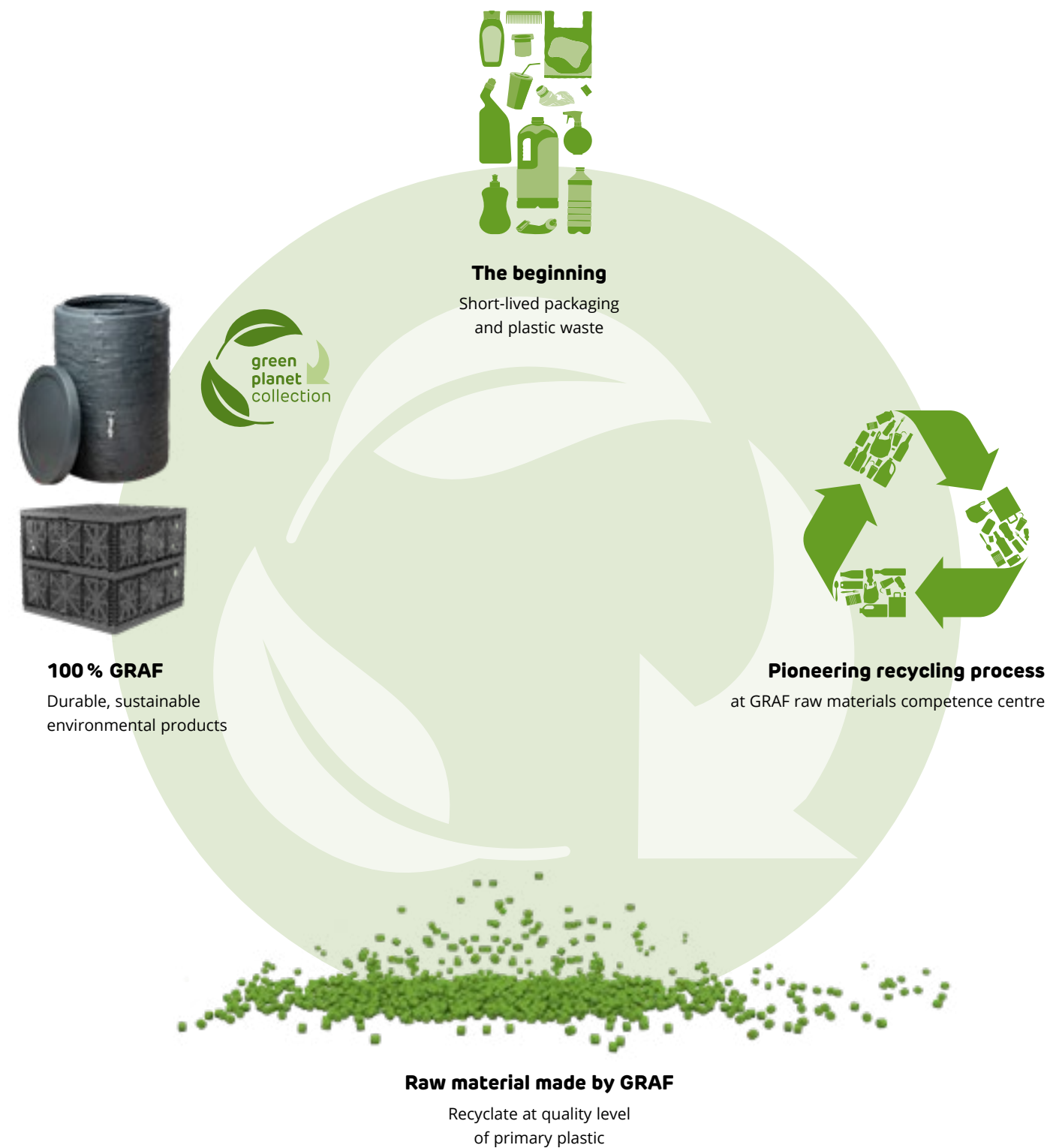
By the way, we recycle our products ourselves. Our raw materials competence centre makes us unique. It is our heart and soul, containing not only all of our innovative power, but also our lifeblood. For a better world for us all – for a greener planet.

Photo copyright: stock.adobe.com:  
© contrastwerkstatt





# The GRAF recycling cycle



## This is us

The whole world is talking about sustainability. For us, it has long been a natural part of our DNA. We recognized the potential of rainwater early on: „Rainwater is free“ was one of our first campaigns back in the 1970s. Rain barrels were produced in our family business as early as 1974. The first underground tanks for rainwater harvesting followed just four years later. GRAF rain barrels have been made from recycled material since 1980. By the way, rainwater is still free of charge. But in times of climate change, drought and heavy rain, sustainable water management is much more than that: it is a valuable contribution to our future.

## For this we stand



**75 %**  
share of recycling material



**Environmental products for SUSTAINABLE water management**



**100.000 TONNES CO<sub>2</sub> savings**  
every year as much as more than  
60,000 cars emit



**LONG SERVICE LIFE**  
and spare parts supply



**Recycling material FREE FROM POLLUTANTS**



**80 % share of renewable energies in production**

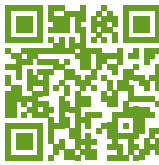


**Products FULLY RECYCLABLE**



**State-of-the-art production facilities for LOW ENERGY CONSUMPTION**

For further information see:  
[www.graf.info/en-ie/sustainability](http://www.graf.info/en-ie/sustainability)



learn more





Further details on infiltration, retention, and rainwater treatment can be found in our catalogue "Environmentally friendly solutions".

**Please note:**

Information on all products and systems in this brochure is subject to changes and errors.

Pictures and photographs are approximate only.

The applicable technical documentation for the products shall control, which we will be happy to send you on request.

All offers, deliveries and services are subject to our general terms and conditions, which we will also be happy to send you.

GRAF worldwide please visit  
**[www.graf.info](http://www.graf.info)**

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Image shows EcoPrimo (pre-filtration for stormwater systems)

## RAINWATER HARVESTING



## STORMWATER MANAGEMENT



## WASTEWATER TREATMENT SOLUTIONS



## SEPARATORS



## GARANTIA GARDEN PRODUCTS & MULTI-PURPOSE CONTAINERS



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