



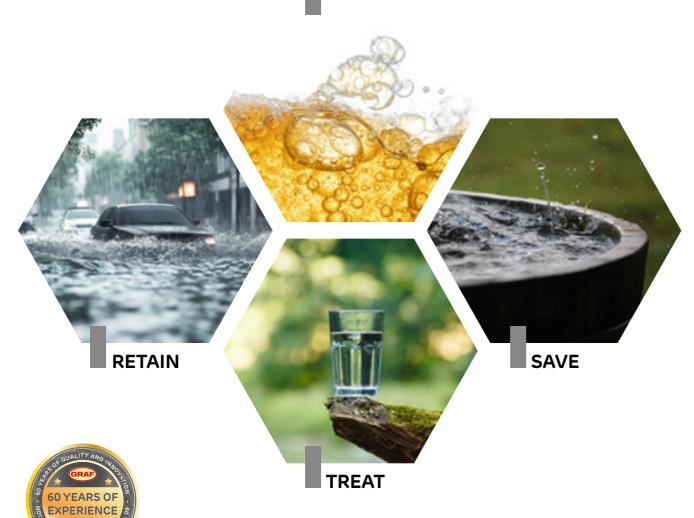
Water is our element

GRAF

Solutions to your challenges

GRAF offers an extensive range of products for water resource management. GRAF provides local solutions to global challenges, such as protecting water courses or preventing flooding, with typical German quality.











Environmental products from recycled raw materials

Over 70 % of the raw materials used by GRAF are recycled. In-house recycling of raw materials allows us to ensure consistently high raw material quality and to make all the products in our value-added chain highly sustainable. All GRAF products are also 100 % recyclable.

Global network of sales partners and production facilities!

GRAF products are available worldwide. Sales partners in more than 80 countries help us to develop solutions suited to local markets and deliver the customer support needed on the ground.

The manufacturing process is essential for a top-quality product. GRAF is proficient in all established procedures for the manufacture of plastic products. Our production facilities feature state-of-the-art equipment.





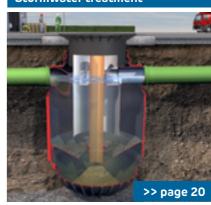




Rainwater harvesting in style



Stormwater treatment



Firefighting water tanks



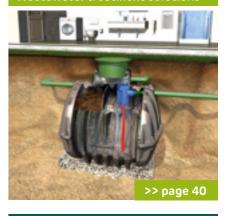
Composters and garden products



Underground tanks



Wastewater treatment solutions



Containers for home and garden





The webcode takes you straight to the information you need.

- Instructions
- Dimensional drawings
- Detailed product info
- Catalogue downloads
- Sizing forms and tender files
- BIM-data

Q WEBCODE G4107

www.graf.info

- GRAF TV
- Product advisor
- Numerous downloads
- References



Climate change is here

Heavy rainfall events and resulting floods are no longer unusual. All around the world, we can see an increase in stormwater events.

One of the best examples is the flooding due to heavy rainfall in Dubai which happened in April 2024. These heavy rainfalls not only cause major damage to infrastructure and properties, but it is also even a risk of human life.

As climate change will increase the number of such events happening in the future, municipalities, architects and planners will need to rethink the current design of water management in urbanized areas.

GRAF has more than 25 years of experience in manufacturing stormwater management systems. Its latest contribution to solving these challenges is the EcoBloc.

Flood prevention made with EcoBloc



One of the key solutions to reduce the risk of floods are Sustainable Drainage Systems (SUDS).

By creating decentralized underground tanks to temporarily store the stormwater, the sewer can be prevented from overcharging. These tanks are commonly connected with the impermeable surfaces to catch the runoff and to either infiltrate the water into the soil, or to retain and discharge the water controlled into the The EcoBloc maxx is a system to build up such stormwater tanks. Due to its modular design, the tank size can be individually chosen to fit existing requirements. The clever design allows it to be installed in trafficked areas such as parking lots or industrial surfaces, even with truck loads occurring. Due to its light weight and size, it can be installed easily and quickly without the need of heavy machinery.



Stormwater Management product range

GRAF

The Stormwater Management product range delivers end-to-end solutions from the collection to the controlled release of rainwater. This comprehensive range includes inlet chambers, simple and complex filtration systems, storage modules, shaft systems and flow limiters. Each product is designed to work in synergy, ensuring efficient and sustainable management of stormwater across a variety of applications.

Simple and complex filter

Before channeling rainwater into the storage modules, a pre-filtration is recommended. Depending on the respective impermeable areas and pollution, different kinds of filtration are necessary. GRAF offers a solution for all kinds of pollution and debris in rainwater.

Flow limiter

In the case of an attenuation, the water will be discharged at a predefined constant rate or a maximum outflow. Such a discharge rate can be realised by using flow limiters. GRAF offers different flow limiters to fit the individual needs on site.

Store, infiltrate or attenuate

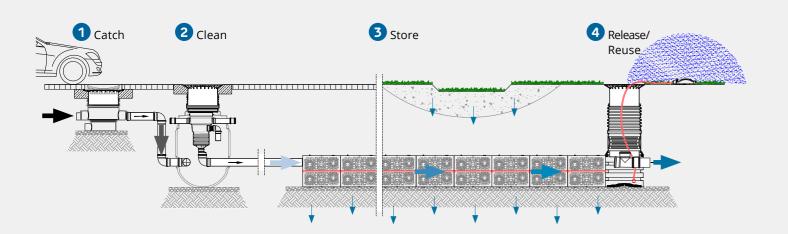
The temporary storage of the rainwater – to infiltrate or to attenuate – can be realised by using the GRAF stormwater modules. Especially the EcoBloc product range offers full flexibility in regards of size and position on site.

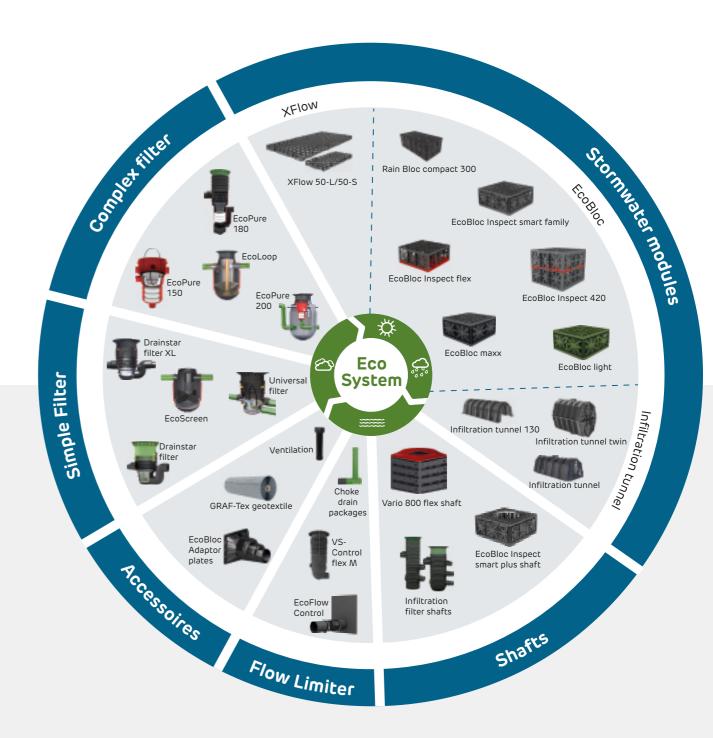
All systems are designed for the use below ground.

Shafts and accessories

The stormwater management product range also includes various accessories, such as ventilation shafts or adaptor plates to connect specific pipe diameters. Fully integrateable shaft solutions for maintenance or access are also available.

The typical 4 steps of a complete stormwater management system





EcoBloc infiltration system

BBA approved

The EcoBloc Inspect flex and the EcoBloc maxx are approved by the British Board of Agrément. Due to this certification, the quality is continously controlled by the notified bodies of the BBA.





HGV-bearing

The EcoBloc Inspect flex has an HGV-bearing capacity of up to 60 tons / HS-25 with an 800 mm (2' 7.5") earth covering.



Up to 96 % storage volume

The EcoBloc maxx has a gross volume of 225 litres (59.4 US gal.) and a storage volume of 217 litres (57.3 US gal.). With a storage volume of up to 96 %, it has 3 times the storage coefficient of a standard gravel infiltration ditch.

Service life of over 50 years

A durable product design ensures sustainability. The EcoBloc system and the Vario 800 flex shaft system are designed for a service life of over 50 years.

Fully integrated shaft

The Vario 800 flex shaft system can be directly installed in an EcoBloc infiltration / attenuation system.



EcoBloc Inspect Tiex Load **** Logistics *** EcoBloc Inspect flex combineable with EcoBloc maxx and light



1 Stackable

To save space during transport and storage, the parts of the Vario 800 flex shaft are stacked on top of each other. This minimizes transport costs, storage space in stock and CO2 emissions.



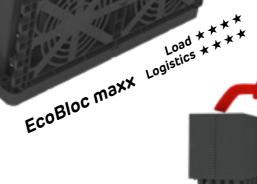
2. Easy installation

Groups of four wall elements are connected in a few simple steps and without tools to form a single height unit of the Vario 800 flex shaft. The height can be easily adjusted to the EcoBloc tank depth. A shaft cover and base plate complete the element.



3. Ready

GRAF accessory components can now be added to the Vario 800 flex shaft as required.



1. Stackable

To save space when transporting the EcoBloc maxx and EcoBloc light modules, they can be stacked inside one another. This minimizes transport costs, storage space and CO2 emissions.



2. Easy installation

The EcoBloc baseplate forms the base for the relevant EcoBloc system. Up to 14 EcoBloc modules can be placed on one baseplate.



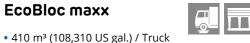
3. Ready

The sides are sealed with EcoBloc end plates. The EcoBloc system can therefore be adapted to individual requirements.

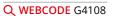
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EcoBloc overview

EcoBloc maxx



- HGV loading / HS-20 load bearing
- 96 % Storage coefficient





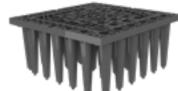
EcoBloc light

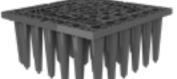


- 610 m³ (161,140 US gal.) / Truck
- Vehicle loading / H-15 load bearing
- 97 % Storage coefficient

Q WEBCODE G4109











EcoBloc maxx

Connecting surfaces on EcoBloc maxx end plates

Volume	Length	Width	Height	Order
[l]	[mm]	[mm]	[mm]	no.
225	800	800	350	402200
(59.4 US gal.)	(2' 7.5")	(2' 7.5")	(13.8")	

EcoBloc light

Connecting surfaces on EcoBloc light end plates

Volume	Length	Width	Height	Order
[l]	[mm]	[mm]	[mm]	no.
225 (59.4 US gal.)	800 (2' 7.5")	800 (2' 7.5")	350 (13.8")	



EcoBloc maxx base plate

Forms the foundation of the EcoBloc maxx system

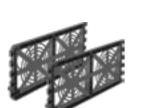
Volume	Length	Width	Height	Order
[l]	[mm]	[mm]	[mm]	no.
25	800	800	40	402201
(6.6 US gal.)	(2' 7.5")	(2' 7.5")	(1.6")	



EcoBloc light base plate

Forms the foundation of the EcoBloc light system

Volume	Length	Width	Height	Order
[l]	[mm]	[mm]	[mm]	no.
25	800	800	40	402301
(6.6 US gal.)	(2' 7.5")	(2' 7.5")	(1.6")	



EcoBloc maxx end plates

The outside surface of an EcoBloc maxx system is sealed by end plates with contact surface DN110 (4") / DN160 (6") / DN200 (8") / DN250 (10").

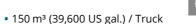
Item	Order no.
Set (2 units)	402203

EcoBloc light end plates

The outside surface of an EcoBloc light system is sealed by end plates with contact surface DN110 (4") / DN160 (6") / DN200 (8") / DN250 (10").

Item	Order no.
Set (2 units)	402303

EcoBloc Inspect flex



- HGV 60 / HS-25 load bearing
- Inspectable
- High pressure jetting possible





Q WEBCODE G4107





EcoBloc Inspect flex

DN110 (4") / DN160 (6") / DN200 (8") connecting surfaces

Volume [l]	Length [mm]	Width [mm]	Height [mm]	Order no.
205 (54.2 US gal.)	800 (2' 7.5")	800 (2' 7.5")	320 (12.6")	402005

EcoBloc Inspect flex base plate

Forms the foundation of the EcoBloc Inspect flex system

Volume	Length	Width	Height	Order no.
[l]	[mm]	[mm]	[mm]	
25	800	800	40	402006
(6.6 US gal.)	(2' 7.5")	(2' 7.5")	(1.6")	

EcoBloc System accessories

EcoBloc connectors

For horizontal connection Set 10 units



Order no. 402015

Set 25 units

Order no. 402018

Set 200 units

Order no. 402025

Deaeration end

DN110 (4")

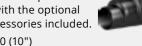
Order no. 369017

DN160 (6") / DN200 (8"), excl. connection pipe

Order no. 369046

EcoBloc adaptor plate

Connection dimensions up to DN630 can be achieved with the optional adaptor plate. Accessories included. DN200 (8") / DN250 (10")



Order no. 402036

DN315 (12") / DN400 (16") / DN500 (20")

Order no. 402033

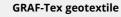
DN630 (25")

Order no. 402040

EcoBloc Inspect flex end plates

The outside surface of an EcoBloc Inspect flex system is sealed by end plates with contact surface DN110 (4") / DN125 (5") / DN160 (6") / DN200 (8")

Item	Order no.
Set (2 units)	402002



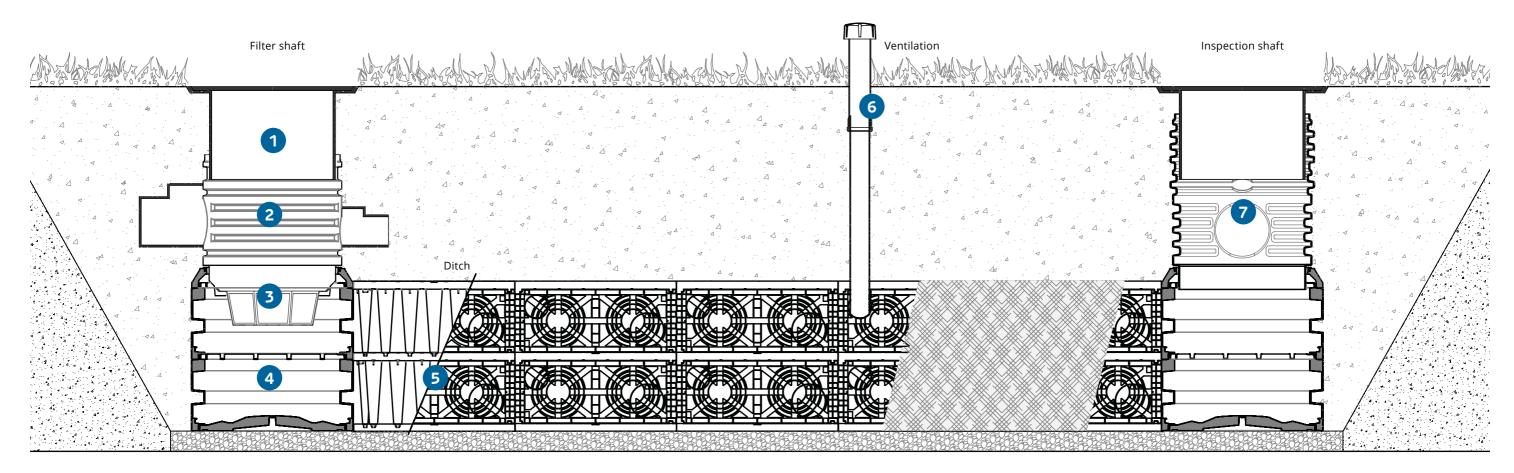
Sold by the metre, roll width 5 m (16' 4.9")

Order no. 231002

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Stormwater tank made with EcoBloc





1 Telescopic dome shaft



Choice of pedestrian, car or HGV loading

2 Infiltration inlet module DN 600



- Freely rotatable for optimum alignment to connecting line
- Connections up to DN315 (12")

3 Infiltration filter strainer



- Stainless steel filter (mesh width 0.75 mm)
 - Reliably filters out contamination

4 Vario 800 flex, type 2



- Optimally aligned to EcoBloc family
- Wide range of possible shaft solutions
- Connections up to DN400 (16")

5 EcoBloc



- HGV-bearing up to 60 tons/HS-25
- 410 m³ / Truck

6 Deaeration end



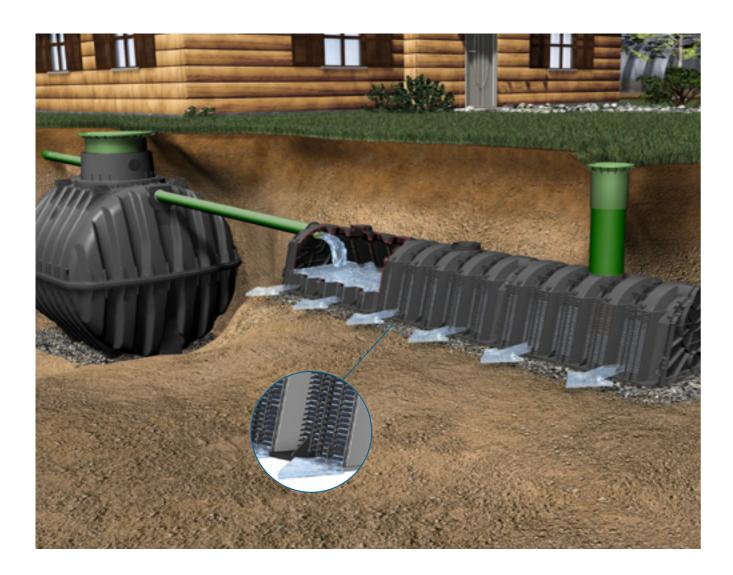
- DN110 (4")
- For separate ventilation
- For installation in green spaces

7 Infiltration connecting piece 1000 DN 600



For greater installation depths

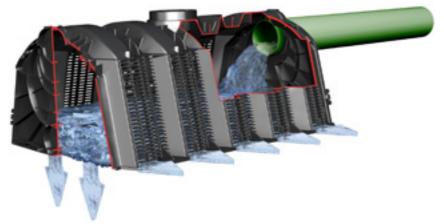
Infiltration tunnel / twin



A percolation system downstream of the sewage treatment plant offers optimal disposal of the clarified wastewater. Only a soil with percolation capacity and a minimum distance of 1 meter (3' 3.4") from the groundwater level at the tunnel base are required. The percolation system consists of several tunnel modules as well as two end plates and can be dimensioned as desired.

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 (24.3 lbs). The tunnel modules are simply joined together in a line and two end plates are fitted perline.



Infiltration Tunnel 300 Q WEBCODE G4103

- Suitable for HGV 60 / HS-25 load bearing
- 300 m3 (79,250 US gal.) / Container
- Inspectable





Infiltration Tunnel 300



(1'7.7")

Infiltration Tunnel 130



Volume

[1]

130







(1' 0.6")

Infiltration Tunnel twin 600

- Suitable for vehicle load bearing
- 300 m3 (79,250 US gal.) / Container
- Inspectable



Q WEBCODE G4104







Infiltration Tunnel twin 600

Click bolt connectors included

C 2010 CO				
Volume	Length	Width	Height	Order no.
[l]	[mm]	[mm]	[mm]	
600	1160	800	1020	410130
(158 .5 US gal.)	(3' 9.7")	(2' 7.5")	(3' 4.2")	

End plate for Infiltration Tunnel 300/-twin 600

Contact surfaces DN110 (4") / DN160 (6") / DN200 (8") / DN315 (12")

Item	Order no.
Set (2 units)	231004

End plate for Infiltration Tunnel 130

Contact surfaces DN110 (4")

Order no. Item Set (2 units) 410203



Inspection end

(34.3 US gal.) (3' 10.9")

DN200 (8")

Order no. 340527



Connector for Infiltration Tunnel twin (set of 6 pcs. for one Infiltration tunnel twin 600)

Order no. 410094



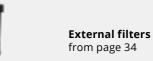
GRAF-Tex geotextile

Sold by the metre, roll width 5 m (16' 4.9")

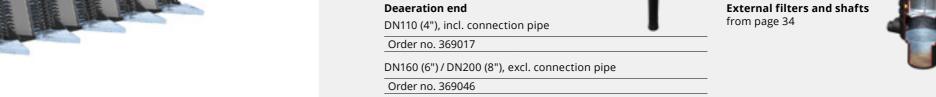
Order no. 231002

Sold by the metre, roll width 2.5 m (8' 2.4")

Order no. 231007



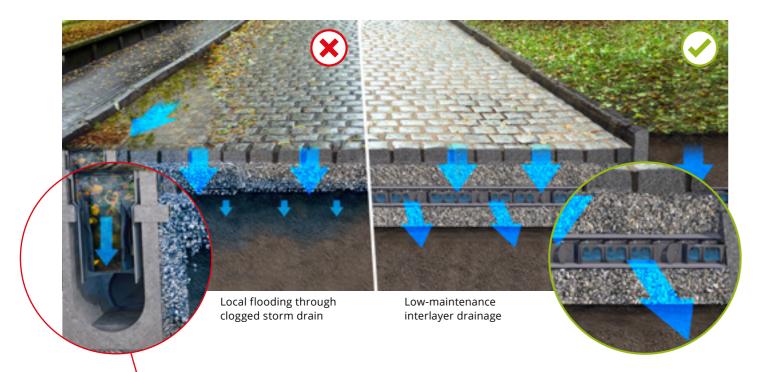




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XFlow

Advantages





- Service vehicle required
- Bad maintenance only during heavy rain event is detectable
- Deepest point of storm drain is vulnerable to dirt



- Easy maintenance of catchment area
- No labor intensive maintenance and inspection necessary
- Bad maintenance only detecable during heavy rain events
- Only the usual cleaning work is necessary on carparks, traversable surfaces and paths
- No further underground construction products required
- Fast detection in case of lacking maintenance

XFlow

System overview and components

GRAF

XFlow 50-S

- 1 cell = 0.16 m² (1.72 ft²) infiltration / collector area
- Storage coefficient of 85 %
- Gross / net volume: 8.2 l (2.17 US gal.) / 7.0 l (1.85 US gal.)

Q WEBCODE G4701



XFlow 50-L

- 1 cell = 0.64 m² (6.89 ft²) infiltration / collector area
- Storage coefficient of 88 %
- Gross / net volume: 32.6 l (8.61 US gal.) / 28.7 l (7.58 US gal.)

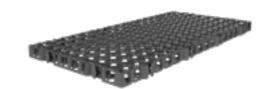




XFlow 50-S

Drainage cell with one quarter of the area for installation over small areas or for supplementing edge areas around large installations with XFlow 50-L.

Area [m²]	Length [mm]	Width [mm]	Height [mm]	Order no.
0.16 (1.72 ft²)	560 (22")	280 (11")	52 (2")	495001



XFlow 50-L

Drainage cell ideal for large installations with high savings potential in installation times and work.

Area	Length	Width	Height	Order no.
[m²]	[mm]	[mm]	[mm]	
0.64	1120	560	52	495000
(6.89 ft²)	(44")	(22")	(2")	





GRAF

Proven worldwide: GRAF infiltration technology

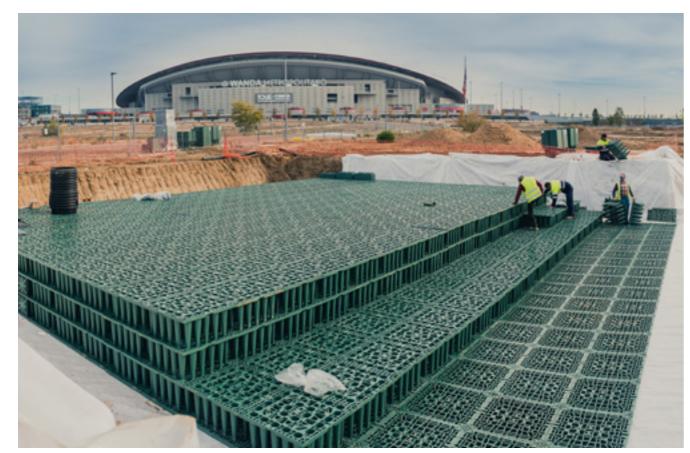




Housing development, Acapulco (MX)



Brewery, Kerry (IRE)

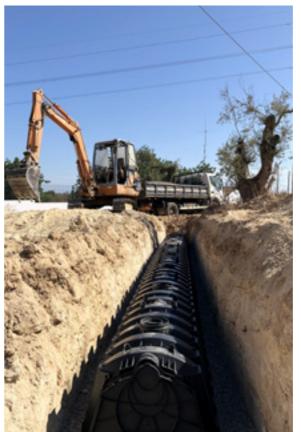


Football Stadium , Madrid (ES)

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Warehouse, Vinterbo (NO)



Housing development, Quinta da Balreeia (PT)



Warehouse, Jandakot (AU)



Infrastructure, South Al-Mutlaa (KW)



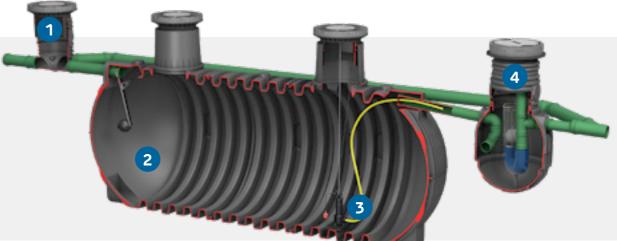
Stormwater treatment

EcoPrimo

Batch system







1 EcoDiviso

This bypass shaft directs the first flush of a rain event to the retention tank. Once the retention tank is full, the bypass is activated, allowing the remaining stormwater to bypass the system.

- Available in two sizes S and M
- Inlet, Outlet and Bypass available in DN110, DN160, DN 200, DN250, DN315, DN400
- · Modular design with stepless shaft components, suitable for pedestrian loads up to HGV-bearing capacities of 60 tons



2 Carat / Carat XL / Carat XXL

The retention tank captures and holds back the first flush of a rain event. It is equipped with a backflow protection valve featuring a float ball mechanism. As the tank fills up, the float ball rises, closing the valve to prevent backflow and ensure optimal retention capacity.

- Available in sizes from 4.800 L to 52.000 L
- Treatment of areas up to 10.000 m²
- Stainless steel backflow protection valve



3 Smart pump technology

The pump is equipped with a control unit that starts a timer after a rain event. This allows sediments in the stormwater to settle at the bottom of the tank while lighter fluids float to the surface of the water. Once the designated settling time has elapsed, the pump activates to empty the tank.

- Sedimentation time is adjustable from 12 h - 72 h, individual phases for local and regional specifications
- Control unit is integrated in the tank therefore protected against vandalism



The water is pumped into a light fluid separator that retains any light fluids present in the stormwater. The separator features a coalescence unit with an integrated sampling shaft, allowing for easy monitoring. This separator ensures that only clean water is discharged from the tank.

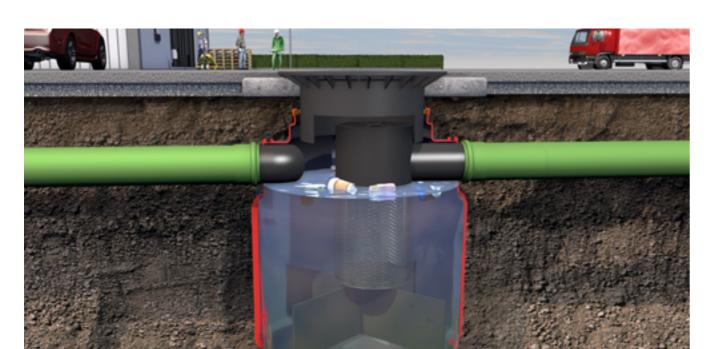
- German DIBt certification
- Cleaning performance proven according to EN 858-1











Picture shows EcoScreen Saphir with telescopic dome shaft 600 cast iron.

Outlet • Stainless steel screen • With integrated bypass pro-

EcoScreen Saphir

- · Simple but efficient first cleaning stage for coarse pollutants
- · Ideal for use with street drains or stormwater drains with a high dirt load where no suitable pre-filter can be installed at the point of entry
- Connection DN200

tected by a screen for 100 %

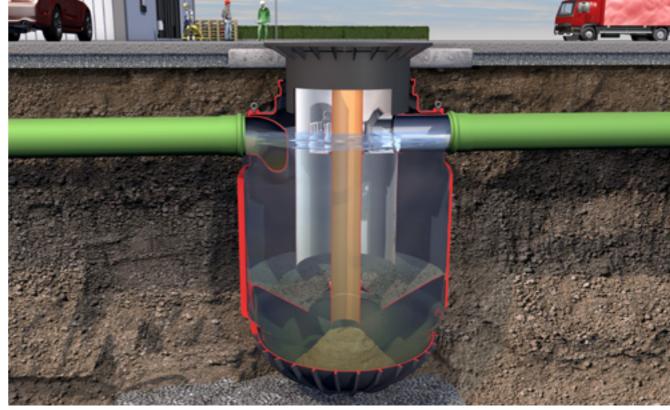
retention of coarse particles

- Coarse particles < 5mm are verifiably 100 % retained
- No height offset between inlet and outlet
- HGV-bearing with load distribution plate

EcoLoop Saphir

Hydrodynamic Separator (HDS)





Picture shows EcoLoop Saphir with telescopic dome shaft 600 cast iron.

EcoLoop Saphir

- Second cleaning stage for the retention of very fine particles
- Ideal for areas with higher cleaning requirements
- Connection DN200
- Certified for the removal of Total Suspended Solids (TSS) and particles <63µm
- No height offset between inlet and outlet
- HGV-bearing with load distribution plate

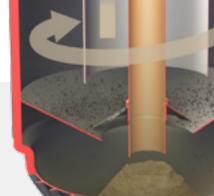
Q WEBCODE G4410





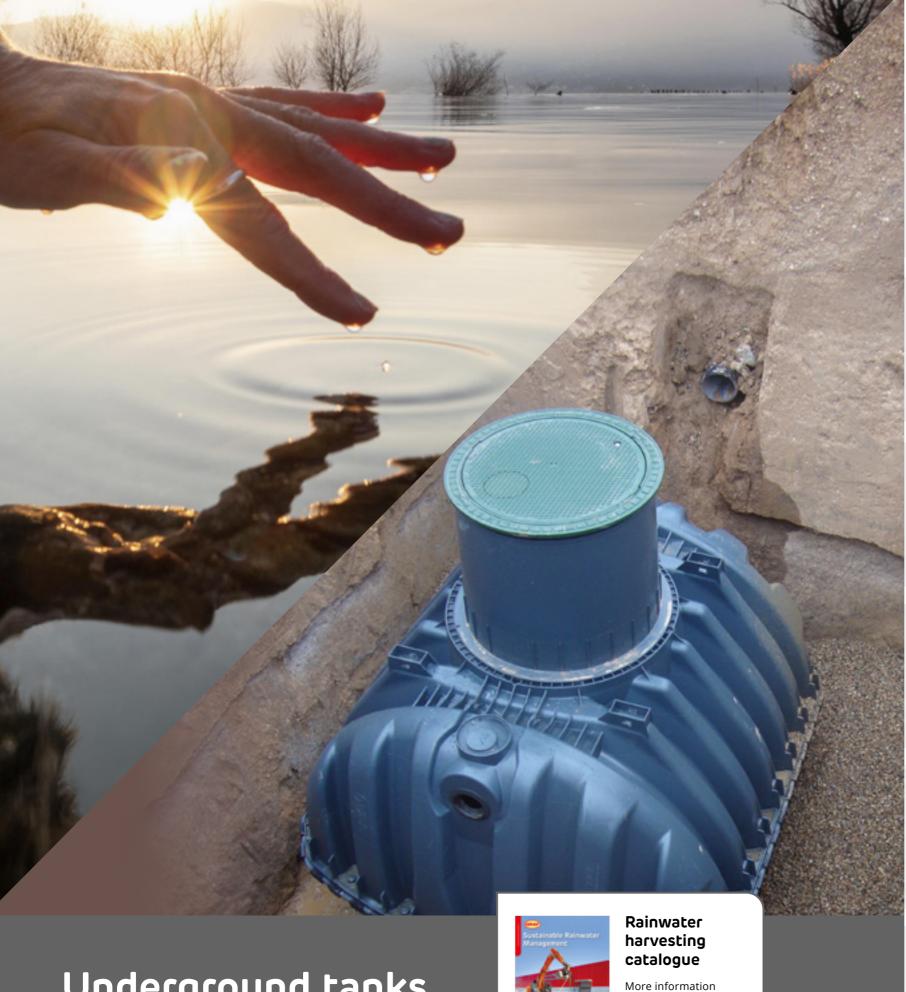
Bionically shaped inlet

- By the example of nature
- Minimizes turbulence and enhances sedimentation performance
- Tangential flow leads to hydrodynamic sedimentation



Two-chamber system

• Filter surface hydraulically loadable up to 10 times the inlet geometry







Carat S underground tank

available in sizes 2,7001 - 6,5001



Carat XL underground tank

available in sizes 8,500 l, 10,000 l and 13,000 l



Carat XXL underground tank

available in sizes 16,000 | - 122,000 |



Platin flat tank

available in sizes 1,5001 - 7,5001



Platin XL flat tank

available in sizes 7,500 l, 10,000 l and 15,000 l



Platin XXL flat tank

20,0001 - 65,0001

about rainwater

harvesting can be found in our catalogue.



Underground tanks

available in sizes

Application examples GRAF underground tanks





Carat S underground tank – advantages



- ✓ From 2,700 6,500 litres
- ✓ Very stable
- ✓ Suitable for vehicle loading
- ✓ Can be installed in groundwater
- Easy to transport
- Can be extended as required











Q WEBCODE G1105

Technical data

Max. earth covering (without groundwater/loading capacity)	1500 mm
Max. vehicle weight	12 to
Earth covering needed for loading capacity	800 – 1500 mm
Max. axle load	8 to
Groundwater stability	up to the middle of the tank
Earth covering needed with groundwater installation	800 – 1500 mm



Ribbing

- Extremely stable
- Reinforced base
- H-profile provides continuous stabilisation ring
- Equal wall thickness



Stackable half shells

- Logistical advantage
- Reduced transport costs
- Good for the environment

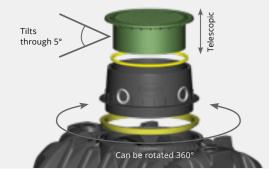


Easy and reliable assembly

- Quick connectors (shown in green) without screws
- High-quality EPDM seal (shown in yellow)
- Centring bolt (shown in orange) for easy assembly

Baffle

- Two- or multi-chamber tank with individual design
- Flexible choice of baffle position



The tank that turns its head for you

- Rotating tank dome
- Simple adaptation to ground level
- Incl. lip seals as standard
- Suitable for vehicle loading
- Sealed up to ground level
- Unique stability and precision fit







Tank dome and covers

For more flexibility in the trench

- ✓ For simple trench height correction
- ✓ Cover can be inclined up to 5°
- ✓ Access dome with 600 mm diameter
- Child-proof covers



Extension

- 300 mm extension
- 1000 mm extension



Maxi | Mini telescopic dome shaft

- Suitable for pedestrian loading
- Infinitely adjustable
- Incl. child-proof cover



Tank dome

• Can be rotated – for simple alignment of connection pipes



Telescopic dome shaft 600 for vehicle load

- Suitable for vehicle loading
- Infinitely adjustable
- With cast cover



Tank dome micro with cover



Tank dome Mini and Mini telescopic dome shaft



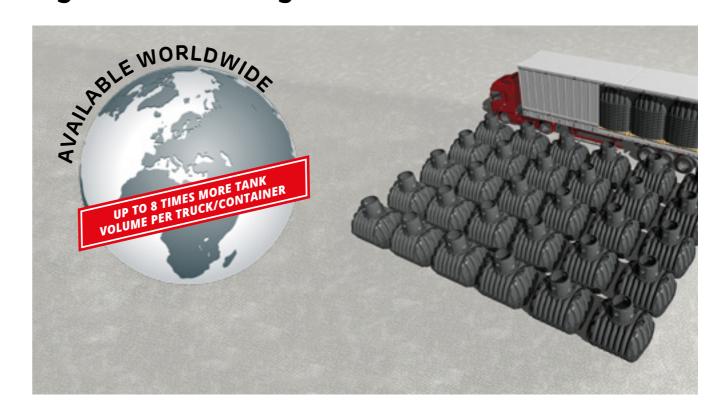
Tank dome Maxi and Maxi telescopic dome shaft



Tank dome Maxi and telescopic dome shaft 600 for vehicle load

Carat S underground tank – logistical advantages





Advantages

- Easy to transport
- Tank made up of two half shells
- 5 9 tanks per pallet
- Up to 8 times more tanks per lorry / container
- Up to 36 wastewater or 45 rainwater harvesting systems per lorry / container









Flush adaptation to ground level





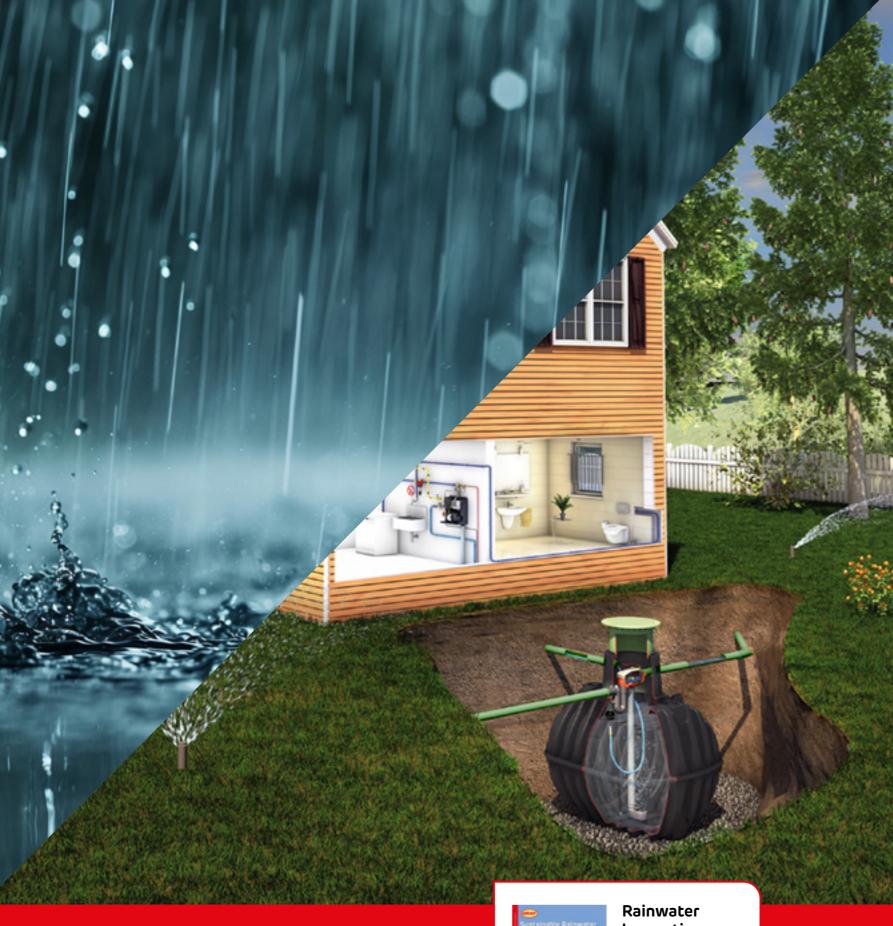
Covers suitable for vehicle loading allows tank to be installed under driveway











Rainwater harvesting with system



harvesting catalogue

More information about rainwater harvesting can be found in our catalogue.

A systematic approach to rainwater harvesting

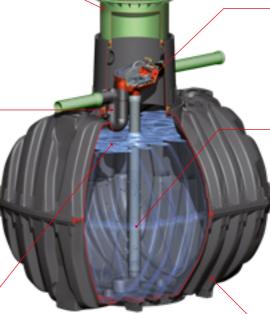


Covers

Suitable for pedestrian to vehicle loading

Overflow siphon

- To remove excess water
- Odour trap



Internal/external filter

Cleans rainwater before it enters the tank

Steady inflow

Prevents the sediment at the bottom of the tank from being stirred up

System control

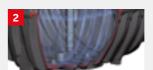
- Cost-effective in-house internal drinking water intake
- Floating switch-controlled

Suction pipe/Floating extraction units

Extracts the water from the cleanest zone, 100 - 150 mm below the water's surface

Four-stage cleaning process for best water quality





The filtered water is routed through a calmed inlet digester on the base of the tank.



The floating layer is removed through the overflow siphon installed in the tank when the tank



The collected rainwater is removed by means of a floating extraction unit near the top of the tank.

Application examples



Watering green spaces and sports fields





Flushing toilets







Internal filters

- Compact filter technology integrated in the tank
- No second shaft and/or opening necessary
- ✓ Up to 100% water yield
- ✓ Filter insert with mesh width of 0,35mm
- ✓ Very little height offset between inlet and outlet

Universal-Filter 3/XLInternal filter technology with 100% water yield



Minimax-Pro Filter
Self cleaning, minimum height loss







External filters

- External filters in sturdy plastic shaft
- ✓ Suitable for pedestrian and vehicle loading
- ✓ Continuously variable installation depth of 580-1050mm
- ✓ Maximum flow rate of 16 l/s
- Sealed up to ground level

Universal-Filter 3 external



Drainstar-Filter external



Optimax-Filter external



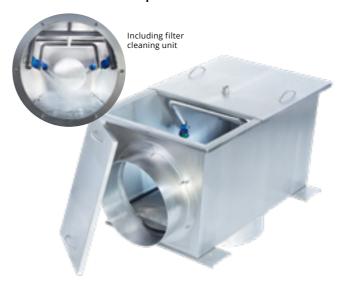
Industrial filters

- ✓ High quality filters for larger roof areas
- ✓ Flow rates of up to 2001/sec
- ✓ Pipe connection from DN 160 DN 400

Universal filter 3 XL external



Optimax-Pro



Optimax filter XL external



Control system

The central system control for your rainwater harvesting system



Display of the operating pressure

Cost-effective in-house internal drinking water intake



Q WEBCODE G3102

With automatic filter cleaning unit as option



Digital display of the operating status and the level in the cistern

Floating switch-controlled

Regular rinsing of the drinking water reservoir prevents microbial contamination



Control system

Control system	Aqua-Cer	nter Basic	Aqua-Center Silentio	
Pump	15/4	25/4	15/4	25/4
Rated power	660 W	800 W	660 W	800 W
Operating noise	55 dB(A)	55 dB(A)	49 dB(A)	49 dB(A)
Protection class	IP 44	IP 44	IP 44	IP 44
Operating pressure	3.5 bar	4.3 bar	3.5 bar	4.3 bar
Delivery height	35 m	43 m	35 m	43 m
Max. flow rate	3,600 l/h	4,200 l/h	3,600 l/h	4,200 l/h
Max. suction lift	6 m	6 m	6 m	6 m
Max. suction length	15 m	15 m	15 m	15 m
Operating pressure gauge	•	•	•	•
Optionally as Silentio Press package				
for distances of ≥ 15 m from house			•	•
Drinking water feeding module				
Volume	10) l	6.	51
Manual switchover to drinking water possible		•		
Automatic water exchange in feed tank				•
Overflow according to DIN EN 1717		•		•

Internationally recognised quality: the extreme sturdiness of the Platin flat tank



15,000 l (3,960 US gal.), Production plant, Herbolzheim (Germany)



30,000 l (7,926 US gal.), Industrial plant, Geelong (Australia)



5,000 l (1,325 US gal.), Private home, Teningen (Germany)



7,500 l (1,980 US gal.), Luxury apartment, Sussex (United Kingdom)



3,500 l (925 US gal.), Building, Vacarisses (Spain)

f.info www.graf.info **37**





Firefighting water storage



3.30 - 4.00 m

Carat XXL

The classic tank, large volume in a small place





- Low volume loss
- 40 t vehicle loading
- Up to 122 m³ total volume

Carat XXL firefighting water tank						
Loading capacity:						
Man-sized	•					
Trafficable by cars	•					
HGV trafficable	•					
Nominal volume	122 m³					
Useful volume*	90%					
Groundwater stability	Up to the middle					
	of the tank					

Platin XXL

Problem solver for shallow installation situations due to high groundwater or rocky subsoil.





- Low installation depth, less excavation
- Easy to inspect

Installation depth

Good cleaning options

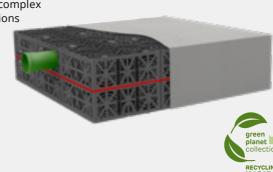
Platin XXL firefighting water tank						
Loading capacity:						
Man-sized	•					
Trafficable by cars	•					
HGV trafficable	•1)					
Nominal volume	65 m³					
Useful volume*	80%					
Groundwater stability	Up to tank shoulder 2)					
Installation depth	2.00 – 2.75 m					

1) In conjunction with a load distribution plate

EcoBloc Inspect

Special solution for large volumes or complex installation situations





- Extendable volume
- Also available as underground version
- Variable attachment of the EcoBlocs

EcoBloc Inspect flex firefighting water tank					
•					
•					
•					
∞					
80 - 93 %					
project specific evaluation					
max. 5 m					

Suction connection



Extinguishing water suction connection form B with 4" female thread

Firefighting water tank









Our oneLines portfolio offers wastewater solutions for single & multiple households, holiday lets, hotels, camping sites, offices as well as larger housing developments & commercial developments. Extensive range of Cesspools, Septic tanks, Anaerobic treatment systems and fully biological SBR treatment solutions will be 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 will be offered through our competence center at the company KLARO GmbH. A complete range of compact and non-electric residential wastewater treatment plants will be offered through BIOROCK.

1 - 10,000 PE (150 I/d - 1,500,000 I/d) and more

single family homes



villages, office buildings, camp sites, hotels







temporary work, service stations, mining restaurants, automotive workshops



• one**2clean**Xtra

one2cleanXtra

Anaerobix

Cesspools

• one**2clean**

oneAdvanced

KLAROMAX

Septic tanks

grey2clean

easyCompact

• one**2clean**Xtra

oneAdvanced

Anaerobix

 Septic tank Cesspools

KLAROcontainer

• one**Sepa** grease

• one**Sepa** oil



treatment solutions



More information about wastewater can be found in our catalogue.

one**Solution**

one2clean / one2cleanXtra -

The revolutionary SBR technology 3-70 PE (450 - 10,500 l/d)

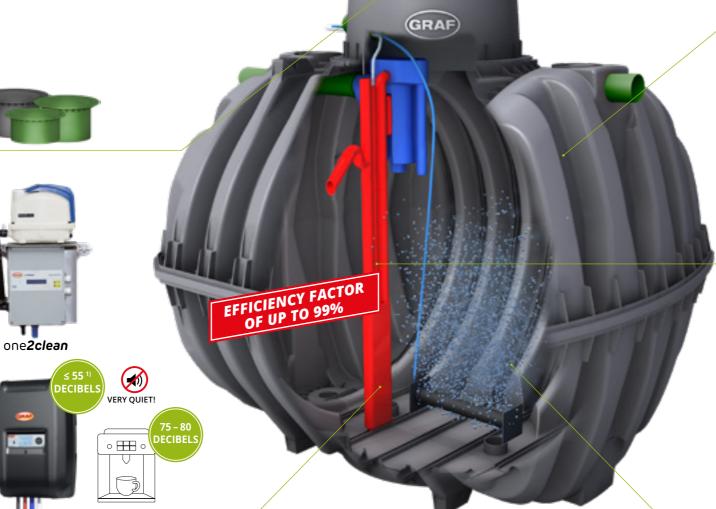
- Just one tank with one chamber needed
- ✓ No electrical part in the tank
- Extremely small amount of sludge produced



Detailed info about covers refer to the Tanks chapter.

Covers

Suitable for pedestrian or vehicle loading



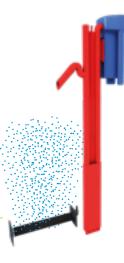
Wastewater tank

- State-of-the-art manufacturing for maximum stability
- 100 % watertight and corrosion-resistant
- Can be mounted in groundwater



one**2clean** / one**2clean**Xtra installation kit

- Only one clear water lifter
- Rugged clear water lifter manufactured in one seamless piece
- Simple maintenance via an integrated, self-cleaning sampling container



one**2clean** / one**2clean**Xtra control cabinets

- Simple handling thanks to micro-processor control
- Energy-saving
- Extremely quiet
- Battery-free power failure detection (for one**2clean**Xtra)
- Just one tank with one chamber needed





+H Hygiene modules



removal module



Remote transmission modules



outlet module

1)Based on internal tests

one**2clean**Xtra

✓ Incredibly little sewage sludge

Conventional wastewater treatment systems

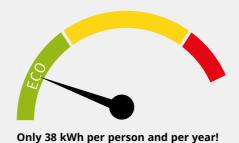


✓ Minimal maintenance costs

one2clean / one2cleanXtra



✓ Minimal power consumption



Aeration phase

Settling phase



Clear water discharge phase

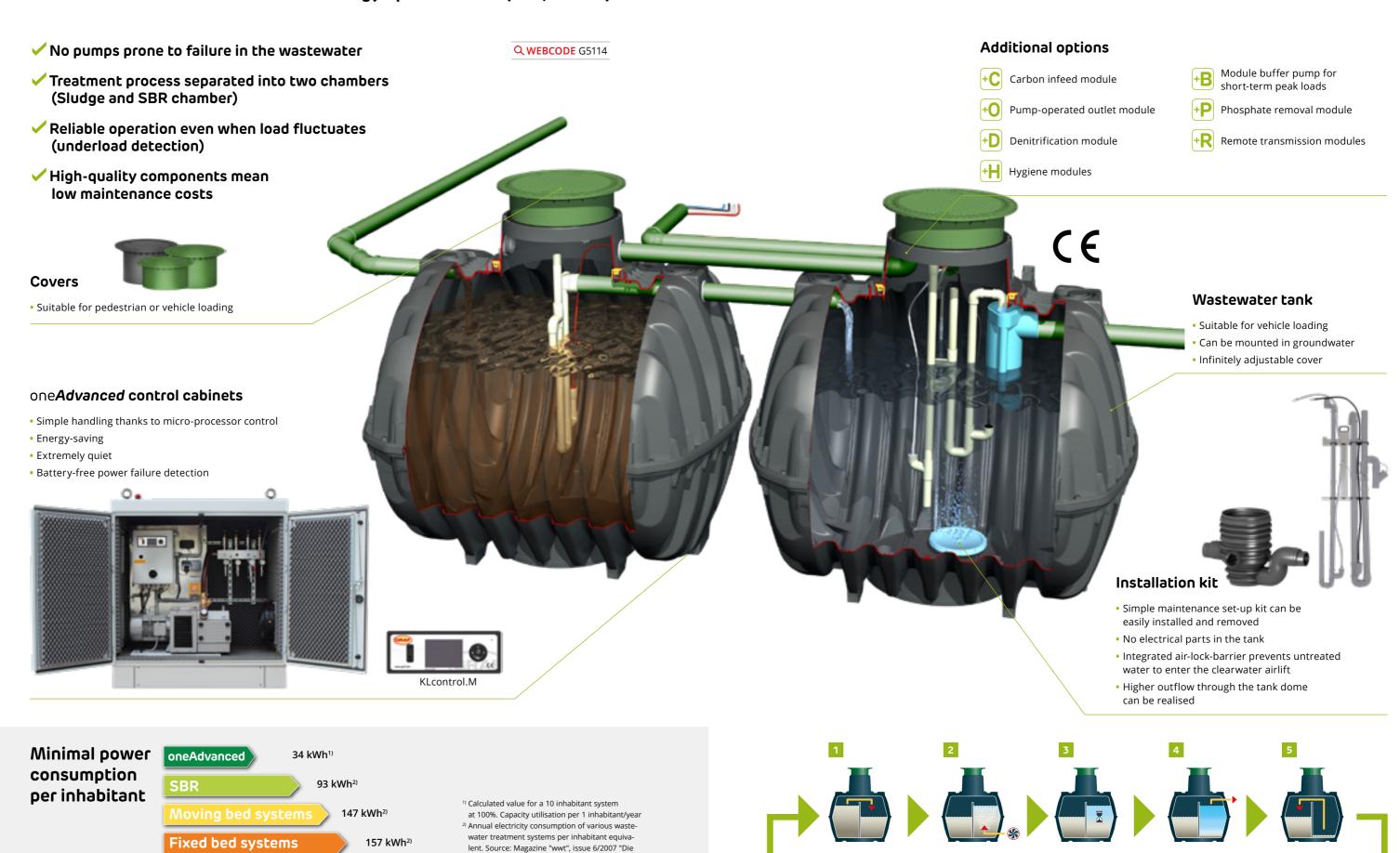
www.graf.info 43 42 www.graf.info

one**Solution**



one Advanced - The classic SBR technology up to 1000 PE (150,000 I/d)

Aerated systems



www.graf.info 45

Kleinkläranlage als Dauerlösung" (The small was-

tewater treatment plant as a permanent solution),

page 15, Table 3 Practical data.

Charging phase

Aeration phase

Settling phase

Clear water

discharge phase

Sludge return

one**Zero**

easy Compact - The non-electric fully biological treatment plant up to 6 PE (900 I/d)

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.

- 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 tanks to large opening





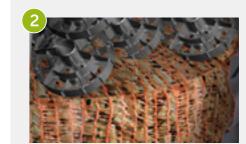
Q WEBCODE G5124

How does the easy Compact work



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.



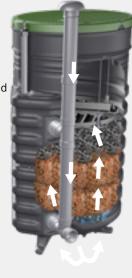
Biological treatment

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.



Continuous ventilation

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



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.



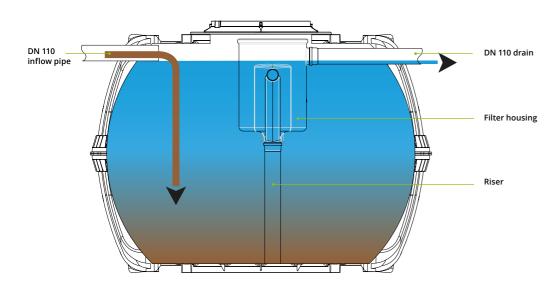
RECYCLING INSIDE

GRAF

one**Zero**

Anaerobix - Wastewater system with biological filter

- ✓ Simple and economical system
- ✓ Very good cleaning performance
- ✓ No electrical components in the tank





PIA, independent testing institute in Aachen

Anaerobix filter

- 30, 40 & 60 l
- Virtually almost maintenance-free
- PIA tested and certified
- Cleaning value of up to 90 %
- Suitable for different tank models from GRAF



Covers



Suitable for pedestrian loading



Anaerobix 60 l assembled in Carat

Anaerobix Herkules system

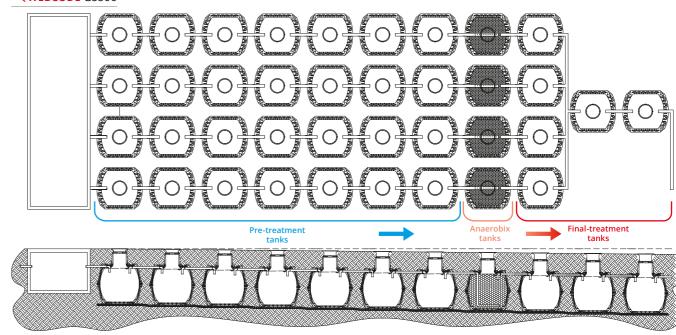
- The ideal one household solution
- Virtually almost maintenance-free
- PIA tested and certified
- Cleaning value of up to 90 %

Q WEBCODE G5503

Anaerobix XL/XXL system

- Energy-free system
- Can be designed as requested from 22 up to 1000 PE
- PIA tested and certified
- Unbeatable logistical advantage

Q WEBCODE G5506





Anaerobix Carat XXL 800 inhabitants, Panama

Small wastewater treatment systems, septic tanks and cesspools



Q WEBCODE G5504

Small wastewater treatment systems and septic tanks and cesspools

- Compact design
- Infinitely adjustable cover
- 100 % watertight and corrosion-resistant



Technical data



System comparison







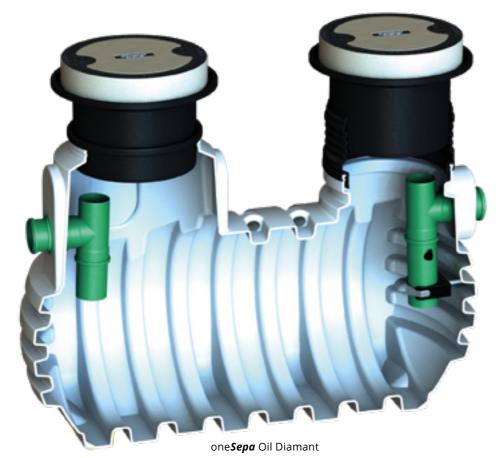


System	one 2clean	one 2clean Xtra	one Advanced	easy Compact	Anaerobix
System conformity	EN 12566-3	EN 12566-3	EN 12566-3 / ATV A-122	EN 12566-3	PIA
Classian and a	Fully biological	Fully biological	Fully biological	Fully biological,	Anaerobic
Cleaning process	SBR technology	SBR technology	SBR technology	aerated biofiltration	process
	9 inhabitants	70 inhabitants	14 inhabitants	6 Inhabitants	21 inhabitants
Single-tank system up to	1,350 l/d	10,500 l/d	2,100 l/d	900l/d	3,150 l/d
	18 inhabitants		1000 inhabitants		
Multi-tank system up to	2,700 l/d	-	150,00 l/d	-	-
	1 – 2 times	1 – 3 times	1 – 3 times	1 – 2 times	1 – 2 times
Maintenance interval	a year	a year	a year	a year	a year
	<u> </u>		<u> </u>		-
Control					
Underload detection		•	•		
+R module		0	0		
for remote monitoring					
+P module		0	0		
for phosphate removal					
+C module		0	0		
for carbon addition					
+H module for hygiene		0	0		
+D module	•	•	•		
for denitrification					
+O module		0	0		
for pump-driven outlet					
Power cut detection		•	•		
Temperature sensor					
for protecting against		•	•		
overheating					
Logbook function	•	•	•		
Operating keypad	4 digits	keypad	keypad		
Serial interface for		•	•		
software updates					
External control cabinet	0	0	0		
Annual power	40 kWh	47 kWh	34 kWh		
consumption per person	(calculated for	(calculated for	(calculated for		
consumption per person	a 9 PE system)	a 9 PE system)	a 10 PE system)		

[•] Standard equipment O optional

one**Sepa**

Grease separator and oil separator



C E N 1825

Q WEBCODE G5606

one**Sepa** Oil - Diamant

	NS	ø DN	Length	Width	Height	Weight	Oil	Sludge	Total tank capacity
	[l/s]	[mm]	[mm]	[mm]	[mm]	[kg]	[1]	[1]	[1]
-	6	160	2450	1150	1760 - 2150	165	500	1,300	2,210
	10	160	2450	1150	1760 – 2150	165	500	1,300	2,210
	15	200	2450	1400	2020 - 2310	250	600	2,000	3,330

- ✓ Available as fuel separator (class II) or coalescence separator (class I)
- **✓** Up to NS 15
- ✓ With integrated sampling system on request
- ✓ Grease separator certified to EN 1825
- ✓ Fuel separator certified to EN 858-2 optional with bypass

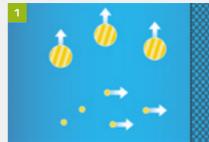


one**Sepa** Oil Saphir with bypass

one**Sepa** Oil - Saphir

NS [l/s]	ø DN [mm]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]	Oil [l]	Sludge [l]	Total tank capacity [l]
3	160	1160	1160	1790 – 1990	80	300	300	770
6	160	1160	1160	2215 - 2315	110	300	600	1,080

Operation of a coalescence unit



• Density of small oil droplets is too low for them to rise in the water



• Small oil droplets collect on the coalescence unit and form a film of oil



• If the oil film is sufficiently dense, the film rises up

Internationally proven: GRAF wastewater treatment systems





4 inhabitants, Perth (Australia)



145 inhabitants, Thirsk (United Kingdom)



38 inhabitants, oneAdvanced, Greece



500 inhabitants, oneAdvanced, Bulgaria



32 inhabitants, British Columbia (Canada)



5 inhahitants Kimst (Sweden



800 inhabitants, Anaerobix XXL, Panama



90 inhabitants, Oaxaca (Mexico)



200 inhabitants, Rudenki Town (Ukrain

KLARO MAX

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

KLARO container.one®







hoto: KLARO

Klaro Max Customised solution for the efficient treatment of large volumes of wastewater

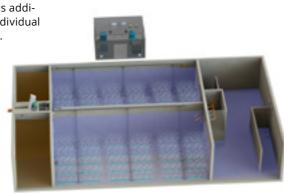
Specially designed for applications with a daily wastewater volume of 150 m³ or more per day, the KLARO MAX wastewater treatment plant is a reliable solution for a wide variety of locations worldwide.

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 safty principle



Example: Two-line system from 5,000 PE

The intelligent mobile wastewater solution

KLARO container.one® 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-andplay 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.

KLARO **container.one**® 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 m³ (20 ft container) per day resp. 34,5 m³ (40 ft)
- Modularly expandable for larger wastewater volumes

Q WEBCODE G5116

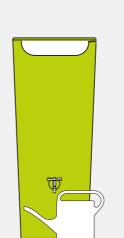




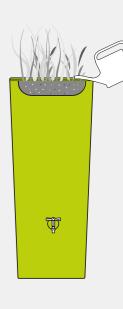
Guaranteed GRAF quality















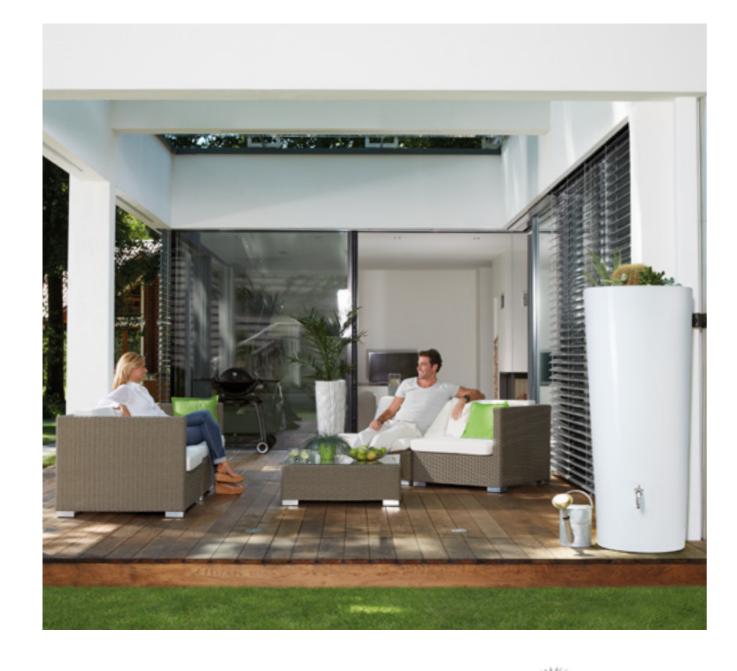
in style

garden catalogue.

ainwater harvesting in style

Decorative rainwater tanks

Modern Line | Exclusive Line



MODERN LINE

- Stylish and ultra modern
- 210 350 litres



EXCLUSIVE LINE

- An extensive range of unique overground tanks
- For very high quality standards
- From 250 600 litres



Decorative rainwater tanks

Classic Line | Basic Line



CLASSIC LINE

- Decorative rainwater tanks
- From 220 2.000 litres



BASIC LINE

- Essential for the best water quality and convenient use
- From 120 2,600 litres



Useful accessories, easy to connect

Downpipe filter • Filters dirt-particles out of rainwater • Prevents overflow of overground tank • Summer and winter mode • Easy assembly

→ ⊼ . ⊼

Drain tap

- Convenient water extraction
- Is screwed into the standard thread connection without the need to drill



Universal hose set

- Additional extraction option and entire tank volume can be used
- Also serves as level gauge



Aqua-Go hose set

- Suitable for all overground rainwater tanks
- Shows the current fill level up to a height of 2 m

Downpipe filters







Perfect inflow-connection to water butts and overground tanks

Rapido Quattro	Speedy	Regendieb Pro
Downpipe	Downpipe	Downpipe
90 x 65 mm	DN 70 - DN 110	DN 70 - DN 110
•	•	16 mm
•	•	•
50 m ²	80 m ²	200 m ²
•	Plastic sieve	Stainless steel fine sieve
•	•	•
	Downpipe 90 x 65 mm	Downpipe Downpipe 90 x 65 mm DN 70 - DN 110 • • 50 m² 80 m²

Dimensions			
Depth	60 mm	130 mm	•
Height	80 mm	90 mm	255 mm
Diameter	60 mm	60 mm	130 mm
Connection to overground tank	32 mm (1 ¼")	32 mm (1 ¼")	DN 50/32 mm (1 1/4")



Many other downpipe-filter options can get found here: www.garantia.com

Water springs and stone fountains

Useful and stylish



- Including chrome water tap 19 mm (¾")
- Option of connecting from below using 19 mm (¾") hose connection
- Simple installation pre-drilled connections
- Weather-resistant







By using your own compost as a garden fertiliser, you can save money and improve the longterm fertility of the soil. Garden cuttings as well as fruit and vegetable leftovers from the kitchen aren't waste, but valuable materials. By composting it, you can re-use it in your garden. Composting reduces waste by up to 30 %, helping to protect the environment and the climate.

Our composters are made of self-recycled plastic and are weather-resistant. GARANTIA® composters range in size from 280 to 1,100 litres.

For a good compost you need fruit and vegetable waste, coffee grounds, tea leaves, eggshells (crushed), pot plants, cut flowers, spent potting soil, lawn cuttings and leaves.

Wet materials should be mixed with dry ones and coarse materials with fine ones. Good aeration is important to producing good compost. Ensure that the compost is damp. Compost mustn't be too dry or too wet!



Other products for the garden













Composters and garden-products



catalogue

More information about our composters and garden accessories can be found in our catalogue.

Composters



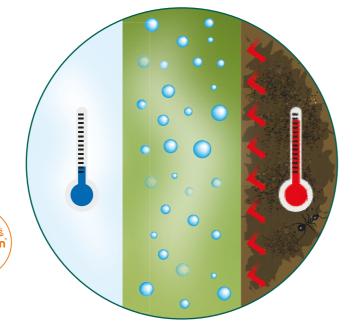


The quality material

The Thermo-King, Thermo-Star and Thermo-Wood are made of the quality material Thermolen®. Thanks to the foamed thermo walls, the Thermo-King, Thermo-Star and Thermo-Wood offer excellent insulating characteristics. The resulting heat is contained within the composter and accelerates the composting process.

Thermolen® is a UV and weatherproof material for long-term use and reliable composting-results.

Thermolen® is a polypropylene, made of 100% self-recycled Post-Consumer plastics. "Made in Germany".





- 100 % recycled polypropylene
- · High-quality material, with high impact resistance and rigidity
- Our composters are fully recycable





Flat pack for perfect transport

Composter

- Capacity of 280 1,100 litres
- Ventilation slots for the best composting results
- Large removal flaps















Thermo-Wood Thermo-King Thermo-Star Eco-King Eco-Master composter Eco-Composter Air-King

Ergo Raised bed

A beautiful addition to your garden





Work at a comfortable height



Easy assembly – no tools required



Decorative texture – wood or stone



Ergo Raised bed in practical 6-corner shape



Ergo Quadro S



Ergo Quadro M



Ergo Quadro L

Ergo Raised bed

Cold frame attachment and growth module





The safe way to protect plants from bad weather and pests



For healthy, fast growth



Growth module



Cold frame attachment



 Constant moisture for roots

- Moisture remains longer in the soil
- Reduces water consumption
- Rapid plant growth
- Made from 100 % recycled material (PP)

Urban balcony raised bed

For balconies and terraces



- Ideal for a garden at home
- For herbs, vegetables and other plants
- Ergonomic no bending and kneeling required









Sunny Plant aids

The safe way to protect plants from bad weather and pests



- For accelerated plant growth and early harvesting
- Watering recesses to collect rain or watering water
- The safe way to protect plants from bad weather and pests







Maxi Garden board

The ideal walkway for the garden and camping-site



- A very safe step thanks to antislip surface structure
- Very large format for comfortable standing on the board
- Ideal support for wheelbarrow use inside the garden
- Comfortably creates path length and area with just 4 garden boards



Flexible use



Edgar lawn edging Elegant edging for your beds



- The individual sections can be connected lengthways and crossways
- One set contains 6 lawn edge pieces with a total length of 4.5 m









Elegant and flexible edging











versal round container

Bio bucket





Multi-purpose container square

Barrel for beverage

Tried and tested in industry

GRAF supplies barrels, containers and tanks. Our products have proven themselves in industrial environments throughout the decades. Our international customers use GRAF products around the globe to store and transport liquids and bulk materials.



Detailed info about drums, containers and tanks can get found here:

www.graf.info



Universal container, round and oval



Bio bucket, multi-purpose container square and barrels for beverages



















For separating bio from the kitchen waste





- Bio bucket: 8 10 litres
- Multi-purpose container: 60 90 litres
- Barrel: Capacity of 10 500 litres

• Capacity of 30 – 70 litres

For compost/garden waste

- Can be stacked
- Two sturdy carrying handles
- Recyclable
- Availabe in three different colours
- Food safe virgin material according to EU regulation 10/2011 (for the white colored bucket)



The GRAF **Recycling Cycle**





This is us

The whole world is talking about sustainability. For us, it has long been an integral part of our very identity. We recognised the potential of rainwater early on: "Rainwater is free" was one of our first campaigns back in the 1970s. GRAF water butts have been manufactured in our family business since 1974. Only four years later, the first underground tanks for rainwater harvesting followed. GRAF water butts have been made from recycled material since 1980. The Green Dot was still a long way off back then. Rainwater is still free of charge, by the way. But in times of climate change, drought and heavy rainfall, sustainable water management is much more than that: it is a valuable contribution to our future.

This is what we stand for



recycled content



Environmental products for **SUSTAINABLE** water management



Every year 100.000 T LESS CO_2 emissions trough recycling. This is equivalent to the CO₂ emissions of 60,000 cars



LONG SERVICE LIFE and spare parts supply



Recycled material FREE FROM HARMFUL **SUBSTANCES**



80% renewable energy share used in production





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



For more information, see: www.graf.info/sustainability



Your specialist dealer:

Please note:

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

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.

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