Otto Graf GmbH has been supplying high-quality plastic products to its customers for 50 years. In 1974, GRAF developed its first pioneering range of rainwater harvesting products. Today we are market leader in numerous countries for Rainwater Harvesting Systems.

High Quality Manufacturing
GRAF continuously invests in the expansion of its headquarters in Teningen, near Freiburg (Breisgau). The facility has now an approximate area of 155,000 m² and is one of the most modern production facilities for plastic products in the world.

Our choice of Germany for the new production site was easy. On the one hand, we feel an obligation to the site because of our history. On the other, we would like to offer our customers products of the highest quality.

Where quality comes first
To ensure consistent high product quality, you need optimised production processes and outstanding quality management. Every individual tank at the new production site in Teningen is checked for dimensional accuracy, wall thickness and weight. All production parameters, e.g. material composition, machine settings and the staff involved in the production process, are documented for each individual product.

Our goal: your satisfaction
More than 100,000 satisfied customers already benefit from the advantages of GRAF products.

Manufacturing certified according to ISO 9001
Manufacturing certified according to ISO 50001
EcoBloc
Stormwater management system

Various applications

- Rainwater infiltration
- Stormwater attenuation
- Rainwater harvesting

Service life of over 50 years

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

Easy to install

The modules are fitted simply, at speed and in various ways. They can be installed without heavy machinery – one EcoBloc Inspect flex module weighs just 8 kg (17.6 lbs), even only 7 kg (15.4 lbs) for one EcoBloc light.

High storage volume

GRAF infiltration modules have three times the storage volume of a standard gravel infiltration ditch. One module therefore takes the place of around 1300 kg (1.4 tons) of gravel or a 50 m (164’) drainage pipe. Since you don’t have to excavate so much soil and enjoy great value for money compared with a standard gravel infiltration ditch, the GRAF modules save you hard-earned cash!

Up to 97 % reservoir volume

The GRAF EcoBloc light has a gross volume of 225 litres (59.4 US gal) and a reservoir volume of 219 litres (57.9 US gal). With a reservoir volume in excess up to 97 %, it is a market-leading product. The EcoBloc variants maxx and Inspect flex still offer a reservoir coefficient of 96 % despite their high load-bearing capacity.

Lorry-bearing up to 60 tons

The GRAF EcoBloc Inspect flex has a heavy-duty lorry-bearing capacity of 60 tons with an 800 mm (2’ 7.5”) earth covering.

Gravel bearing up to 60 tons

The GRAF EcoBloc Inspect flex has a gravel bearing capacity of up to 60 tons with a 300 mm (12”) gravel covering.

Installation depth of up to 5 metres (16’ 4.8”)

Even under very heavy loads, GRAF EcoBloc Inspect flex modules can be installed at a depth of up to 5 metres (16’ 4.8”). This means that up to 14 layers are possible. Please consult GRAF when the installation depth is greater than 5 metres.

Easy to inspect

The standard inspection channel allows the entire infiltration/attenuation system to be monitored effectively. The EcoBloc Inspect flex allows access by commercially available inspection cameras. This has been confirmed by several independent testing authorities.

High pressure jetting possible

GRAF EcoBloc Inspect flex can easily resist high pressure jetting.

Optimum connection positions

Optimum connection positions ensure full use of infiltration ditch volume.

High pressure jetting possible

GRAF EcoBloc Inspect flex can easily resist high pressure jetting.

Optimum connection positions

Optimum connection positions ensure full use of infiltration ditch volume.

Logistics

No tools required

100 % recycling

CO₂

logistics

EcoBloc light

EcoBloc max

EcoBloc Inspect flex

EcoBloc Configurator

Please ask your GRAF sales consultant for your login account information to the GRAF EcoBloc Configurator.
Application and logistics

Stormwater attenuation
The controlled discharge of rainwater is increasingly important during heavy rain. The GRAF EcoBloc modules can be also surrounded by an impermeable membrane, which prevents water from escaping from the system unchecked. Restricted outflow allows the water to be discharged into the sewage system in a controlled manner.

Rainwater infiltration
Local infiltration of rainwater is gaining in importance. As we cover over more and more ground with concrete, we are interrupting the natural water cycle. The GRAF EcoBloc modules combine environmental management of rainwater with the opportunity to protect against flooding. It stores rainwater and gradually releases it back into groundwater reserves.

Eco-friendly product – green logistics
One lorry can transport up to 2700 EcoBloc light units. That corresponds to a volume of 610 m³ (161,145 US gal.). This reduces carbon emissions during transport by 85%..

1. Stackable
To save space during transport, the EcoBloc max and EcoBloc light modules are stacked into each other. This minimizes transport costs, storage space in stock and CO₂ emissions.

2. Easy installation
The EcoBloc base plate forms the foundations of each EcoBloc system. Up to 14 EcoBloc modules can be fitted on one base plate.

3. Ready
The side faces are sealed with EcoBloc end plates. The EcoBloc system can be adapted to match individual requirements.

One lorry can transport up to 2700 EcoBloc light units. That corresponds to a volume of 610 m³ (161,145 US gal.). This reduces carbon emissions during transport by 85%.
**The system at a glance**

**EcoBloc Inspect flex**
- Lorry-bearing 60 tons/HS-25
- 150 m³ (5314 US gal.)/Truck
- Inspectable
- High pressure jetting possible

**Order no. 402015** Set 10 units

**Order no. 402018** Set 25 units

**Order no. 402020** Set 50 units

**Order no. 402025** Set 200 units

**EcoBloc connectors**
- For horizontal connection

**Graf-Tex geotextile**
- size of 2.50 x 2.50 m (8’ 2.4” x 8’ 2.4”)

**Order no. 231006** Sold by the metre, roll width 5 m (16’ 4.8”)

**Deaeration end**
- DN 100 (4”)

**Order no. 369017**

**Adaptor plate**
- DN 300 (12”)
- DN 400 (16”)
- DN 500 (20”)

**EcoBloc System accessories**

**EcoBloc connectors**
- For horizontal connection
  - Order no. 402015 Set 10 units
  - Order no. 402018 Set 25 units
  - Order no. 402020 Set 50 units
  - Order no. 402025 Set 200 units

**Deaeration end**
- DN 100 (4”)
  - Order no. 369017

**Adaptor plate**
- DN 300 (12”)
- DN 400 (16”)
- DN 500 (20”)

**Graf-Tex geotextile**
- size of 2.50 x 2.50 m (8’ 2.4” x 8’ 2.4”)
  - Order no. 231006

**Sold by the metre, roll width 5 m (16’ 4.8”)
Order no. 231002**

**EcoBloc Inspect flex**
- The front ends of an EcoBloc Inspect flex system are sealed by end plates with DN 100 (4")/150 (6")/200 (8") connecting surfaces

**Item Colour Order no.**
- EcoBloc Inspect flex end plates (Set 2 units) grey 402002

**EcoBloc maxx**
- Lorry-bearing 40 tons/HS-20
- 410 m³ (11414 US gal.)/Truck

**Connecting surfaces on EcoBloc maxx end plates**

**Item Colour Order no.**
- EcoBloc maxx end plates (Set 2 units) grey 402200

**EcoBloc light**
- Lorry-bearing 12 tons
- 610 m³ (161145 US gal.)/Truck

**Connecting surfaces on EcoBloc light end plates**

**Item Colour Order no.**
- EcoBloc light end plates (Set 2 units) green 402300

**EcoBloc Inspect flex base plate**
- Forms the foundation of the EcoBloc Inspect flex system

**Volume Length Width Height Weight Colour Order no.**
- 205 l 800 mm 800 mm 320 mm 8 kg grey 402005

**EcoBloc maxx base plate**
- Forms the foundation of the EcoBloc maxx system

**Volume Length Width Height Weight Colour Order no.**
- 225 l 800 mm 800 mm 350 mm 9 kg grey 402200

**EcoBloc light base plate**
- Forms the foundation of the EcoBloc light system

**Volume Length Width Height Weight Colour Order no.**
- 225 l 800 mm 800 mm 350 mm 7 kg green 402300

**EcoBloc Inspect flex base plate**
- Forms the foundation of the EcoBloc Inspect flex system

**Volume Length Width Height Weight Colour Order no.**
- 25 l 800 mm 800 mm 40 mm 4 kg grey 402006

**EcoBloc maxx base plate**
- Forms the foundation of the EcoBloc maxx system

**Volume Length Width Height Weight Colour Order no.**
- 25 l 800 mm 800 mm 40 mm 4 kg grey 402201

**EcoBloc light base plate**
- Forms the foundation of the EcoBloc light system

**Volume Length Width Height Weight Colour Order no.**
- 25 l 800 mm 800 mm 40 mm 4 kg green 402301

**EcoBloc Inspect flex end plates**
- The front ends of an EcoBloc Inspect flex system are sealed by end plates with DN 100 (4")/150 (6")/200 (8") connecting surfaces

**Item Colour Order no.**
- EcoBloc Inspect flex end plates (Set 2 units) grey 402002

**EcoBloc maxx end plates**
- The outside surface of an EcoBloc maxx system is sealed by end plates with contact surfaces DN 100 (4")/150 (6")/200 (8")/250 (10")

**Item Colour Order no.**
- EcoBloc maxx end plates (Set 2 units) grey 402203

**EcoBloc light end plates**
- The outside surface of an EcoBloc light system is sealed by end plates with contact surfaces DN 100 (4")/150 (6")/200 (8")/250 (10")

**Item Colour Order no.**
- EcoBloc light end plates (Set 2 units) green 402303
### Applications and loads

**Infiltration module**
- EcoBloc Inspect flex
- EcoBloc maxx
- EcoBloc light

<table>
<thead>
<tr>
<th>Net volume</th>
<th>Gross volume</th>
<th>Storage coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>195 l (51.5 US gal.)</td>
<td>205 l (54.2 US gal.)</td>
<td>96%</td>
</tr>
<tr>
<td>217 l (57.3 US gal.)</td>
<td>225 l (59.4 US gal.)</td>
<td>96%</td>
</tr>
<tr>
<td>219 l (57.9 US gal.)</td>
<td>225 l (59.4 US gal.)</td>
<td>97%</td>
</tr>
</tbody>
</table>

**Inspectable**
- High pressure jetting possible

**Load**
- **Short-term max.**
  - 100 kN/m²
  - 100 kN/m²
  - 75 kN/m²

- **Long-term max.**
  - 59 kN/m²
  - 59 kN/m²
  - 35 kN²

**Without traffic load**
- **min. earth covering**
  - 250 mm (9.8’’)
  - 250 mm / 500 mm
  - 250 mm / 500 mm

- **max. earth covering**
  - 2750 mm (9’’)
  - 2750 mm / 2000 mm
  - 2750 mm / 2000 mm

**Vehicle**
- **min. earth covering**
  - 250 mm (9.8’’)
  - 250 mm / 500 mm
  - 250 mm / 500 mm

- **max. earth covering**
  - 2750 mm (9’’)
  - 2750 mm / 2000 mm
  - 2750 mm / 2000 mm

**Connections**
- DN 100 (4’’)
- DN 150 (6’’)
- DN 200 (8’’)
- DN 250 (10’’)
- DN 300 (12’’)
- DN 400 (16’’)
- DN 500 (20’’)

**Measurements**
- **Length**
  - 800 mm (2’’ 7.5’’)
  - 800 mm (2’’ 7.5’’)
  - 800 mm (2’’ 7.5’’)

- **Width**
  - 800 mm (2’’ 7.5’’)
  - 800 mm (2’’ 7.5’’)
  - 800 mm (2’’ 7.5’’)

- **Height**
  - 320 mm (12.6’’)
  - 350 mm (13.8’’)
  - 350 mm (13.8’’)

- **Weight**
  - 8 kg (17.6 lbs)
  - 9 kg (19.8 lbs)
  - 7 kg (15.4 lbs)

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1) When combined with EcoBloc Inspect flex
2) Values on request when combined with EcoBloc Inspect flex
3) Optionally available with Vario shaft (page 12)
4) Optionally available with adaptor plates (page 9)
Flexible use
The GRAF Vario 800 shaft provides easy access to all EcoBloc modules. It can be used in many different ways:
- As an inspection shaft
- As an inlet shaft
- As a filter shaft
- As a flow control shaft

Easy to inspect
The Vario 800 shaft allows easy access to the EcoBloc system by commercially available inspection cameras. This has been confirmed by several independent testing authorities.

Lorry-bearing up to 60 tons
The GRAF Vario 800 shaft has a heavy-duty lorry-bearing capacity of 60 tons with an 800 mm (2' 7.5") earth covering. The fibreglass reinforced material gives the shaft extra strength.

Connection surfaces up to DN 400 (16")
The Vario 800 comes with DN 200 (8"), DN 300 (12") and DN 400 (16") connection surfaces. The optional, freely rotating inlet module can be connected to pipes of sizes DN 150 (6"), DN 200 (8"), DN 250 (10") and DN 300 (12").

Wide access
The Vario 800 is terminated at the top by GRAF telescopic dome shafts. With a clear width of 600 mm, it gives easy access to the shaft. The base of the shaft itself is 800 x 800 mm (2' 7.5") x (2' 7.5") in size, providing sufficient space for all possible applications.

No additional excavation
The Vario 800 flex shaft system can be directly installed in an EcoBloc infiltration or detention system. The connection surfaces of the inspection channels in the Vario 800 flex shaft system are accurately matched to the EcoBloc system.

Can be positioned in any location
The dimensions of the Vario 800 shaft enable free positioning within the EcoBloc system. The corner position enables the connection of large pipe diameters of up to DN 400 (16") on the two side panels. The central position offers ideal access to the inspection camera from all directions. Using the optional inlet module, a connection of up to DN 300 (12") can be made with a freely defined angle.
Vario 800 flex shaft system

Vario 800 flex, type 1
shaft body for one or more layer of EcoBloc system

<table>
<thead>
<tr>
<th>Volume</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
<th>Colour</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>230 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>355 mm</td>
<td>16 kg</td>
<td>grey</td>
<td>450050</td>
</tr>
<tr>
<td>(60.7 US gal.)</td>
<td>(2' 7.5&quot;)</td>
<td>(2' 7.5&quot;)</td>
<td>(1' 2&quot;)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vario 800 flex, type 2
shaft body for two or more layer of EcoBloc system

<table>
<thead>
<tr>
<th>Volume</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
<th>Colour</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>420 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>660 mm</td>
<td>27 kg</td>
<td>grey</td>
<td>450051</td>
</tr>
<tr>
<td>(113.5 US gal.)</td>
<td>(2' 7.5&quot;)</td>
<td>(2' 7.5&quot;)</td>
<td>(2' 2&quot;)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vario 800 flex, base/cover set
base- and cover for Vario 800 flex shaft

<table>
<thead>
<tr>
<th>Item</th>
<th>Colour</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>set consisting out of Vario base- and cover plate</td>
<td>grey</td>
<td>450052</td>
</tr>
</tbody>
</table>

Accessories

Shaft components

Infiltration filter strainer DN 600 (24")
Made entirely from stainless steel, mesh width 0.75 mm (0.03")

Incl. profile seal for telescopic dome shaft; DN 150 (6")/ DN 200 (8")/ DN 250 (10")/ DN 300 (12") connections

Order no. 340533

Infiltration inlet module DN 600 (24")

Order no. 330360

Infiltration connecting piece 1000 DN 600 (24")

With DN 200 (8") contact surface, incl. profile seal, length 1000 mm (3' 3.3"), 750 mm (2' 5.5"), 500 mm (1' 7.7")

Order no. 371015

Infiltration connecting piece 1000 DN 600 (24")

With DN 200 (8") pipe connections, incl. profile seal, length 1000 mm (3' 3.3"), 750 mm (2' 5.5"), 500 mm (1' 7.7")

Order no. 371016

Retention accessories

Choke drain DN 100 (4")
Incl. emergency overflow and DN 100 (4") connector seal; flow rate of 3.0 l (0.79 US gal.)/sec. up to 6.5 l (1.72 US gal.)/sec.

Order no. 330547

Choke drain DN 150 (6")
Incl. emergency overflow and DN 150 (6") connector seal; flow rate of 2.0 l (0.53 US gal.)/sec. up to 16 l (4.22 US gal.)/sec.

Order no. 330598

Tank Covers

Mini telescopic dome shaft
Suitable for pedestrian loading, height adjustable from 140 – 340 mm (5.5" – 13.4")

Order no. 371010

Maxi telescopic dome shaft
Suitable for pedestrian loading, height adjustable from 140 – 440 mm (5.5" – 17.3")

Order no. 371011

Cast iron telescopic dome shaft
Suitable for vehicle loading, height adjustable from 140 – 440 mm (5.5" – 17.3")

Order no. 371020

Telescopic dome shaft lorry
Suitable for lorry-bearing loading, height adjustable from 140 – 440 mm (5.5" – 17.3")

Order no. 371021

1. Stackable
To save space during transport and storage, the parts of the Vario 800 are stacked into each other. This minimizes transport costs 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. 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 shaft as required.
Rainwater harvesting solutions
For more information about our rainwater harvesting solutions, ask for our catalogue.

Prices:
A price list with our export conditions is available on request.

Warranty clause:
The warranty mentioned in this brochure only refers to the tank in question and not to the accessories. Within the warranty period we grant free replacement of the material. Further benefits are excluded. Pre-condition for warranty benefits are proper handling, assembly and installation according to the mounting guidelines.

N.B. Protect tanks from frost when installed above ground! In case of groundwater installation, please contact us for further information prior to purchase!

For all dimensions and abstracts provided in this brochure, we reserve a tolerance of +/- 3%. Depending on the connection type, the useful volume of the underground tanks may be up to 10% below the tank capacity.

Subject to technical modifications and errors. Design details, methods and standards of individual products may change as a result of technical advancements and environmental regulations.

For all our offers and conclusions of contract, only our General Terms and Conditions of Business dated 01/10/2012 shall apply, which we will send to you on request.