EcoBloc System
Stormwater management
GRAF – Setting standards in quality

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
Internationally proven: GRAF infiltration technology

Warehouse, Kent (UK)

Energy supplier, Warwick (UK)

Housing development, Singapur (SG)

University of Agriculture, Prague (CZ)

Daycare centre, Lörrach (DE)

Industrial building, Tumeltsham (AT)
EcoBloc
Stormwater management system

Various applications
✓ Rainwater infiltration
✓ Stormwater attenuation
✓ Rainwater harvesting

Full integrated shaft
The Vario 800 flex shaft system (page 12) can be directly installed in an EcoBloc infiltration or infiltration/attenuation system. The connection surfaces of the inspection channels in the Vario 800 flex shaft system are accurately matched to the EcoBloc system.

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!

Service life of over 50 years
A durable product design ensures sustainability. The GRAF EcoBloc system and the Vario 800 flex shaft system is 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.

Optimum connection positions
Optimum connection positions ensure full use of infiltration ditch volume.
**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.

**High pressure jetting possible**
GRAF EcoBloc Inspect flex can easily resist high pressure jetting.

**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.

**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.

**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.

**GRAF 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.

1. **Stackable**
To save space during transport, the EcoBloc maxx 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.
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 2800 EcoBloc light units. That corresponds to a volume of 630 m³ (22,250 ft³). This reduces carbon emissions during transport by 85%!
The system at a glance

**EcoBloc Inspect flex**
- Lorry-bearing 60 tons/HS-25
- 150 m³ (5,300 ft³)/Truck
- Inspectable
- High pressure jetting possible

**EcoBloc maxx**
- Lorry-bearing 40 tons/HS-20
- 410 m³ (14,480 ft³)/Truck

### EcoBloc Inspect flex
DN 100 (4")/150 (6")/200 (8") connecting surfaces

<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>205 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>320 mm</td>
<td>8 kg</td>
<td>grey</td>
<td>402005</td>
</tr>
<tr>
<td>(54.2 US gal.)</td>
<td>(2’7.5&quot;)</td>
<td>(2’7.5&quot;)</td>
<td>(12.6&quot;)</td>
<td>(17.6 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Webcode G4107**

### EcoBloc Inspect flex base plate
Forms the foundation of the EcoBloc Inspect flex 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>25 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>40 mm</td>
<td>4 kg</td>
<td>grey</td>
<td>402006</td>
</tr>
<tr>
<td>(6.6 US gal.)</td>
<td>(2’7.5&quot;)</td>
<td>(2’7.5&quot;)</td>
<td>(1.6&quot;)</td>
<td>(8.8 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### EcoBloc maxx base plate
Forms the foundation of the EcoBloc maxx 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>25 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>40 mm</td>
<td>4 kg</td>
<td>grey</td>
<td>402201</td>
</tr>
<tr>
<td>(6.6 US gal.)</td>
<td>(2’7.5&quot;)</td>
<td>(2’7.5&quot;)</td>
<td>(1.6&quot;)</td>
<td>(8.8 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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") contact surfaces

<table>
<thead>
<tr>
<th>Item</th>
<th>Colour</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoBloc Inspect flex end plates</td>
<td>grey</td>
<td>402002</td>
</tr>
<tr>
<td>(Set 2 units)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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")

<table>
<thead>
<tr>
<th>Item</th>
<th>Colour</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoBloc maxx end plates</td>
<td>grey</td>
<td>402203</td>
</tr>
<tr>
<td>(Set 2 units)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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
Order no. 402030  DN 300 (12")
Order no. 402031  DN 400 (16")
Order no. 402032  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

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EcoBloc light
- Lorry-bearing 12 tons
- 630 m³ (22,250 ft³)/Truck

Load ★ ★
Logistics ★ ★ ★ ★ ★

EcoBloc light
Connecting surfaces on EcoBloc light end plates

<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>225 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>350 mm</td>
<td>7 kg</td>
<td>green</td>
<td>402300</td>
</tr>
<tr>
<td>(59.4 US gal.)</td>
<td>(2' 7.5&quot;)</td>
<td>(2' 7.5&quot;)</td>
<td>(13.8&quot;)</td>
<td>(15.4 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q Webcode G4109

EcoBloc light base plate
Forms the foundation of the EcoBloc light 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>25 l</td>
<td>800 mm</td>
<td>800 mm</td>
<td>40 mm</td>
<td>4 kg</td>
<td>green</td>
<td>402301</td>
</tr>
<tr>
<td>(6.6 US gal.)</td>
<td>(2' 7.5&quot;)</td>
<td>(2' 7.5&quot;)</td>
<td>(1.6&quot;)</td>
<td>(8.8 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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")

<table>
<thead>
<tr>
<th>Item</th>
<th>Colour</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoBloc light end plates (Set 2 units)</td>
<td>green</td>
<td>402303</td>
</tr>
</tbody>
</table>
Applications and loads

- **12 tons**
  - min. 800 mm (2' 7.5")
  - 2500 mm (8' 2.4")
  - EcoBloc light

- **40 tons / HS-20**
  - min. 800 mm (2' 7.5")
  - 5000 mm (16' 4.8")
  - EcoBloc max

- **60 tons / HS-25**
  - min. 800 mm (2' 7.5")
  - 5000 mm (16' 4.8")
  - EcoBloc Inspect flex

Otto Graf GmbH
### Infiltration module EcoBloc Inspect flex EcoBloc maxx EcoBloc light

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

- Inspectable •
- High pressure jetting possible

### Load

<table>
<thead>
<tr>
<th>Load</th>
<th>Short-term max. 100 kN/m²</th>
<th>Long-term max. 59 kN/m²</th>
<th>max. 75 kN/m²</th>
<th>max. 35 kN/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without traffic load</td>
<td>min. earth covering 250 mm (9.8&quot;)</td>
<td>max. earth covering 2750 mm (9&quot;)</td>
<td>max. installation depth 5000 mm (16' 4.8&quot;)</td>
<td>max. number of layers 14</td>
</tr>
<tr>
<td>Vehicle</td>
<td>min. earth covering 250 mm (9.8&quot;)</td>
<td>max. earth covering 2750 mm (9&quot;)</td>
<td>max. installation depth 5000 mm (16' 4.8&quot;)</td>
<td>max. number of layers 14</td>
</tr>
<tr>
<td>Lorry 12</td>
<td>min. earth covering 500 mm (1' 7.7&quot;)</td>
<td>max. earth covering 2750 mm (9&quot;)</td>
<td>max. installation depth 5000 mm (16' 4.8&quot;)</td>
<td>max. number of layers 13</td>
</tr>
<tr>
<td>Lorry 30</td>
<td>min. earth covering 500 mm (1' 7.7&quot;)</td>
<td>max. earth covering 2500 mm (8' 2.4&quot;)</td>
<td>max. installation depth 5000 mm (16' 4.8&quot;)</td>
<td>max. number of layers 13</td>
</tr>
<tr>
<td>Lorry 40/HS-20</td>
<td>min. earth covering 500 mm (1' 7.7&quot;)</td>
<td>max. earth covering 2250 mm (7' 4.5&quot;)</td>
<td>max. installation depth 5000 mm (16' 4.8&quot;)</td>
<td>max. number of layers 13</td>
</tr>
<tr>
<td>Lorry 60/HS-25</td>
<td>min. earth covering 800 mm (2' 7.5&quot;)</td>
<td>max. earth covering 2250 mm (7' 4.5&quot;)</td>
<td>max. installation depth 5000 mm (16' 4.8&quot;)</td>
<td>max. number of layers 13</td>
</tr>
</tbody>
</table>

### Connections

| DN 100 (4")      | • | • | • |
| DN 150 (6")      | • | • | • |
| DN 200 (8")      | • | • | • |
| DN 250 (10")     | • | • | • |
| DN 300 (12")     | • | • | • |
| DN 400 (16")     | • | • | • |
| DN 500 (20")     | • | • | • |

### Measurements

<table>
<thead>
<tr>
<th>Length</th>
<th>800 mm (2' 7.5&quot;)</th>
<th>800 mm (2' 7.5&quot;)</th>
<th>800 mm (2' 7.5&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>800 mm (2' 7.5&quot;)</td>
<td>800 mm (2' 7.5&quot;)</td>
<td>800 mm (2' 7.5&quot;)</td>
</tr>
<tr>
<td>Height</td>
<td>320 mm (12.6&quot;)</td>
<td>350 mm (13.8&quot;)</td>
<td>350 mm (13.8&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>8 kg (17.6 lbs)</td>
<td>9 kg (19.8 lbs)</td>
<td>7 kg (15.4 lbs)</td>
</tr>
</tbody>
</table>

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)
Vario 800 flex shaft system

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.

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**

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### 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 (60.7 US gal.)</td>
<td>800 mm (2’ 7.5”)</td>
<td>800 mm (2’ 7.5”)</td>
<td>355 mm (1’ 2”)</td>
<td>16 kg (35.3 lbs)</td>
<td>grey</td>
<td>450050</td>
</tr>
</tbody>
</table>

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### 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 (113.5 US gal.)</td>
<td>800 mm (2’ 7.5”)</td>
<td>800 mm (2’ 7.5”)</td>
<td>660 mm (2’ 2”)</td>
<td>27 kg (59.5 lbs)</td>
<td>grey</td>
<td>450051</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item Description</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>

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**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.
Accessories

Shaft components

Infiltration filter strainer DN 600 (24”)
Made entirely from stainless steel, mesh width 0.75 mm (0.03”)  
Order no. 340523

Infiltration inlet module DN 600 (24”)
Incl. profile seal for telescopic dome shaft; DN 150 (6“)/ DN 200 (8“)/ DN 250 (10“)/ DN 300 (12“) connections  
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 1.0 l (0.26 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

Cover and compensating ring to be provided on site
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.