



GRASPOINTNER
Sustainable innovation.



The best things
are made from
the same mould.

BG-FILCOTEN[®]
one urban

The monolithic
drainage system

BG-FILCOTEN® When opposites,

FILCOTEN® HPC (High Performance Concrete) is a material that unites outstanding technical properties with ecological sustainability. The optimised high-density structure of HPC makes it possible to construct highly stable lightweight drainage channels – but it's the idea behind it that makes it unique.

Unique concept, revolutionary results.

Our engineers wanted to create something which combines two extreme opposites: maximum performance with minimal environmental impact.

Maximum performance, minimal environmental impact.

After intensive development, they finally achieved their goal. FILCOTEN® HPC embodies these opposites, making it unique in the marketplace.



Minimal weight

- FILCOTEN® HPC enables a lightweight construction
- quick and easy to install
- Dimensionally stable, robust concrete elements



Maximum robustness

- Unsurpassed stability and durability
- High pressure resistance clearly exceeding the requirements per EN 1433 for concrete channels



Resistant to extreme temperatures and UV light

- Maximum resistance to frost and de-icing salt
- UV resistant



Fireproof

- Non-combustible building material – Class A1
- Therefore emits no toxic smoke



Perfect hold: in the concrete bed

- Ideal expansion coefficient, identical to that of the surrounding concrete



High drainage performance

- Low water absorption and penetration
- Smooth channel surface for high drainage performance and optimal self-cleaning effect



attract great things.

Sustainability



Verified Life Cycle Assessment

- ecological transparency under ISO 14040/14044 and EN 15804
- ideal for sustainable construction projects



Sustainable production

- Manufactured with 100 % green power
- Approx. 17,56 % from in-house photovoltaic plant
- Resource-efficient manufacturing process



End-to-end resource conservation

- 100 % recyclable, certified
- Quality class U-A (certified by the Bautechnische Versuchs- und Forschungsanstalt Salzburg (bvfs).



Certified for sustainability and low emissions

- Certified environmental and energy management under ISO 14001 or 50001 at the location of Oberwang / AT
- Certified biologically sound construction material that meets the stringent testing criteria of the IBR, the Institute for Biologically Sound Construction, for heavy metals, VOCs, biocides and radioactivity, styrene free ¹⁾
- Certified ²⁾ in accordance with KIWA BRL 5070





Proven sustainability that can be **seen** & leaves a lasting impression

Today, many companies claim sustainability credentials, but the key question is: how much of this environmental protection is just a green facade?

Full transparency – nature deserves it.

With our BG-FILCOTEN® products, we are following a unique path of total transparency and have subjected the system to a rigorous, independent life cycle analysis ¹⁾. This takes the form of a **Life Cycle Assessment** in line with ISO 14040 & ISO 14044 or EN 15804:A2 and uses recognised indicators such as the Global Warming Potential (GWP), Cumulative Energy Expenditure (CEE) and Abiotic Resource Use (ARU).

We play with our cards on the table – and even let others look over our shoulder.

To confirm our transparent data, the product Life Cycle Assessment for phases A1 – A4 was subsequently verified by external experts ²⁾ in line with EN 15804:A2.



Analysed and verified by:

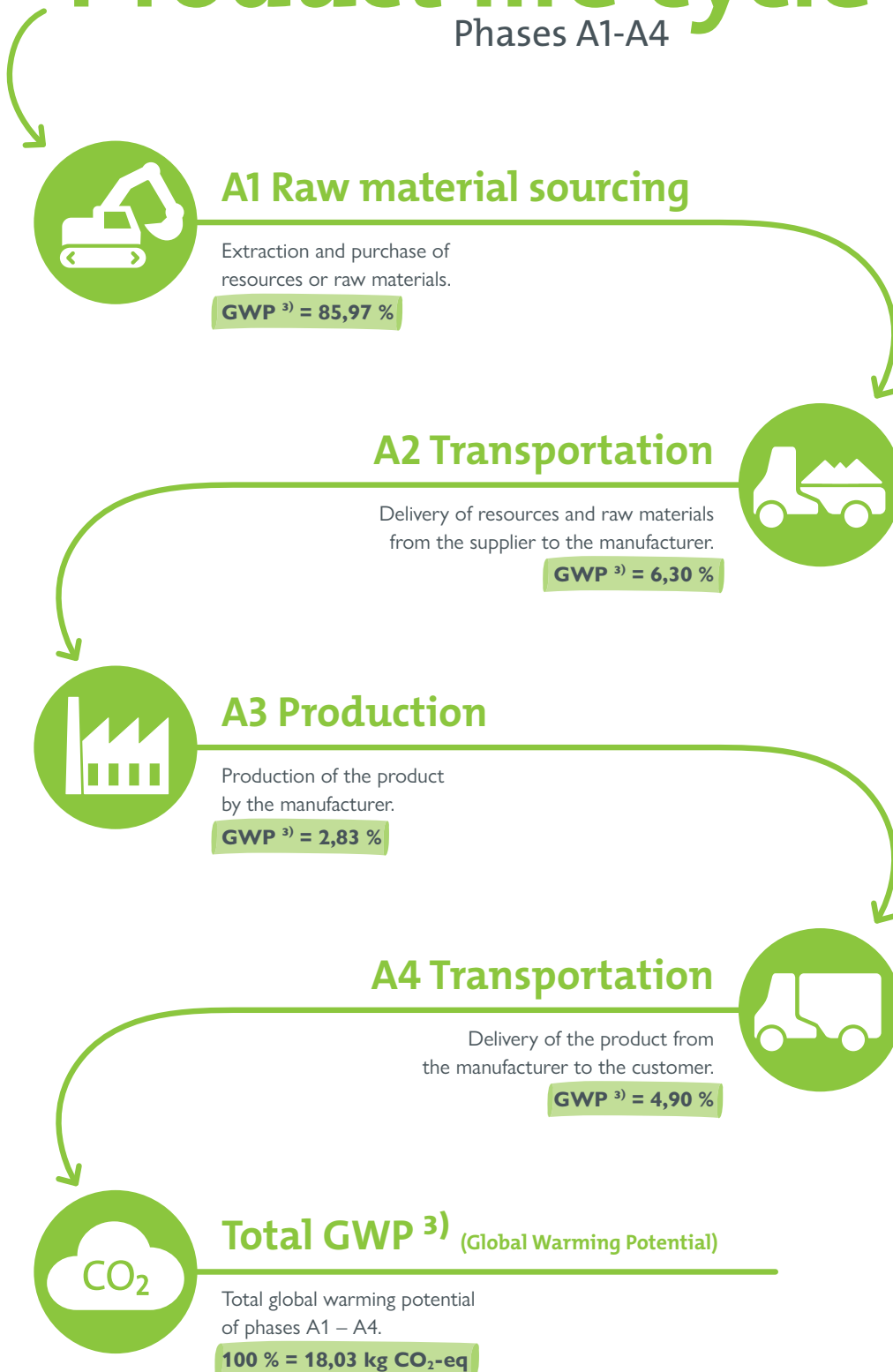
¹⁾ ECODESIGN company – www.ecodesign-company.com

¹⁺²⁾ TerraNEXT – www.terranext.io (verification Q4/2024 completed)



Product life cycle

Phases A1-A4



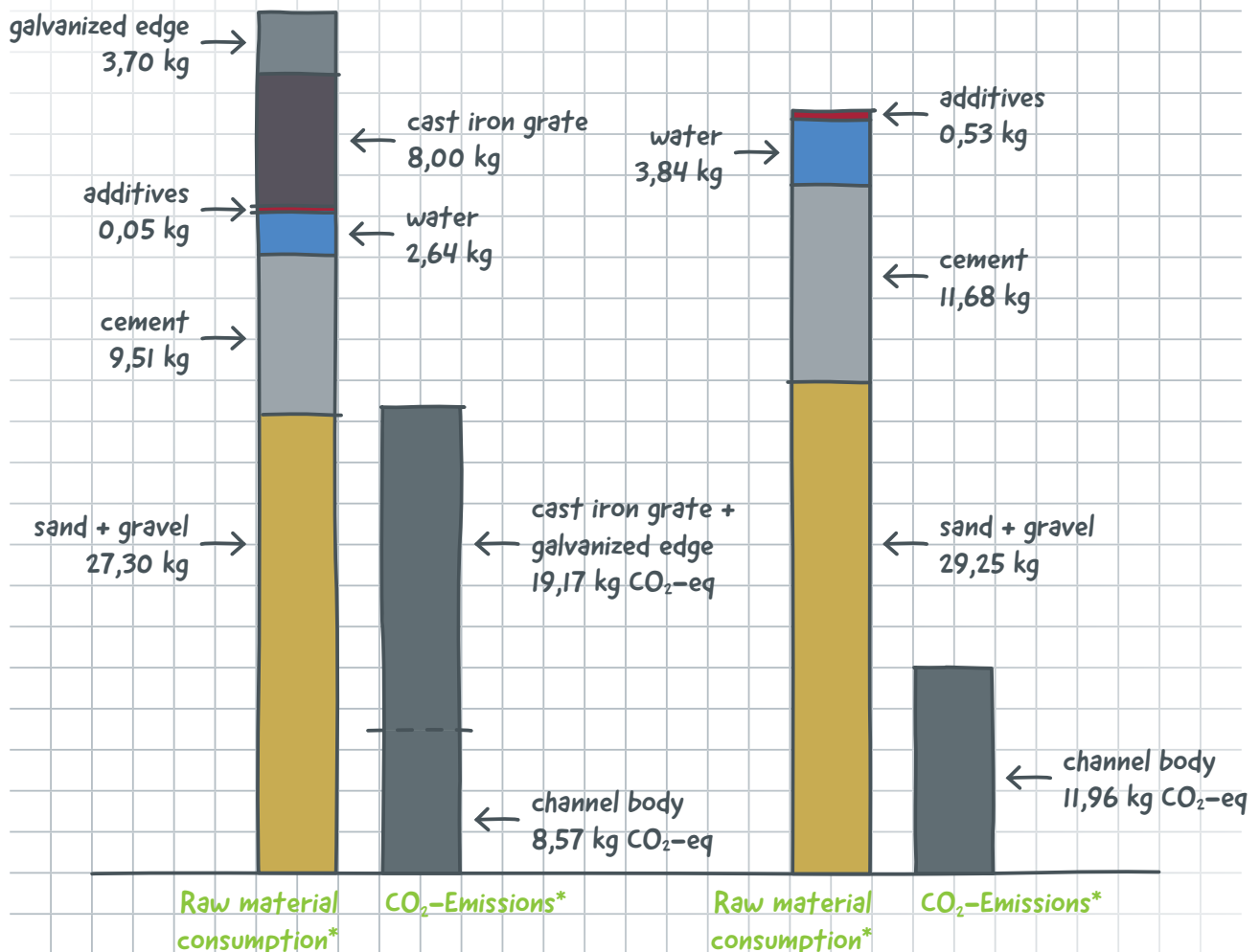
³⁾ The GWP values are based on a meter of the BG-FILCOTEN® one urban NW 100.

Less raw material consumption less CO₂-Emissions.

Because sustainability and climate protection start with the material...

Comparing FILCOTEN® HPC with conventional concrete shows how resources in construction projects can be saved while significantly reducing CO₂ emissions.

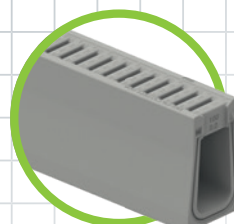
Every meter BG-FILCOTEN® one urban ¹⁾ saves 5,90 kg of raw materials and 15,77 kg CO₂-eq compared to BG-CLASSIC BGU-Z V ²⁾.




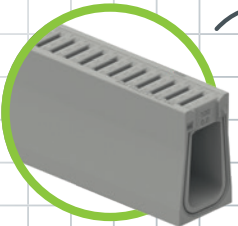
²⁾ BG-CLASSIC
BGU-Z V, NW 100



¹⁾ BG-FILCOTEN®
one urban, NW 100



Simply effective and sustainable: The FILCOTEN® HPC formula ...

	NW 100 D 400	Global warming potential A1 – A4	Total global warming potential for A1 – A4 500 m of channel run****
	BG-CLASSIC BGU-Z V	33,20 kg CO ₂ -eq**	16.601 kg CO ₂ -eq**
	BG-FILCOTEN® one urban	18,03 kg CO ₂ -eq**	- 9.015 kg CO ₂ -eq**
			<u><u>= 7.586 kg CO₂-eq</u></u>

A saving of **7.586 kg CO₂** equivalent equals...



..... 30.515 km

...approx. 30.515 km journey of a diesel passenger car (248,6 g/km CO₂-eq)***



..... 7.048 km

...approx. 7.048 km journey of a 40 tonne semitrailer truck (1.076,4 g/km CO₂-eq)***

*) Per running metre.

**) Value basis LCA environmental indicators according to ISO 14040 and ISO 14044 modules A1-A4 in accordance with EN 15804:A2, BG-Graspointner LCA report 2018, LCA calculator 2023, provided by ECODESIGN company – www.ecodesign-company.com

***) Source: Emission figures of the Austrian Federal Environment Agency, database 2021. Figures used consider total emissions, including statistically average occupancy rates.

****) Assuming a distance of 500 km to the construction site.

Monolithic, versatile, good.



BG-FILCOTEN[®] one urban

The BG-FILCOTEN[®] one family has a new addition. And, just like any other family, the BG-FILCOTEN[®] one urban is a totally novel, new arrival on the market. With manifold innovations and a D 400 load class all rolled into one, it offers up a ton of useful features – making it the perfect all-rounder for urban spaces.

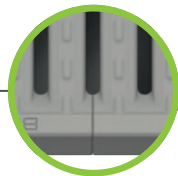
Overview of applications

Roads, inner cities, pedestrian zones, cycle paths, gardening and landscaping, car parks, sports complexes.

Class D 400

Inflow opening in the channel joint

Inlet opening in the joint with standard slot width for ideal water drainage

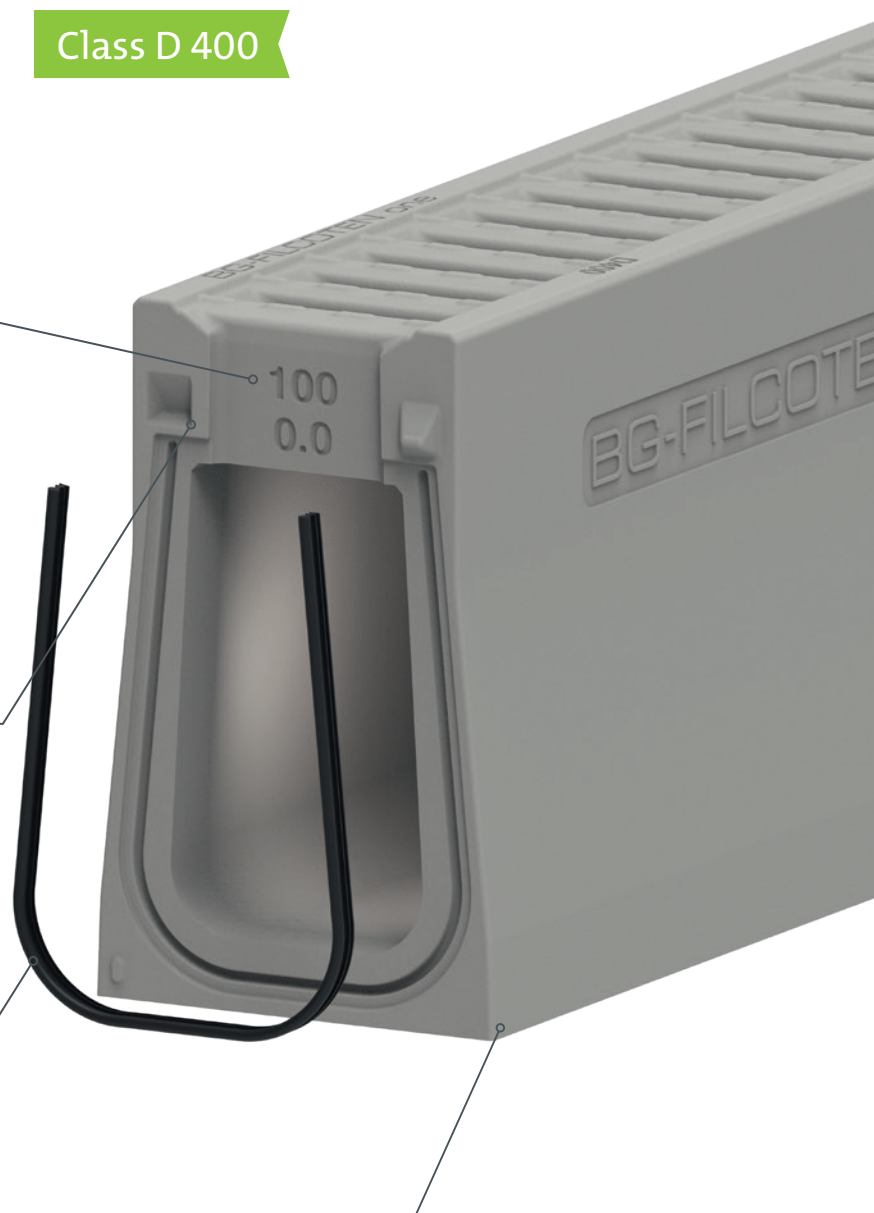


Tenon system for non-directional installation

- Non-directional channel joint for easy and fast installation
- Interlocking tenon system for snug, truly-aligned positioning of elements
- Predefined distance in the joint for optimum function of the insertable sealing profile

Easy-to-handle sealing system¹⁾

- Preformed groove on the front/end sides for easy insertion of the sealing profile
- Permanently sealed joints, guided by the tenon system
- Requirements according to EN 1433



High-performance

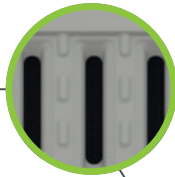
High, large-capacity channel body for enhanced drainage performance



GRASPOINTNER
Sustainable innovation.

Cyclist- and pedestrian-friendly

- Grippy, anti-skid pimple surface for pedestrian zones
- Optimised slot widths for safe driving and walking: NW 100 = 10 mm, NW 150 = 12 mm, NW 200 = 15 mm
- Slot widths according to EN 1433



Integrates fully with the surrounding environment

Surface in characteristic concrete colour

Optimised inlet surface

Recessed inflow openings and pimple surface for enhanced water collection performance and winter road services

Monolithic structure

- Element made entirely of FILCOTEN® HPC
- Extremely robust and wear resistant
- Ideal for dynamic exposure in road traffic

Verified LCA (Life Cycle Assessment)

- Low greenhouse gas emission levels
- Manufactured with 100 % green electricity
- Resource-efficient manufacturing process

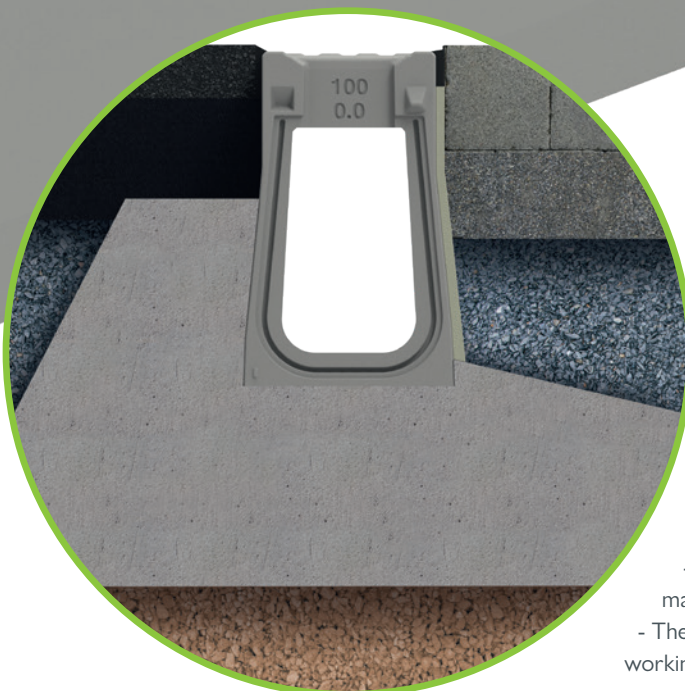
Multiple certifications

- 100 % recyclable, certified quality class U-A⁴⁾
- Certified organic material that meets the strict testing criteria of the Institute for Biologically Sound Construction Rosenheim (IBR) with regard to heavy metals, VOCs, biocides and radioactivity, styrene-free ²⁾
- Certified ³⁾ in acc. with KIWA BRL 5070



Re-designed, multiple benefits: The trapezoidal shape

- Enhanced anchoring performance in levelling concrete
- Optimised structural safety; can be installed as Type I – with so-called Type I installation, no concrete casings are required
- Wide channel foot for solid positioning of the gutter, even during installation
- Due to its very construction, the required grouting joint automatically materialises when installing in curb stone areas or upright areas
- The upper 90 mm of the channel wall are vertical in order to enable ideal working with pavement covering



¹⁾ Optional sealing profile.

²⁾ No use of synthetic resins.

³⁾ KIWA certificate number: NL BSB® K43940.

⁴⁾ Quality class U-A (certified by the experimental and research Institute for construction Salzburg)

Well thought-out elements make an outstanding system.

What is a good drainage system all about? Quite simply, it must be more than the sum of its parts. When developing BG-FILCOTEN® one urban, from the start, we always focused on the entire system, not just on the individual single parts.

Class D 400

Intelligent solutions for your requirements

We achieved a great number of intelligent solutions for more efficiency, performance and, above all, easy and safe handling – from the first installation, to the daily use through to the routine maintenance.

One grating – one design

- Continuation of the slotted grating design for the cast iron grating
 - Edge and grating, cathodic dip-coated
 - fix-locking as well as 4 point bolted possible
 - Class D 400

Sump unit, one part

- Suspended silt bucket for sump unit
- Total length 500 mm
- closed base
- Outlet NW 100 / 150 with DN 150; NW 200 with DN 200 (pipe coupling)
- Left/right rotation
- Maintenance access in the style of the channel run

Outlet element

- Outlet unit NW 100 with DN 100; NW 150 with DN 150 and NW 200 available with DN 200 opening.
- The drainpipe can be serviced/cleaned through the removable grating.

Revision element

- Maintenance access in the style of the channel run
- T-piece with knock-out section (optional)
- Total length 1000 mm
- Closed base



Sump unit upper part

- Simple cleaning of the outlet unit
- Large outlet opening in the channel bottom
- Suspended silt bucket for sump unit
- T-piece with knock-out section (optional)
- Total length 1000 mm

Front cap

- Interlocking
- Closure of the channel run

End cap with outlet

- Interlocking
- Closure of the run with socket (pipe coupling)
NW 100: DN 100; NW 150: DN 150;
NW 200: DN 200

Basic channel

- NW 100, NW 150 or NW 200
- Standard construction height no 0
- Total length 1000 mm

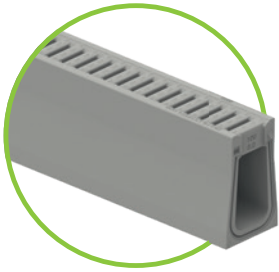
Sump unit, bottom part

- Socket (pipe coupling)
NW 100 / 150: DN 150;
NW 200: DN 200
- Left/right rotation

Sustainability in action: FILCOTEN® HPC (High Performance Concrete)

- Cement-bound, mineral material
- Extremely durable, stable and UV-resistant
- Extremely resistant to frost, de-icing salt, oil, gasoline
- 100 % recyclable, certified ¹⁾
- Certified environmental and energy management according to ISO 14001 or 50001 at the location of Oberwang/AT
- Tested by the IBR ²⁾ – safe in terms of sustainable building

¹⁾ according to the guidelines of the Austrian Construction Material Recycling Association. ²⁾ Institute of Baubiologie Rosenheim.



BG-FILCOTEN® one urban, NW 100

Monolithic channel made of FILCOTEN® HPC (High Performance Concrete) Class D 400

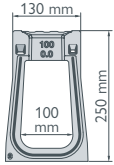
Item no.	Monolithic channel body D 400 – no slope	Class acc. to EN 1433	Weight	Pcs./Pallet
15110100	one urban NW 100 no. 0, Type I, L = 1000 mm, SW 10/70 mm	D 400	43,0 kg	15 pcs.

BG-FILCOTEN® one urban, NW 100: Inlet cross-section 195 cm²/m | Discharge cross-section 155 cm²/m

Accessories

for BG-FILCOTEN® one urban, NW 100

Item no.	Accessories	Class acc. to EN 1433	Weight
15110000	Corner element, variable, NW 100	D 400	36,3 kg
15110180	Maintenance unit NW 100, no. 0, L = 1000 mm incl. ductile iron grating ¹⁾	D 400	41,2 kg
15110190	Outlet element NW 101 no. 0, L = 1000 mm incl. ductile iron grating, with DN 100 drill hole ¹⁾	D 400	40,8 kg
15110170	Sump unit, one-piece, NW 100 no. 0, L = 500 mm incl. ductile iron grating, silt bucket, DN 150 outlet ¹⁾	D 400	43,8 kg
15110175	Sump unit upper section NW 101, no. 0, L = 1000 mm incl. ductile iron grating ¹⁾	D 400	39,2 kg
19110095	Sump unit bottom section, NW 101, DN 150 outlet		30,0 kg
19110100	Front cap, NW 100, no. 0, without outlet		1,8 kg
19110110	End cap NW 100, no. 0, with DN 100 outlet		1,4 kg
19110900	Lifting hook (consisting of 2 pcs.) NW 100, painted blue		0,4 kg
19000707	Sealing profile one urban, NW 100		0,1 kg
32103	pro bolting material for ductile iron gratings class D (1 pc. bolt, 1 pc. nut – 4 pcs. required per m)		
32109	pro bolting material stainless steel, for ductile iron grating class D (1 pc. bolt, 1 pc. nut – 4 pcs. required per m)		



Maintenance unit or outlet element incl. ductile iron grating



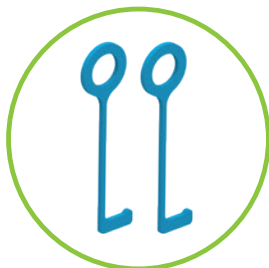
Sump unit upper and lower sections DN 150



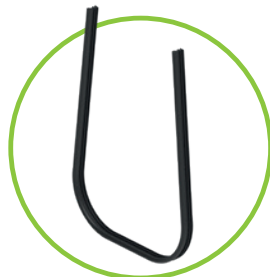
Sump unit, one-piece, incl. ductile iron grating, silt bucket, outlet DN 150



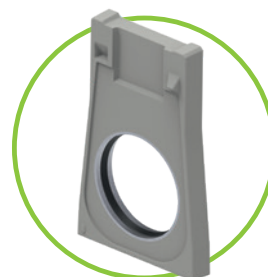
Corner element, variable



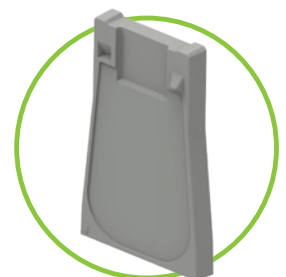
Lifting hook, painted blue for NW 100, 2 pcs. per set



Is a joint sealing profile required? Please say so with your order.

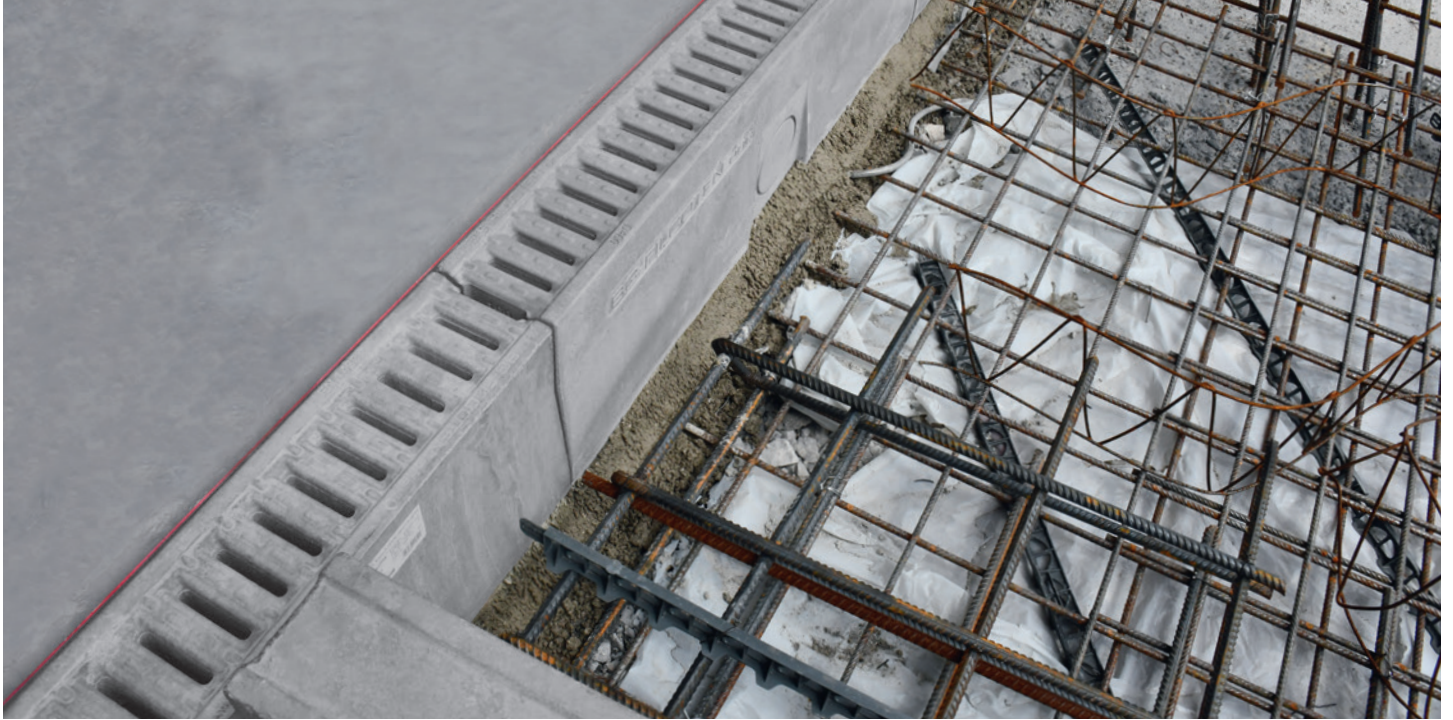


End cap with outlet



Front cap closed

References



When environmental protection is part of the DNA ...

Sustainability

is one of the most important components of our corporate culture. This becomes obvious from our materials, manufacturing processes and energy sources. After all, we are a member of the **Climate Alliance Austria**, the country's largest climate protection network, for a reason.

Our view of entrepreneurship is not to look at the profit alone.

The company's success and development will always be closely connected to its responsibility for the community – and for the environment. After all, what good is a huge profit if you can't bare to look at yourself in the mirror at the end of the day?

Lived sustainability in all its facets.

For this reason, the sustainable use of our environment is a central element of our corporate culture. BG-Graspointner attaches great importance to transparency.

Certified environmentally friendly production.

In the production process, we focus on maximum environmental protection, whether in the selection of raw materials or in the avoidance of unnecessary waste. With this in mind, we have implemented a certified environmental and energy management system in accordance with ISO 14001 and 50001 at our location in Oberwang, Austria.

High-performance products: with a view to protecting people and nature.

We develop our products with the aim of making them as efficient as possible. And by efficiency, we also understand that these products protect people and the environment as much as possible.

FILCOTEN® HPC as an example: environmental compatibility guaranteed.

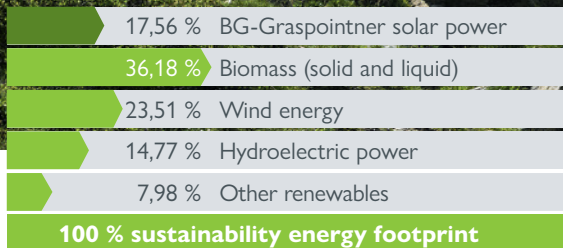
Our most innovative material, FILCOTEN® HPC, is tested for harmful substances¹⁾ – guaranteed environmentally compatible and IBR-certified, KIWA BRL 5070 certified, 100% recyclable, and the economical use of raw materials make FILCOTEN® HPC unique in terms of its environmental performance.



¹⁾ No use of synthetic resins.
²⁾ At the location of Oberwang/AT.



BG green energy ²⁾



■ Yield from own PV-system in 2022

■ Data external electricity mix 2022

Sustainable to the end: We use recyclable raw materials.

Most of our products are made of mineral raw materials or metal. They are therefore 100% recyclable and can be assigned to quality class U-A according to the certification by the Salzburg Institute for Construction Engineering Research (bvfs), a state accredited test and research facility for building constructions and building materials.

Clean energy for clean products.

We rely on the use of green energy. With our BG-FILCOTEN® channels we even use 100% renewable energies and completely renounce fossil fuels.



General notes

The following installation guidelines and installation examples are intended for standard applications. The load class and the installation location according to EN 1433 have to be adapted to the location conditions from the planner. The generally-recognised technical rules and regulations must be observed during installation. In special cases, contact the BG applications engineering department.

BG-FILCOTEN® one urban

1. FILCOTEN® HPC channels are to be installed on a concrete foundation in line with EN 206-1 or in permeable concrete in line with RVS 08.18.01. A mortar bed (at least 2 cm thick) is imperative if the internal bottom surface of the channel is cured. Depending on the structural requirements, support concrete wedges on each side of the channel or concrete stretchers with steel reinforcement are required – see table and sectional views for details.

2. Start setting up the channel run at the outlet unit, ensuring that the lower part of the outlet unit is at the right height and position to connect with the sewer pipe and the channel run. If there are several outlet units in one channel run, the lower parts of the outlet units must be installed particularly carefully at the right height and position.

3. The two front sides of a downstream channel element can be connected to the upstream element as the tongue/groove/tenon system allows for any flow direction. As a result, there is no flow direction arrow on the channels.

4. We recommend using the plug-in sealing profile on the channel element butt joints. The channel joints can also be sealed with conventional sealing materials (e.g. 1-component PU-based sealing materials), the BG application-engineering department will provide you with a description of the materials and determine the quantities required.

5. Before the surface layer is laid, the channel run should be protected to avoid concrete spills on the surface, e.g. with protective plastic sheeting. Avoid damaging the channels while compacting the superstructure and the pavement (asphalt, pavement, concrete).

6. In the event of horizontal forces (e.g. areas of concrete, slopes, etc.) it is necessary to provide a sufficiently sized expansion joint in the area of the carriageway edge at a distance of 30-150 cm to channel run. Care must be taken to ensure that no forces whatsoever that may result from a temperature expansion (concrete and/or paved surfaces) can impact the channel walls. Expansion joints must be provided and installed accordingly. The same applies to cement-stabilised base layers in the superstructure. The selected joint fillers must be made of a suitable material. Expansion joints running transversely to the channel run are to be arranged in the adjacent concrete surfaces so that they run through a channel joint.

7. To prevent uncontrolled stress cracks in a concrete stretcher along a channel run, preformed crack and/or expansion joints must be added at regular intervals, according to recognised technical rules or the specification of a static calculation. These joints should be added at right angles (along the channel section) to the channel element joints. The number of joints and their spacing also depend, for example, on the concrete quality used as well as the ambient temperatures that

exist when pouring the concrete, and also on the concrete curing, and should be carried out accordingly.

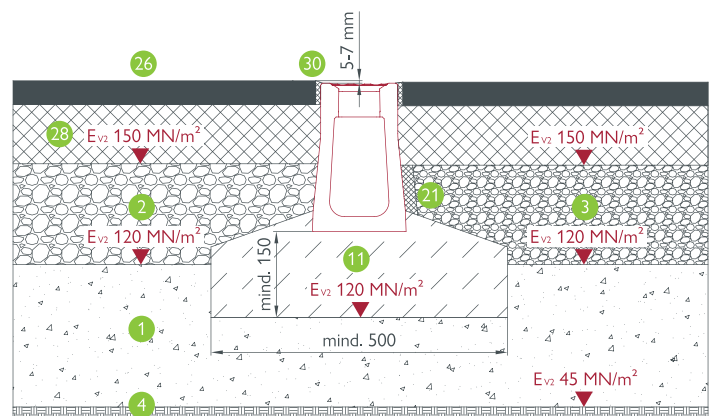
8. Paved surfaces with a potential to be subject to shear forces must be force-locked to the backrest. This can be accomplished by setting the first three rows of paving slabs (along the channel run) in a mortar bed. The joints must be backfilled with mineral materials. Shear forces from the paving must not act directly on the channel walls (e.g. thermal expansion, braking forces, etc.).

The respective technical guidelines for the creation of paved surfaces, in bound or unbound construction, must be observed accordingly.

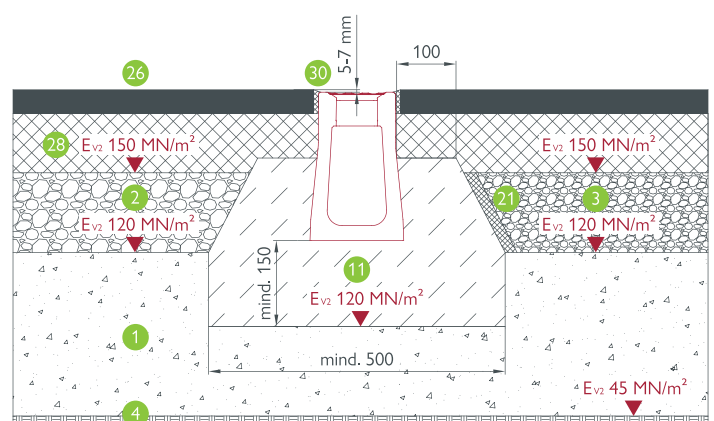
9. All adjacent covers should permanently run 3 – 5 mm higher should always be higher than the surface of the channel/grating to avoid mechanical damage (e.g. snow clearing) and to guarantee the water drainage.

10. The same installation guidelines apply accordingly to inspection and sump units (incl. upper/lower parts).

11. The channel system must be inspected at regular intervals (at least 1x per year) for contamination and its functioning, and cleaned if necessary, especially the sump unit with silt bucket.



BG-FILCOTEN® one urban, NW 100: Asphalt – Asphalt, cl. A – C



BG-FILCOTEN® one urban, NW 100: Asphalt – Asphalt, cl. A – D, urban area, medium wheel loads



GRASPOINTNER
Sustainable innovation.

BG-Graspointner Inc.
642 De Courcelle, Suite 206
Montreal (QC), H4C 3C5
Canada

Phone: +1 514 932 5445

E-mail: sales.ca@bg-graspointner.com

Web: www.bg-graspointner.com



Your partner for BG-Graspointner drainage systems.