



GRASPOINTNER
Sustainable innovation



One element,
all the strengths.

 **FILCOTEN**[®]
one

The monolithic
drainage system

The **first** of its kind – and the most **sustainable**.



The simplest ideas are often the best. The new, revolutionary FILCOTEN[®] one is a good example. Channel and grating cast in one piece and for the first time made from the most innovative material on the market: FILCOTEN[®] HPC (High Performance Concrete).

Made from one piece, brilliantly simple.

We have invested a lot of work and it has paid off: Many hours of construction, design, planning and testing brought a unique product that combines a great number of exceptional properties. Surprisingly, the first of its kind.

Monolithic structure, environmentally-friendly in many ways.

FILCOTEN[®] HPC combines its excellent properties with sustainability. Therefore, the new FILCOTEN[®] one is in a class of its own when it comes to environmental friendliness. 100% recyclability, certified absence of harmful substances and extremely low greenhouse gas emission levels are beneficial for both humans and the environment.

Inflow opening in the channel joint

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



Optimized inflow openings

- slot widths according to EN 1433
- innovative S-design for efficient rainwater inflow

Cyclist- and pedestrian-friendly

- counter-rotating radial arrangement of the inflow openings
- safe to drive and walk over thanks to the S-design of the double slots

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)¹⁾

- low greenhouse gas emission levels
- produced using exclusively green power
- resource-efficient production process



Tongue/groove/tenon system for installation in either direction

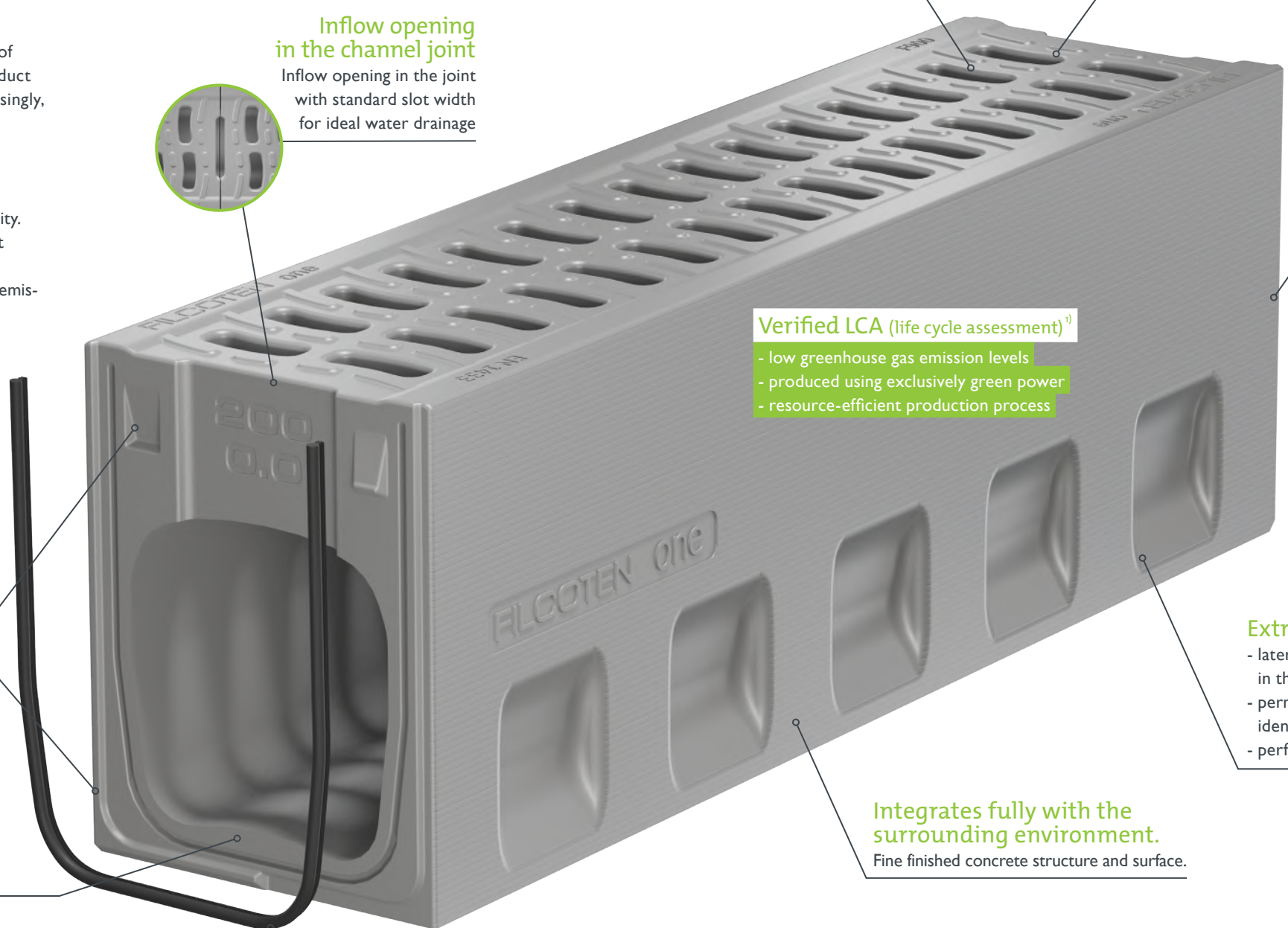
- non-directional channel joint for easy and fast installation
- interlocking of the tongue/groove/tenon system for accurate, aligned setting of the elements
- predefined distance in the joint for optimum function of the insertable sealing profile

Highly efficient flume

- channel cross-section with innovative corrugated W-profile design for optimum hydraulic performance on partial and complete filling
- high self-cleaning effect of the W-profile causing turbulences in the inflowing water

Easy-to-handle sealing system

- preformed groove on the front/end sides for easy insertion of the sealing profile
- permanent joint sealing through tight fit of the tongue/groove/tenon system
- requirements according to EN 1433



Extremely durable hold in the concrete bed

- lateral anchoring pockets for maximum anchorage in the concrete bed
- permanent fit in the foundation thanks to identical linear expansion coefficient
- perfect connection between HPC and concrete

Integrates fully with the surrounding environment.

Fine finished concrete structure and surface.

One solution for all kinds of applications.

FILCOTEN[®] one is the first choice, wherever heavy dynamic loads may occur. The reason is obvious: Thanks to its monolithic structure and the sophisticated design, it combines an unprecedented number of benefits in a one-channel system.

An overview of applications:

- industrial spaces
- logistic centers
- airports
- highway central lane
- temporary highway crossings due to construction
- railway crossings
- roundabouts
- harbours
- parking facilities
- asphalt surfaces



¹⁾According to ISO 14040, ISO 14044, EN 15804 | ²⁾No use of synthetic resins

Well thought-out elements make an outstanding system.

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

Intelligent solutions for your requirements

We achieved a great number of intelligent solutions for more efficiency and better performance. Primarily, easy and safe handling from the initial installation to daily use and routine maintenance.

One grating – one design

- consistent continuation of the S-design also for the cast iron grating
- edge and grating, cathodic dip-coated
- 4-point bolting
- class F900



Front/end cap

- with tongue/groove/tenon system
- closure of front/end sides of the channel run

End cap with outlet

- with tongue/groove/tenon system
- closure of run with socket DN 150 / 6", DN 200 / 8"

Easy access

- simple cleaning of the outlet unit
- large drain hole in channel bottom for attaching the sediment bucket
- total length 1,000 mm / 39.37"

Adapter cap

- for stepped slope installation
- from no. 0 to 40-0 depth

Retention & stepped slope

- 40-0 depth (20 cm / 7.87" deeper than no. 0)
- for higher hydraulic requirements
- longer channel runs possible up to one outlet point
- for retention (additional volume: 40 l/m)

Class D400 – F900

Basic channel NW200 / 8", NW150 / 6"

- standard construction depth no 0
- total length of element 1,000 mm / 39.37"

Outlet unit

- socket DN 150 / 6", DN 200 / 8"
- tight connection of pipework

Revision element

- maintenance access in the style of the channel run
- cast iron grating in S-design, 4-point bolting
- total length of element 1,000 mm / 39.37"

Lived sustainability: 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, certified¹⁾
- certified environmental and energy management according to ISO 14001 and 50001 at the location of Oberwang/AT
- tested by the IBR²⁾ – safe in terms of building biology

¹⁾in accordance with the guidelines of the Austrian Construction Materials Recycling Association | ²⁾Institute for Building Biology Rosenheim

Works LEFT OR RIGHT...

Tongue/groove/tenon system for easy installation.

Developing innovative products means always thinking one step ahead to offer benefits to customers even in the slightest details. This includes the question: how can the installation of a drainage channel be realized easier?

The efficient way is always better.

Our response: an innovative tongue/groove/tenon system for direction-independent and considerably easier and faster installation of FILCOTEN[®] one. The new smart sealing system* prevents water leakage between the channel elements and guarantees uncomplicated handling.

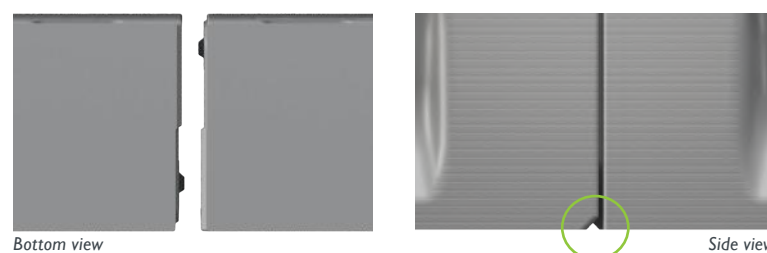
Innovation for increased precision: Wedge-shaped connectors enable precise connection of the channel elements and keep them at the correct distance for the sealing profile to work optimally.



Direction-independent installation: The design of the tongue/groove/tenon system at the face end ensures that the channel elements match in any direction of installation. Installation becomes easier and more efficient.



Precise fitting: Thanks to the half-side tongue/groove/tenon system, the channels are exactly aligned in a longitudinal direction when connected, without any lateral shifting. At the same time, the chamfered base offers sufficient "space" for mortar installation.

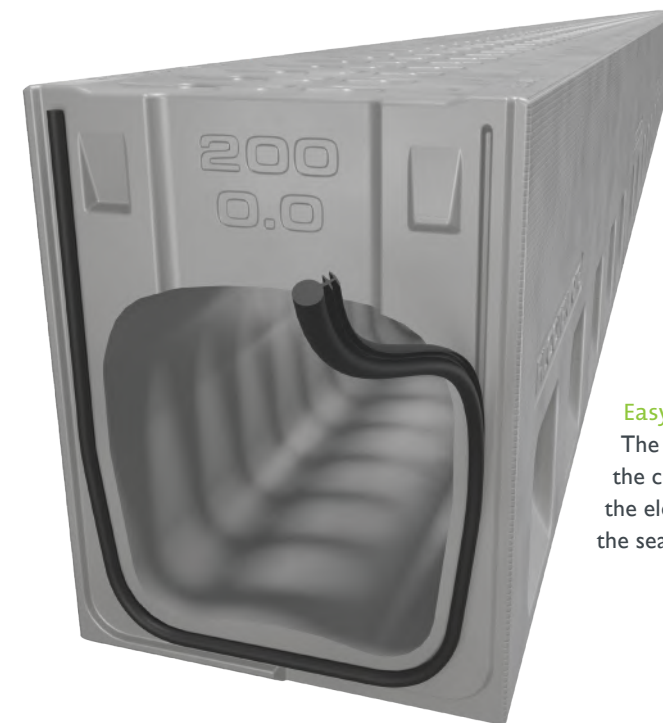


Bottom view

Side view

... and seals TIGHTLY.

Smart sealing system.

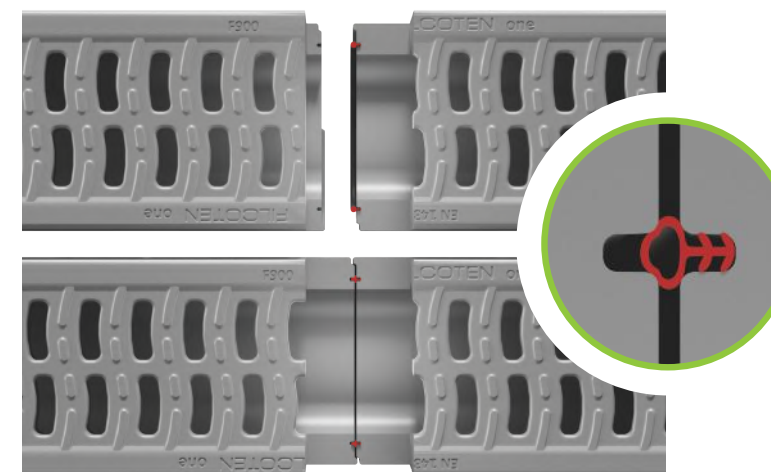


Easy handling included:

The sealing is simply inserted into the circular groove at the face side of the element. Moulded lamellas stop the sealing slipping out of the groove.

Fitting on both face sides for outstanding sealing performance:

When fitting a drainage channel, only one sealing profile is required per drainage joint, and is pressed into the free groove of the facing element thanks to the precisely fitting tongue/groove/tenon system. This way, the joint is sealed tightly.



*The sealing system is optional.



Water flow at any time.

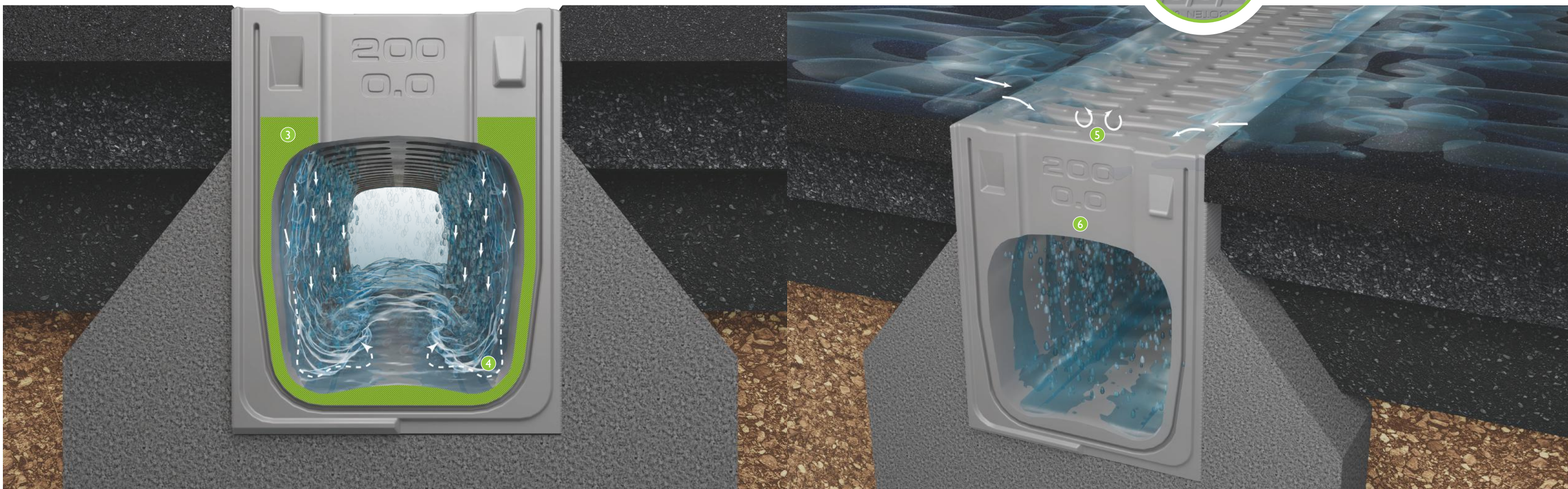
Good designs always serve a purpose and the purpose of a drainage channel is very clear: The surface water is to be drained as efficiently as possible. Based on this criterion, the design of FILCOTEN[®]one is simply fantastic.

1 Perfectly dimensioned inlet openings

- large enough to enable a high rainwater inflow for quick draining
- at the same time, small enough to prevent the entry of coarse dirt and hold it back on the top surface of the drainage system

2 Structured surface for more grip

- grating surface has anti-slip structure
- maximum grip when driven over longitudinally or diagonally



3 W-profile for any rainwater discharge

- light rain quantities are quickly drained in the two lateral W-chambers
- for stronger rain the high-capacity W-profile offers maximum hydraulic capacity and water spreading volume

4 Targeted turbulences ensure constant cleaning

- the chambers at the side of the W-profile ensure targeted turbulences of the rainwater
- these turbulences generate a constantly high self-cleaning effect
- even during light rain, thorough and efficient cleaning of the system is ensured

5 Innovative inlet openings with S-shaped design

- EN1433 compliant inlet opening precisely above the W-profile of the drainage base
- optimized inlet and minimized overflow of surface water thanks to grating surface with innovative S-shaped design

6 FEM-optimized design

- monolithic drainage system FEM-optimized F900
- structurally tailored design in every detail, e.g. strength and structure of the spans





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

Today, many companies claim sustainability credentials, but the key question is: How much is this backed up by hard facts behind the green facade?

Full transparency – nature deserves it.

With FILCOTEN® one, we are following a unique path of total transparency and have subjected the system to rigorous, independent environmental analysis¹⁾. That takes the form of a **Life Cycle Assessment** in line with ISO 14040, ISO 14044 and EN 15804 and using recognized indicators such as the Global Warming Potential (GWP), Cumulative Energy Expenditure (CEE), Abiotic Resource Use (ARU) or testing water usage.

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 experts²⁾ in line with EN 15804.



Non-renewable primary energy resources



Net use of fresh water



Global Warming Potential

Environmental indicators:

NW 150 no. 0	NW 150 no. 40-0	NW 200 no. 0	NW 200 no. 40-0	
178	251	229	300	MJ
4.09	5.77	5.25	6.97	l
24.2	34.2	31.1	40.5	kg CO ₂ -eq.

These data are related to the extraction of raw materials, their transport, the manufacturing of the product (A1-A3) and its distribution (A4) in line with EN 15804. Values per linear metre of FILCOTEN® one

Analysed and verified by:

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

²⁾ ESU-services GmbH – www.esu-services.ch



Sustainable in every respect,
 high-performance down to the last fibre,
 or simply FILCOTEN®.

BG green electricity:

As of 2018

51,33 %	Hydroelectric power
44,12 %	Biomass (solid & liquid)
2,11 %	Biogas
1,27 %	Wind power
1,14 %	Solar energy
0,03 %	Other green energy
100 %	Sustainable energy mix.

Sustainability and innovation are the central components of our company's culture. This can be seen from the materials, the manufacturing processes and the energy used. Thus, we are a member of Climate Alliance Austria: the largest municipal climate protection network in Austria.

FILCOTEN® HPC (High Performance Concrete) is not just a highly advanced material, but ultimately the result of all our efforts to create cutting-edge technology that is in harmony with nature.



Environmentally friendly production process.

We also focus on environmental protection in the production process. Whether it be in selecting raw materials or avoiding unnecessary waste. Consequently, we have implemented a certified environmental/energy management scheme in line with ISO 14001 and 50001 at our site in Oberwang, Austria.



Mineral raw material, recyclable and energy-efficient.

FILCOTEN® HPC is a mineral raw material that is 100% recyclable (certified by BPS GmbH, the Upper Austrian soil and construction materials test center) and free from resins and solvents. To manufacture it, we rely 100% on green electricity and it is nearly free from the use of resins and solvents.



Certified: non-toxic.

- meets the strict criteria of the Rosenheim Institute for Building Biology (IBR)
- does not harm people's health and the environment
- guaranteed to be ecologically safe as it is tested for biocides, solvents, VOC, heavy metals and radioactivity



¹⁾ No use of synthetic resins



Nominal width 150, 200 / 6", 8"

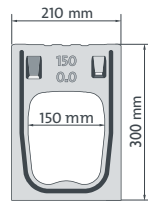


FILCOTEN[®] one, nominal width 150 mm / 6"

Monolithic channel made of FILCOTEN[®] HPC (High Performance Concrete) Class D400-F900

Item no.	Monolithic channel body up to cl. F - without slope	Weight
15015100	FILCOTEN one NW 150 / 6", no. 0, L = 1000 mm / 39.37" ¹⁾ , SW 23/52 mm / SW 0.9"/2.05"	76.6 kg / 167.55 lb
15015168	FILCOTEN one NW 150 / 6", no. 40-0, L = 1000 mm / 39.37" ¹⁾ , SW 23/52 mm / SW 0.9"/2.05"	107 kg / 235.89 lb

FILCOTEN one NW 150 / 6" : Inlet cross-section 370 cm²/m / 57.35 sq.in/m |
Cross-section area 150/0: 220 cm²/m / 34.1 sq.in/m | 150/40-0: 520 cm²/m / 80.6 sq.in/m

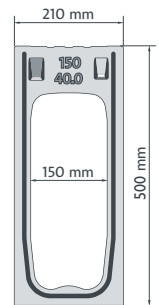


Accessories

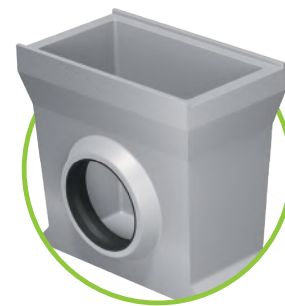
for FILCOTEN[®] one, nominal width 150 mm / 6"

Item no.	Accessories	Weight
15015180	Maintenance unit with ductile iron grating, no. 0, L = 1000 mm / 39.37" ¹⁾	83 kg / 182.98 lb
15015188	Maintenance unit with ductile iron grating, no. 40-0, L = 1000 mm / 39.37" ¹⁾	111 kg / 244.71 lb
30001	Additional charge for maintenance unit with outlet DN 150 / 6"	
15015170	Outlet unit upper part, with ductile iron grating, no. 0, L = 1000 mm / 39.37" ¹⁾	79 kg / 174.16 lb
15015178	Outlet unit upper part, with ductile iron grating, no. 40-0, L = 1000 mm / 39.37" ¹⁾	108 kg / 238.09 lb
19115095	Outlet unit lower part, outlet DN 150 / 6"	32.8 kg / 72.31 lb
22510	BG sediment bucket for sump unit, plastic	0,4 kg / 0.88 lb
19115100	Front /end cap, no. 0 , without outlet	7,2 kg / 15.87 lb
19115108	Front /end cap, no. 40-0, without outlet	11,4 kg / 25.13 lb
19115110	End cap with outlet, no. 0, outlet DN 150 / 6"	5,2 kg / 11.46 lb
19115118	End cap with outlet, no. 40-0, outlet DN 150 / 6"	10 kg / 22.04 lb
19115157	Adapter cap for stepped slope no. 0 / 40-0	9,1 kg / 20.06 lb
19115900	Lifting-hook (consisting of 2 pcs.) for FILCOTEN one NW 150 / 6" , painted green	1,9 kg / 4.19 lb
19000701	Profile for joint sealing, no. 0, L= 630 mm / 24.8" ²⁾	
19000702	Profile for joint sealing, no. 40-0, L= 1040 mm / 40.94" ²⁾	

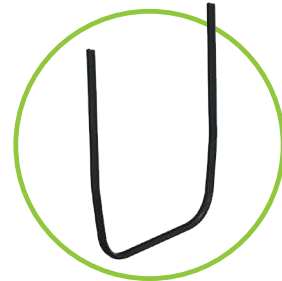
¹⁾ cl. F 900 type M, Set of monolithic channel, cast-iron edge and bolted ductile iron grating



Outlet or maintenance unit with ductile iron grating



Outlet unit - lower part



²⁾ Is a joint sealing profile required? Please contact our Service-Team.



Lifting-hook (consisting of 2 pcs.) for NW 150 / 6", painted green

FILCOTEN[®] one, nominal width 200 mm / 8"

Monolithic channel made of FILCOTEN[®] HPC (High Performance Concrete) Class D400-F900

Item no.	Monolithic channel body up to cl. F - without slope	Weight
15020100	FILCOTEN one NW 200 / 8", no. 0, L = 1000 mm / 39.37" ¹⁾ , SW 23/70 mm / SW 0.9"/2.75"	99 kg / 218.25 lb
15020168	FILCOTEN one NW 200 / 8", no. 40-0, L = 1000 mm / 39.37" ¹⁾ , SW 23/70 mm / SW 0.9"/2.75"	131.5 kg / 289.91 lb

FILCOTEN one NW 200 / 8" : Inlet cross-section 510 cm²/m / 79.05 sq.in/m |
Cross-section area 200/0: 340 cm²/m / 52.7 sq.in/m | 200/40-0: 735 cm²/m / 113.92 sq.in/m

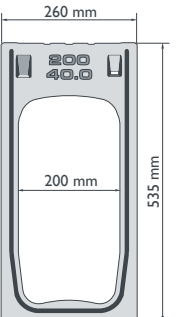
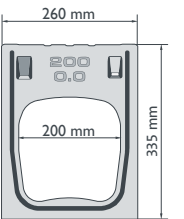


Accessories

for FILCOTEN[®] one, nominal width 200 mm / 8"

Item no.	Accessories	Weight
15020180	Maintenance unit with ductile iron grating, no. 0, L = 1000 mm / 39.37" ¹⁾	101 kg / 222.66 lb
15020188	Maintenance unit with ductile iron grating, no. 40-0, L = 1000 mm / 39.37" ¹⁾	133 kg / 293.21 lb
30002	Additional charge for maintenance unit with outlet DN 200 / 8"	
15020170	Outlet unit upper part, with ductile iron grating, no. 0, L = 1000 mm / 39.37" ¹⁾	96 kg / 211.64 lb
15020178	Outlet unit upper part, with ductile iron grating, no. 40-0, L = 1000 mm / 39.37" ¹⁾	128 kg / 282.09 lb
19120095	Outlet unit lower part, outlet DN 200 / 8"	35.5 kg / 78.26 lb
22511	BG sediment bucket for sump unit, plastic	0,7 kg / 1.54 lb
19120100	Front /end cap, no. 0, without outlet	13 kg / 28.66 lb
19120108	Front /end cap, no. 40-0, without outlet	21 kg / 46.29 lb
19120110	End cap with outlet, no. 0, outlet DN 200 / 8"	8.5 kg / 18.74 lb
19120118	End cap with outlet, no. 40-0, outlet DN 200 / 8"	16.5 kg / 36.37 lb
19120157	Adapter cap for stepped slope no. 0 / 40-0	12.5 kg / 27.56 lb
19120900	Lifting-hook (consisting of 2 pcs.) for FILCOTEN one NW 200 / 8", painted black	2.1 kg / 4.63 lb
19000703	Profile for joint sealing, no. 0, L= 750 mm / 29.5" ²⁾	
19000704	Profile for joint sealing, no. 40-0, L= 1130 mm / 44.49" ²⁾	

¹⁾ cl. F 900 type M, Set of monolithic channel, cast-iron edge and bolted ductile iron grating



End cap with outlet



Front /end cap without outlet



Adapter cap for stepped fall no. 0 / 40-0



Lifting-hook (consisting of 2 pcs.), for NW 200 / 8", painted black

FILCOTEN[®] one installation ¹⁾ examples



Projects



¹⁾The installation drawings are available on our homepage www.bg-graspointner.com
For special installation requirements, kindly contact our Technical Support team at technical@bg-graspointner.com



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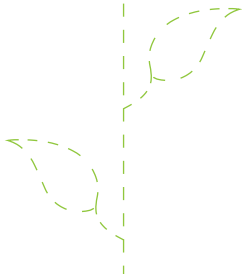
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blog.bg-graspointner.com/us-ca



Find out more about our commitment to sustainable print products in our blog article.



Printed according to criteria documents of the austrian Eco-Label „printed products“: gugler*print, Melk, UWZ-Nr. 609, www.gugler.at



This product is made of material from well-managed, FSC®-certified forests and other controlled sources.

greenprint*
carbon positive printed

* Our contribution to the reforestation project of BOKU Wien in Ethiopia.

Your Partner for BG-Graspointner Drainage Systems