

# ENVIRONMENTAL PRODUCT DECLARATION

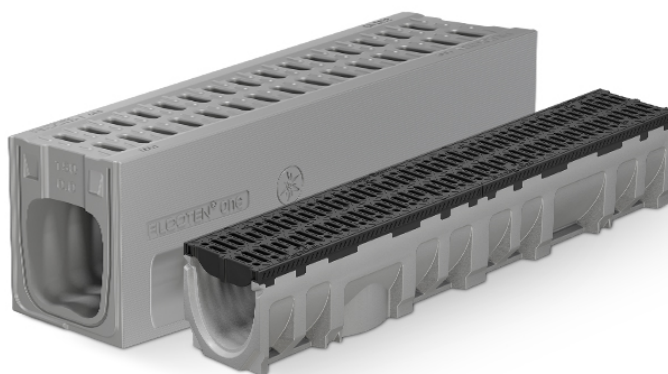
In accordance with ISO 14025 and EN 15804+A2 

## BG-Graspointner GmbH – BG-FILCOTEN one urban NW 100 variable corner-element



GRASPOINTNER  
Sustainable innovation.

**BG-FILCOTEN®**  
Drainage channels



GRASPOINTNER  
Sustainable innovation.

### Owner of the declaration

BG-Graspointner GmbH  
Gessenschwandt 29  
4882 Oberwang  
Austria

### Product

BG-FILCOTEN one urban NW 100 variable  
corner-element

### Declared product / Functional unit

1 M of BG-FILCOTEN one urban NW 100  
variable corner-element

### This declaration is based on Product Category Rules

EN 15804:2012 + A2:2019,  
NPCR 020 PART B for concrete and  
concrete elements (v3.0)

### Program operator:

EPD-Norge  
Majorstuen P.O. Box 5250  
N-0303 Oslo  
Norway

### Declaration number

NEPD-10000-10000-2

### Registration number

NEPD-10000-10000-2

### Issue date

31.01.2025

### Valid to

31.01.2030

### EPD Software

Emidat EPD Tool v1.0.0

## General Information

### Product

BG-FILCOTEN one urban NW 100 variable corner-element

### Program Operator

EPD-Norge  
Majorstuen P.O. Box 5250  
N-0303 Oslo  
Norway  
Phone: +47 23 08 80 00  
Email: post@epd-norge.no

### Declaration Number

NEPD-10000-10000-2

### This declaration is based on Product Category Rules

EN 15804:2012 + A2:2019,  
NPCR 020 PART B for concrete and concrete elements  
(v3.0)

### Statements

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

### Functional unit

1 M of BG-FILCOTEN one urban NW 100 variable corner-element with a reference service life of 20 years

### General information on verification of EPD from EPD tools

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPDNorway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

### Verification of EPD tool

Charlotte Merlin, FORCE Technology  
(no signature required)

### Owner of the declaration

BG-Graspointner GmbH

### Contact person

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### Email

alexander.zeppetzauer@bg-graspointner.com

### Manufacturer

BG-Graspointner GmbH  
Gessenschwandt 29  
4882 Oberwang, Austria

### Place of production

Oberwang, Austria

### Management system

ISO 9001, ISO 14001, ISO 50001

### Issue date

31.01.2025

### Valid to

31.01.2030

### Year of study

2023

### Comparability

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not seen in a building context. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database (including primary and secondary data).

### Development and verification of EPD

The declaration was created using the Emidat EPD tool v1.0, developed by Emidat GmbH. The EPD tool has been approved by EPD Norway.

Developer of EPD: Alexander Zeppetzauer  
Reviewer of company-specific input data and EPD:  
Steffen Bernauer

### Approved



Håkon Hauan, CEO EPD-Norge

## Product

### Product description

Monolithic drainage channel BG-FILCOTEN one urban NW 100 variable corner-element (item no. 15110000) made of FILCOTEN HPC (High Performance Concrete).

Channel element with partly closed surface, mitre-cut and bonded together, angles from 90-180° are possible in the line.

Load class D400 – Type I, tested according to EN1433; CE-certified

Channel element with trapeze shape, channel joint sealable

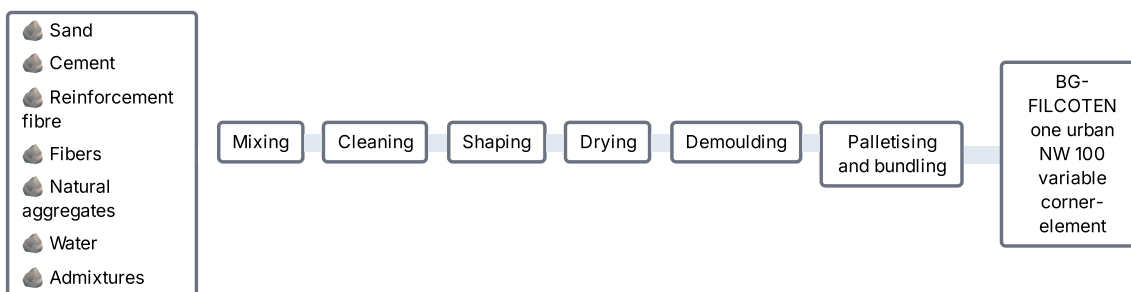
Inlet-slots 10/70 mm, according to EN 1433, Inlet cross section 195 cm<sup>2</sup>/m.

Building biology tested and recommended by IBR (Institut für Baubiologie Rosenheim, DE).

Fire-behaviour class: A1 according to EN13501 - non-combustible.

100% recyclable with U-A marking.

Delivery and installation according to the manufacturer's installation instructions.



Drainage channels out of concret - FILCOTEN® HPC (High Performance Concrete) - for vehicular and pedestrian areas according to standard EN 1433

### Product specification

Name of ingredient	Share of total weight	Country of origin
Admixtures	0 - 2 %	Austria
Cement	25 - 50 %	Austria
Fibers	0 - 2 %	Germany
Natural aggregates	25 - 50 %	Austria
Reinforcement fibre	0 - 2 %	Austria
Sand	25 - 50 %	Austria
Water	2 - 10 %	Austria

### Technical data

	Unit	Value
Compressive Strength (Cylinder)	N / mm <sup>2</sup>	70.0
Density	kg / m <sup>3</sup>	2364.32
Surface exposed to air	m <sup>2</sup>	0.7
Total mass	kg	36.3

### Market

Austria

## Reference service life

20 years

## LCA: Calculation rules

### Functional unit

1 M of BG-FILCOTEN one urban NW 100 variable corner-element

### Reference service life

20 years

### Data quality

The Emdat EPD Tool v1.0.0 was used for LCA modeling and calculation. Background data was used from ecoinvent database v3.10.

### System boundaries (X=included, MND=module not declared)

	Production			Installation		Use stage							End-of-Life				Next product system
	Raw material supply	Transport	Manufacturing	Transport	Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Demolition	Transport	Waste Processing	Disposal	Benefits and loads beyond the system boundary
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	x	x	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography			AT	AT	AT	AT	MND	MND	MND	MND	MND	MND	AT	AT	AT	AT	AT

For the geographies modeled in A1 and A2, refer to *Product specification*.

Type of EPD: cradle to gate with options A4-A5, B1, C1-C4 and module D

#### Stage of Material Production and Construction

Module A1: Extraction and processing of raw materials

Module A2: Transportation of raw materials to the plant

Module A3: Precast concrete production at the plant and waste treatment

Module A4: Transportation to installation site

#### Use Stage

Module B1: Carbonation during the utilization phase

#### Disposal Stage

Module C1: Demolition/Dismantling

Module C2: Transportation of concrete demolition waste for processing

Module C3: Sorting of waste components and recycling of concrete and other contained components

Module C4: Landfilling of concrete and other contained components

#### Credits and burdens outside the system boundaries

Module D: Credits and burdens from recycling as a replacement for primary materials

### Cut-off criteria

Environmental impacts of the following processes are considered to be negligible: minor auxiliary materials used during installation (sealants, adhesives, or fasteners), minor water use for cleaning precast concrete elements .

### Allocation

Elementary flows (energy and fuels, ancillary materials and waste) data was collected on production-process-level. Using the total output of the production process in 2023, elementary flows are assigned to 1 declared unit based on mass.

## LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport to the building site (A4)	Value	Unit
Transported mass	36.30	kg
Fuel consumption	0.08	L / 100 km
Average distance from manufacturer to construction site	500.00	km
Transport mode	truck	

Installation into the building (A5)	Value	Unit
Pavement	Asphalt	-
Type	M	-
Class	D 400	-
Concrete	0.11	m <sup>3</sup>
Steel reinforcement	0	kg
Bitumen seal	6.21	kg

Use of the installed product (B1)	Value	Unit
Reference use period	20	years
Application	Engineering structures, exposed to rain	
Degree of carbonation (Dc)	0.85	-
Cement absorption factor	0.49	kg CO <sub>2</sub> / kg Cement
k-factor	1.10	mm / √year
Correction factor	1.00	-
Surface area of concrete	0.70	m <sup>2</sup>

Calculation of carbonization according to EN 16757. k-factor results from the concrete's compressive strength and its application. The cement absorption factor (maximum theoretical CO<sub>2</sub> uptake) depends on the average clinker content in cement. The correction factor results from cement substitutes in the recipe.

End of life (C1-C4)	Value	Unit
Material for recycling (total)	27.59	kg
Distance to waste recycling facility	50	km
Material for landfill (total)	8.71	kg
Distance to waste landfill facility	50	km
Concrete to recycling	27.59	kg
Diesel required to demolish 1 kg of concrete	0.06	MJ / kg
PM 10 emissions during the demolition of 1 kg of concrete	6.00e-05	kg / kg
PM 2.5 emissions during the demolition of 1 kg of concrete	1.70e-05	kg / kg

Carbonation during waste processing is not considered. Recycling rate for concrete of 76% reflects the modeled country. Source: [https://environment.ec.europa.eu/document/download/22239ead-82d4-42fb-86dc-d202d5f40507\\_en?filename=2011\\_CDW\\_Report\\_0.pdf](https://environment.ec.europa.eu/document/download/22239ead-82d4-42fb-86dc-d202d5f40507_en?filename=2011_CDW_Report_0.pdf).

Reuse, recovery and/or recycling potentials (D)	Value	Unit
Amount of secondary material that the system takes in	0	kg
Avoided gravel production	27.59	kg
Exported electrical energy	0.04	MJ
Exported thermal energy	0.08	MJ

Calculation of benefits and loads per EN 15804+A2.

## LCA: Results

### Core environmental impact indicators

Indicator	Unit	A1-3	A4	A5	B1	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> -eq.	8.39e+00	1.88e+00	4.05e+01	-1.36e-02	2.23e-01	1.88e-01	1.69e-01	5.46e-02	-6.52e-02
GWP-fossil	kg CO <sub>2</sub> -eq.	8.37e+00	1.88e+00	4.01e+01	-1.36e-02	2.22e-01	1.88e-01	1.69e-01	5.45e-02	-6.36e-02
GWP-biogenic	kg CO <sub>2</sub> -eq.	1.99e-02	9.43e-04	3.86e-01	0	2.22e-05	9.43e-05	1.33e-04	4.23e-05	-1.66e-03
GWP-luluc	kg CO <sub>2</sub> -eq.	1.70e-03	6.67e-04	1.37e-02	0	1.93e-05	6.67e-05	1.47e-05	2.83e-05	-9.95e-06
ODP	kg CFC-11-Eq	4.31e-08	3.92e-08	5.36e-07	0	3.40e-09	3.92e-09	2.59e-09	1.58e-09	-1.10e-09
AP	mol H <sup>+</sup> -Eq	1.87e-02	4.44e-03	1.34e-01	0	2.01e-03	4.44e-04	1.53e-03	3.86e-04	-4.85e-04
EP-freshwater	kg P-Eq	4.64e-04	1.32e-04	5.14e-03	0	6.48e-06	1.32e-05	4.93e-06	4.52e-06	-5.01e-06
EP-marine	kg N-Eq	5.66e-03	1.16e-03	3.52e-02	0	9.31e-04	1.16e-04	7.08e-04	1.47e-04	-1.91e-04
EP-terrestrial	mol N-Eq	5.74e-02	1.26e-02	3.90e-01	0	1.02e-02	1.26e-03	7.75e-03	1.61e-03	-2.22e-03
POCP	kg NMVOC-Eq	1.68e-02	7.71e-03	1.46e-01	0	3.04e-03	7.71e-04	2.31e-03	5.75e-04	-6.43e-04
ADPE	kg Sb-Eq	4.63e-05	5.37e-06	1.94e-04	0	7.97e-08	5.37e-07	6.06e-08	8.64e-08	-5.71e-07
ADPF	MJ, net calorific value	4.75e+01	2.82e+01	4.96e+02	0	2.91e+00	2.82e+00	2.21e+00	1.34e+00	-9.39e-01
WDP	m <sup>3</sup> world Eq deprived	6.04e-01	1.42e-01	9.43e+00	0	7.12e-03	1.42e-02	5.42e-03	3.74e-03	-4.12e-02

**GWP-total:** Global Warming Potential - total **GWP-fossil:** Global warming potential - fossil **GWP-biogenic:** Global Warming Potential - biogenic **GWP-luluc:** Global Warming Potential - luluc **ODP:** Depletion potential of the stratospheric ozone layer **AP:** Acidification potential, Accumulated Exceedance **EP-freshwater:** Eutrophication potential - freshwater **EP-marine:** Eutrophication potential - marine **EP-terrestrial:** Eutrophication potential - terrestrial **POCP:** Photochemical Ozone Creation Potential **ADPE:** Abiotic depletion potential - non-fossil resources **ADPF:** Abiotic depletion potential - fossil resources **WDP:** Water (user) deprivation potential

### Additional indicators

Indicator	Unit	A1-3	A4	A5	B1	C1	C2	C3	C4	D
PM	disease incidence	2.04e-07	1.83e-07	1.52e-06	0	3.24e-07	1.83e-08	2.49e-07	8.78e-09	-1.30e-08
IRP	kBq U235-Eq	1.99e-01	3.43e-02	1.30e+00	0	1.30e-03	3.43e-03	9.90e-04	8.52e-04	-9.90e-03
ETP-fw	CTUe	ND	6.69e+00	1.05e+02	0	4.12e-01	6.69e-01	3.14e-01	1.83e-01	-4.10e-01
HTP-c	CTUh	ND	1.20e-08	1.13e-07	0	8.70e-10	1.20e-09	6.61e-10	2.46e-10	-9.09e-10
HTP-nc	CTUh	ND	1.86e-08	3.12e-07	0	3.95e-10	1.86e-09	3.00e-10	2.40e-10	-5.45e-10
SQP	dimensionless	ND	2.84e+01	2.15e+02	0	2.04e-01	2.84e+00	1.55e-01	2.63e+00	-1.82e+00

**PM:** Potential incidence of disease due to PM emissions **IRP:** Potential Human exposure efficiency relative to U235 **ETP-fw:** Potential Comparative Toxic Unit for ecosystems **HTP-c:** Potential Comparative Toxic Unit for humans - cancer effects **HTP-nc:** Potential Comparative Toxic Unit for humans - non-cancer effects **SQP:** Potential Soil quality index

**IRP:** This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

**ETP-fw, HTP-c, HTP-nc and SQP:** The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with these indicators.



## Use of resources

Indicator	Unit	A1-3	A4	A5	B1	C1	C2	C3	C4	D
PERE	MJ	1.89e+01	4.48e-01	2.04e+01	0	1.78e-02	4.48e-02	1.35e-02	1.24e-02	-2.96e-01
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.89e+01	4.48e-01	2.04e+01	0	1.78e-02	4.48e-02	1.35e-02	1.24e-02	-2.96e-01
PENRE	MJ	4.69e+01	2.82e+01	4.96e+02	0	2.91e+00	2.82e+00	2.21e+00	1.34e+00	-9.39e-01
PENRM	MJ	5.92e-01	0	0	0	0	0	-4.50e-01	0	0
PENRT	MJ	4.75e+01	2.82e+01	4.96e+02	0	2.91e+00	2.82e+00	1.76e+00	1.34e+00	-9.39e-01
SM	kg	1.58e-01	0	0	0	0	0	0	0	2.76e+01
RSF	MJ	6.83e+00	0	0	0	0	0	0	0	0
NRSF	MJ	1.61e+01	0	0	0	0	0	0	0	0
FW	m <sup>3</sup>	5.90e-02	4.10e-03	3.54e-01	0	1.89e-04	4.10e-04	1.44e-04	1.39e-03	-3.93e-02

**PERE:** Primary energy resources - renewable: use as energy carrier **PERM:** Primary energy resources - renewable: used as raw materials **PERT:** Primary energy resources - renewable: total **PENRE:** Primary energy resources - non-renewable: use as energy carrier **PENRM:** Primary energy resources - non-renewable: used as raw materials **PENRT:** Primary energy resources - non-renewable: total **SM:** Use of secondary material **RSF:** Renewable secondary fuels **NRSF:** Non-renewable secondary fuels **FW:** Net use of fresh water

## Waste flows

Indicator	Unit	A1-3	A4	A5	B1	C1	C2	C3	C4	D
HWD	kg	8.57e-02	4.10e-02	1.14e+00	0	3.25e-03	4.10e-03	2.47e-03	1.48e-03	-3.72e-03
NHWD	kg	5.06e+00	8.22e-01	3.25e+01	0	4.44e-02	8.22e-02	3.38e-02	8.75e+00	-5.01e-02
RWD	kg	7.21e-04	8.48e-06	3.27e-04	0	3.19e-07	8.48e-07	2.43e-07	2.08e-07	-2.15e-06

**HWD:** Hazardous waste disposed **NHWD:** Non hazardous waste disposed **RWD:** Radioactive waste disposed

## Output flows

Indicator	Unit	A1-3	A4	A5	B1	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	1.08e+00	0	0	0	0	0	2.76e+01	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EEE	MJ	4.17e-02	0	0	0	0	0	0	0	0
EET	MJ	8.06e-02	0	0	0	0	0	0	0	0

**CRU:** Components for re-use **MFR:** Materials for recycling **MER:** Materials for energy recovery **EEE:** Exported electrical energy **EET:** Exported thermal energy

Name	Value	Unit
Biogenic carbon content in product	0	kg C
Biogenic carbon content in accompanying packaging	0	kg C

## Additional requirements

### Greenhouse gas emissions from the use of electricity in the manufacturing phase

Electricity consumption in the manufacturing phase is composed from the sources below certified by Guarantee of Origin. Electricity is represented by data in ecoinvent 3.10 regionalised for Austria.

Electricity	Unit	Value
Solar	kg CO <sub>2</sub> -eq. / kWh	0.10
Wind	kg CO <sub>2</sub> -eq. / kWh	0.03
Hydro	kg CO <sub>2</sub> -eq. / kWh	0.33
Geothermal	kg CO <sub>2</sub> -eq. / kWh	0.07
Bioenergy	kg CO <sub>2</sub> -eq. / kWh	0.05
Gas	kg CO <sub>2</sub> -eq. / kWh	0.83
On-site electricity, PV	kg CO <sub>2</sub> -eq. / kWh	0.11

### Dangerous substances

The product contains no substances given by the REACH candidate list.

## Additional environmental information







### Additional environmental impact indicators required in NPCR Part A for construction products

Indicator	Unit	A1-3	A4	A5	B1	C1	C2	C3	C4	D
GWP-IOBC	kg CO <sub>2</sub> -eq.	ND	1.88e+00	4.01e+01	-1.36e-02	2.23e-01	1.88e-01	1.69e-01	5.45e-02	-6.37e-02

**GWP-IOBC:** Global Warming Potential - Instantaneous oxidation of biogenic carbon

## Bibliography

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DIN EN ISO 14040:2021-02	Environmental management - Life cycle assessment - Principles and framework
DIN EN ISO 14044:2021-02	Environmental management - Life cycle assessment - Requirements and guidelines
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
DIN CENTR 15941:2010-11	Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data
DIN EN 15942:2022-04	Sustainability of construction works - Environmental product declarations - Communication format business-to-business
ISO 21930:2017-07	Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services
Ecoinvent v3.10	ecoinvent, Zurich, Switzerland, database version 3.10
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EN 16757	Sustainability of construction works - Environmental product declarations - Product Category Rules for concrete and concrete elements
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