

Environmental Product Declaration (EPD)



Declaration code EPD-VGP-GB-67.0



Viega GmbH
& Co. KG

connecting technology

Geopress press connector



Basis:

DIN EN ISO 14025
EN 15804 + A2
Company EPD
Environmental
Product Declaration

Publication date:
12.12.2023
Valid until:
12.12.2028



[www.ift-rosenheim.de/
published EPDs](http://www.ift-rosenheim.de/published-EPDs)

Environmental Product Declaration (EPD)



Declaration code EPD-VGP-GB-67.0

Programme operator	ift Rosenheim GmbH Theodor-Gietl-Straße 7-9 83026 Rosenheim, Germany		
Practitioner of the LCA	Viega GmbH & Co. KG Viega Platz 1 57439 Attendorn, Germany		
Declaration holder	Viega GmbH & Co. KG Viega Platz 1 57439 Attendorn, Germany www.viega.de		
Declaration code	EPD-VGP-GB-67.0		
Designation of declared product	Geopress press connector		
Scope	Connecting and fitting technology for use in piping systems.		
Basis	This EPD was prepared on the basis of EN ISO 14025:2011 and DIN EN 15804:2012+A2:2019. In addition, the "Allgemeiner Leitfaden zur Erstellung von Typ III Umweltproduktdeklarationen" (General guideline for preparation of Type III Environmental Product Declarations) applies. The declaration is based on the PCR documents "PCR Part A" PCR-A-0.3:2018 and "Piping systems including connecting and fitting technology" PCR-RS-1.0:2022.		
Validity	Publication date: 12.12.2023	Last revision: 12.12.2023	Valid until: 12.12.2028
	This verified Company Environmental Product Declaration (company EPD) applies solely to the specified products and is valid for a period of five years from the date of publication in accordance with DIN EN 15804.		
LCA Basis	The LCA was prepared in accordance with DIN EN ISO 14040 and DIN EN ISO 14044. The base data includes the data collected at two production plants of Viega GmbH & Co. KG, and the generic data derived from the Ecoinvent 3 data base (v3.8 with aggregated inputs) and Ecoinvent EN 15804. LCA calculations were carried out for the included "cradle to grave" including all upstream chains (e.g. raw material extraction, etc.).		
Notes	The ift-Guidance Sheet "Conditions and Guidance for the Use of ift Test Documents" applies. The declaration holder assumes full liability for the underlying data, certificates and verifications.		

Christian Kehrer
Head of Certification and Surveillance Body

Dr. Torsten Mielecke
Chairman of Expert Committee
ift-EPD and PCR

Prof. Dr. Eric Brehm
External verifier

1 General Product Information

Product definition

The EPD relates to the product group connecting technology and applies to:

1 kg Geopress of company Viega GmbH & Co. KG

These are divided into the following product groups

Product group (PG)		Piece weights
PG1	Geopress	0.002 - 3.225 kg
PG2	Geopress G	0.096 - 2.126 kg
PG3	Geopress K / K Gas	0.070 - 1.358 kg

Table 1 Product groups*

*The relevant piece weights [kg/piece] are specified in the conversion table of Annex B in accordance with Part B of the PCR. Specification of weights per unit length is not possible.

The declared unit is obtained by summing up:

PG	Assessed product	Unit weight	Declared unit
1	Cap with SC (Item no. 767389)	0.13 g	1 kg
2	Average	3,379.11 g	1 kg
3	Weighted average	1,324.93 g	1 kg

Table 2 Functional unit per reference product

Averaging is explained in the background report.

The average unit is declared as follows:

Directly used material flows are determined by means of manufactured masses (kg) and allocated to the declared unit. All other inputs and outputs in the production were scaled to the declared unit in their entirety since there is no typical functional unit due to the high number of variants. The reference period is the year 2022.

The validity of the EPD is restricted to the following press connector:

- Geopress
- Geopress G
- Geopress K and K Gas

Product description

Geopress

Press connector system made of corrosion-resistant gunmetal for plastic tubes. Permissible tube types PE 80/100/100-RC and PE-X of SDR series 11. Suitable for underground, municipal drinking water supply pipes.

Geopress G

Press connector system made of corrosion-resistant gunmetal for plastic tubes. Permissible tube types PE 80/100/100-RC and PE-X. Suitable for underground, municipal gas supply lines and underground liquid gas lines (only in combination with gunmetal support sleeve).

Geopress K

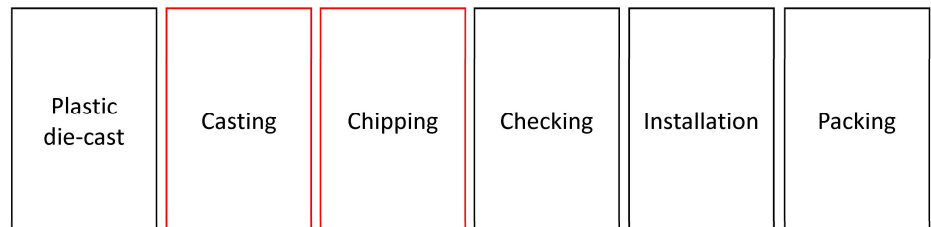
Press connector system made of glass fiber reinforced polyamide. Permissible tube types PE 80/100/100-RC and PE-X. Internal sealing. Function of the support sleeve integrated into the press connector. Suitable for underground, municipal drinking water supply pipes.

Geopress K Gas

Press connector system made of glass fiber reinforced polyamide. Permissible tube types PE 80/100/100-RC and PE-X. Function of the support sleeve integrated into the press connector. Suitable for underground, municipal supply lines.

For a detailed product description refer to the manufacturer specifications or the product specifications of the respective offer/quotation.

Product manufacture



does not apply to all articles

Illustration 1 Manufacturing process

Note: Depending on the product type, not all production steps are carried out.

Application

Geopress

- Drinking water
- Hot water
- Local heating supply
- Geothermal energy
- Rainwater

Geopress G

- Gas
- Liquefied petroleum gas in gas phase

Geopress K

- Drinking water

Geopress K Gas

- Gas
- Liquefied petroleum gas in gas phase

Test evidence / reports

For information on updated verifications (incl. other national approvals) refer to [Geopress | viega.de](https://www.geopress-viega.de).

Management systems

The following management systems are held:

- Quality management system as per DIN EN ISO 9001:2015
- Energy management system as per DIN EN ISO 50001:2018
- Environmental management system as per DIN EN ISO 14001:2015
- Occupational health and safety management system as per DIN EN ISO 45001:2018

Additional information

For additional verifications of applicability or conformity refer to the CE marking and the documents accompanying the product, if applicable.

2 Materials used

Primary materials

The raw materials used can be found in Section 6.2 Inventory analysis (Inputs).

Declarable substances

Substances according to REACH candidate list are included (declaration of 04.10.2023). Further information on the listed substance and the corresponding SCIP number are available on request from the manufacturer.

All relevant safety data sheets are available from Viega GmbH & Co. KG.

3 Construction process stage

Processing recommendations, installation

Observe the instructions for assembly/installation, operation, maintenance and disassembly, provided by the manufacturer. For this, see www.viega.de

4 Use stage

Emissions to the environment

No emissions to indoor air, water and soil are known. There may be VOC emissions. There is no contact with the indoor/outdoor air.

Reference service life (RSL)

The RSL information was provided by the manufacturer. The RSL must be established under specified reference conditions of use and relate to the declared technical and functional performance of the product within the building. It must be determined according to all specific rules given in European product standards or, if none are available, according to a c-PCR. It must also take into account ISO 15686-1, -2, -7 and -8. If there is guidance on deriving RSLs from European Product Standards or a c-PCR, then such guidance must take precedence.

If it is not possible to determine the service life as the RSL in accordance with ISO 15686, the BBSR table "Nutzungsdauer von Bauteilen zur Lebenszyklusanalyse nach BNB" (service life of building components for life cycle assessment in accordance with the sustainable construction evaluation system) can be used. For further information and explanations refer to www.nachhaltigesbauen.de.

For this EPD the following applies:

For a "cradle to grave" EPD and Module D (A + B + C + D), a reference service life (RSL) must be specified.

The service life for Geopress press connector of company Viega GmbH & Co. KG is specified as 50 years according to the manufacturer.

The service life is dependent on the characteristics of the product and in-use conditions. The conditions and characteristics described in the EPD are applicable, in particular the characteristics listed below:

- Outdoor environment: Climatic influences may have a negative impact on the service life.
- Indoor environment: No impacts (e.g. humidity, temperature) known that have a negative effect on the service life.

The service life solely applies to the characteristics specified in this EPD or the corresponding references.

The RSL does not reflect the actual life time, which is usually determined by the service life and the redevelopment of a building. It does not give any information on the useful life, warranty referring to performance characteristics or guarantees.

5 End-of-life stage

Possible end-of-life stages

Geopress press connector are sent to central collection points. There the products are usually shredded and sorted into their constituents. The end-of-life stage depends on the site where the products are used and is therefore subject to the local regulations. Observe the locally applicable regulatory requirements.

In this EPD, the modules of after-use are presented according to the market situation. Specific parts of metals are recycled. Residual fractions are sent to landfill or, in part, thermally recycled.

Disposal routes

The LCA includes the average disposal routes.

All life cycle scenarios are detailed in the Annex.

6 Life Cycle Assessment (LCA)

Environmental product declarations are based on life cycle assessments (LCAs) which use material and energy flows for the calculation and subsequent representation of environmental impacts.

As a basis for this, life cycle assessments were prepared for Geopress press connector. These LCAs are in conformity with the requirements set out in DIN EN 15804 and the international standards DIN EN ISO 14040, DIN EN ISO 14044, ISO 21930 and EN ISO 14025.

The LCA is representative of the products presented in the Declaration and the specified reference period.

6.1 Definition of goal and scope

Aim The goal of the LCA is to demonstrate the environmental impacts of the products. In accordance with DIN EN 15804, the environmental impacts covered by this Environmental Product Declaration are presented for the entire product life cycle in the form of basic information. No other additional environmental impacts are specified.

Data quality, data availability and geographical and time-related system boundaries The specific data originate exclusively from the 2022 fiscal year. They were collected on-site at the plants located Ennest and Elspe and originate in parts from company records and partly from values directly obtained by measurement.

The generic data originate from the Ecoinvent 3 data base (v3.9.1 with aggregated inputs from 2022) and Ecoinvent EN 15804. The last update of both databases was in 2023. Data from before this date originate also from these databases and are not more than ten years old. No other generic data were used for the calculation.

Generic data are selected as accurately as possible in terms of geographic reference. If no country-specific data sets are available or if the regional reference cannot be determined, European or globally valid data sets are used.

Data gaps were either filled with comparable data or conservative assumptions, or the data were cut off in compliance with the 1% rule.

The life cycle was modelled using the sustainability software tool "Umberto 11" for the development of life cycle assessments.

The data quality complies with the requirements of prEN 15941:2022.

Scope / system boundaries The system boundaries refer to the supply of raw materials and purchased parts, manufacture/production, use and end-of-life stage of the Geopress press connector. No additional data from pre-suppliers/subcontractors or other sites were taken into consideration.

Product group connecting technology

Cut-off criteria

All company data collected, i.e. all commodities/input and raw materials used, the thermal energy and electricity consumption, were taken into consideration.

The boundaries cover only the product-relevant data. Building sections/parts of facilities that are not relevant to the manufacture of the products, were excluded.

The transport distances of the pre-products used were taken into consideration as a function of 100% of the mass of the products. The following means of transport was assumed: >32 t truck/semitrailer, Euro 6, diesel, 53 % capacity utilization

Other transport distances of the pre-products were not taken into consideration.

The criteria for the exclusion of inputs and outputs as set out in DIN EN 15804 are fulfilled. From the data analysis it can be assumed that the total of negligible processes per life cycle stage does not exceed 1% of the mass/primary energy. This way the total of negligible processes does not exceed 5% of the energy and mass input. The life cycle calculation also includes material and energy flows that account for less than 1%.

6.2 Inventory analysis

Aim

All material and energy flows are described below. The processes covered are presented as input and output parameters and refer to the declared units.

Life cycle stages

The Annex shows the entire Geopress press connector life cycle. The product stage "A1 – A3", construction process stage "A4 – A5", use stage "B1 – B7", end-of-life stage "C1 – C4" and the benefits and loads beyond the system boundaries "D" are considered.

Benefits

The below benefits have been defined as per DIN EN 15804:

- Benefits from recycling
- Benefits (thermal and electrical) from incineration

Allocation of co-products

Allocations occur during production.
Allocation was based on the masses (units) of products produced.

Allocations for re-use, recycling and recovery

If the products are reused/recycled and recovered during the product stage (rejects), the elements are shredded, if necessary and then sorted into their constituents. This is done by various process plants, e.g. magnetic separators.
The system boundaries were set following their disposal, reaching the end-of-waste status.

Product group connecting technology

Allocations beyond life cycle boundaries

The use of recycled materials in the manufacturing process was based on the current market-specific situation. In parallel to this, a recycling potential was taken into consideration that reflects the economic value of the product after recycling (recyclate).
The system boundary set for the recycled material refers to collection.

Secondary material

The use of secondary material in module A3 by Viega GmbH & Co. KG was considered. Secondary material is not used.

Inputs

The LCA includes the following production-relevant inputs per of 1 kg Geopress:

Energy

For the input material natural gas, "natural gas, high pressure (GER), domestic supply with seasonal storage" was assumed. For the electricity mix, "electricity, high voltage, production mix (GER)" was assumed.

A portion of the process heat is used for space heating. This can, however, not be quantified, hence a "worst case" figure was taken into account for the product.

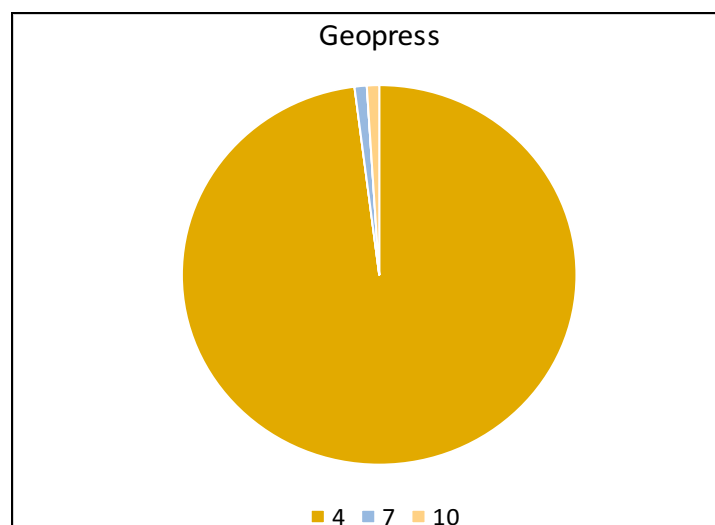
Water

There is no water consumption in the individual process steps for production.

The consumption of fresh water specified in Section 6.3 originates (among others) from the process chain of the pre-products and the process water for cooling.

Raw material / pre-products

The charts below show the share of raw materials/pre-products in percent.



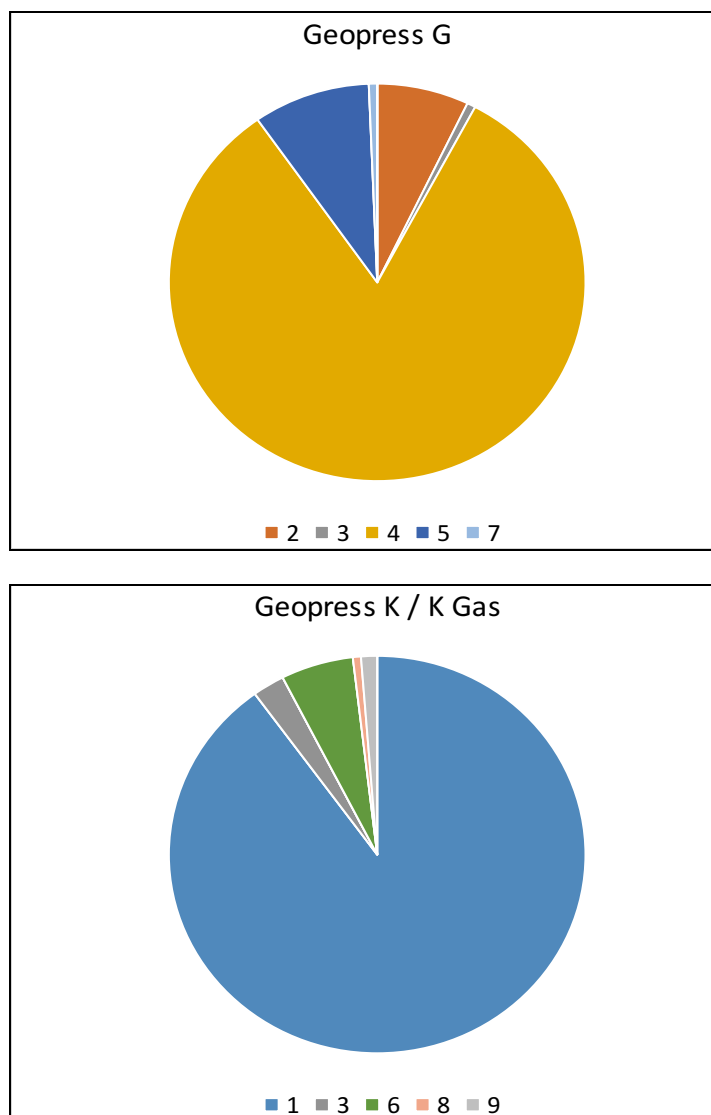


Illustration 2 Percentage of individual materials per declared unit

Ref.	Material	Mass in %		
		Geopress	Geopress GP	Geopress K / K G
1	Silicon bronze (SiBr)	0.00 %	0.00 %	90.00 %
2	Stainless steel	0.00 %	7.14 %	0.00 %
3	Brass	0.00 %	0.65 %	2.50 %
4	Gunmetal	97.86 %	82.47 %	0.00 %
5	Copper	0.00 %	9.09 %	0.00 %
6	PA	0.00 %	0.00 %	5.63 %
7	PE	1.43 %	0.65 %	0.00 %
8	POM	0.00 %	0.00 %	0.63 %
9	PVC	0.00 %	0.00 %	1.25 %
10	EPDM	0.71 %	0.00 %	0.00 %

Table 3 Percentage of individual materials per declared unit

Ancillary materials and consumables

There are no ancillary materials and consumables used.

Product packaging

The amounts used for product packaging are as follows:

Material	Mass in kg		
	Geopress	Geopress G	Geopress K / K G
PE	0.01	0	0.01
Paper/cardboard	0	0	0.20

Table 4 Weight in kg of packaging per declared unit

Biogenic carbon content

Only the biogenic carbon content of the associated packaging is reported, as the total mass of biogenic carbon-containing materials is less than 5% of the total mass of the product and associated packaging. According to EN 16449, the following amounts of biogenic carbon are generated for packaging:

Product	Part	Content in kg C
Geopress	In the corresponding packaging	0
Geopress G	In the corresponding packaging	0
Geopress K / K G	In the corresponding packaging	0.12

Table 5 Biogenic carbon content of packaging at gate per declared unit

Outputs

The LCA includes the following production-relevant outputs per of 1 kg Geopress:

Waste

Secondary raw materials were included in the benefits.
 See Section 6.3 Impact assessment.

Waste water

No waste water is produced during the manufacturing process.

6.3 Impact assessment

Aim

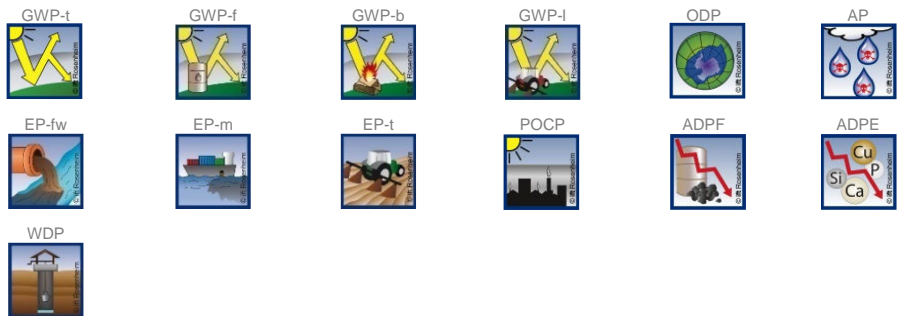
The impact assessment covers both inputs and outputs. The impact categories applied are stated below:

Core indicators

The models for impact assessment were applied as described in DIN EN 15804-A2.

The core indicators presented in the EPD are as follows:

- Climate change - total (GWP-t)
- Climate change - fossil (GWP-f)
- Climate change - biogenic (GWP-b)
- Climate change - land use & land use change (GWP-l)
- Ozone depletion (ODP)
- Acidification (AP)
- Eutrophication freshwater (EP-fw)
- Eutrophication salt water (EP-m)
- Eutrophication land (EP-t)
- Photochemical ozone creation (POCP)
- Depletion of abiotic resources - fossil fuels (ADPF)
- Depletion of abiotic resources - minerals and metals (ADPE)
- Water use (WDP)



Resource management

The models for impact assessment were applied as described in DIN EN 15804-A2.

The following resource use indicators are presented in the EPD:

- Renewable primary energy as energy source (PERE)
- Renewable primary energy for material use (PERM)
- Total use of renewable primary energy (PERT)
- Non-renewable primary energy as energy source (PENRE)
- Renewable primary energy for material use (PENRM)
- Total use of non-renewable primary energy (PENRT)
- Use of secondary materials (SM)
- Use of renewable secondary fuels (RSF)
- Use of non-renewable secondary fuels (NRSF)
- Net use of freshwater resources (FW)



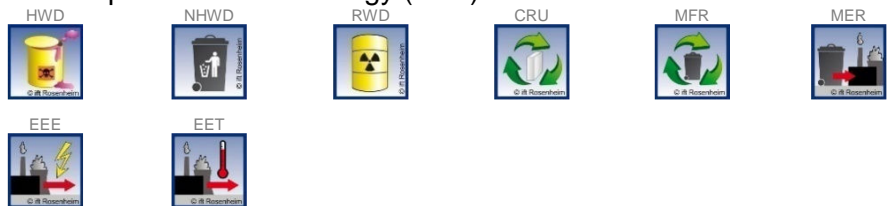
Waste

The waste generated during the production of 1 kg Geopress is evaluated and shown separately for the fractions trade wastes, special wastes and radioactive wastes. Since waste handling is modelled within the system boundaries, the amounts shown refer to the deposited wastes. A portion of the waste indicated is generated during the manufacture of the pre-products.

The models for impact assessment were applied as described in DIN EN 15804-A2.

The following waste categories and indicators for output closures are presented in the EPD:

- Disposed hazardous waste (HWD)
- Non-hazardous waste disposed (NHWD)
- Radioactive waste disposed (RWD)
- Components for re-use (CRU)
- Materials for recycling (MFR)
- Materials for energy recovery (MER)
- Exported electrical energy (EEE)
- Exported thermal energy (EET)

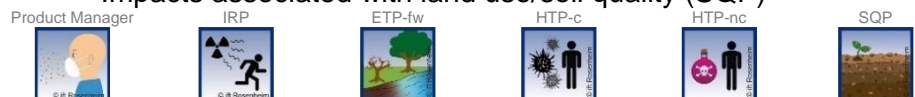



Additional environmental impact indicators

The models for impact assessment were applied as described in DIN EN 15804-A2.

The additional impact categories presented in the EPD are as follows:

- Particulate matter emissions (PM)
- Ionizing radiation, human health (IRP)
- Ecotoxicity – freshwater (ETP-fw)
- Human toxicity, carcinogenic effects (HTP-c)
- Human toxicity, non-carcinogenic effects (HTP-nc)
- Impacts associated with land use/soil quality (SQP)



		Results per 1 kg Geopress														
		Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Core indicators																
GWP-t	kg CO ₂ equivalent	9.10E+00	6.34E-02	7.94E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	2.89E-02	4.60E-04	-3.91E+00
GWP-f	kg CO ₂ equivalent	8.97E+00	6.33E-02	7.82E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	2.95E-02	4.57E-04	-3.82E+00
GWP-b	kg CO ₂ equivalent	9.29E-02	2.21E-05	1.23E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47E-06	-6.32E-04	2.78E-06	-6.31E-02
GWP-l	kg CO ₂ equivalent	3.40E-02	3.25E-05	1.19E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.21E-06	4.15E-05	3.33E-07	-2.37E-02
ODP	kg CFC-11-eq.	4.38E-05	1.07E-09	2.69E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72E-10	3.78E-10	1.08E-11	-1.22E-07
AP	mol H ⁺ -eq.	7.23E-02	2.47E-04	2.09E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47E-05	2.24E-04	3.25E-06	-4.64E-02
EP-fw	kg P-eq.	4.28E-03	5.30E-06	2.80E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.52E-07	1.44E-05	1.20E-07	-2.44E-03
EP-m	kg N-eq.	8.84E-03	4.52E-05	2.21E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68E-05	6.86E-05	1.22E-06	-5.31E-03
EP-t	mol N-eq.	8.43E-02	4.68E-04	6.47E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80E-04	7.50E-04	4.40E-06	-1.85E-02
POCP	kg NMVOC-eq.	3.15E-02	1.73E-04	1.45E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59E-05	2.88E-04	1.30E-05	-4.98E-02
ADPF*2	MJ	1.61E+02	0.00E+00	5.60E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91E-08	1.49E-06	9.98E-03	-7.81E+01
ADPE*2	kg Sb equivalent	2.56E-03	9.59E-01	1.98E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.45E-01	9.57E-10	-1.76E-03
WDP*2	m ³ world-eq. deprived	5.45E+01	4.79E-03	1.34E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.74E-04	5.54E-03	5.52E-05	-3.86E+01
Resource management																
PERE	MJ	1.58E+02	1.21E-02	9.82E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.76E-02	1.70E-04	-1.12E+02
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.58E+02	1.21E-02	9.82E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.76E-02	1.70E-04	-1.12E+02
PENRE	MJ	1.60E+02	9.59E-01	7.34E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	5.62E-01	8.73E-03	-7.81E+01
PENRM	MJ	9.40E-01	0.00E+00	-7.14E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	-2.17E-01	-8.73E-03	0.00E+00
PENRT	MJ	1.61E+02	9.59E-01	1.98E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.46E-01	0.00E+00	-7.81E+01
SM	kg	4.49E-02	4.02E-04	8.48E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48E-05	3.90E-04	3.81E-06	-2.55E-02
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	1.10E+00	1.31E-04	-3.67E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13E-05	1.44E-04	1.00E-05	-7.74E-01
Categories of waste																
HWD	kg	7.86E-01	7.04E-04	3.94E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13E-04	1.03E-03	8.57E-06	-4.42E-01
NHWD	kg	1.52E+01	2.25E-02	1.28E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.62E-03	5.63E-02	2.55E-04	-8.17E+00
RWD	kg	8.98E-04	0.00E+00	1.36E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34E-08	3.74E-07	3.14E-09	-5.75E-04
Output material flows																
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.49E-02	0.00E+00	8.98E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20E-06	9.38E-01	6.96E-08	-9.74E-03
MER	kg	4.14E-05	0.00E+00	7.65E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.52E-09	5.46E-08	3.13E-10	-2.85E-05
EE	MJ	8.76E-02	0.00E+00	7.45E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76E-05	2.07E-04	1.72E-06	-4.81E-02

Key:

GWP-t – global warming potential - total **GWP-f** – global warming potential fossil fuels **GWP-b** – global warming potential - biogenic **GWP-l** – global warming potential - land use and land use change
ODP – ozone depletion potential **AP** - acidification potential **EP-fw** - eutrophication potential - aquatic freshwater **EP-m** - eutrophication potential - aquatic marine
EP-t - eutrophication potential - terrestrial **POCP** - photochemical ozone formation potential **ADPF*2** - abiotic depletion potential – fossil resources **ADPE*2** - abiotic depletion potential - minerals&metals
WDP*2 - Water (user) deprivation potential **PERE** - Use of renewable primary energy **PERM** - use of renewable primary energy resources **PERT** - total use of renewable primary energy resources
PENRE - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources **PENRT** - total use of non-renewable primary energy resources
SM - use of secondary material **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of fresh water **HWD** - hazardous waste disposed
NHWD - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for re-use **MFR** - materials for recycling **MER** - materials for energy recovery
EE - exported energy


ift ROSENHEIM																
Results per 1 kg Geopress																
	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Additional environmental impact indicators																
PM	Disease incidence	7.40E-07	6.15E-09	6.40E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08E-09	4.15E-09	7.01E-11	-4.96E-07
IRP*1	kBq U235-eq.	2.89E+00	8.71E-04	6.34E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41E-04	1.51E-03	1.31E-05	-1.85E+00
ETP-fw*2	CTUe	1.49E+02	5.07E-01	7.25E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.13E-02	2.71E-01	4.34E-03	-9.94E+01
HTP-c*2	CTUh	1.23E-08	0.00E+00	3.96E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.57E-12	4.16E-11	2.56E-13	-6.84E-09
HTP-nc*2	CTUh	6.19E-07	2.81E-11	1.44E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12E-10	1.70E-09	2.90E-12	-4.05E-07
SQP*2	dimensionless	3.47E+01	9.44E-01	1.56E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55E-01	6.03E-01	2.26E-02	-2.17E+01

Key:
PM – particulate matter emissions potential **IRP*1** – ionizing radiation potential – human health **ETP-fw*2** - Eco-toxicity potential – freshwater **HTP-c*2** - Human toxicity potential – cancer effects **HTP-nc*2** - Human toxicity potential – non-cancer effects **SQP*2** – soil quality potential

Disclaimers:

*1 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.

*2 The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

		Results per 1 kg Geopress G														
		Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Core indicators																
GWP-t	kg CO ₂ equivalent	8.62E+00	6.27E-02	1.48E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	3.52E-02	4.52E-04	-4.25E+00
GWP-f	kg CO ₂ equivalent	8.48E+00	6.26E-02	1.04E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	3.17E-02	4.49E-04	-4.16E+00
GWP-b	kg CO ₂ equivalent	1.06E-01	2.18E-05	4.39E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47E-06	3.48E-03	2.73E-06	-6.71E-02
GWP-l	kg CO ₂ equivalent	3.72E-02	3.21E-05	8.91E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.21E-06	5.22E-05	3.27E-07	-2.36E-02
ODP	kg CFC-11-eq.	8.71E-06	1.06E-09	2.05E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72E-10	4.17E-10	1.06E-11	-1.23E-07
AP	mol H ⁺ -eq.	7.88E-02	2.45E-04	5.23E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47E-05	2.48E-04	3.20E-06	-1.94E-02
EP-fw	kg P-eq.	4.55E-03	5.24E-06	2.45E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.52E-07	1.43E-05	1.18E-07	-2.41E-03
EP-m	kg N-eq.	9.81E-03	4.47E-05	1.41E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68E-05	7.77E-05	1.20E-06	-5.55E-03
EP-t	mol N-eq.	9.30E-02	4.63E-04	1.39E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80E-04	8.23E-04	4.33E-06	-5.21E-02
POCP	kg NMVOC-eq.	3.49E-02	1.71E-04	5.32E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59E-05	3.02E-04	1.28E-05	-4.70E-02
ADPF*2	MJ	1.73E+02	0.00E+00	4.92E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91E-08	1.40E-06	9.81E-03	-1.55E-03
ADPE*2	kg Sb equivalent	2.58E-03	9.49E-01	1.62E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.83E-01	9.42E-10	-8.08E+01
WDP*2	m ³ world-eq. deprived	5.90E+01	4.74E-03	9.18E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.74E-04	5.77E-03	5.43E-05	-3.78E+01
Resource management																
PERE	MJ	1.72E+02	1.19E-02	9.11E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.84E-02	1.67E-04	-1.11E+02
PERM	MJ	2.24E-03	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	-2.15E-03	0.00E+00	0.00E+00
PERT	MJ	1.72E+02	1.19E-02	9.11E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.62E-02	1.67E-04	-1.11E+02
PENRE	MJ	1.73E+02	9.49E-01	2.86E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.83E-01	0.00E+00	-8.08E+01
PENRM	MJ	2.70E-01	0.00E+00	-2.70E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.73E+02	9.49E-01	1.62E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.83E-01	0.00E+00	-8.08E+01
SM	kg	1.10E+01	3.98E-04	6.47E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48E-05	3.93E-04	3.75E-06	-8.55E-02
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	1.20E+00	1.30E-04	-3.12E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13E-05	1.48E-04	9.86E-06	-7.62E-01
Categories of waste																
HWD	kg	1.00E+00	6.96E-04	2.24E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13E-04	1.05E-03	8.43E-06	-5.92E-01
NHWD	kg	1.64E+01	2.23E-02	1.12E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.62E-03	5.52E-02	2.51E-04	-8.33E+00
RWD	kg	9.71E-04	0.00E+00	1.26E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34E-08	3.70E-07	3.09E-09	-5.69E-04
Output material flows																
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.62E-02	0.00E+00	6.89E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20E-06	9.48E-01	6.84E-08	-9.64E-03
MER	kg	5.17E-05	0.00E+00	5.21E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.52E-09	5.45E-08	3.08E-10	-3.49E-05
EE	MJ	1.03E-01	0.00E+00	5.72E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76E-05	2.13E-04	1.69E-06	-5.78E-02

Key:
GWP-t – global warming potential - total **GWP-f** – global warming potential fossil fuels **GWP-b** – global warming potential - biogenic **GWP-l** – global warming potential - land use and land use change
ODP – ozone depletion potential **AP** - acidification potential **EP-fw** - eutrophication potential - aquatic freshwater **EP-m** - eutrophication potential - aquatic marine
EP-t - eutrophication potential - terrestrial **POCP** - photochemical ozone formation potential **ADPF*2** - abiotic depletion potential – fossil resources **ADPE*2** - abiotic depletion potential - minerals&metals
WDP*2 - Water (user) deprivation potential **PERE** - Use of renewable primary energy **PERM** - use of renewable primary energy resources **PERT** - total use of renewable primary energy resources
PENRE - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources **PENRT** - total use of non-renewable primary energy resources
SM - use of secondary material **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of fresh water **HWD** - hazardous waste disposed
NHWD - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for re-use **MFR** - materials for recycling **MER** - materials for energy recovery
EE - exported energy


ift ROSENHEIM																
Results per 1 kg Geopress G																
Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Additional environmental impact indicators																
PM	Disease incidence	8.27E-07	6.08E-09	1.32E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08E-09	5.57E-09	6.89E-11	-5.16E-07
IRP*1	kBq U235-eq.	3.13E+00	8.62E-04	5.93E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41E-04	1.50E-03	1.28E-05	-1.83E+00
ETP-fw*2	CTUe	1.59E+02	5.01E-01	6.39E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.13E-02	3.50E-01	4.27E-03	-9.67E+01
HTP-c*2	CTUh	1.50E-08	0.00E+00	9.85E-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.57E-12	5.26E-11	2.52E-13	-9.84E-09
HTP-nc*2	CTUh	6.38E-07	2.78E-11	1.07E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12E-10	1.70E-09	2.85E-12	-3.72E-07
SQP*2	dimensionless	3.91E+01	9.33E-01	9.75E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55E-01	6.71E-01	2.22E-02	-2.33E+01

Key:
PM – particulate matter emissions potential **IRP*1** – ionizing radiation potential – human health **ETP-fw*2** - Eco-toxicity potential – freshwater **HTP-c*2** - Human toxicity potential – cancer effects **HTP-nc*2** - Human toxicity potential – non-cancer effects **SQP*2** – soil quality potential

Disclaimers:

*1 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.

*2 The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

 Results per 1 kg Geopress K / K Gas																
	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Core indicators																
GWP-t	kg CO ₂ equivalent	8.32E+00	7.58E-02	5.14E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	3.22E-02	4.40E-04	-6.72E+00
GWP-f	kg CO ₂ equivalent	8.15E+00	7.57E-02	7.10E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	3.27E-02	4.37E-04	-6.68E+00
GWP-b	kg CO ₂ equivalent	1.49E-01	2.64E-05	5.07E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47E-06	-5.70E-04	2.66E-06	-2.87E-02
GWP-l	kg CO ₂ equivalent	2.25E-02	3.88E-05	1.78E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.21E-06	4.14E-05	3.18E-07	-1.30E-02
ODP	kg CFC-11-eq.	5.68E-06	1.28E-09	7.69E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72E-10	3.73E-10	1.03E-11	-7.57E-08
AP	mol H ⁺ -eq.	4.59E-01	2.96E-04	2.88E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47E-05	2.14E-04	3.11E-06	-9.04E-02
EP-fw	kg P-eq.	3.66E-02	6.34E-06	4.49E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.52E-07	1.38E-05	1.15E-07	-3.52E-02
EP-m	kg N-eq.	2.56E-02	5.40E-05	1.69E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68E-05	6.85E-05	1.16E-06	-2.33E-02
EP-t	mol N-eq.	3.41E-01	5.59E-04	4.25E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80E-04	7.13E-04	4.21E-06	-3.21E-01
POCP	kg NMVOC-eq.	9.64E-02	2.06E-04	1.07E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59E-05	2.72E-04	1.25E-05	-4.41E-01
ADPF*2	MJ	1.02E+02	0.00E+00	9.85E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91E-08	1.38E-06	9.55E-03	-6.73E-03
ADPE*2	kg Sb equivalent	6.95E-03	1.15E+00	4.09E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.33E-01	9.16E-10	-8.46E+01
WDP*2	m ³ world-eq. deprived	6.37E+00	5.73E-03	3.38E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.74E-04	5.77E-03	5.28E-05	-6.74E+00
Resource management																
PERE	MJ	1.89E+01	1.44E-02	1.40E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	3.18E+00	1.63E-04	-2.48E+01
PERM	MJ	3.25E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	-3.13E+00	0.00E+00	0.00E+00
PERT	MJ	2.22E+01	1.44E-02	1.40E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.55E-02	1.63E-04	-2.48E+01
PENRE	MJ	9.98E+01	1.15E+00	2.50E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	4.44E-01	4.15E-03	-8.47E+01
PENRM	MJ	2.57E+00	0.00E+00	-2.46E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	-1.11E-01	-4.15E-03	0.00E+00
PENRT	MJ	1.02E+02	1.15E+00	4.09E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.33E-01	0.00E+00	-8.47E+01
SM	kg	2.86E-01	4.81E-04	9.23E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48E-05	4.71E-04	3.65E-06	-2.71E-01
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	1.82E-01	1.57E-04	3.02E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13E-05	1.45E-04	9.59E-06	-1.85E-01
Categories of waste																
HWD	kg	7.38E-01	8.41E-04	1.73E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13E-04	1.08E-03	8.20E-06	-6.86E-01
NHWD	kg	1.32E+02	2.69E-02	2.01E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.62E-03	5.38E-02	2.44E-04	-1.27E+02
RWD	kg	2.01E-04	0.00E+00	1.98E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34E-08	3.83E-07	3.01E-09	-1.96E-04
Output material flows																
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.78E-02	0.00E+00	7.94E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20E-06	8.87E-01	6.66E-08	-1.30E-02
MER	kg	4.85E-05	0.00E+00	2.34E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.52E-09	6.22E-08	2.99E-10	-3.62E-05
EE	MJ	1.05E-01	0.00E+00	6.60E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76E-05	2.16E-04	1.64E-06	-9.19E-02

Key:
GWP-t – global warming potential - total **GWP-f** – global warming potential fossil fuels **GWP-b** – global warming potential - biogenic **GWP-l** – global warming potential - land use and land use change
ODP – ozone depletion potential **AP** - acidification potential **EP-fw** - eutrophication potential - aquatic freshwater **EP-m** - eutrophication potential - aquatic marine
EP-t - eutrophication potential - terrestrial **POCP** - photochemical ozone formation potential **ADPF*2** - abiotic depletion potential – fossil resources **ADPE*2** - abiotic depletion potential - minerals&metals
WDP*2 - Water (user) deprivation potential **PERE** - Use of renewable primary energy **PERM** - use of renewable primary energy resources **PERT** - total use of renewable primary energy resources
PENRE - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources **PENRT** - total use of non-renewable primary energy resources
SM - use of secondary material **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of fresh water **HWD** - hazardous waste disposed
NHWD - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for re-use **MFR** - materials for recycling **MER** - materials for energy recovery
EE - exported energy

ift ROSENHEIM																
Results per 1 kg Geopress K / K Gas																
	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Additional environmental impact indicators																
PM	Disease incidence	1.16E-06	7.35E-09	5.68E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08E-09	4.05E-09	6.71E-11	-1.09E-06
IRP*1	kBq U235-eq.	7.69E-01	1.04E-03	8.83E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41E-04	1.54E-03	1.25E-05	-7.41E-01
ETP-fw*2	CTUe	5.58E+02	6.06E-01	9.40E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.13E-02	2.66E-01	4.15E-03	-5.27E+02
HTP-c*2	CTUh	7.01E-08	0.00E+00	3.50E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.57E-12	4.56E-11	2.45E-13	-6.68E-08
HTP-nc*2	CTUh	5.94E-06	3.36E-11	1.49E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12E-10	1.60E-09	2.78E-12	-5.75E-06
SQP*2	dimensionless	1.52E+02	1.13E+00	6.86E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55E-01	5.83E-01	2.16E-02	-1.44E+02

Key:
PM – particulate matter emissions potential **IRP*1** – ionizing radiation potential – human health **ETP-fw*2** - Eco-toxicity potential – freshwater **HTP-c*2** - Human toxicity potential – cancer effects **HTP-nc*2** - Human toxicity potential – non-cancer effects **SQP*2** – soil quality potential

Disclaimers:

*1 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.

*2 The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

6.4 Interpretation, LCA presentation and critical review

Evaluation

The environmental impacts of

- Geopress
- Geopress G and
- Geopress K / K Gas

differ considerably from each other. The differences in the environmental impact of the products lie in the various pre-products and raw materials used and in the mass of the pre-products and raw materials used in each case. Increasing the proportion of recycling can reduce these environmental impacts.

The main environmental impact of production is caused by gunmetal in press connectors Geopress and Geopress G and silicon bronze in press connectors Geopress K and Geopress K G. This is to be expected, as these raw materials account for up to over 99 percent depending on the product and the high LCIA values associated with the raw material are the main source of emissions.

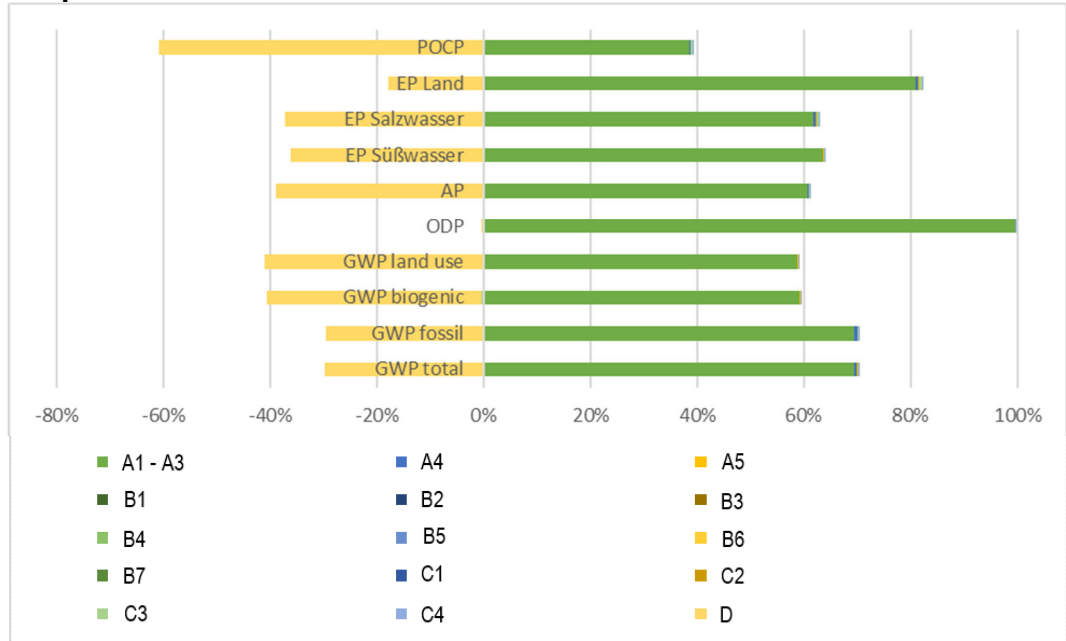
The LCA covers the complete life cycle. As the products do not generate any emissions in the use stage, here the value is 0. The replacement was balanced separately in B4 for 1 year as a scenario. Otherwise, there is no environmental impact during the use phase. The more gunmetal or silicon bronze in the product, the greater the environmental impact.

Due to the main material gunmetal or silicon bronze, there are correspondingly high credits at the end of life (depending on the environmental indicator).

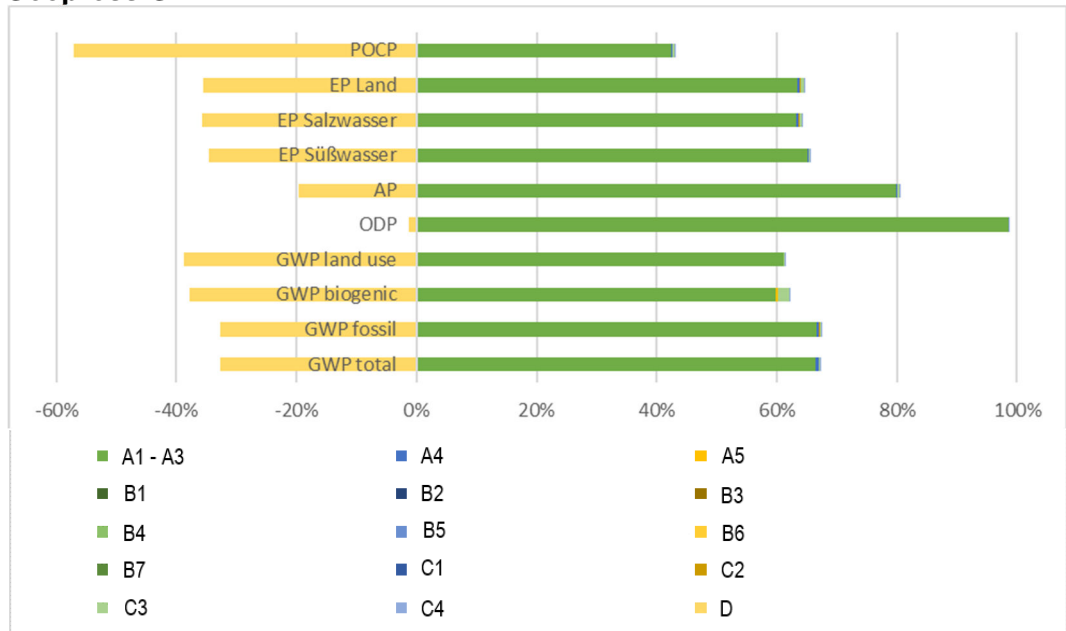
The charts below show the allocation of the main environmental impacts.

The values obtained from the LCA calculation are suitable for the certification of buildings.

Geopress



Geopress G



Geopress K / K Gas



Illustration 3 Percentage of the modules in selected environmental impact indicators

Report

The LCA report underlying this EPD was developed according to the requirements of DIN EN ISO 14040 and DIN EN ISO 14044 as well as DIN EN 15804 and DIN EN ISO 14025. It is deposited with ift Rosenheim. The results and conclusions reported to the target group are complete, correct, without bias and transparent. The results of the study are not designed to be used for comparative statements intended for publication.

Critical review

The critical review of the LCA and of the report took place in the course of verification of the EPD and was carried out by the external auditor Prof. Dr. Eric Brehm.

7 General information regarding the EPD

Comparability

This EPD was prepared in accordance with DIN EN 15804 and is therefore only comparable to those EPDs that also comply with the requirements set out in DIN EN 15804.

Any comparison must refer to the building context and the same boundary conditions of the various life cycle stages.

For comparing EPDs of construction products, the rules set out in DIN EN 15804, Clause 5.3, apply.

The detailed individual results of the products were summarised on the basis of conservative assumptions and differ from the average results. Identification of the product groups and the resulting variations are documented in the background report.



Product group connecting technology

Communication The communications format of this EPD meets the requirements of EN 15942:2012 and is therefore the basis for B2B communication. Only the nomenclature has been changed according to DIN EN 15804.

Verification Verification of the Environmental Product Declaration is documented in accordance with the ift "Richtlinie zur Erstellung von Typ III Umweltproduktdeklarationen" (Guidance on preparing Type III Environmental Product Declarations) in accordance with the requirements set out in DIN EN ISO 14025.

This declaration is based on the PCR documents "PCR Part A" PCR-A-0.3:2018 and "Piping systems including connecting and fitting technology" PCR-RS-1.0:2022.

The European standard EN 15804 serves as the core PCR ^{a)}
Independent verification of the declaration and statement according to EN ISO 14025:2010
Independent third party verifier: ^{b)} Eric Brehm
^{a)} Product category rules ^{b)} Optional for business-to-business communication Mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4).

Revisions of this document

No.	Date	Note	Person in charge	Testing personnel
1	11.12.2023	External verification	Pscherer	Brehm

8 Bibliography

1. **Research project.** "EPDs für transparente Bauelemente" (EPDs for transparent building components) - Final report. Rosenheim: ift Rosenheim GmbH, 2011. SF-10.08.18.7-09.21/II 3-F20-09-1-067.
2. **PCR Part A.** Product category rules for environmental product declarations as per EN ISO 14025 and EN 15804. Rosenheim: ift Rosenheim, 2018.
3. **ift-Guideline NA-01/3.** General guideline for preparation of Type III Environmental Product Declarations Rosenheim: ift Rosenheim GmbH, 2015.
4. **Klöpffer, W und Grahl, B.** Ökobilanzen (LCA). Weinheim: Wiley-VCH-Verlag, 2009.
5. **Eyerer, P. und Reinhardt, H.-W.** Ökologische Bilanzierung von Baustoffen und Gebäuden - Wege zu einer ganzheitlichen Bilanzierung. (LCA of building materials and buildings - Routes to integrated LCA). Basel: Birkhäuser Verlag, 2000.
6. **Gefahrstoffverordnung - GefStoffV. (Hazardous substances regulation).** Verordnung zum Schutz vor Gefahrstoffen (Regulation on protection against hazardous substances). Berlin: BGBl. (Federal Gazette) I S. 3758, 2017.
7. **Chemikalien-Verbotsverordnung - ChemVerbotsV. (Chemicals Prohibition Regulation).** Verordnung über Verbote und Beschränkungen des Inverkehrbringens gefährlicher Stoffe, Zubereitungen und Erzeugnisse Chemikaliengesetz (Regulation on bans and restrictions of the placing on the market of hazardous substances, formulations and products covered by the Chemicals Law). Berlin: BGBl. (Federal Gazette) I S. 1328, 2017.
8. **DIN EN ISO 14040:2018-05.** Environmental management - Life cycle assessment - Principles and framework. Berlin: Beuth Verlag GmbH, 2018.
9. **DIN EN ISO 14044:2006-10.** Environmental management - Life cycle assessment - Requirements and guidelines. Berlin: Beuth Verlag GmbH, 2006.
10. **EN ISO 14025:2011-10.** Environmental labels and declarations - Type III environmental declarations - Principles and procedures. Berlin: Beuth Verlag GmbH, 2011.
11. **EN 15942:2012-01.** Sustainability of construction works - Environmental product declarations - Communication format business-to-business. Berlin: Beuth Verlag GmbH, 2012.
12. **Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety).** Leitfaden Nachhaltiges Bauen (Guidance on Sustainable Building). Berlin: s.n., 2016.
13. **DIN EN 13501-1:2010-01.** Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests. Berlin: Beuth Verlag GmbH, 2010.
14. **ISO 21930:2017-07.** Sustainability in building construction - Environmental declaration of building products. Berlin: Beuth Verlag, 2017.
15. **Bundesimmissionsschutzgesetz - BImSchG. (Federal Immission Law).** Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnlichen Vorgängen (Law on harmful environmental impacts by air contamination, noise, vibrations and similar processes). Berlin: BGBl. (Federal Gazette) I S. 3830, 2017.
16. **Chemikaliengesetz – ChemG (Chemicals Act).** Law on protection against hazardous substances - Subdivided into Chemicals Law and a series of regulations; of relevance here: Law on protection against hazardous substances. Berlin: BGBl. (Federal Gazette) I S. 1146, 2017.
17. **DIN EN ISO 12457- Parts 1-4 :2003-01.** Characterization of waste - Leaching; Compliance test for leaching of granular waste materials and sludges - Part 1-4: Berlin: Beuth Verlag GmbH, 2003.
18. **DIN EN 12457 - Parts 1-4:2003-01.** Characterization of waste - Leaching; Compliance test for leaching of granular waste materials and sludges - Part 1-4: Berlin: Beuth Verlag GmbH, 2003.
19. **Federal Environmental Agency.** TEXTS 151/2021 - Promoting high-quality recycling of plastic waste from demolition waste and strengthening the use of recycled materials in construction products in line with the European Plastics Strategy. Dessau-Roßlau: Federal Environmental Agency, 2021. Vol. ISSN 1862-4804.
20. **ift Rosenheim GmbH.** Conditions and Guidance for the Use of ift Test Documents. Rosenheim: s.n., 2016.
21. **DIN EN ISO 16000 Parts 6, 9 11.** Indoor air: Determination of the emission of volatile organic compounds from building products and furnishing Berlin: Beuth Verlag GmbH, 2012, 2008, 2006.
22. **DIN EN 15804:2012+A2:2019+AC:2021.** Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products: Berlin: Beuth Verlag GmbH, 2022.
23. **OENORM S 5200:2009-04-01.** Radioactivity in construction materials. Berlin: Beuth Verlag GmbH, 2009.
24. **PCR Part B - Piping systems including connecting and fitting technology.** Product category rules for environmental product declarations as per EN ISO 14025 and EN 15804. Rosenheim: ift Rosenheim, 2022.

9 Annex A

Description of life cycle scenarios for Geopress press connector

Product stage			Con- struction process stage		Use stage*							End-of-life stage				Benefits and loads beyond system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material supply	Transport	production	Transport	Construction/installation process	Use	maintenance	Repair	replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse Recovery Recycling potential
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

* For declared B-modules, the calculation of the results is performed taking into account the specified RSL related to one year

Table 6 Overview of applied life cycle stages

The scenarios were calculated taking into account the defined RSL (see 4 Use stage).

The scenarios were based on information provided by the manufacturer. The scenarios were furthermore based on the research project "EPDs for transparent building components" (1).

Note: The standard scenarios selected are presented in bold type. They were also used for calculating the indicators in the summary table.

- ✓ Included in the LCA
- Not included in the LCA

A4 Transport to construction site		
No.	Scenario	Description
A4.1	National	Transport mix 35-53% capacity used ¹ , approx. 600 km
A4.2	International/EU country	Transport mix 35-53% capacity used ¹ , approx. 2,000 km
A4.3	International/Non-EU	Transport mix 35-53% capacity used ¹ , approx. 15,000 km

¹ Capacity used: utilized loading capacity of the truck

The transport distances shown represent a transport average with the following transport mix. The scenarios include the return transport, if applicable.

Shipping method	Network fleet structure	Share in %		
		A4.1	A4.2	A4.3
Parcel service provider (CEP - Courier-Express- Parcel service)	Van 7.5 – 16 t (Euro 6), diesel, 35% capacity utilization	2	0	0.5
Forwarding agency and own truck fleet	32 - 40 t truck/semitrailer (Euro 6), diesel, 53% capacity utilization	98	90	85
Air freights	Cargo and passenger aircrafts, kerosene	0	9	11
Seagoing vessels/containers	Seagoing/container vessels to receiving port, heavy oil	0	1	3.5

A4 Transport to construction site	Transport weight [kg] per declared unit	Density [kg/m ³]	Capacity load factor ²
Geopress	1.01	7.90	0.8
Geopress G	1.00	7.90	0.8
Geopress K / K G	1.21	7.90	0.8

² Capacity load factor:

- = 1 Product completely fills the packaging (without air inclusion)
- < 1 Packaging contains unused volume (e.g. air, filling material)
- > 1 Product is packed in compressed form

The scenarios were calculated per kg and can be scaled to the product group using the above masses.

A4 Transport to construction site	Unit	A4.1	A4.2	A4.3
Core indicators				
GWP-t	kg CO ₂ equivalent	6.27E-05	3.33E-04	2.81E-03
GWP-f	kg CO ₂ equivalent	6.26E-05	3.33E-04	2.81E-03
GWP-b	kg CO ₂ equivalent	2.18E-08	8.84E-08	7.09E-07
GWP-l	kg CO ₂ equivalent	3.21E-08	1.06E-07	7.96E-07
ODP	kg CFC-11-eq.	1.06E-12	5.45E-12	4.58E-11
AP	mol H ⁺ -eq.	1.71E-07	1.16E-06	1.03E-05
EP-fw	kg P-eq.	5.24E-09	1.74E-08	1.31E-07
EP-m	kg N-eq.	4.47E-08	3.98E-07	3.63E-06
EP-t	mol N-eq.	4.62E-07	4.21E-06	3.85E-05
POCP	kg NMVOC-eq.	2.45E-07	1.62E-06	1.42E-05
ADPF	MJ	9.49E-04	4.78E-03	4.00E-02
ADPE	kg Sb equivalent	1.81E-10	5.55E-10	4.09E-09
WDP	m ³ world-eq. deprived	4.74E-06	1.66E-05	1.27E-04
Resource management				
PERE	MJ	1.19E-05	4.13E-05	3.15E-04
PERM	MJ	0.00	0.00	0.00
PERT	MJ	1.19E-05	4.13E-05	3.15E-04
PENRE	MJ	9.49E-04	4.78E-03	4.00E-02
PENRM	MJ	0.00	0.00	0.00

Product group connecting technology

PENRT	MJ	9.49E-04	4.78E-03	4.00E-02
SM	kg	3.98E-07	1.33E-06	1.00E-05
RSF	MJ	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00
FW	m ³	1.30E-07	4.63E-07	3.54E-06
Categories of waste				
HWD	kg	6.96E-07	2.36E-06	1.78E-05
NHWD	kg	2.23E-05	7.40E-05	5.57E-04
RWD	kg	2.05E-10	7.39E-10	5.69E-09
Output material flows				
CRU	kg	0.00	0.00	0.00
MFR	kg	7.38E-09	2.84E-08	2.27E-07
MER	kg	4.16E-11	1.35E-10	1.02E-09
EE	MJ	1.68E-07	5.81E-07	4.41E-06
Additional environmental impact indicators				
PM	Disease incidence	6.08E-12	1.94E-11	1.43E-10
IRP	kBq U235-eq.	8.61E-07	3.15E-06	2.44E-05
ETPfw	CTUe	5.01E-04	2.44E-03	2.02E-02
HTPc	CTUh	2.78E-14	9.74E-14	7.45E-13
HTPnc	CTUh	6.85E-13	3.61E-12	3.04E-11
SQP	dimensionless	9.33E-04	2.92E-03	2.12E-02

A5 Construction/Installation

No.	Scenario	Description
A5.1	Manual	According to the manufacturer. the products are installed with battery-operated pressing pliers (0.0009 kWh/kg, electricity mix (GLO)).

In case of deviating consumption during installation/assembly of the products which forms part of the site management, they are covered at the building level.

The following quantities of waste materials are produced during installation.

Product group	Waste materials in kg	of which quantities collected for waste recycling (output materials) in kg
Geopress	0.011	0.029
Geopress G	0.000	0.022
Geopress K / K G	0.209	0.026

Ancillary materials, consumables, use of water, use of other resources, material losses as well as direct emissions during installation are negligible.

It is assumed that the packaging material in the Module construction / installation is sent to waste handling. Waste is only thermally recycled in line with the conservative approach. Benefits from A5 are specified in module D:

- Electricity replaces electricity mix (GLO, high voltage, market group).
- Thermal energy replaces thermal energy from natural gas (district or industrial, natural gas, RoW);
- Gunmetal recyclate made from A5 replaces 100 % gunmetal (Geopress, Geopress G).
- SiBr recyclate from A5 replaces 100 % SiBr (Geopress K, Geopress K G).

Transport to the recycling plants is included.

Since this is a single scenario, the results are shown in the relevant summary table.

B1 Use (not relevant)

Refer to Section 4 Use stage - Emissions to the environment.

No emissions are known which may occur during the use stage of the products because press fitting is without contact to air, water and soil.

The following additional information is not part of the LCA, life cycle inventory or data from information modules.

Since this is a single scenario, the results are shown in the relevant summary table.

B2 Cleaning, maintenance and repair

B2.1 Cleaning (not relevant)

No cleaning is required.

Ancillary materials, consumables, use of energy and water, material losses and waste as well as transport distances during cleaning are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B2.2 Maintenance and repair (not relevant)

No maintenance is required.

Ancillary materials, consumables, use of energy and water, waste, material losses and transport distances during maintenance are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B3 Repair

No repair of the components of the building part is required.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance from Viega GmbH & Co. KG.

Ancillary materials, consumables, use of energy and water, waste, material losses and transport distances during repair are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B4 Exchange / Replacement

No.	Scenario	Description
B4.1	No replacement	According to manufacturer, a replacement is not planned.
B4.2	Normal use and heavy use	One-time replacement after 50 years (RSL)* Energy consumption 0.0009 kWh/kg.

*Assumptions for evaluation of possible environmental impacts; statements made do not constitute any guaranty or warranty of performance.

The statements made in this EPD are only informative to allow evaluation at the building level.

It is assumed that no replacement will be necessary during the 50-year reference service life and the 50-year building service life. The environmental impacts of replacement are due to the product, construction and disposal stages.

The results were based on one year, taking into account the RSL.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance from Viega GmbH & Co. KG.

B4 Exchange/ replacement	Unit	B4.1	B4.2		
			Geopress	Geopress G	Geopress K / K G
Core indicators					
GWP-t	kg CO ₂ equivalent	0.00	5.24E+00	4.57E+00	1.07E+01
GWP-f	kg CO ₂ equivalent	0.00	5.20E+00	4.51E+00	1.00E+01
GWP-b	kg CO ₂ equivalent	0.00	2.94E-02	4.55E-02	6.42E-01
GWP-l	kg CO ₂ equivalent	0.00	1.04E-02	1.47E-02	2.58E-02
ODP	kg CFC-11-eq.	0.00	4.37E-05	8.59E-06	5.70E-06
AP	mol H ⁺ -eq.	0.00	2.62E-02	3.40E-02	6.59E-01
EP-fw	kg P-eq.	0.00	1.85E-03	2.23E-03	5.27E-02
EP-m	kg N-eq.	0.00	3.55E-02	4.35E-02	4.78E-01
EP-t	mol N-eq.	0.00	1.34E-02	1.64E-02	1.35E-01
POCP	kg NMVOC-eq.	0.00	1.34E-02	1.64E-02	1.35E-01
ADPF	MJ	0.00	8.30E+01	9.62E+01	1.24E+02
ADPE	kg Sb equivalent	0.00	8.03E-04	1.07E-03	9.97E-03
WDP	m ³ world-eq. deprived	0.00	1.59E+01	2.30E+01	6.69E+00
Resource management					
PERE	MJ	0.00	4.59E+01	6.66E+01	2.55E+01
PERM	MJ	0.00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	0.00	4.59E+01	6.66E+01	2.55E+01
PENRE	MJ	0.00	8.30E+01	9.62E+01	1.24E+02
PENRM	MJ	0.00	-7.46E-17	0.00E+00	1.82E-17
PENRT	MJ	0.00	8.30E+01	9.62E+01	1.24E+02
SM	kg	0.00	1.99E-02	2.59E-02	4.09E-01
RSF	MJ	0.00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	0.00	3.28E-01	4.72E-01	2.10E-01
Categories of waste					
HWD	kg	0.00	3.46E-01	4.28E-01	1.00E+00
NHWD	kg	0.00	7.10E+00	8.37E+00	1.90E+02
RWD	kg	0.00	3.23E-04	4.29E-04	2.34E-04
Output material flows					

CRU	kg	0.00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00	9.62E-01	9.72E-01	9.28E-01
MER	kg	0.00	1.29E-05	1.80E-05	6.25E-05
EE	MJ	0.00	4.71E-02	5.32E-02	1.45E-01
Additional environmental impact indicators					
PM	Disease incidence	0.00	2.55E-07	3.36E-07	1.66E-06
IRP	kBq U235-eq.	0.00	1.05E+00	1.39E+00	9.10E-01
ETPfw	CTUe	0.00	5.00E+01	6.54E+01	7.74E+02
HTPc	CTUh	0.00	5.54E-09	5.37E-09	1.00E-07
HTPnc	CTUh	0.00	2.17E-07	2.77E-07	8.61E-06
SQP	dimensionless	0.00	1.37E+01	1.73E+01	2.16E+02

B5 Improvement/modernization (not relevant)

According to the manufacturer, the elements are not included in the improvement/modernisation activities for buildings.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance from Viega GmbH & Co. KG.

Ancillary materials, consumables, use of energy and water, material losses, waste as well as transport distances during replacement are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B6 Operational energy use (not relevant)

There is no energy used during normal use.

Ancillaries, consumables, water use, material losses, waste materials, transport distances and other scenarios are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B7 Operational water use (not relevant)

No water consumption when used as intended. Water consumption for cleaning is specified in Module B2.1.

Ancillaries, consumables, energy use, material losses, waste materials, transport distances and other scenarios are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

C1 Deconstruction

No.	Scenario	Description
C1	Deconstruction	<p>Connecting technology 99% deconstruction.</p> <p>Further deconstruction rates are possible, give adequate reasons.</p>

No relevant inputs or outputs apply to the scenario selected. The energy consumed for deconstruction is negligible. Any arising consumption is marginal.

Since this is a single scenario, the results are shown in the relevant summary table.

In case of deviating consumption the removal of the products forms part of site management and is covered at the building level.

C2 Transport

No.	Scenario	Description
C2	Transport	<p>Transport to collection point with >32 t truck (Euro 4), diesel, 29.96 t payload, 53% capacity used, 50 km (1)</p>

Since this is a single scenario, the results are shown in the relevant summary table.

C3 Waste management

No.	Scenario	Description
C3	Current market situation	<p>Share for recirculation of materials:</p> <ul style="list-style-type: none"> • (Stainless) Steel 98% in melt (UBA, 2017) • Remaining metals 97 % in melt (UBA, 2017) • Plastics 60 % thermal recycling in incineration plants (Zukunft Bauen, 2017) • Plastics 40 % recycled (Zukunft Bauen, 2017) • Remainder to landfill/disposal,

No electricity consumption for the recycling plant per declared unit was taken into account for waste treatment due to the low proportion and lack of sources.

As the products are placed on the European market, the disposal scenario is based on average European data sets.

The below table presents the disposal processes and their percentage by mass/weight. The calculation is based on the above mentioned shares in percent related to the declared unit of the product system.

Product group connecting technology

C3 Disposal	Unit	Geopress	Geopress G	Geopress K / K G
Collection process, collected separately	kg	0.99	0.99	0.99
Collection process, collected as mixed construction waste	kg	0.01	0.01	0.01
Recovery system, for re-use	kg	0.00	0.00	0.00
Recovery system, for recycling	kg	0.94	0.95	0.89
Recovery system, for energy recovery	kg	0.02	0.01	0.07
Disposal	kg	0.04	0.04	0.04

The 100% scenarios differ from the current average recovery shown here (in background report C3.4). The evaluation of each scenario is described in the background report.

Since this is a single scenario, the results are shown in the summary table.

C4 Disposal

No.	Scenario	Description
C4	Disposal	The non-recordable amounts and losses within the re-use/ recycling chain (C1 and C3) are modelled as “disposed” (EU-28).

The 100% scenarios differ from the current average recovery shown here (in background report C4.4). The evaluation of each scenario is described in the background report.

The consumption in scenario C4 results from physical pre-treatment, waste recycling and management of the disposal site. The benefits obtained here from the substitution of primary material production are allocated to Module D, e.g. electricity and heat from waste incineration.

Since this is a single scenario, the results are shown in the summary table.

D Benefits and loads from beyond the system boundaries

No.	Scenario	Description
D	Recycling potential	<ul style="list-style-type: none"> • CuNiFe recyclate from C3 excluding the recyclate used in A3 replaces 100% of CuNiFe; • Steel scrap from C3 excluding the scrap used in A3 replaces 100% of steel; • SiBr scrap from C3 excluding the scrap used in A3 replaces 100% of bronze; • Gunmetal scrap from C3 excluding the scrap used in A3 replaces 100% of copper; • Brass scrap from C3 excluding the scrap used in A3 replaces 100% of bronze; • Stainless steel scrap from C3 excluding the scrap used in A3 replaces 100% of stainless steel; • Plastic recyclate from C3 excluding the plastics used in A3 replaces 60% of polyethylene granules or tetrafluoroethylene. • Benefits from incineration plant: Electricity replaces electricity mix (GLO), thermal energy replaces thermal energy from natural gas (RoW).

The values in Module D result from recycling of the packaging material in Module A5 and from deconstruction at the end of service life.

The 100% scenarios differ from the current average recovery shown here (in background report D4). The evaluation of each scenario is described in the background report.

Since this is a single scenario, the results are shown in the summary table.

10 Annex B

Conversion table for unit weights

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress K	Geopress K-Fittings	250361	9715 Coupling with SC 25 5 A 9	Coupling with SC	9715	25	710057	138	0.14
Geopress K	Geopress K-Fittings	250371	9715 Coupling with SC 32 5 A 9	Coupling with SC	9715	32	710064	188	0.19
Geopress K	Geopress K-Fittings	250401	9715 Coupling with SC 63 5 A 9	Coupling with SC	9715	63	710101	652	0.65
Geopress K	Geopress K-Fittings	250421	97155 Repair coupling with SC 325 A 9	Repair coupling with SC	97155	32	710118	231	0.23
Geopress K	Geopress K-Fittings	250431	97155 Repair coupling with SC 405 A 9	Repair coupling with SC	97155	40	710125	347	0.35
Geopress K	Geopress K-Fittings	250441	97155 Repair coupling with SC 505 A 9	Repair coupling with SC	97155	50	710132	530	0.53
Geopress K	Geopress K-Fittings	250451	97155 Repair coupling with SC 635 A 9	Repair coupling with SC	97155	63	710149	730	0.73
Geopress K	Geopress K-Fittings	250471	97152 Reducing coupling with SC 32x25 5 A 9	Reducing coupling with SC	97152	32 X 25	710156	162	0.16
Geopress K	Geopress K-Fittings	250481	97152 Reducing coupling with SC 40x32 5 A 9	Reducing coupling with SC	97152	40 X 32	710163	228	0.23
Geopress K	Geopress K-Fittings	250541	9711 Adapter with SC 25x3/4 5 A 9	Adapter with SC	9711	25 X 3/4	710217	168	0.17
Geopress K	Geopress K-Fittings	250551	9711 Adapter with SC 32x3/4 5 A 9	Adapter with SC	9711	32 X 3/4	710224	240	0.24
Geopress K	Geopress K-Fittings	250561	9711 Adapter with SC 32x1 5 A 9	Adapter with SC	9711	32 X 1	710231	242	0.24
Geopress K	Geopress K-Fittings	250571	9711 Adapter with SC 32x11/4 5 A 9	Adapter with SC	9711	32 X 11/4	710248	294	0.29
Geopress K	Geopress K-Fittings	250581	9711 Adapter with SC 32x11/2 5 A 9	Adapter with SC	9711	32 X 11/2	710255	308	0.31
Geopress K	Geopress K-Fittings	250601	9711 Adapter with SC 40x11/4 5 A 9	Adapter with SC	9711	40 X 11/4	710279	342	0.34
Geopress K	Geopress K-Fittings	250611	9711 Adapter with SC 40x11/2 5 A 9	Adapter with SC	9711	40 X 11/2	710286	362	0.36
Geopress K	Geopress K-Fittings	250631	9711 Adapter with SC 50x11/4 5 A 9	Adapter with SC	9711	50 X 11/4	710309	564	0.56
Geopress K	Geopress K-Fittings	250661	9711 Adapter with SC 63x2 5 A 9	Adapter with SC	9711	63 X 2	710330	788	0.79
Geopress K	Geopress K-Fittings	250671	9712 Adapter with SC 25x3/4 5 A 9	Adapter with SC	9712	25 X 3/4	710347	194	0.19
Geopress K	Geopress K-Fittings	250681	9712 Adapter with SC 32x1 5 A 9	Adapter with SC	9712	32 X 1	710354	242	0.24
Geopress K	Geopress K-Fittings	250711	9712 Adapter with SC 50x11/2 5 A 9	Adapter with SC	9712	50 X 11/2	710385	580	0.58
Geopress K	Geopress K-Fittings	250741	97151 Plug-in piece with SC 28x32 5 A 9	Plug-in piece with SC	97151	28 X 32	710415	216	0.22
Geopress K	Geopress K-Fittings	251041	97134 Adapter coupling with SC 32x32 5 A 9	Adapter coupling with SC	97134	32 X 32	710644	534	0.53
Geopress K	Geopress K-Fittings	251171	97131 Adapter with SC 32x22 5 A 9	Adapter with SC	97131	32 X 22	710682	750	0.75
Geopress K	Geopress K-Fittings	251181	9756 Cap with SC 25 5 A 9	Cap with SC	9756	25	710699	70	0.07
Geopress K	Geopress K-Fittings	251191	9756 Cap with SC 32 5 A 9	Cap with SC	9756	32	710705	94	0.09
Geopress K	Geopress K-Fittings	251351	9716 Elbow 90° with SC 25 5 A 9	Elbow 90° with SC	9716	25	710873	152	0.15
Geopress K	Geopress K-Fittings	251361	9716 Elbow 90° with SC 32 5 A 9	Elbow 90° with SC	9716	32	710880	205	0.21
Geopress K	Geopress K-Fittings	251381	9716 Elbow 90° with SC 50 5 A 9	Elbow 90° with SC	9716	50	710903	540	0.54
Geopress K	Geopress K-Fittings	251411	9714 Adapter elbow90° with SC 32x3/4 5 A 9	Adapter elbow 90° with SC	9714	32 X 3/4	710934	292	0.29
Geopress K	Geopress K-Fittings	251421	9714 Adapter elbow90° with SC 32x1 5 A 9	Adapter elbow 90° with SC	9714	32 X 1	710941	296	0.30
Geopress K	Geopress K-Fittings	251431	9714 Adapter elbow90° with SC 32x11/2 5 A 9	Adapter elbow 90° with SC	9714	32 X 11/2	710958	360	0.36
Geopress K	Geopress K-Fittings	251451	9714 Adapter elbow90° with SC 40x11/4 5 A 9	Adapter elbow 90° with SC	9714	40 X 11/4	710972	420	0.42
Geopress K	Geopress K-Fittings	251521	97142 Adapter elbow90° with SC 32x1 5 A 9	Adapter elbow 90° with SC	97142	32 X 1	711047	292	0.29
Geopress K	Geopress K-Fittings	251591	9726 Elbow 45° with SC 50 5 A 9	Elbow 45° with SC	9726	50	711115	510	0.51
Geopress K	Geopress K-Fittings	251601	9726 Elbow 45° with SC 63 5 A 9	Elbow 45° with SC	9726	63	711122	690	0.69
Geopress K	Geopress K-Fittings	251611	97262 Adapter elbow45° with SC 32x1 5 A 9	Adapter elbow 45° with SC	97262	32 X 1	711139	274	0.27
Geopress K	Geopress K-Fittings	251681	97161 Elbow 90° with SC 28x32 5 A 9	Elbow 90° with SC	97161	28 X 32	711177	258	0.26
Geopress K	Geopress K-Fittings	251771	9718 Tee with SC 25 5 A 9	Tee with SC	9718	25	711269	216	0.22
Geopress K	Geopress K-Fittings	251781	9718 Tee with SC 32 5 A 9	Tee with SC	9718	32	711276	292	0.29
Geopress K	Geopress K-Fittings	251791	9718 Tee with SC 40 5 A 9	Tee with SC	9718	40	711283	460	0.46
Geopress K	Geopress K-Fittings	251891	97531 Gas flow monitor 32TypA/DS 1 9	Gas flow monitor	97531	32 TYP A/D	711382	410	0.41
Geopress K	Geopress K-Fittings	251931	97551 Gas flow monitor 32TypC S 1 9	Gas flow monitor	97551	32 TYP C	711429	410	0.41
Geopress K	Geopress K-Fittings	252021	97532 Gas flow monitor 32TypA/D0 1 9	Gas flow monitor	97532	32 TYP A/D	711528	208	0.21

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress K	Geopress K-Fittings	252061	97552 Gas flow monitor 32TypC 0 1 9	Gas flow monitor	97552	32 TYP C	711566	207	0.21
Geopress K	Geopress K-Fittings	252081	97552 Gas flow monitor 63TypC 0 1 9	Gas flow monitor	97552	63 TYP C	711580	121	0.12
Geopress K	Geopress K-Fittings	252091	97522 Gas flow monitor 32TypR 0 1 9	Gas flow monitor	97522	32 TYP R	711597	208	0.21
Geopress K	Geopress K-Fittings	269471	97135 Adapter elbow90° with SC 32x22 5 A 9	Adapter elbow 90° with SC	97135	32 X 22	762209	1130	1.13
Geopress	Geopress-Accessory	575391	9605 Support pipe 25x3.0 2 1 9	Support pipe	9605	25 X 3.0	701857	46.8	0.05
Geopress	Geopress-Fittings	640201	96144HAEI elbow coupling ZAK46xd32 2G1 9	Elbow coupling	96144HA	ZAK 46 X D 32	663162	1068	1.07
Geopress	Geopress-Fittings	640211	96144HAEI elbow coupling ZAK46xd40 2G1 9	Elbow coupling	96144HA	ZAK 46 X D 40	663179	1150	1.15
Geopress	Geopress-Fittings	640221	96144HAEI elbow coupling ZAK46xd50 2G1 9	Elbow coupling	96144HA	ZAK 46 X D 50	663186	1360	1.36
Geopress	Geopress-Fittings	640231	96144HAEI elbow coupling ZAK46xd63 2G1 9	Elbow coupling	96144HA	ZAK 46 X D 63	663193	1650	1.65
Geopress	Geopress-Accessory	640980	96157 Sealing 32 6NA 9	Sealing	96157	32	656324	2.5	0.00
Geopress	Geopress-Accessory	640990	96157 Sealing 40 6NA 9	Sealing	96157	40	656331	3.5	0.00
Geopress	Geopress-Accessory	641000	96157 Sealing 50 6NA 9	Sealing	96157	50	656348	5	0.01
Geopress	Geopress-Accessory	641010	96157 Sealing 63 6NA 9	Sealing	96157	63	656355	9.7	0.01
Geopress	Geopress-Accessory	741730	9697 Clamping ring - 5 A 9	Clamping ring	9697	-	692223	87	0.09
Geopress	Geopress-Fittings	841831	96137HAAadapter with SC ZAK46xd32 2 1 9	Adapter	96137HA	ZAK 46 X D 32	640118	529.8	0.53
Geopress	Geopress-Fittings	841841	96137HAAadapter with SC ZAK46xd40 2 1 9	Adapter	96137HA	ZAK 46 X D 40	640125	639.5	0.64
Geopress	Geopress-Fittings	841851	96137HAAadapter with SC ZAK46xd50 2 1 9	Adapter	96137HA	ZAK 46 X D 50	640132	647.5	0.65
Geopress	Geopress-Fittings	841861	96137HAAadapter with SC ZAK46xd63 2 1 9	Adapter	96137HA	ZAK 46 X D 63	640149	720	0.72
Geopress	Geopress-Accessory	854091	9696 Built-in part 0.7-1.00m S Z 9	Built-in part	9696	0.7 - 1.00 M	668204	1647	1.65
Geopress	Geopress-Accessory	854141	9696 Built-in part 1.25-1.8m 7 H 9	Built-in part	9696	1.25 - 1.8 M	648763	3038	3.04
Geopress	Geopress-Accessory	854151	9696 Built-in part 1.5-2.0m 7 H 9	Built-in part	9696	1.5 - 2.0 M	648770	3225	3.23
Geopress	Geopress-Accessory	854191	9696 Built-in part 1.00-1.5m 7 H 9	Built-in part	9696	1.00 - 1.5 M	650681	2650	2.65
Geopress	Geopress-Accessory	856261	96159TWSealing 63 6 1A9	Sealing	96159TW	63	786540	9.1	0.01
Geopress	Geopress-Accessory	856341	96159TWSealing 32 6 1A9	Sealing	96159TW	32	787059	2.36	0.00
Geopress	Geopress-Fittings	870701	96532 Gas flow monitor 32TypA/D2 1 9	Gas flow monitor	96532	32 TYP A/D	555641	94	0.09
Geopress	Geopress-Fittings	870711	96532 Gas flow monitor 40TypA/D2 1 9	Gas flow monitor	96532	40 TYP A/D	555955	189	0.19
Geopress	Geopress-Fittings	870721	96532 Gas flow monitor 50TypA/D2 1 9	Gas flow monitor	96532	50 TYP A/D	555962	238	0.24
Geopress	Geopress-Fittings	870731	96532 Gas flow monitor 63TypA/D2 1 9	Gas flow monitor	96532	63 TYP A/D	555979	326.5	0.33
Geopress	Geopress-Fittings	870781	96552 Gas flow monitor 32TypC 2 1 9	Gas flow monitor	96552	32 TYP C	556020	104	0.10
Geopress	Geopress-Fittings	870811	96552 Gas flow monitor 63TypC 2 1 9	Gas flow monitor	96552	63 TYP C	556051	320	0.32
Geopress	Geopress-Fittings	905003	9611TW Adapter coupling with SC 32x3/4 2 1 9	Adapter coupling with SC	9611TW	32 X 3/4	764852	265	0.27
Geopress	Geopress-Fittings	905013	9611TW Adapter coupling with SC 32x1 2 1 9	Adapter coupling with SC	9611TW	32 X 1	764869	282	0.28
Geopress	Geopress-Fittings	905023	9611TW Adapter coupling with SC 32x11/4 2 1 9	Adapter coupling with SC	9611TW	32 X 1 1/4	764876	307	0.31
Geopress	Geopress-Fittings	905033	9611TW Adapter coupling with SC 32x11/2 2 1 9	Adapter coupling with SC	9611TW	32 X 1 1/2	764883	370	0.37
Geopress	Geopress-Fittings	905043	9611TW Adapter coupling with SC 40x1 2 1 9	Adapter coupling with SC	9611TW	40 X 1	764890	400	0.40
Geopress	Geopress-Fittings	905053	9611TW Adapter coupling with SC 40x11/4 2 1 9	Adapter coupling with SC	9611TW	40 X 1 1/4	764906	390	0.39
Geopress	Geopress-Fittings	905063	9611TW Adapter coupling with SC 40x11/2 2 1 9	Adapter coupling with SC	9611TW	40 X 1 1/2	764913	388	0.39
Geopress	Geopress-Fittings	905073	9611TW Adapter coupling with SC 50x1 2 1 9	Adapter coupling with SC	9611TW	50 X 1	764920	594	0.59
Geopress	Geopress-Fittings	905083	9611TW Adapter coupling with SC 50x11/4 2 1 9	Adapter coupling with SC	9611TW	50 X 1 1/4	764937	598	0.60
Geopress	Geopress-Fittings	905093	9611TW Adapter coupling with SC 50x11/2 2 1 9	Adapter coupling with SC	9611TW	50 X 1 1/2	764944	586	0.59
Geopress	Geopress-Fittings	905103	9611TW Adapter coupling with SC 63x11/2 2 1 9	Adapter coupling with SC	9611TW	63 X 1 1/2	764951	830	0.83
Geopress	Geopress-Fittings	905113	9611TW Adapter coupling with SC 63x2 2 1 9	Adapter coupling with SC	9611TW	63 X 2	764968	922	0.92
Geopress	Geopress-Fittings	905123	9612TW Adapter coupling with SC 32x1 2 1 9	Adapter coupling with SC	9612TW	32 X 1	765156	284	0.28
Geopress	Geopress-Fittings	905133	9612TW Adapter coupling with SC 40x11/4 2 1 9	Adapter coupling with SC	9612TW	40 X 11/4	765163	390	0.39
Geopress	Geopress-Fittings	905143	9612TW Adapter coupling with SC 50x11/4 2 1 9	Adapter coupling with SC	9612TW	50 X 11/4	765170	645	0.65
Geopress	Geopress-Fittings	905153	9612TW Adapter coupling with SC 50x11/2 2 1 9	Adapter coupling with SC	9612TW	50 X 11/2	765187	606	0.61
Geopress	Geopress-Fittings	905163	9612TW Adapter coupling with SC 63x2 2 1 9	Adapter coupling with SC	9612TW	63 X 2	765194	864	0.86
Geopress	Geopress-Fittings	905173	9615TW Coupling with SC 32 2 1 9	Coupling with SC	9615TW	32	765200	468	0.47

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress	Geopress-Fittings	905183	9615TW Coupling with SC 40 2 1 9	Coupling with SC	9615TW	40	765217	730	0.73
Geopress	Geopress-Fittings	905193	9615TW Coupling with SC 50 2 1 9	Coupling with SC	9615TW	50	765224	865	0.87
Geopress	Geopress-Fittings	905203	9615TW Coupling with SC 63 2 1 9	Coupling with SC	9615TW	63	765231	1238	1.24
Geopress	Geopress-Fittings	905213	96155TWRRepair coupling with SC 322 1 9	Repair coupling with SC	96155TW	32	765552	585	0.59
Geopress	Geopress-Fittings	905223	96155TWRRepair coupling with SC 402 1 9	Repair coupling with SC	96155TW	40	765569	844	0.84
Geopress	Geopress-Fittings	905233	96155TWRRepair coupling with SC 502 1 9	Repair coupling with SC	96155TW	50	765576	1076.82	1.08
Geopress	Geopress-Fittings	905243	96155TWRRepair coupling with SC 632 1 9	Repair coupling with SC	96155TW	63	765583	1438	1.44
Geopress	Geopress-Fittings	905253	96152TWRReducing coupling with SC 40x32 2 1 9	Reducing coupling with SC	96152TW	40 X 32	765590	506	0.51
Geopress	Geopress-Fittings	905263	96152TWRReducing coupling with SC 50x32 2 1 9	Reducing coupling with SC	96152TW	50 X 32	765606	622	0.62
Geopress	Geopress-Fittings	905273	96152TWRReducing coupling with SC 50x40 2 1 9	Reducing coupling with SC	96152TW	50 X 40	765613	700	0.70
Geopress	Geopress-Fittings	905283	96152TWRReducing coupling with SC 63x32 2 1 9	Reducing coupling with SC	96152TW	63 X 32	765620	808	0.81
Geopress	Geopress-Fittings	905293	96152TWRReducing coupling with SC 63x40 2 1 9	Reducing coupling with SC	96152TW	63 X 40	765637	828	0.83
Geopress	Geopress-Fittings	905303	96152TWRReducing coupling with SC 63x50 2 1 9	Reducing coupling with SC	96152TW	63 X 50	765644	1016	1.02
Geopress	Geopress-Fittings	905313	9616TW Elbow 90° with SC 32 2 1 9	Elbow 90° with SC	9616TW	3 2	765651	514	0.51
Geopress	Geopress-Fittings	905323	9616TW Elbow 90° with SC 40 2 1 9	Elbow 90° with SC	9616TW	4 0	765668	694	0.69
Geopress	Geopress-Fittings	905333	9616TW Elbow 90° with SC 50 2 1 9	Elbow 90° with SC	9616TW	5 0	765675	1000	1.00
Geopress	Geopress-Fittings	905343	9616TW Elbow 90° with SC 63 2 1 9	Elbow 90° with SC	9616TW	6 3	765682	1684	1.68
Geopress	Geopress-Fittings	905353	9626TW Elbow 45° with SC 32 2 1 9	Elbow 45° with SC	9626TW	3 2	765699	440	0.44
Geopress	Geopress-Fittings	905363	9626TW Elbow 45° with SC 40 2 1 9	Elbow 45° with SC	9626TW	4 0	765705	602	0.60
Geopress	Geopress-Fittings	905373	9626TW Elbow 45° with SC 50 2 1 9	Elbow 45° with SC	9626TW	5 0	765712	850	0.85
Geopress	Geopress-Fittings	905383	9626TW Elbow 45° with SC 63 2 1 9	Elbow 45° with SC	9626TW	6 3	765729	1320	1.32
Geopress	Geopress-Fittings	905393	9618TW Tee with SC 32 2 1 9	Tee with SC	9618TW	32	765736	740	0.74
Geopress	Geopress-Fittings	905403	9618TW Tee with SC 40 2 1 9	Tee with SC	9618TW	40	765743	980	0.98
Geopress	Geopress-Fittings	905413	9618TW Tee with SC 50 2 1 9	Tee with SC	9618TW	50	765750	1386	1.39
Geopress	Geopress-Fittings	905423	9618TW Tee with SC 63 2 1 9	Tee with SC	9618TW	63	765767	2115	2.12
Geopress	Geopress-Fittings	905433	9650TW Y-adapter 32x32x40 2 1 9	Y-adapter	9650TW	32 X 32 X 40	765774	1105	1.11
Geopress	Geopress-Fittings	905443	9650TW Y-adapter 40x40x50 2 1 9	Y-adapter	9650TW	40 X 40 X 50	765781	1668	1.67
Geopress	Geopress-Fittings	905453	96151TWPlug-in piece with SC 32x22 2 1 9	Plug-in piece with SC	96151TW	32 X 22	765798	220	0.22
Geopress	Geopress-Fittings	905463	96151TWPlug-in piece with SC 32x28 2 1 9	Plug-in piece with SC	96151TW	32 X 28	765804	224	0.22
Geopress	Geopress-Fittings	905473	96151TWPlug-in piece with SC 40x28 2 1 9	Plug-in piece with SC	96151TW	40 X 28	765811	308	0.31
Geopress	Geopress-Fittings	905483	96151TWPlug-in piece with SC 40x35 2 1 9	Plug-in piece with SC	96151TW	40 X 35	766757	325	0.33
Geopress	Geopress-Fittings	905493	96151TWPlug-in piece with SC 50x42 2 1 9	Plug-in piece with SC	96151TW	50 X 42	765835	444	0.44
Geopress	Geopress-Fittings	905503	96161TW Plug-in Elbow 90° with SC 28x32 2G1 9	Plug-in Elbow 90° with SC	96161TW	28 X 32	767020	325	0.33
Geopress	Geopress-Fittings	905513	96161TW Plug-in Elbow 90° with SC 28x40 2G1 9	Plug-in Elbow 90° with SC	96161TW	28 X 40	767037	434	0.43
Geopress	Geopress-Fittings	905523	96161TW Plug-in Elbow 90° with SC 35x40 2G1 9	Plug-in Elbow 90° with SC	96161TW	35 X 40	767044	522	0.52
Geopress	Geopress-Fittings	905533	96161TW Plug-in Elbow 90° with SC 42x50 2G1 9	Plug-in Elbow 90° with SC	96161TW	42 X 50	767051	800	0.80
Geopress	Geopress-Fittings	905543	96161TW Plug-in Elbow 90° with SC 54x63 2G1 9	Plug-in Elbow 90° with SC	96161TW	54 X 63	767068	1206	1.21
Geopress	Geopress-Fittings	905553	9615TW Coupling with SC 25 2 1 9	Coupling with SC	9615TW	25	767075	326	0.33
Geopress	Geopress-Fittings	905563	96152TWRReducing coupling with SC 32x25 2 1 9	Reducing coupling with SC	96152TW	32 X 25	767082	362	0.36
Geopress	Geopress-Fittings	905573	9616TW Elbow 90° with SC 25 2 1 9	Elbow 90° with SC	9616TW	2 5	767150	390	0.39
Geopress	Geopress-Fittings	905583	9618TW Tee with SC 25 2 1 9	Tee with SC	9618TW	25	767167	510	0.51
Geopress	Geopress-Fittings	905593	9618TW Tee with SC 63x32x63 2 1 9	Tee with SC	9618TW	63 X 32 X 63	767174	1562	1.56
Geopress	Geopress-Fittings	905603	9618TW Tee with SC 63x40x63 2 1 9	Tee with SC	9618TW	63 X 40 X 63	767181	1656	1.66
Geopress	Geopress-Fittings	905613	96171TWTee with SC 32x1x3/4 2 1 9	Tee with SC	96171TW	32 X 1 X 3/4	767198	590	0.59
Geopress	Geopress-Fittings	905623	96171TWTee with SC 40x11/4x1 2 1 9	Tee with SC	96171TW	40 X 1 1/4 X 1	767204	805	0.81
Geopress	Geopress-Fittings	905633	96171TWTee with SC 50x11/2A 2 1 9	Tee with SC	96171TW	50 X 1 1/2A	767211	1080	1.08
Geopress	Geopress-Fittings	905643	96171TWTee with SC 50x11/4 2 1 9	Tee with SC	96171TW	50 X 1 1/4	767228	1100	1.10
Geopress	Geopress-Fittings	905653	96171TWTee with SC 63x2x11/2 2 1 9	Tee with SC	96171TW	63 X 2 X 1 1/2	767235	1826	1.83

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress	Geopress-Fittings	905663	9611TW Adapter coupling with SC 25x1/2 2 1 9	Adapter coupling with SC	9611TW	25 X 1/2	767242	196	0.20
Geopress	Geopress-Fittings	905673	9611TW Adapter coupling with SC 25x3/4 2 1 9	Adapter coupling with SC	9611TW	25 X 3/4	767259	200	0.20
Geopress	Geopress-Fittings	905683	96151TW Plug-in piece with SC 25x22 2 1 9	Plug-in piece with SC	96151TW	25 X 22	767266	168	0.17
Geopress	Geopress-Fittings	905693	96151TW Plug-in piece with SC 63x54 2 1 9	Plug-in piece with SC	96151TW	63 X 54	767273	636	0.64
Geopress	Geopress-Fittings	905703	9621TW Coupling with SC 32x11/2 2 1 9	Coupling with SC	9621TW	32 X 1 1/2	767280	350	0.35
Geopress	Geopress-Fittings	905713	9621TW Coupling with SC 40x11/2 2 1 9	Coupling with SC	9621TW	40 X 1 1/2	767297	368	0.37
Geopress	Geopress-Fittings	905723	9621TW Coupling with SC 50x11/2 2 1 9	Coupling with SC	9621TW	50 X 1 1/2	767303	568	0.57
Geopress	Geopress-Fittings	905733	9621TW Coupling with SC 63x11/2 2 1 9	Coupling with SC	9621TW	63 X 1 1/2	767310	852	0.85
Geopress	Geopress-Fittings	905743	9622TW Union with SC 32x1 2 1 9	Union with SC	9622TW	32 X 1	767327	748	0.75
Geopress	Geopress-Fittings	905753	9622TW Union with SC 32x11/2 2 1 9	Union with SC	9622TW	32 X 1 1/2	767334	792	0.79
Geopress	Geopress-Fittings	905763	9622TW Union with SC 40x11/4 2 1 9	Union with SC	9622TW	40 X 1 1/4	767341	982	0.98
Geopress	Geopress-Fittings	905773	9622TW Union with SC 40x11/2 2 1 9	Union with SC	9622TW	40 X 1 1/2	767358	978	0.98
Geopress	Geopress-Fittings	905793	9622TW Union with SC 50x11/2 2 1 9	Union with SC	9622TW	50 X 1 1/2	767365	1150	1.15
Geopress	Geopress-Fittings	905813	9622TW Union with SC 63x11/2 2 1 9	Union with SC	9622TW	63 X 1 1/2	767372	1808	1.81
Geopress	Geopress-Fittings	905873	9656TW Cap with SC 25 2 1 9	Cap with SC	9656TW	25	767389	144	0.14
Geopress	Geopress-Fittings	905883	9656TW Cap with SC 32 2 1 9	Cap with SC	9656TW	32	767396	190	0.19
Geopress	Geopress-Fittings	905903	9656TW Cap with SC 40 2 1 9	Cap with SC	9656TW	40	767402	260	0.26
Geopress	Geopress-Fittings	905913	9656TW Cap with SC 50 2 1 9	Cap with SC	9656TW	50	767419	365	0.37
Geopress	Geopress-Fittings	905933	9656TW Cap with SC 63 2 1 9	Cap with SC	9656TW	63	767426	455	0.46
Geopress	Geopress-Fittings	905943	9693TW Connetion socket 32 2 1 9	Connetion socket	9693TW	32	767433	720	0.72
Geopress	Geopress-Fittings	905963	9693TW Connetion socket 40 2 1 9	Connetion socket	9693TW	40	767440	705	0.71
Geopress	Geopress-Fittings	905973	9693TW Connetion socket 50 2 1 9	Connetion socket	9693TW	50	767457	740	0.74
Geopress	Geopress-Fittings	905993	9693TW Connetion socket 63 2 1 9	Connetion socket	9693TW	63	767464	728	0.73
Geopress	Geopress-Fittings	906023	9694TW Connetion elbow 90° with SC 32 2G1 9	Connection elbow 4590° with SC	9694TW	32	767471	915	0.92
Geopress	Geopress-Fittings	906053	9694TW Connetion elbow 90° with SC 40 2G1 9	Connection elbow 4590° with SC	9694TW	40	767488	1056	1.06
Geopress	Geopress-Fittings	906063	9694TW Connetion elbow 90° with SC 50 2G1 9	Connection elbow 4590° with SC	9694TW	50	766900	1175	1.18
Geopress	Geopress-Fittings	906083	9694TW Connetion elbow 90° with SC 63 2G1 9	Connection elbow 4590° with SC	9694TW	63	766917	1515	1.52
Geopress	Geopress-Fittings	906093	96941TWConnetion elbow 45° with SC 32 2G1 9	Connection elbow 4545° with SC	96941TW	32	766924	895	0.90
Geopress	Geopress-Fittings	906103	96941TWConnetion elbow 45° with SC 40 2G1 9	Connection elbow 4545° with SC	96941TW	40	766931	975	0.98
Geopress	Geopress-Fittings	906123	96941TWConnetion elbow 45° with SC 63 2G1 9	Connection elbow 4545° with SC	96941TW	63	767655	1365	1.37
Geopress	Geopress-Fittings	906143	96132TWAdapter with SC 32/32 2 1 9	Adapter with SC	96132TW	32 / 32	767679	554	0.55
Geopress	Geopress-Fittings	906153	96132TWAdapter with SC 40/40 2 1 9	Adapter with SC	96132TW	40 / 40	767686	795	0.80
Geopress	Geopress-Fittings	906163	96132TWAdapter with SC 50/50 2 1 9	Adapter with SC	96132TW	50 / 50	767693	1324	1.32
Geopress	Geopress-Fittings	906173	96132TWAdapter with SC 63/63 2 1 9	Adapter with SC	96132TW	63 / 63	767709	1616	1.62
Geopress	Geopress-Fittings	906193	96133G Adapter with SC 32xDN25 2 1 9	Adapter with SC	96133G	32 X DN25	781842	682	0.68
Geopress	Geopress-Fittings	906263	96133G Adapter with SC 50xDN40 2 1 9	Adapter with SC	96133G	50 X DN40	783051	1228	1.23
Geopress	Geopress-Fittings	906273	96133G Adapter with SC 63xDN50 2 1 9	Adapter with SC	96133G	63 X DN50	783068	1785	1.79
Geopress	Geopress-Fittings	906293	96134TWAdapter with SC 32x32 2 1 9	Adapter with SC	96134TW	32 X 32	767792	546	0.55
Geopress	Geopress-Fittings	906423	96134TWAdapter with SC 40x40 2 1 9	Adapter with SC	96134TW	40 X 40	767808	786	0.79
Geopress	Geopress-Fittings	906433	96134TWAdapter with SC 50x50 2 1 9	Adapter with SC	96134TW	50 X 50	767815	1295	1.30
Geopress	Geopress-Fittings	906443	96134TWAdapter with SC 63x63 2 1 9	Adapter with SC	96134TW	63 X 63	767822	1586	1.59
Geopress	Geopress-Fittings	906463	9614TW Adapter elbow90° with SC 25x3/4 2G1 9	Adapter elbow 90° with SC	9614TW	25 X 3/4	767839	260	0.26

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress	Geopress-Fittings	906473	9614TW Adapter elbow90° with SC 32x3/4 2G1 9	Adapter elbow 90° with SC	9614TW	32 X 3/4	767846	320	0.32
Geopress	Geopress-Fittings	906483	9614TW Adapter elbow90° with SC 32x1 2G1 9	Adapter elbow 90° with SC	9614TW	32 X 1	767853	374	0.37
Geopress	Geopress-Fittings	906493	9614TW Adapter elbow90° with SC 32x11/2 2G1 9	Adapter elbow 90° with SC	9614TW	32 X 1 1/2	767860	557	0.56
Geopress	Geopress-Fittings	906513	9614TW Adapter elbow90° with SC 40x1 2G1 9	Adapter elbow 90° with SC	9614TW	40 X 1	767877	520	0.52
Geopress	Geopress-Fittings	906543	9614TW Adapter elbow90° with SC 40x11/4 2G1 9	Adapter elbow 90° with SC	9614TW	40 X 1 1/4	767884	590	0.59
Geopress	Geopress-Fittings	906583	9614TW Adapter elbow90° with SC 40x11/2 2G1 9	Adapter elbow 90° with SC	9614TW	40 X 1 1/2	767891	680	0.68
Geopress	Geopress-Fittings	906593	9614TW Adapter elbow90° with SC 50x1 2G1 9	Adapter elbow 90° with SC	9614TW	50 X 1	767907	696	0.70
Geopress	Geopress-Fittings	906623	9614TW Adapter elbow90° with SC 50x11/4 2G1 9	Adapter elbow 90° with SC	9614TW	50 X 1 1/4	767914	794	0.79
Geopress	Geopress-Fittings	906633	9614TW Adapter elbow90° with SC 50x11/2 2G1 9	Adapter elbow 90° with SC	9614TW	50 X 1 1/2	767921	893.5	0.89
Geopress	Geopress-Fittings	906643	9614TW Adapter elbow90° with SC 63x11/2 2G1 9	Adapter elbow 90° with SC	9614TW	63 X 1 1/2	767938	1205	1.21
Geopress	Geopress-Fittings	906673	9614TW Adapter elbow90° with SC 63x2 2G1 9	Adapter elbow 90° with SC	9614TW	63 X 2	767945	1372	1.37
Geopress	Geopress-Fittings	907003	96142TW Adapter elbow90° with SC 25x3/4 2G1 9	Adapter elbow 90° with SC	96142TW	25 X 3/4	767952	270	0.27
Geopress	Geopress-Fittings	907033	96142TW Adapter elbow90° with SC 32x1 2G1 9	Adapter elbow 90° with SC	96142TW	32 X 1	767983	375	0.38
Geopress	Geopress-Fittings	907043	96142TW Adapter elbow90° with SC 40x1 2G1 9	Adapter elbow 90° with SC	96142TW	40 X 1	767990	464	0.46
Geopress	Geopress-Fittings	907053	96142TW Adapter elbow90° with SC 40x11/4 2G1 9	Adapter elbow 90° with SC	96142TW	40 X 1 1/4	768003	588	0.59
Geopress	Geopress-Fittings	907063	96142TW Adapter elbow90° with SC 50x11/2 2G1 9	Adapter elbow 90° with SC	96142TW	50 X 1 1/2	768010	810	0.81
Geopress	Geopress-Fittings	907073	96142TW Adapter elbow90° with SC 63x2 2G1 9	Adapter elbow 90° with SC	96142TW	63 X 2	768027	1273.5	1.27
Geopress	Geopress-Fittings	907083	96201TW Connection elbow 90° with SC 32x1 2G1 9	Connection elbow 4590° with SC	96201TW	32 X 1	768034	892	0.89
Geopress	Geopress-Fittings	907093	96201TW Connection elbow 90° with SC 32x11/2 2G1 9	Connection elbow 4590° with SC	96201TW	32 X 1 1/2	768041	924	0.92
Geopress	Geopress-Fittings	907103	96201TW Connection elbow 90° with SC 40x1 2G1 9	Connection elbow 4590° with SC	96201TW	40 X 1	768058	1004	1.00
Geopress	Geopress-Fittings	907113	96201TW Connection elbow 90° with SC 40x11/2 2G1 9	Connection elbow 4590° with SC	96201TW	40 X 1 1/2	768065	1020	1.02
Geopress	Geopress-Fittings	907133	96201TW Connection elbow 90° with SC 40x11/4 2G1 9	Connection elbow 4590° with SC	96201TW	40 X 1 1/4	768072	1040	1.04
Geopress	Geopress-Fittings	907153	96201TW Connection elbow 90° with SC 63x11/2 2G1 9	Connection elbow 4590° with SC	96201TW	63 X 1 1/2	768096	1572	1.57
Geopress	Geopress-Fittings	907163	96262TW Adapter coupling with SC 32x1 2G1 9	Adapter coupling with SC	96262TW	32 X 1	768102	340	0.34
Geopress	Geopress-Fittings	907173	96262TW Adapter coupling with SC 40x11/4 2G1 9	Adapter coupling with SC	96262TW	40 X 1 1/4	768119	502	0.50
Geopress	Geopress-Fittings	907183	96262TW Adapter coupling with SC 50x11/2 2G1 9	Adapter coupling with SC	96262TW	50 X 1 1/2	768126	730	0.73
Geopress	Geopress-Fittings	907193	96262TW Adapter coupling with SC 63x2 2G1 9	Adapter coupling with SC	96262TW	63 X 2	768133	1128	1.13
Geopress K	Geopress K-Fittings	907203	9793TW Connection piece with SC 32 5 A 9	Connection piece with SC	9793TW	32	768140	648	0.65
Geopress K	Geopress K-Fittings	907213	9793TW Connection piece with SC 40 5 A 9	Connection piece with SC	9793TW	40	768157	676	0.68
Geopress K	Geopress K-Fittings	907223	9793TW Connection piece with SC 50 5 A 9	Connection piece with SC	9793TW	50	768164	738	0.74
Geopress K	Geopress K-Fittings	907233	9793TW Connection piece with SC 63 5 A 9	Connection piece with SC	9793TW	63	768171	750	0.75
Geopress K	Geopress K-Fittings	907253	9794TW Connection elbow 90° with SC 40 5 A 9	Connection elbow 4590° with SC	9794TW	40	767495	758	0.76
Geopress K	Geopress K-Fittings	907263	9794TW Connection elbow 90° with SC 50 5 A 9	Connection elbow 4590° with SC	9794TW	50	767501	866	0.87
Geopress K	Geopress K-Fittings	907273	9794TW Connection elbow 90° with SC 63 5 A 9	Connection elbow 4590° with SC	9794TW	63	767518	918	0.92
Geopress K	Geopress K-Fittings	907283	97941TW Connection elbow 45° with SC 32 5 A 9	Connection elbow 4545° with SC	97941TW	32	767525	672	0.67

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress K	Geopress K-Fittings	907293	97941TWConnetion elbow 45° with SC 40 5 A 9	Connection elbow 4545° with SC	97941TW	40	767532	730	0.73
Geopress K	Geopress K-Fittings	907303	97941TWConnetion elbow 45° with SC 50 5 A 9	Connection elbow 4545° with SC	97941TW	50	767549	846	0.85
Geopress K	Geopress K-Fittings	907313	97941TWConnetion elbow 45° with SC 63 5 A 9	Connection elbow 4545° with SC	97941TW	63	768256	876	0.88
Geopress K	Geopress K-Fittings	907353	97201TWConnetion elbow with SC 63x11/2 5 A 9	Connection elbow 45with SC	97201TW	63 X 1 1/2	768294	1358	1.36
Geopress K	Geopress K-Fittings	907363	9721TW Adapter with SC 32x11/2 5 A 9	Adapter with SC	9721TW	32 X 1 1/2	768300	360	0.36
Geopress K	Geopress K-Fittings	907373	9721TW Adapter with SC 40x11/2 5 A 9	Adapter with SC	9721TW	40 X 1 1/2	768317	344	0.34
Geopress K	Geopress K-Fittings	907553	9793G Connection piece with SC 32 5 A 9	Connection piece with SC	9793G	32	768416	648	0.65
Geopress K	Geopress K-Fittings	907703	9794G Connetion elbow 90° with SC 32 5 A 9	Connection elbow 4590° with SC	9794G	32	768454	696	0.70
Geopress K	Geopress K-Fittings	907743	97941G Connetion elbow 45° with SC 32 5 A 9	Connection elbow 4545° with SC	97941G	32	768492	672	0.67
Geopress	Geopress-Fittings	908133	9616G Elbow 90° with SC 32 2G1 9	Elbow 90° with SC	9616G	32	772185	520	0.52
Geopress	Geopress-Fittings	908143	9616G Elbow 90° with SC 40 2G1 9	Elbow 90° with SC	9616G	40	772192	690	0.69
Geopress	Geopress-Fittings	908153	9616G Elbow 90° with SC 50 2G1 9	Elbow 90° with SC	9616G	50	772208	995	1.00
Geopress	Geopress-Fittings	908163	9616G Elbow 90° with SC 63 2G1 9	Elbow 90° with SC	9616G	63	772215	1684	1.68
Geopress	Geopress-Fittings	908173	9626G Elbow 45° with SC 32 2G1 9	Elbow 45° with SC	9626G	32	772222	444	0.44
Geopress	Geopress-Fittings	908183	9626G Elbow 45° with SC 40 2G1 9	Elbow 45° with SC	9626G	40	772239	598	0.60
Geopress	Geopress-Fittings	908193	9611G Adapter coupling with SC 40x11/4 2 1 9	Adapter coupling with SC	9611G	40 X 1 1/4	772246	390	0.39
Geopress	Geopress-Fittings	908203	9611G Adapter coupling with SC 50x11/2 2 1 9	Adapter coupling with SC	9611G	50 X 1 1/2	772253	584	0.58
Geopress	Geopress-Fittings	908213	9611G Adapter coupling with SC 63x2 2 1 9	Adapter coupling with SC	9611G	63 X 2	772260	920	0.92
Geopress	Geopress-Fittings	908223	96131G Adapter with SC 32x22 2 1 9	Adapter	96131G	32 X 22	772277	588	0.59
Geopress	Geopress-Fittings	908233	96135G Adapter with SC 32x22x90° 2 1 9	Adapter	96135G	32 X 22 X 90°	772284	922	0.92
Geopress	Geopress-Fittings	908243	9615G Coupling with SC 32 2 1 9	Coupling with SC	9615G	32	772291	470	0.47
Geopress	Geopress-Fittings	908253	9615G Coupling with SC 40 2 1 9	Coupling with SC	9615G	40	772307	730	0.73
Geopress	Geopress-Fittings	908263	9615G Coupling with SC 50 2 1 9	Coupling with SC	9615G	50	772314	865	0.87
Geopress	Geopress-Fittings	908273	9615G Coupling with SC 63 2 1 9	Coupling with SC	9615G	63	772321	1194	1.19
Geopress	Geopress-Fittings	908283	96155G Repair Sliding coupling SC 322 1 9	Repair Sliding coupling SC	96155G	32	772338	580	0.58
Geopress	Geopress-Fittings	908293	96155G Repair Sliding coupling SC 402 1 9	Repair Sliding coupling SC	96155G	40	772345	846	0.85
Geopress	Geopress-Fittings	908303	96155G Repair Sliding coupling SC 502 1 9	Repair Sliding coupling SC	96155G	50	772352	1090	1.09
Geopress	Geopress-Fittings	908313	96155G Repair Sliding coupling SC 632 1 9	Repair Sliding coupling SC	96155G	63	772369	1442	1.44
Geopress	Geopress-Fittings	908323	96151G Plug-in piece with SC 22x32 2 1 9	Plug-in piece with SC	96151G	22 X 32	772376	220	0.22
Geopress	Geopress-Fittings	908333	96151G Plug-in piece with SC 28x32 2 1 9	Plug-in piece with SC	96151G	28 X 32	772383	224	0.22
Geopress	Geopress-Fittings	908343	9693G Connection piece with SC 32 2 1 9	Connection piece with SC	9693G	32	772390	716	0.72
Geopress	Geopress-Fittings	908353	9693G Connection piece with SC 40 2 1 9	Connection piece with SC	9693G	40	772406	702	0.70
Geopress	Geopress-Fittings	908363	9693G Connection piece with SC 50 2 1 9	Connection piece with SC	9693G	50	772413	740	0.74
Geopress	Geopress-Fittings	908373	9693G Connection piece with SC 63 2 1 9	Connection piece with SC	9693G	63	772420	752.5	0.75
Geopress	Geopress-Fittings	908401	96531 Gas flow monitor 32TypA/D2 1 9	Gas flow monitor	96531	32 TYP A/D	484477	574	0.57
Geopress	Geopress-Fittings	908411	96531 Gas flow monitor 40TypA/D2 1 9	Gas flow monitor	96531	40 TYP A/D	484484	793	0.79
Geopress	Geopress-Fittings	908421	96531 Gas flow monitor 50TypA/D2 1 9	Gas flow monitor	96531	50 TYP A/D	484491	1178	1.18
Geopress	Geopress-Fittings	908431	96531 Gas flow monitor 63TypA/D2 1 9	Gas flow monitor	96531	63 TYP A/D	484507	1835	1.84
Geopress	Geopress-Saddle fitting	908443	9690TW Saddle fitting 63 5 A 9	Saddle fitting	9690TW	63	772437	1660	1.66
Geopress	Geopress-Saddle fitting	908453	9690TW Saddle fitting 90 5 A 9	Saddle fitting	9690TW	90	772444	1735	1.74

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress	Geopress-Saddle fitting	908463	9690TW Saddle fitting 110 5 A 9	Saddle fitting	9690TW	110	772451	1855	1.86
Geopress	Geopress-Saddle fitting	908473	9690TW Saddle fitting 125 5 A 9	Saddle fitting	9690TW	125	772468	1900	1.90
Geopress	Geopress-Saddle fitting	908483	9690TW Saddle fitting 140 5 A 9	Saddle fitting	9690TW	140	772475	2140	2.14
Geopress	Geopress-Saddle fitting	908493	9690TW Saddle fitting 160 5 A 9	Saddle fitting	9690TW	160	772482	2160	2.16
Geopress	Geopress-Saddle fitting	908543	9690TW Saddle fitting 180 5 A 9	Saddle fitting	9690TW	180	772499	2420	2.42
Geopress	Geopress-Saddle fitting	908563	9690TW Saddle fitting 225 5 A 9	Saddle fitting	9690TW	225	772512	2550	2.55
Geopress	Geopress-Saddle fitting	908573	9690G Saddle fitting 63 5 A 9	Saddle fitting	9690G	63	772529	1675	1.68
Geopress	Geopress-Saddle fitting	908583	9690G Saddle fitting 90 5 A 9	Saddle fitting	9690G	90	772536	1742	1.74
Geopress	Geopress-Saddle fitting	908593	9690G Saddle fitting 110 5 A 9	Saddle fitting	9690G	110	772543	1855	1.86
Geopress	Geopress-Saddle fitting	908603	9690G Saddle fitting 125 5 A 9	Saddle fitting	9690G	125	772550	1808	1.81
Geopress	Geopress-Saddle fitting	908623	9690G Saddle fitting 160 5 A 9	Saddle fitting	9690G	160	772574	2180	2.18
Geopress	Geopress-Saddle fitting	908633	9690G Saddle fitting 180 5 A 9	Saddle fitting	9690G	180	772581	2420	2.42
Geopress	Geopress-Saddle fitting	908653	9690G Saddle fitting 225 5 A 9	Saddle fitting	9690G	225	772604	2630	2.63
Geopress	Geopress-Fittings	908663	9626G Elbow 45° with SC 50 2G1 9	Elbow 45° with SC	9626G	50	772697	835	0.84
Geopress	Geopress-Fittings	908673	9626G Elbow 45° with SC 63 2G1 9	Elbow 45° with SC	9626G	63	772703	1348	1.35
Geopress	Geopress-Fittings	908683	9611G Adapter coupling with SC 32x1 2 1 9	Adapter coupling with SC	9611G	32 X 1	772710	280	0.28
Geopress	Geopress-Saddle fitting	908793	9692G Saddle fitting 90 5 A 9	Saddle fitting	9692G	90	772611	1740	1.74
Geopress	Geopress-Fittings	909001	96551 Gas flow monitor 32TypC 2 1 9	Gas flow monitor	96551	32 TYP C	488871	588	0.59
Geopress	Geopress-Fittings	909021	96551 Gas flow monitor 50TypC 2 1 9	Gas flow monitor	96551	50 TYP C	488895	1182	1.18
Geopress	Geopress-Fittings	909031	96551 Gas flow monitor 63TypC 2 1 9	Gas flow monitor	96551	63 TYP C	488901	1835	1.84
Geopress	Geopress-Fittings	909153	9612G Adapter coupling with SC 32x1 2 1 9	Adapter coupling with SC	9612G	32 X 1	804398	290	0.29
Geopress	Geopress-Fittings	909163	9612G Adapter coupling with SC 40x11/4 2 1 9	Adapter coupling with SC	9612G	40 X 1 1/4	804404	395	0.40
Geopress	Geopress-Fittings	909173	9612G Adapter coupling with SC 50x11/2 2 1 9	Adapter coupling with SC	9612G	50 X 1 1/2	804411	610	0.61
Geopress	Geopress-Fittings	909183	9612G Adapter coupling with SC 63x2 2 1 9	Adapter coupling with SC	9612G	63 X 2	804428	860	0.86
Geopress	Geopress-Fittings	909193	96133G Adapter with SC 40xDN32 2 1 9	Adapter with SC	96133G	40 X DN32	804435	1152	1.15
Geopress	Geopress-Fittings	909203	9614G Adapter elbow90° with SC 32x1 2G1 9	Adapter elbow 90° wit h SC	9614G	32 X 1	804442	380	0.38
Geopress	Geopress-Fittings	909213	9614G Adapter elbow90° with SC 40x11/4 2G1 9	Adapter elbow 90° wit h SC	9614G	40 X 1 1/4	805159	585	0.59
Geopress	Geopress-Fittings	909233	9614G Adapter elbow90° with SC 50x11/2 2G1 9	Adapter elbow 90° wit h SC	9614G	50 X 1 1/2	805166	885	0.89
Geopress	Geopress-Fittings	909303	9614G Adapter elbow90° with SC 63x2 2G1 9	Adapter elbow 90° wit h SC	9614G	63 X 2	805173	1370	1.37
Geopress	Geopress-Fittings	909313	96142G Adapter elbow90° with SC 32x1 2G1 9	Adapter elbow 90° wit h SC	96142G	32 X 1	805180	375	0.38
Geopress	Geopress-Fittings	909323	96142G Adapter elbow90° with SC 40x11/4 2G1 9	Adapter elbow 90° wit h SC	96142G	40 X 1 1/4	805197	585	0.59
Geopress	Geopress-Fittings	909361	96521 Gas flow monitor 32TypR 2 1 9	Gas flow monitor	96521	32 TYP R	493288	585	0.59
Geopress	Geopress-Fittings	909403	96142G Adapter elbow90° with SC 50x11/2 2G1 9	Adapter elbow 90° wit h SC	96142G	50 X 1 1/2	805203	810	0.81
Geopress	Geopress-Fittings	909413	96142G Adapter elbow90° with SC 63x2 2G1 9	Adapter elbow 90° wit h SC	96142G	63 X 2	805210	1250	1.25
Geopress	Geopress-Fittings	909423	96152G Reducing coupling with SC 40x32 2 1 9	Reducing coupling with SC	96152G	40 X 32	805227	506	0.51

System	Product subgroup	Material	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
Geopress	Geopress-Fittings	909433	96152G Reducing coupling with SC 50x32 2 1 9	Reducing coupling with SC	96152G	50 X 32	805234	622	0.62
Geopress	Geopress-Fittings	909463	96152G Reducing coupling with SC 50x40 2 1 9	Reducing coupling with SC	96152G	50 X 40	805241	694	0.69
Geopress	Geopress-Fittings	909473	96152G Reducing coupling with SC 63x32 2 1 9	Reducing coupling with SC	96152G	63 X 32	805258	812	0.81
Geopress	Geopress-Fittings	909483	96152G Reducing coupling with SC 63x40 2 1 9	Reducing coupling with SC	96152G	63 X 40	805265	820	0.82
Geopress	Geopress-Fittings	909493	96152G Reducing coupling with SC 63x50 2 1 9	Reducing coupling with SC	96152G	63 X 50	805272	1018	1.02
Geopress	Geopress-Fittings	909553	9618G Tee with SC 32 2G1 9	Tee with SC	9618G	32	805289	744	0.74
Geopress	Geopress-Fittings	909563	9618G Tee with SC 40 2G1 9	Tee with SC	9618G	40	805296	972	0.97
Geopress	Geopress-Fittings	909573	9618G Tee with SC 50 2G1 9	Tee with SC	9618G	50	805302	1406.98	1.41
Geopress	Geopress-Fittings	909583	9618G Tee with SC 63 2G1 9	Tee with SC	9618G	63	805319	2126	2.13
Geopress	Geopress-Fittings	909593	9656G Cap with SC 32 2 1 9	Cap with SC	9656G	32	805326	190	0.19
Geopress	Geopress-Fittings	909603	9656G Cap with SC 40 2 1 9	Cap with SC	9656G	40	805333	256	0.26
Geopress	Geopress-Fittings	909613	9656G Cap with SC 50 2 1 9	Cap with SC	9656G	50	805340	360	0.36
Geopress	Geopress-Fittings	909623	9656G Cap with SC 63 2 1 9	Cap with SC	9656G	63	805357	454	0.45
Geopress	Geopress-Fittings	909633	9694G Connetion elbow 90° with SC 32 2G1 9	Connection elbow 4590° with SC	9694G	32	805364	905	0.91
Geopress	Geopress-Fittings	909653	9694G Connetion elbow 90° with SC 50 2G1 9	Connection elbow 4590° with SC	9694G	50	805388	1165	1.17
Geopress	Geopress-Fittings	909663	9694G Connetion elbow 90° with SC 63 2G1 9	Connection elbow 4590° with SC	9694G	63	805395	1527	1.53
Geopress	Geopress-Fittings	909673	96941G Connetion elbow 45° with SC 32 2G1 9	Connection elbow 4545° with SC	96941G	32	805401	895	0.90
Geopress	Geopress-Fittings	909753	96941G Connetion elbow 45° with SC 63 2G1 9	Connection elbow 4545° with SC	96941G	63	805432	1351	1.35
Geopress	Geopress-Accessory	909871	96158 Clamping ring 32 5 B 9	Clamping ring	96158	32	495374	6.5	0.01
Geopress	Geopress-Accessory	909901	96158 Clamping ring 63 5 B 9	Clamping ring	96158	63	495404	23.4	0.02
Geopress	Geopress-Accessory	918311	9605 Support pipe 25x2.3 2 1 9	Support pipe	9605	25 X 2.3	469139	55.71	0.06
Geopress	Geopress-Accessory	918321	9605 Support pipe 32x2.9 2 1 9	Support pipe	9605	32 X 2.9	469146	68.07	0.07
Geopress	Geopress-Accessory	918331	9605 Support pipe 40x3.7 2 1 9	Support pipe	9605	40 X 3.7	469351	107.6	0.11
Geopress	Geopress-Accessory	918341	9605 Support pipe 50x4.6 2 1 9	Support pipe	9605	50 X 4.6	469306	149.1	0.15
Geopress	Geopress-Accessory	918351	9605 Support pipe 63x5.8 2 1 9	Support pipe	9605	63 X 5.8	469368	228.1	0.23
Geopress	Geopress-Saddle fitting	852021	9690 Saddle fitting 110 5 A 9	Saddle fitting	9690	110	576660	1760	1.76
Geopress K	Geopress K-Fittings	907243	9794TW Connetion elbow 90° with SC 32 5 A 9	Connection piece with SC	9794TW	32	768188	700	0.70
Geopress K	Geopress K-Fittings	907583	9793G Adapter with SC 63 5 A 9	Adapter with SC	9793G	63	768447	746	0.75

Imprint



Practitioner of the LCA
Viega GmbH & Co. KG
Viega Platz 1
57439 Attendorn, Germany



Programme operator
ift Rosenheim GmbH
Theodor-Gietl-Straße 7-9
83026 Rosenheim, Germany
Phone +49 (0)8031/261-0
Fax: +49 (0)8031/261-290
E-Mail: info@ift-rosenheim.de
www.ift-rosenheim.de



Declaration holder
Viega GmbH & Co. KG
Viega Platz 1
57439 Attendorn, Germany

Notes

This EPD is mainly based on the work and findings of Institut für Fenstertechnik e.V., Rosenheim (ift Rosenheim) and specifically on ift-Guideline NA-01/3 "Allgemeiner Leitfaden zur Erstellung von Typ III Umweltproduktdeklarationen" (Guidance on preparing Type III Environmental Product Declarations).

The work, including all its parts, is protected by copyright. Any use outside the narrow limits of copyright law without the consent of the publisher is inadmissible and punishable by law. In particular, this applies to any form of reproduction, translations, storage on microfilm and the storage and processing in electronic systems.

Layout

ift Rosenheim GmbH – 2021

Photographs (front page)

Viega GmbH & Co. KG

© ift Rosenheim, 2023



ift Rosenheim GmbH
Theodor-Gietl-Straße 7-9
83026 Rosenheim
Phone: +49 (0) 80 31/261-0
Fax: +49 (0) 80 31/261-290
E-Mail: info@ift-rosenheim.de
www.ift-rosenheim.de