

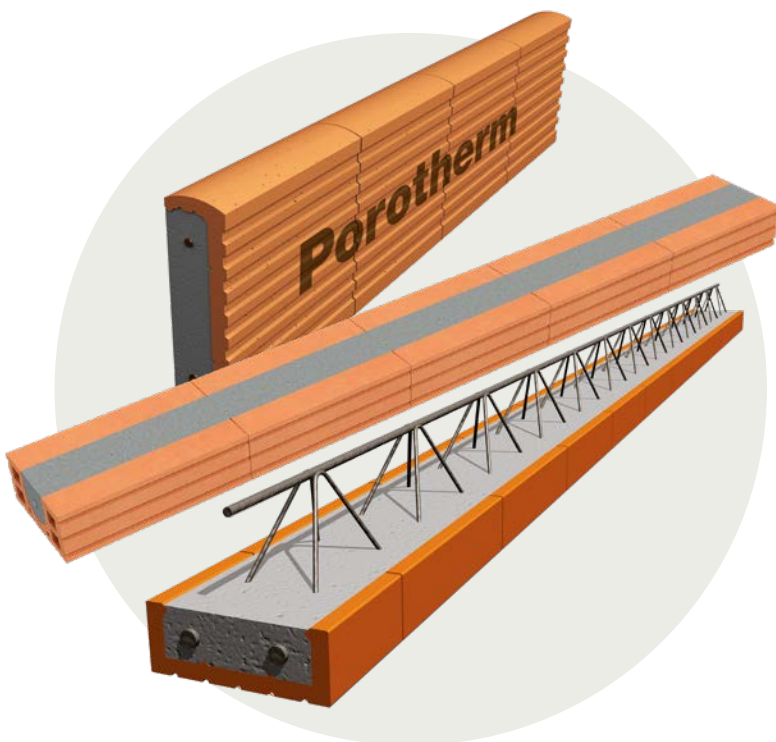
Environmental Product Declaration

*in accordance with
EN 15804+A2:2022, EN ISO 14025:2010
independently verified by a third party*

Lintels and ceiling beams

Porotherm KP 11.5, KP 14.5 a KP 10/14.5
Porotherm KP 7
Porotherm KP Vario UNI
Ceramic-concrete ceiling beams POT

Multi-product EPD based on average results



1. General information

EPD Program	National Environmental Labelling Programme of the Czech Republic (NPEZ)	 Ministerstvo životního prostředí
Address	Ministry of the Environment, Vršovická 1442/65, Prague 10, 100 10, Czech Republic	
Web	https://www.ekoznacka.cz/	
E-mail	info@mzp.gov.cz	
Product category rules (PCR)	EN 15804+A2 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.	

Responsibility for PCR, LCA and independent third-party verification

Product Category Rules (PCR)	EN 15804+A2 serves as the core Product Category Rules (PCR)
Life Cycle Assessment (LCA)	Luboš Nobilis, Nesuchyně 12, 270 07, Czech Republic, nobilis.lubos@gmail.com
Third-party verification	Independent verification of the declaration and data according to ISO 14025: ☒ EPD verified by an individual independent verifier Third-party verifier: Ing. Jan Weinzettel, Ph.D., http://www.fernconsulting.cz, weinzettel@seznam.cz The procedure for follow-up of data during the validity of the EPD involves third-party verification: yes ☐ no ☒

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For EPDs to be comparable, they shall be based on the same PCR (including the same version number) or fully aligned PCR versions; cover products with identical functions, technical performance and use; apply equivalent system boundaries and data descriptions; apply equivalent data quality requirements, data collection methods and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); contain equivalent content declarations; and be valid at the time of comparison. Further information on comparability is provided in EN 15804+A2 and ISO 14025. Wienerberger s.r.o. is the sole owner and bears responsibility for this EPD.

Company information

Manufacturer	Wienerberger s.r.o. Company ID: 00015253 VAT ID: CZ00015253
Production site	3216 - Řepov, Řepov 255, 293 01, Mladá Boleslav, Czech Republic
Head office	Plachého 388/28 370 01 České Budějovice 1 Czech Republic
Contact	Tel.: +420 800 240 250 / +420 383 826 111 E-mail: info@wienerberger.cz Web: https://wienerberger.cz/

Wienerberger s.r.o. is part of the Wienerberger AG Group. The company's registered office is located in České Budějovice, Plachého 388/28, postcode 370 01, Czech Republic. The company is registered in the Commercial Register maintained by the Regional Court in České Budějovice, Section C, File No. 27563, dated 29 December 1990.

Wienerberger s.r.o. provides a comprehensive portfolio of sustainable solutions and services for construction and renovation.

In the Czech market, the company's portfolio currently includes the Porotherm masonry system, Tondach clay roof tiles and roof accessories, Terca facing bricks and brick slips, Penter clay pavers, Semmelrock concrete products and Pipelife piping systems. Wienerberger s.r.o. is part of the international Wienerberger Group, the world's largest producer of clay bricks and a leading manufacturer of clay roof tiles in Europe. More information is available at www.wienerberger.cz.

The subject of this EPD is Porotherm ceramic and ceramic-concrete lintels. All of these elements can be used as lintels above windows or doors and can span openings of various widths. The product range also includes Porotherm KP 11.5, KP 14.5 and KP 10/14.5 ceramic flat lintels, which are used as load-bearing lintels above openings in wall structures. All products are manufactured at production plant 3217 – Řepov, Řepov 255, 293 01 Mladá Boleslav, Czech Republic.

2. Products

2.1 UN CPC code

UN CPC code: 3755 - Prefabricated structural components for building or civil engineering, of cement, concrete or artificial stone, 3731 (Bricks, blocks, tiles and other ceramic goods of siliceous earths)

2.2 Product description

Product names/product lines: All products that share the common identification: masonry lintels or ceiling beams, within the framework of the mandatory documentation according to Regulation (EU) No 2024/3110 of the European Parliament and of the Council.

Product description: The basic input element of the production is the “U” shaped parts made of fired ceramic. These serve as permanent formwork filled with concrete, which determines the shape and dimensions of the resulting product. Lintels and beams are reinforced with steel reinforcement embedded in the concrete. The quantity and method of placing the reinforcement depends on the type, shape and dimensions of the product. As the product length increases, the required diameter of the reinforcement also increases. The correct position of the reinforcement is ensured by spacers, which are made of recycled PVC.

2.3 Use

All types of Porotherm lintels are intended for use in load-bearing and non-load-bearing masonry above window and door openings. The required load-bearing capacity or thickness of the masonry can be achieved by combining different types and quantities of these lintels. POT ceiling beams are used for horizontal structures - primarily for ceilings and roofs. A structure with a 6 cm thick concrete layer above the ceiling inserts is also suitable for flat roofs. A structure without a concrete layer above the inserts can also be used for pitched roofs with a slope of up to 45°. In such cases, the beams are laid horizontally, not at a slope.

2.4 Technical data

Lintels are manufactured and tested according to the EN 15037-1 standard and ceiling beams according to the EN 845-2+A1 standard.

One cubic meter (m³) of lintels and ceiling beams weighs between 1500 kg and 2650 kg. The volume of material in the products depends on the specific type of product. The EPD is based on 1 lm of individual product types and thus takes into account their specific composition.

Type of lintel	Thickness [cm]	Min./max. length [cm]	Type of beam	Distance between beam axes [cm]	Thickness [cm]	Min./max. length [cm]
Porotherm KP 11.5, KP 14.5 a KP 10/14.5	11.5 and 14.5	75/250	POT 175-825/902	50	19/25/29	150/800
Porotherm KP 7	7	75/300		62.5		
Porotherm KP Vario UNI	Min. 38, max. 50 (incl. Vario UNI box)	75/300				

Further technical information is available at: <https://www.wienerberger.cz/zdivo-porotherm/dokumenty.html>

2.5 Basic raw materials and auxiliary materials

The ratio of the individual components of the product varies depending on its total length. The longer the product, the more steel reinforcement it contains per running meter – due to the use of larger diameter reinforcement. The assessment results are based on the average composition of the products.

Composition (kg/DU)	KP 11.5 1–1.5 m	KP 11.5 1.75–2.25 m	KP 11.5 2.5–2.75 m	KP 14.5 1–1.5 m	KP 14.5 1.75–2.25 m	KP 14.5 2.5–2.75 m	Post-consumer recycled content (%)	Biogenic carbon content (kg C/DU)
Clay masonry units	7.60	7.60	7.60	10.56	10.56	10.56	0	0
Concrete	6.90	6.68	6.41	11.44	11.22	10.95	0	0
Reinforcement steel	0.40	0.62	0.89	0.40	0.62	0.89	0	0
Total	14.90	14.90	14.90	22.40	22.40	22.40	0	0
Packaging (kg/DU)	KP 11.5 1–1.5 m	KP 11.5 1.75–2.25 m	KP 11.5 2.5–2.75 m	KP 14.5 1–1.5 m	KP 14.5 1.75–2.25 m	KP 14.5 2.5–2.75 m	Mass (% relative to the product)	Mass of biogenic material (kg C/kg)
Wooden spacers	4.85E-01	4.85E-01	4.85E-01	7.29E-01	7.29E-01	7.29E-01	3.26	0.2–0.35
PVC spacers	9.77E-03	9.77E-03	9.77E-03	1.47E-02	1.47E-02	1.47E-02	0.07	0
Carbon and paper	2.26E-03	2.26E-03	2.26E-03	3.40E-03	3.40E-03	3.40E-03	0.02	0.001–0.002
PE film	3.13E-04	3.13E-04	3.13E-04	4.70E-04	4.70E-04	4.70E-04	0.00	0
Total	4.97E-01	4.97E-01	4.97E-01	7.48E-01	7.48E-01	7.48E-01	3.35	0.2–0.35

Composition (kg/DU)	KP 7 1 m	KP 7 1.25–1.5 m	KP 7 1.75–2 m	KP 7 2.25–2.5 m	KP 7 2.75–3.5 m	Post-consumer recycled content (%)	Biogenic carbon content (kg C/DU)	
Clay masonry units	10.64	10.64	10.64	10.64	10.64	0	0	
Concrete	23.89	23.76	23.56	23.44	23.17	0	0	
Reinforcement steel	0.47	0.60	0.80	0.92	1.19	0	0	
Total	35.00	35.00	35.00	35.00	35.00	0	0	
Packaging (kg/DU)	KP 7 1 m	KP 7 1.25–1.5 m	KP 7 1.75–2 m	KP 7 2.25–2.5 m	KP 7 2.75–3.5 m	Mass (% relative to the product)	Mass of biogenic material (kg C/kg)	
Wooden spacers	1.14E+00	1.14E+00	1.14E+00	1.14E+00	1.14E+00	3.26	0.5	
PVC spacers	2.30E-02	2.30E-02	2.30E-02	2.30E-02	2.30E-02	0.07	0	
Carbon and paper	5.32E-03	5.32E-03	5.32E-03	5.32E-03	5.32E-03	0.02	0.0025	
PE film	7.35E-04	7.35E-04	7.35E-04	7.35E-04	7.35E-04	0.00	0	
Total	1.17E+00	1.17E+00	1.17E+00	1.17E+00	1.17E+00	3.35	0.5	
Composition (kg/DU)	POT 1.75–2.75 m	POT 3–3.75 m	POT 4–4.25 m	POT 4.5 m	POT 4.75 m	POT 5 m	Post-consumer recycled content (%)	Biogenic carbon content (kg C/DU)
Clay masonry units	6.80	6.80	6.80	6.80	6.80	6.80	0	0
Concrete	12.12	11.57	12.43	11.91	11.53	11.53	0	0
Reinforcement steel	1.78	2.23	2.77	2.99	3.16	3.38	0	0
Total	21.70	21.70	21.70	21.70	21.70	21.70	0	0
Packaging (kg/DU)	POT 1.75–2.75 m	POT 3–3.75 m	POT 4–4.25 m	POT 4.5 m	POT 4.75 m	POT 5 m	Mass (% relative to the product)	Mass of biogenic material (kg C/kg)
Wooden spacers	7.06E-01	7.06E-01	7.06E-01	7.06E-01	7.06E-01	7.06E-01	3.26	0.32
PVC spacers	1.42E-02	1.42E-02	1.42E-02	1.42E-02	1.42E-02	1.42E-02	0.07	0
Carbon and paper	3.30E-03	3.30E-03	3.30E-03	3.30E-03	3.30E-03	3.30E-03	0.02	0.0015
PE film	4.56E-04	4.56E-04	4.56E-04	4.56E-04	4.56E-04	4.56E-04	0.00	0
Total	7.24E-01	7.24E-01	7.24E-01	7.24E-01	7.24E-01	7.24E-01	3.35	0.32
Composition (kg/DU)	POT 5.25–5.75 m	POT 6–6.25 m	POT 6.5 m	POT 6.75 m	POT 7–7.5 m	POT 7.75–8.25 m	Post-consumer recycled content (%)	Biogenic carbon content (kg C/DU)
Clay masonry units	6.80	6.80	6.80	6.80	6.80	6.80	0	0
Concrete	10.33	10.92	13.38	13.01	13.60	13.13	0	0
Reinforcement steel	3.57	3.98	4.42	4.79	5.20	5.67	0	0
Total	21.70	21.70	25.60	25.60	25.60	25.60	0	0
Packaging (kg/DU)	POT 5.25–5.75 m	POT 6–6.25 m	POT 6.5 m	POT 6.75 m	POT 7–7.5 m	POT 7.75–8.25 m	Mass (% relative to the product)	Mass of biogenic material (kg C/kg)
Wooden spacers	7.06E-01	7.06E-01	8.33E-01	8.33E-01	8.33E-01	8.33E-01	3.26	0.32 / 0.40
PVC spacers	1.42E-02	1.42E-02	1.68E-02	1.68E-02	1.68E-02	1.68E-02	0.07	0
Carbon and paper	3.30E-03	3.30E-03	3.89E-03	3.89E-03	3.89E-03	3.89E-03	0.02	0.0015 / 0.0017
PE film	4.56E-04	4.56E-04	5.38E-04	5.38E-04	5.38E-04	5.38E-04	0.00	0
Total	7.24E-01	7.24E-01	8.55E-01	8.55E-01	8.55E-01	8.55E-01	3.35	0.32 / 0.40
Composition (kg/DU)	KP Vario UNI 1 m	KP Vario UNI 1.25 m	KP Vario UNI 1.5 m	KP Vario UNI 1.75 m	Post-consumer recycled content (%)	Biogenic carbon content (kg C/DU)		
Clay masonry units	14.00	14.00	14.00	14.00	0	0		
Concrete	46.26	45.80	45.09	44.38	0	0		
Reinforcement steel	0.74	1.12	1.91	2.62	0	0		
Total	61.00	61.00	61.00	61.00	0	0		
Packaging (kg/DU)	KP Vario UNI 1 m	KP Vario UNI 1.25 m	KP Vario UNI 1.5 m	KP Vario UNI 1.75 m	Mass (% relative to the product)	Mass of biogenic material (kg C/kg)		
Wooden spacers	1.99E+00	1.99E+00	1.99E+00	1.99E+00	3.26	0.90		
PVC spacers	4.00E-02	4.00E-02	4.00E-02	4.00E-02	0.07	0		
Carbon and paper	9.27E-03	9.27E-03	9.27E-03	9.27E-03	0.02	0.004		
PE film	1.28E-03	1.28E-03	1.28E-03	1.28E-03	0.00	0		
Total	2.04E+00	2.04E+00	2.04E+00	2.04E+00	3.35	0.90		
Composition (kg/DU)	KP Vario UNI 1 m	KP Vario UNI 2 m	KP Vario UNI 2.25–2.5 m	KP Vario UNI 2.75–3.5 m	Post-consumer recycled content (%)	Biogenic carbon content (kg C/DU)		
Clay masonry units	10.64	10.64	10.64	10.64	0	0		
Concrete	25.26	21.97	24.53	23.99	0	0		
Reinforcement steel	2.10	2.39	2.83	3.37	0	0		
Total	38.00	38.00	38.00	38.00	0	0		
Packaging (kg/DU)	KP Vario UNI 1 m	KP Vario UNI 2 m	KP Vario UNI 2.25–2.5 m	KP Vario UNI 2.75–3.5 m	Mass (% relative to the product)	Mass of biogenic material (kg C/kg)		
Wooden spacers	1.24E+00	1.24E+00	1.24E+00	1.24E+00	3.26	0.56		
PVC spacers	2.49E-02	2.49E-02	2.49E-02	2.49E-02	0.07	0		
Carbon and paper	5.78E-03	5.78E-03	5.78E-03	5.78E-03	0.02	0.003		
PE film	7.98E-04	7.98E-04	7.98E-04	7.98E-04	0.00	0		
Total	1.27E+00	1.27E+00	1.27E+00	1.27E+00	3.35	0.56		

2.6 Manufacture

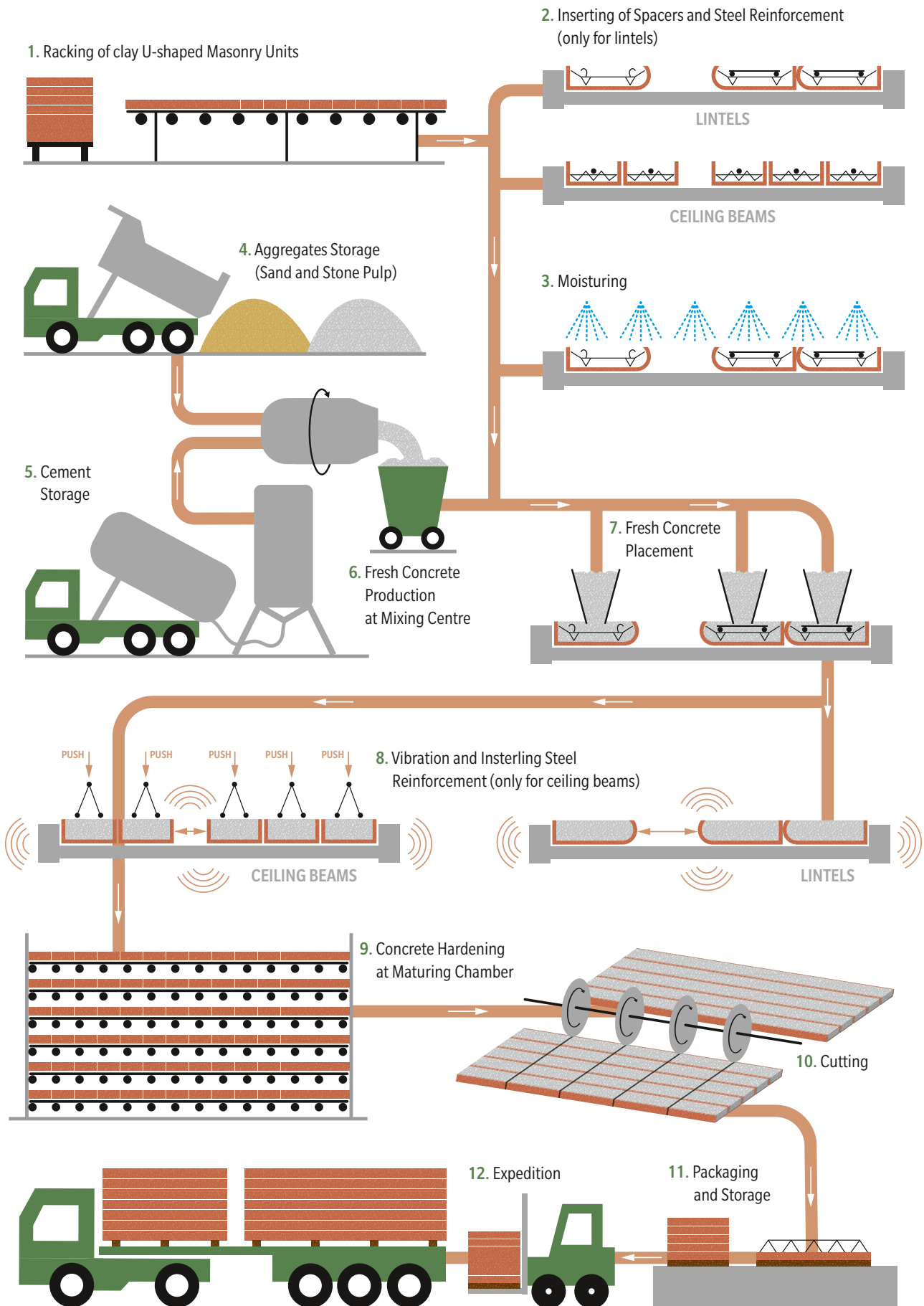




Foto 1: Insertion of spacers



Foto 2: Casting with fresh concrete



Foto 3: Vibration



Foto 4: Strapping machine/dispatch of POT floor beams

2.7 Environment and health during manufacturing

Given the manufacturing conditions, no special statutory or regulatory measures are required for health protection. Emissions from manufacturing are treated in accordance with legal requirements. Emissions are significantly below the specified limit values.

The manufacturing process does not generate wastewater.

Waste products generated during manufacturing are internally recycled.

2.8 Product processing/installation

All horizontal elements – lintels and floor beams – are laid in a bed of M10 cement mortar. These elements must have the prescribed minimum bearing length in the masonry. The minimum bearing length in the masonry for floor beams and Porotherm KP 11.5, KP 14.5 and KP 10/14.5 lintels is the same for all lengths and is 125 mm. For other types of lintels, the bearing length ranges from 125 to 250 mm depending on the clear span of the opening. Specific values are provided in the technical data sheets for the individual lintels.

Floor structures consist of POT floor beams, Miako floor blocks and a monolithic concrete layer of at least class C20/25.

2.9 Packaging

Cardboard, timber battens, PVC spacers and paper labels are used for packaging.

2.10 Conditions of use

Arrows marked "TOP", indicating the correct position of the lintel in the masonry, are embossed on the side of the U-shaped clay units. After the lintel has been installed in the masonry, these arrows must point upwards. Details on the correct use of the product are provided in the relevant technical data sheets.

All lintels are fired or cured during manufacturing, and during the use stage the clay units are inert – they do not release any emissions.

Further details on the correct use of the products can be found in the *Installation Guidelines*:

<https://www.wienerberger.cz/zdivo-porotherm/dokumenty.html>

2.11 Environment and health during use

If the products are used as intended, no adverse effects on health or the environment are expected.

2.12 Reference service life

The technical service life of the products is 100 years when used correctly.

2.13 Extraordinary effects

Fire: Building material class according to EN 13501-1.

Water: No impact.

Mechanical destruction: In the event of mechanical destruction, no environmental or health consequences are expected.

2.14 Reuse stage

release any harmful substances into the air, soil or water, they can be used as aggregate in construction materials at the end of their service life. Steel reinforcement is fully recyclable.

2.15 Disposal

Wienerberger lintels and beams comply with European Waste Catalogue code 17 01 07. If they cannot be reused in accordance with the procedures described above, they can be disposed of in landfills for inert material. They are not hazardous waste and no emissions to the environment are expected.

2.16 Additional information

Further information is available at wienerberger.cz.

3. LCA information

DECLARED UNIT	1 linear metre (1m) of non-installed lentils and ceiling beams: <i>Porotherm KP 11.5 / KP 14.5 / KP 10/14.5 (1 – 1.5 m)</i> <i>Porotherm KP7 (1.25 – 1.5 m) / KP Vario UNI (2.25 – 2.5 m)</i> <i>Ceramic-concrete ceiling beams POT (5.25 – 5.75 m)</i> The EPD provides specific results for the best-selling lengths of each product line, see above in brackets. Results for other reference product lengths, based on reinforcing steel content, are reflected in the supplementary information.
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Conversion from length to mass:

Lintel type (length)	KP 11.5 1–2.75 m	KP 14.5 a KP 10/14.5 1–2.75 m	KP 7 1–3.5 m	POT 1.75–6.25 m	POT 6.5–8.25 m	KP Vario UNI 1–1.75 m	KP Vario UNI 1–3.5 m
Mass per linear metre	14.90	22.40	35.00	21.70	25.60	61.00	38.00

SYSTEM BOUNDARY	Cradle to grave and Module D: Included life cycle stages A1–A3, A4–A5, B1–B7, C1–C4, D.
ASSUMPTIONS AND LIMITATIONS	The unit process of electrical energy is specific to purchased green electricity (source: hydropower). The results are based on the average content of individual product types.
EXCLUDED INPUTS	All inputs and outputs to the process (unit) for which data are available are included in the calculation. In the case of insufficient input data or cut-off data for the unit process, the cut-off criteria are set at 1% of primary energy consumption and 1% of the total mass inputs of this unit process.
DATA USED	Background data are not older than 10 years. All generic data used originate from the Ecoinvent database version 3.11.
DATA QUALITY	Specific data were used for all processes in the production plant. For upstream processes that are not directly influenced by the manufacturer, generic data from the Ecoinvent database version 3.11 were used.
TIME REPRESENTATIVENESS	The data used represent the reference year 2023.
ALLOCATION	All inputs and outputs were allocated on a mass basis according to the weighted average production of specific product types in individual production plants.
COMPARABILITY	Environmental Product Declarations from different programmes may not be comparable. Comparison or evaluation of data reported in the EPD is only possible if all compared data were determined in accordance with EN 15804+A2 and according to the same rules.
GEOGRAPHICAL SCOPE	The geographical scope of the EPD includes production and sales in the Czech Republic.

Life cycle stages

Product stage, A1 – A3

This product stage is divided into 3 modules: A1 (supply of raw materials), A2 (transport) and A3 (manufacturing). Aggregation of modules A1, A2 and A3 is permitted by EN 15804+A2. This option is applied in this EPD.

A1, supply of raw materials

This module takes into account the extraction and processing of all raw materials and energy that occur before the production process itself. These include sand, cement and drinking water for concrete production, steel reinforcement and materials for the production of ceramic fittings (clay, sand, fly ash, sawdust, paper sludge, etc.).

A2, transport to the manufacturer and internal transport

The module includes the transport (by road) of input materials to the production plant, including the extraction and internal transport of clay for the production of ceramic fittings.

A3, manufacturing

The module covers the production of lintels and beams, including the production of ceramic fittings from the producer's subsidiary plant. The ceramic fittings are folded into the required shape and filled with steel reinforcement and cast concrete. After drying, the products are formatted to the required length, undergo final inspection and are packaged and stored. The production of the packaging used is part of the module.

The manufacturing process also includes the combustion of natural gas and auxiliary input materials for production (sawdust, paper sludge), related to the manufacturing process.

For the reference period (2023) and the following year, 100 % green electricity from a renewable source (hydropower) was purchased by the producer, which was taken into account in the analysed model. The (fossil) emission factor of this electricity source is 0.0014 kg CO₂e/MJ. The manufacturer commits to purchasing electricity from renewable sources for the entire validity period of this EPD. In the event of a change in the source of electrical energy that would affect the LCA results, the EPD will be revised or invalidated accordingly.

Construction stage, A4 – A5

A4, transport to the construction site

This module includes transport from the gate of the production plant to the construction site.

Transport is calculated based on a scenario with parameters described in the following table:

PARAMETER	UNIT (expressed per declared unit)
Type of fuel and consumption of the transport vehicle or type of transport vehicle used for transport, e.g. long-distance truck, ship, etc.	Average truck, tonnage 16–32 t, diesel, EURO 6
Distance	150 km
Bulk density of transported products	100 % full load trucks
Capacity utilisation factor	1 (default)

A5, installation in the building

Lintels and floor beams are installed manually. No further processing or modification of the lintels and ceiling beams is expected on the construction site; therefore, only packaging waste is generated during installation.

It is assumed that packaging waste generated during installation is 100 % collected and recovered (energy recovery is assumed for plastics and wood, recycling for cardboard).

Use stage, B1 – B7

The products do not include any inputs or outputs during the use stage; they are passive building elements.

End-of-life stage, C1 – C4

The end-of-life stage is divided into the following modules:

Deconstruction – C1

Deconstruction with the use of heavy machinery for a duration of 5 min./DU is considered.

Transport of the end-of-life product – C2

Transport of waste to recovery and disposal, average distance 50 km.

Waste processing – C3

The recycling of 70 % of the end-of-life product is considered.

Disposal – C4

Landfilling of 30 % of the end-of-life product is considered.

Benefits and loads beyond the product system boundary, D

Separation of the reinforcement from the remaining material is assumed, along with substitution of the corresponding amount of primary unalloyed steel and natural crushed aggregate.

Declared modules, geographical scope, share of specific data and data variation (in the GWP-GHG category result):

	Product stage			Construction stage		Use stage	End-of-life stage				Benefits and loads beyond the system boundary
	Supply of raw materials	Transport	Manufacturing	Transport to construction site	Construction process - Installation	B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use	Deconstruction, demolition	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Module	A1	A2	A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Declared modules	X	X	X	X	X	X	X	X	X	X	X
Geography	EU	CZ	CZ	CZ	EU	EU	EU	EU	EU	EU	EU
Specific data	< 3 %			-	-	-	-	-	-	-	-
Variation – products	< 1 %			-	-	-	-	-	-	-	-
Variation – production plants	0 %			-	-	-	-	-	-	-	-

Legend: X - declared

4. LCA results

In accordance with EN 15804+A2, environmental impacts are declared using the core characterisation factors of EC-JRC (reference package based on EF 3.1). Specific data are based on operational data and generic data originate from the Ecoinvent database.

The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.

All emissions to air, water and soil and all materials and energy used have been included in the calculation.

Warning: It is not recommended to use the results of modules A1–A3 without taking into account the results of module C.

The LCA data results are presented in detail in the following tables and refer to the declared unit of 1 lm of Porotherm lintels and ceiling beams with an assumed average service life of 100 years.

Porotherm KP 11.5

CORE ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm KP 11.5 length 1–1.5 m (14.9 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential - total (GWP – total)	kg CO ₂ eq.	3.88E+00	4.25E-01	9.05E-01	0.00E+00	5.91E-03	1.42E-01	6.40E-02	2.64E-02	-5.75E-01
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	4.62E+00	4.25E-01	3.21E-02	0.00E+00	5.91E-03	1.42E-01	6.40E-02	2.63E-02	-5.76E-01
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-8.41E-01	2.87E-04	8.73E-01	0.00E+00	6.33E-07	9.55E-05	6.91E-06	6.62E-05	1.63E-03
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	9.81E-02	1.41E-04	4.81E-06	0.00E+00	5.10E-07	4.71E-05	5.56E-06	4.22E-06	-1.85E-04
Ozone depletion potential (ODP)	kg CFC11 eq.	3.35E-07	8.44E-09	7.27E-11	0.00E+00	8.97E-11	2.81E-09	9.79E-10	9.81E-10	-3.06E-09
Acidification potential (AP)	mol H ⁺ eq.	1.40E-02	8.84E-04	1.25E-03	0.00E+00	3.10E-05	2.95E-04	5.77E-04	1.64E-04	-2.28E-03
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	7.60E-04	2.88E-05	3.67E-06	0.00E+00	1.71E-07	9.59E-06	1.86E-06	1.20E-06	-2.14E-04
Eutrophication potential-marine (EP-marine)	kg N eq.	4.25E-03	2.12E-04	6.11E-04	0.00E+00	1.39E-05	7.08E-05	2.68E-04	7.00E-05	-5.73E-04
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	4.48E-02	2.29E-03	6.85E-03	0.00E+00	1.53E-04	7.64E-04	2.93E-03	7.66E-04	-6.28E-03
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	1.70E-02	1.47E-03	1.64E-03	0.00E+00	4.91E-05	4.90E-04	8.74E-04	3.09E-04	-2.09E-03
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	9.24E-06	1.38E-06	1.77E-07	0.00E+00	2.04E-09	4.60E-07	2.23E-08	3.28E-08	-7.15E-07
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	9.69E+01	5.97E+00	1.34E-01	0.00E+00	7.67E-02	1.99E+00	8.36E-01	6.55E-01	-6.29E+00
Water use ¹⁾	m ³ world eq. deprived.	4.44E+00	3.37E-02	1.53E-02	0.00E+00	2.25E-04	1.12E-02	2.45E-03	3.19E-02	-1.16E-01

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.
The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm KP 11.5 length 1–1.5 m (14.9 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential – greenhouse gases (GWP-GHG) ¹⁾	kg CO ₂ eq.	4.62E+00	4.20E-01	3.17E-02	0.00E+00	5.85E-03	1.40E-01	6.33E-02	2.61E-02	-5.76E-01
Particulate matter emissions (PM)	disease incidence	2.18E-07	3.13E-08	1.29E-08	0.00E+00	6.00E-10	1.04E-08	9.40E-08	4.14E-09	-4.51E-08
Human toxicity potential, non-carcinogenic (HTP-nc)*	CTUh	3.16E-08	3.87E-09	2.60E-09	0.00E+00	1.80E-11	1.29E-09	1.13E-10	1.01E-10	-1.95E-09
Human toxicity potential, carcinogenic (HTP-c)*	CTUh	1.83E-09	3.02E-09	2.29E-10	0.00E+00	2.83E-11	1.01E-09	2.50E-10	1.11E-10	-7.27E-10
Freshwater ecotoxicity potential (ETP-fw)	CTUe	8.53E+00	1.63E+00	2.60E-01	0.00E+00	1.09E-02	5.42E-01	1.19E-01	6.69E-02	-1.57E+00
Land use related impacts / soil quality (LU)*	dimensionless	2.38E+01	3.61E+00	6.62E-02	0.00E+00	5.37E-03	1.20E+00	5.86E-02	1.33E+00	-1.95E+00
Ionising radiation, human health (IRP)**	kBq U-235 eq.	1.28E-01	7.75E-03	5.86E-03	0.00E+00	3.43E-05	2.58E-03	3.74E-04	5.60E-04	-1.12E-02

Note: ¹⁾ This indicator is identical to the impact category Global warming potential – total, however without taking into account biogenic carbon dioxide and carbon stored in the product.

* Statement: The results of this environmental impact indicator shall be used with caution because the uncertainties of these results are high or because there is limited experience with the indicator.

** Statement: This impact category mainly addresses the potential impact of low-dose ionising radiation on human health related to the nuclear fuel cycle. It does not consider effects resulting from possible nuclear accidents, occupational exposure, or from the disposal of radioactive waste in underground facilities. This indicator also does not measure potential ionising radiation from soil, radon, or certain construction materials.

PARAMETERS DESCRIBING RESOURCE USE per DU – 1 lm of product **PoroTherm KP 11.5** length 1–1.5 m (14.9 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ/DJ	1.22E+01	1.02E-01	1.17E-01	0.00E+00	4.69E-04	3.42E-02	5.12E-03	1.34E-02	-1.81E-01
Use of renewable primary energy resources used as raw materials (PERM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT)	MJ/DJ	1.22E+01	1.02E-01	1.17E-01	0.00E+00	4.69E-04	3.42E-02	5.12E-03	1.34E-02	-1.81E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE)	MJ/DJ	9.69E+01	5.97E+00	1.34E-01	0.00E+00	7.67E-02	1.99E+00	8.36E-01	6.55E-01	-6.29E+00
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT)	MJ/DJ	9.69E+01	5.97E+00	1.34E-01	0.00E+00	7.67E-02	1.99E+00	8.36E-01	6.55E-01	-6.29E+00
Use of secondary material (SM)	kg/DJ	1.33E-01	2.77E-03	2.81E-04	0.00E+00	3.18E-05	9.24E-04	3.47E-04	1.56E-04	-1.63E-03
Use of renewable secondary fuels (RSF)	MJ/DJ	1.66E-04	3.50E-05	7.29E-07	0.00E+00	8.32E-08	1.17E-05	9.08E-07	3.90E-06	-1.40E-05
Use of non-renewable secondary fuels (NRSF)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water (FW)	m³/DJ	1.06E-01	8.30E-04	4.34E-04	0.00E+00	5.49E-06	2.77E-04	5.99E-05	7.48E-04	-2.77E-03

WASTE CATEGORIES per DU – 1 lm of product **PoroTherm KP 11.5** length 1–1.5 m (14.9 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Hazardous waste disposed (HWD)	kg	3.12E-01	8.71E-03	1.23E-03	0.00E+00	8.57E-05	2.90E-03	9.34E-04	4.96E-04	-5.06E-02
Non-hazardous waste disposed (NHWD)	kg	6.52E+00	1.84E-01	3.78E-02	0.00E+00	1.17E-03	6.13E-02	1.28E-02	1.19E-02	-1.10E+00
Radioactive waste disposed (RWD)	kg	3.20E-05	1.93E-06	1.33E-06	0.00E+00	8.42E-09	6.42E-07	9.18E-08	1.32E-07	-2.75E-06

OUTPUT FLOWS per DU – 1 lm of product **PoroTherm KP 11.5** length 1–1.5 m (14.9 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Components for reuse (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	kg	4.27E-02	4.54E-05	9.73E-03	0.00E+00	2.07E-07	1.51E-05	2.26E-06	2.47E-06	0.00E+00
Materials for energy recovery (MER)	kg	4.00E-06	3.85E-07	1.92E-08	0.00E+00	1.05E-09	1.28E-07	1.15E-08	9.78E-09	0.00E+00
Exported electrical energy (EEE)	MJ based on net calorific value	2.06E-02	1.03E-03	1.07E-03	0.00E+00	3.47E-06	3.42E-04	3.79E-05	7.35E-05	0.00E+00
Exported thermal energy (EET)	MJ	2.98E-02	1.49E-03	3.44E-05	0.00E+00	1.83E-06	4.96E-04	1.99E-05	3.03E-05	0.00E+00

Porotherm KP 14.5 a KP 10/14.5

CORE ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of **Porotherm KP 14.5 a KP 10/14.5** length 1–1.5 m (22.4 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential - total (GWP – total)	kg CO ₂ eq.	4.51E+00	6.39E-01	1.36E+00	0.00E+00	8.89E-03	2.13E-01	9.62E-02	3.97E-02	-5.75E-01
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	5.68E+00	6.38E-01	4.82E-02	0.00E+00	8.88E-03	2.13E-01	9.61E-02	3.96E-02	-5.76E-01
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-1.33E+00	4.31E-04	1.31E+00	0.00E+00	9.52E-07	1.44E-04	1.04E-05	9.96E-05	1.63E-03
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	1.63E-01	2.12E-04	7.23E-06	0.00E+00	7.66E-07	7.08E-05	8.36E-06	6.35E-06	-1.85E-04
Ozone depletion potential (ODP)	kg CFC11 eq.	5.46E-07	1.27E-08	1.09E-10	0.00E+00	1.35E-10	4.23E-09	1.47E-09	1.47E-09	-3.06E-09
Acidification potential (AP)	mol H ⁺ eq.	1.77E-02	1.33E-03	1.88E-03	0.00E+00	4.66E-05	4.43E-04	8.68E-04	2.46E-04	-2.28E-03
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	8.63E-04	4.32E-05	5.52E-06	0.00E+00	2.57E-07	1.44E-05	2.80E-06	1.80E-06	-2.14E-04
Eutrophication potential-marine (EP-marine)	kg N eq.	5.58E-03	3.19E-04	9.18E-04	0.00E+00	2.10E-05	1.06E-04	4.02E-04	1.05E-04	-5.73E-04
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	5.83E-02	3.44E-03	1.03E-02	0.00E+00	2.29E-04	1.15E-03	4.41E-03	1.15E-03	-6.28E-03
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	2.31E-02	2.21E-03	2.46E-03	0.00E+00	7.38E-05	7.36E-04	1.31E-03	4.65E-04	-2.09E-03
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	1.17E-05	2.07E-06	2.66E-07	0.00E+00	3.07E-09	6.91E-07	3.35E-08	4.93E-08	-7.15E-07
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	1.48E+02	8.98E+00	2.01E-01	0.00E+00	1.15E-01	2.99E+00	1.26E+00	9.85E-01	-6.29E+00
Water use ¹⁾	m ³ world eq. deprived.	7.08E+00	5.06E-02	2.30E-02	0.00E+00	3.38E-04	1.69E-02	3.69E-03	4.80E-02	-1.16E-01

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.
The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of **Porotherm KP 14.5 a KP 10/14.5** length 1–1.5 m (22.4 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential – greenhouse gases (GWP-GHG) ¹⁾	kg CO ₂ eq.	5.68E+00	6.32E-01	4.77E-02	0.00E+00	8.80E-03	2.11E-01	9.52E-02	3.92E-02	-5.76E-01
Particulate matter emissions (PM)	disease incidence	2.82E-07	4.70E-08	1.94E-08	0.00E+00	9.02E-10	1.57E-08	1.41E-07	6.23E-09	-4.51E-08
Human toxicity potential, non-carcinogenic (HTP-nc)*	CTUh	3.81E-08	5.81E-09	3.90E-09	0.00E+00	2.70E-11	1.94E-09	1.71E-10	1.52E-10	-1.95E-09
Human toxicity potential, carcinogenic (HTP-c)*	CTUh	2.17E-09	4.53E-09	3.45E-10	0.00E+00	4.25E-11	1.51E-09	3.76E-10	1.66E-10	-7.27E-10
Freshwater ecotoxicity potential (ETP-fw)	CTUe	1.07E+01	2.45E+00	3.91E-01	0.00E+00	1.64E-02	8.15E-01	1.78E-01	1.01E-01	-1.57E+00
Land use related impacts / soil quality (LU)*	dimensionless	3.63E+01	5.42E+00	9.96E-02	0.00E+00	8.07E-03	1.81E+00	8.81E-02	1.99E+00	-1.95E+00
Ionising radiation, human health (IRP)**	kBq U-235 eq.	1.52E-01	1.16E-02	8.81E-03	0.00E+00	5.16E-05	3.88E-03	5.63E-04	8.42E-04	-1.12E-02

Note: ¹⁾ This indicator is identical to the impact category Global warming potential – total, however without taking into account biogenic carbon dioxide and carbon stored in the product.

* Statement: The results of this environmental impact indicator shall be used with caution because the uncertainties of these results are high or because there is limited experience with the indicator.

** Statement: This impact category mainly addresses the potential impact of low-dose ionising radiation on human health related to the nuclear fuel cycle. It does not consider effects resulting from possible nuclear accidents, occupational exposure, or from the disposal of radioactive waste in underground facilities. This indicator also does not measure potential ionising radiation from soil, radon, or certain construction materials.

PARAMETERS DESCRIBING RESOURCE USE per DU – 1 lm of product PoroTherm KP 14.5 a KP 10/14.5 length 1–1.5 m (22.4 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ/DJ	1.94E+01	1.54E-01	1.76E-01	0.00E+00	7.05E-04	5.14E-02	7.69E-03	2.01E-02	-1.81E-01
Use of renewable primary energy resources used as raw materials (PERM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT)	MJ/DJ	1.94E+01	1.54E-01	1.76E-01	0.00E+00	7.05E-04	5.14E-02	7.69E-03	2.01E-02	-1.81E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE)	MJ/DJ	1.48E+02	8.98E+00	2.01E-01	0.00E+00	1.15E-01	2.99E+00	1.26E+00	9.85E-01	-6.29E+00
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT)	MJ/DJ	1.48E+02	8.98E+00	2.01E-01	0.00E+00	1.15E-01	2.99E+00	1.26E+00	9.85E-01	-6.29E+00
Use of secondary material (SM)	kg/DJ	1.43E-01	4.17E-03	4.23E-04	0.00E+00	4.79E-05	1.39E-03	5.22E-04	2.34E-04	-1.63E-03
Use of renewable secondary fuels (RSF)	MJ/DJ	2.19E-04	5.27E-05	1.10E-06	0.00E+00	1.25E-07	1.76E-05	1.36E-06	5.86E-06	-1.40E-05
Use of non-renewable secondary fuels (NRSF)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water (FW)	m³/DJ	1.70E-01	1.25E-03	6.53E-04	0.00E+00	8.25E-06	4.16E-04	9.00E-05	1.13E-03	-2.77E-03

WASTE CATEGORIES per DU – 1 lm of product PoroTherm KP 14.5 a KP 10/14.5 length 1–1.5 m (22.4 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Hazardous waste disposed (HWD)	kg	3.45E-01	1.31E-02	1.85E-03	0.00E+00	1.29E-04	4.37E-03	1.40E-03	7.45E-04	-5.06E-02
Non-hazardous waste disposed (NHWD)	kg	8.02E+00	2.77E-01	5.68E-02	0.00E+00	1.76E-03	9.22E-02	1.92E-02	1.79E-02	-1.10E+00
Radioactive waste disposed (RWD)	kg	3.80E-05	2.89E-06	2.00E-06	0.00E+00	1.27E-08	9.65E-07	1.38E-07	1.98E-07	-2.75E-06

OUTPUT FLOWS per DU – 1 lm of product PoroTherm KP 14.5 a KP 10/14.5 length 1–1.5 m (22.4 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Components for reuse (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	kg	6.38E-02	6.82E-05	1.46E-02	0.00E+00	3.12E-07	2.27E-05	3.40E-06	3.72E-06	0.00E+00
Materials for energy recovery (MER)	kg	5.30E-06	5.78E-07	2.88E-08	0.00E+00	1.58E-09	1.93E-07	1.72E-08	1.47E-08	0.00E+00
Exported electrical energy (EEE)	MJ based on net calorific value	2.51E-02	1.54E-03	1.62E-03	0.00E+00	5.22E-06	5.15E-04	5.69E-05	1.11E-04	0.00E+00
Exported thermal energy (EET)	MJ	3.20E-02	2.24E-03	5.17E-05	0.00E+00	2.75E-06	7.45E-04	3.00E-05	4.55E-05	0.00E+00

Porotherm KP 7

CORE ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm KP 7 length 1.25–1.5 m (35 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential - total (GWP – total)	kg CO ₂ eq.	1.04E+01	9.98E-01	2.13E+00	0.00E+00	1.39E-02	3.33E-01	1.50E-01	6.20E-02	-1.03E+00
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	1.20E+01	9.97E-01	7.53E-02	0.00E+00	1.39E-02	3.32E-01	1.50E-01	6.18E-02	-1.03E+00
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-1.84E+00	6.73E-04	2.05E+00	0.00E+00	1.49E-06	2.24E-04	1.62E-05	1.56E-04	2.13E-03
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	2.01E-01	3.32E-04	1.13E-05	0.00E+00	1.20E-06	1.11E-04	1.31E-05	9.92E-06	-4.04E-04
Ozone depletion potential (ODP)	kg CFC11 eq.	7.03E-07	1.98E-08	1.71E-10	0.00E+00	2.11E-10	6.61E-09	2.30E-09	2.30E-09	-6.30E-09
Acidification potential (AP)	mol H+ eq.	3.39E-02	2.08E-03	2.93E-03	0.00E+00	7.28E-05	6.92E-04	1.36E-03	3.85E-04	-4.44E-03
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	1.70E-03	6.75E-05	8.63E-06	0.00E+00	4.01E-07	2.25E-05	4.38E-06	2.81E-06	-3.63E-04
Eutrophication potential-marine (EP-marine)	kg N eq.	1.04E-02	4.99E-04	1.43E-03	0.00E+00	3.27E-05	1.66E-04	6.29E-04	1.65E-04	-1.14E-03
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	1.11E-01	5.38E-03	1.61E-02	0.00E+00	3.59E-04	1.79E-03	6.88E-03	1.80E-03	-1.27E-02
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	4.02E-02	3.45E-03	3.85E-03	0.00E+00	1.15E-04	1.15E-03	2.05E-03	7.26E-04	-4.13E-03
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	2.18E-05	3.24E-06	4.16E-07	0.00E+00	4.80E-09	1.08E-06	5.23E-08	7.71E-08	-1.87E-06
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	2.09E+02	1.40E+01	3.14E-01	0.00E+00	1.80E-01	4.68E+00	1.96E+00	1.54E+00	-1.16E+01
Water use ¹⁾	m ³ world eq. deprived.	9.33E+00	7.91E-02	3.59E-02	0.00E+00	5.28E-04	2.64E-02	5.77E-03	7.49E-02	-3.09E-01

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.
The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm KP 7 length 1.25–1.5 m (35 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential – greenhouse gases (GWP-GHG) ¹⁾	kg CO ₂ eq.	1.20E+01	9.87E-01	7.46E-02	0.00E+00	1.37E-02	3.29E-01	1.49E-01	6.12E-02	-1.03E+00
Particulate matter emissions (PM)	disease incidence	4.70E-07	7.34E-08	3.02E-08	0.00E+00	1.41E-09	2.45E-08	2.21E-07	9.74E-09	-8.33E-08
Human toxicity potential, non-carcinogenic (HTP-nc)*	CTUh	7.95E-08	9.08E-09	6.10E-09	0.00E+00	4.22E-11	3.03E-09	2.67E-10	2.38E-10	-4.28E-09
Human toxicity potential, carcinogenic (HTP-c)*	CTUh	3.66E-09	7.08E-09	5.39E-10	0.00E+00	6.64E-11	2.36E-09	5.87E-10	2.60E-10	-1.16E-09
Freshwater ecotoxicity potential (ETP-fw)	CTUe	1.78E+01	3.82E+00	6.11E-01	0.00E+00	2.56E-02	1.27E+00	2.78E-01	1.57E-01	-2.82E+00
Land use related impacts / soil quality (LU)*	dimensionless	5.48E+01	8.47E+00	1.56E-01	0.00E+00	1.26E-02	2.82E+00	1.38E-01	3.12E+00	-4.53E+00
Ionising radiation, human health (IRP)**	kBq U-235 eq.	3.40E-01	1.82E-02	1.38E-02	0.00E+00	8.06E-05	6.07E-03	8.79E-04	1.32E-03	-2.65E-02

Note: ¹⁾ This indicator is identical to the impact category Global warming potential – total, however without taking into account biogenic carbon dioxide and carbon stored in the product.

* Statement: The results of this environmental impact indicator shall be used with caution because the uncertainties of these results are high or because there is limited experience with the indicator.

** Statement: This impact category mainly addresses the potential impact of low-dose ionising radiation on human health related to the nuclear fuel cycle. It does not consider effects resulting from possible nuclear accidents, occupational exposure, or from the disposal of radioactive waste in underground facilities. This indicator also does not measure potential ionising radiation from soil, radon, or certain construction materials.

PARAMETERS DESCRIBING RESOURCE USE per DU – 1 lm of product **Porotherm KP 7** length 1.25–1.5 m (35 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ/DJ	2.57E+01	2.41E-01	2.75E-01	0.00E+00	1.10E-03	8.03E-02	1.20E-02	3.15E-02	-3.99E-01
Use of renewable primary energy resources used as raw materials (PERM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT)	MJ/DJ	2.57E+01	2.41E-01	2.75E-01	0.00E+00	1.10E-03	8.03E-02	1.20E-02	3.15E-02	-3.99E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE)	MJ/DJ	2.09E+02	1.40E+01	3.14E-01	0.00E+00	1.80E-01	4.68E+00	1.96E+00	1.54E+00	-1.16E+01
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT)	MJ/DJ	2.09E+02	1.40E+01	3.14E-01	0.00E+00	1.80E-01	4.68E+00	1.96E+00	1.54E+00	-1.16E+01
Use of secondary material (SM)	kg/DJ	2.23E-01	6.51E-03	6.61E-04	0.00E+00	7.48E-05	2.17E-03	8.16E-04	3.66E-04	-4.18E-03
Use of renewable secondary fuels (RSF)	MJ/DJ	3.57E-04	8.23E-05	1.71E-06	0.00E+00	1.96E-07	2.74E-05	2.13E-06	9.16E-06	-3.48E-05
Use of non-renewable secondary fuels (NRSF)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water (FW)	m³/DJ	2.24E-01	1.95E-03	1.02E-03	0.00E+00	1.29E-05	6.50E-04	1.41E-04	1.76E-03	-7.37E-03

WASTE CATEGORIES per DU – 1 lm of product **Porotherm KP 7** length 1.25–1.5 m (35 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Hazardous waste disposed (HWD)	kg	5.84E-01	2.05E-02	2.89E-03	0.00E+00	2.01E-04	6.82E-03	2.20E-03	1.16E-03	-8.77E-02
Non-hazardous waste disposed (NHWD)	kg	1.41E+01	4.32E-01	8.87E-02	0.00E+00	2.75E-03	1.44E-01	3.00E-02	2.80E-02	-1.89E+00
Radioactive waste disposed (RWD)	kg	8.57E-05	4.52E-06	3.13E-06	0.00E+00	1.98E-08	1.51E-06	2.16E-07	3.10E-07	-6.51E-06

OUTPUT FLOWS per DU – 1 lm of product **Porotherm KP 7** length 1.25–1.5 m (35 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Components for reuse (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	kg	1.00E-01	1.07E-04	2.29E-02	0.00E+00	4.87E-07	3.55E-05	5.31E-06	5.81E-06	0.00E+00
Materials for energy recovery (MER)	kg	8.19E-06	9.03E-07	4.51E-08	0.00E+00	2.47E-09	3.01E-07	2.69E-08	2.30E-08	0.00E+00
Exported electrical energy (EEE)	MJ based on net calorific value	5.59E-02	2.41E-03	2.53E-03	0.00E+00	8.15E-06	8.04E-04	8.89E-05	1.73E-04	0.00E+00
Exported thermal energy (EET)	MJ	9.27E-02	3.49E-03	8.08E-05	0.00E+00	4.29E-06	1.16E-03	4.68E-05	7.11E-05	0.00E+00

Porotherm KP Vario UNI

CORE ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm KP Vario UNI length 2.25–2.5 m (38 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential - total (GWP – total)	kg CO ₂ eq.	1.58E+01	1.08E+00	2.31E+00	0.00E+00	1.51E-02	3.61E-01	1.63E-01	6.73E-02	-3.76E+00
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	1.75E+01	1.08E+00	8.18E-02	0.00E+00	1.51E-02	3.61E-01	1.63E-01	6.71E-02	-3.78E+00
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-1.99E+00	7.31E-04	2.23E+00	0.00E+00	1.62E-06	2.44E-04	1.76E-05	1.69E-04	1.23E-02
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	2.17E-01	3.60E-04	1.23E-05	0.00E+00	1.30E-06	1.20E-04	1.42E-05	1.08E-05	-1.05E-03
Ozone depletion potential (ODP)	kg CFC11 eq.	7.73E-07	2.15E-08	1.85E-10	0.00E+00	2.29E-10	7.18E-09	2.50E-09	2.50E-09	-1.83E-08
Acidification potential (AP)	mol H+ eq.	5.52E-02	2.26E-03	3.18E-03	0.00E+00	7.91E-05	7.52E-04	1.47E-03	4.18E-04	-1.41E-02
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	3.93E-03	7.33E-05	9.37E-06	0.00E+00	4.36E-07	2.44E-05	4.75E-06	3.05E-06	-1.44E-03
Eutrophication potential-marine (EP-marine)	kg N eq.	1.56E-02	5.42E-04	1.56E-03	0.00E+00	3.55E-05	1.81E-04	6.83E-04	1.79E-04	-3.50E-03
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	1.65E-01	5.84E-03	1.75E-02	0.00E+00	3.89E-04	1.95E-03	7.47E-03	1.95E-03	-3.80E-02
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	5.96E-02	3.75E-03	4.18E-03	0.00E+00	1.25E-04	1.25E-03	2.23E-03	7.89E-04	-1.29E-02
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	3.81E-05	3.52E-06	4.52E-07	0.00E+00	5.21E-09	1.17E-06	5.68E-08	8.37E-08	-3.39E-06
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	2.75E+02	1.52E+01	3.41E-01	0.00E+00	1.95E-01	5.08E+00	2.13E+00	1.67E+00	-4.05E+01
Water use ¹⁾	m ³ world eq. deprived.	1.18E+01	8.59E-02	3.90E-02	0.00E+00	5.74E-04	2.86E-02	6.26E-03	8.14E-02	-5.35E-01

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.
The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm KP Vario UNI length 2.25–2.5 m (38 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential – greenhouse gases (GWP-GHG) ¹⁾	kg CO ₂ eq.	1.75E+01	1.07E+00	8.10E-02	0.00E+00	1.49E-02	3.57E-01	1.61E-01	6.64E-02	-3.78E+00
Particulate matter emissions (PM)	disease incidence	9.65E-07	7.97E-08	3.28E-08	0.00E+00	1.53E-09	2.66E-08	2.40E-07	1.06E-08	-2.90E-07
Human toxicity potential, non-carcinogenic (HTP-nc)*	CTUh	1.30E-07	9.86E-09	6.62E-09	0.00E+00	4.58E-11	3.29E-09	2.89E-10	2.58E-10	-1.11E-08
Human toxicity potential, carcinogenic (HTP-c)*	CTUh	9.87E-09	7.69E-09	5.85E-10	0.00E+00	7.21E-11	2.56E-09	6.38E-10	2.82E-10	-5.07E-09
Freshwater ecotoxicity potential (ETP-fw)	CTUe	4.08E+01	4.15E+00	6.63E-01	0.00E+00	2.78E-02	1.38E+00	3.02E-01	1.71E-01	-1.02E+01
Land use related impacts / soil quality (LU)*	dimensionless	7.24E+01	9.20E+00	1.69E-01	0.00E+00	1.37E-02	3.07E+00	1.49E-01	3.38E+00	-1.05E+01
Ionising radiation, human health (IRP)**	kBq U-235 eq.	4.97E-01	1.98E-02	1.49E-02	0.00E+00	8.75E-05	6.59E-03	9.55E-04	1.43E-03	-5.90E-02

Note: ¹⁾ This indicator is identical to the impact category Global warming potential – total, however without taking into account biogenic carbon dioxide and carbon stored in the product.

* Statement: The results of this environmental impact indicator shall be used with caution because the uncertainties of these results are high or because there is limited experience with the indicator.

** Statement: This impact category mainly addresses the potential impact of low-dose ionising radiation on human health related to the nuclear fuel cycle. It does not consider effects resulting from possible nuclear accidents, occupational exposure, or from the disposal of radioactive waste in underground facilities. This indicator also does not measure potential ionising radiation from soil, radon, or certain construction materials.

PARAMETERS DESCRIBING RESOURCE USE per DU – 1 lm of product **Porotherm KP Vario UNI** length 2.25–2.5 m (38 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ/DJ	3.06E+01	2.61E-01	2.99E-01	0.00E+00	1.20E-03	8.71E-02	1.31E-02	3.42E-02	-1.03E+00
Use of renewable primary energy resources used as raw materials (PERM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT)	MJ/DJ	3.06E+01	2.61E-01	2.99E-01	0.00E+00	1.20E-03	8.71E-02	1.31E-02	3.42E-02	-1.03E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE)	MJ/DJ	2.75E+02	1.52E+01	3.41E-01	0.00E+00	1.95E-01	5.08E+00	2.13E+00	1.67E+00	-4.05E+01
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT)	MJ/DJ	2.75E+02	1.52E+01	3.41E-01	0.00E+00	1.95E-01	5.08E+00	2.13E+00	1.67E+00	-4.05E+01
Use of secondary material (SM)	kg/DJ	8.98E-01	7.07E-03	7.18E-04	0.00E+00	8.12E-05	2.36E-03	8.86E-04	3.97E-04	-7.94E-03
Use of renewable secondary fuels (RSF)	MJ/DJ	6.98E-04	8.94E-05	1.86E-06	0.00E+00	2.12E-07	2.98E-05	2.32E-06	9.95E-06	-7.10E-05
Use of non-renewable secondary fuels (NRSF)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water (FW)	m³/DJ	2.84E-01	2.12E-03	1.11E-03	0.00E+00	1.40E-05	7.05E-04	1.53E-04	1.91E-03	-1.29E-02

WASTE CATEGORIES per DU – 1 lm of product **Porotherm KP Vario UNI** length 2.25–2.5 m (38 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Hazardous waste disposed (HWD)	kg	1.92E+00	2.22E-02	3.13E-03	0.00E+00	2.18E-04	7.41E-03	2.38E-03	1.26E-03	-3.38E-01
Non-hazardous waste disposed (NHWD)	kg	3.05E+01	4.69E-01	9.63E-02	0.00E+00	2.99E-03	1.56E-01	3.26E-02	3.04E-02	-7.43E+00
Radioactive waste disposed (RWD)	kg	1.25E-04	4.91E-06	3.40E-06	0.00E+00	2.15E-08	1.64E-06	2.34E-07	3.37E-07	-1.46E-05

OUTPUT FLOWS per DU – 1 lm of product **Porotherm KP Vario UNI** length 2.25–2.5 m (38 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Components for reuse (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	kg	1.11E-01	1.16E-04	2.48E-02	0.00E+00	5.28E-07	3.86E-05	5.77E-06	6.31E-06	0.00E+00
Materials for energy recovery (MER)	kg	1.75E-05	9.81E-07	4.89E-08	0.00E+00	2.68E-09	3.27E-07	2.92E-08	2.49E-08	0.00E+00
Exported electrical energy (EEE)	MJ based on net calorific value	7.40E-02	2.62E-03	2.74E-03	0.00E+00	8.85E-06	8.73E-04	9.66E-05	1.87E-04	0.00E+00
Exported thermal energy (EET)	MJ	1.09E-01	3.79E-03	8.78E-05	0.00E+00	4.66E-06	1.26E-03	5.08E-05	7.71E-05	0.00E+00

Porotherm POT

CORE ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm POT length 5.25–5.75 m (21.7 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential - total (GWP – total)	kg CO ₂ eq.	1.25E+01	6.19E-01	1.32E+00	0.00E+00	8.61E-03	2.06E-01	9.32E-02	3.84E-02	-4.51E+00
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	1.24E+01	6.18E-01	4.67E-02	0.00E+00	8.61E-03	2.06E-01	9.31E-02	3.83E-02	-4.53E+00
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-5.12E-02	4.17E-04	1.27E+00	0.00E+00	9.22E-07	1.39E-04	1.01E-05	9.65E-05	1.61E-02
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	1.28E-01	2.06E-04	7.00E-06	0.00E+00	7.42E-07	6.86E-05	8.10E-06	6.15E-06	-1.14E-03
Ozone depletion potential (ODP)	kg CFC11 eq.	4.35E-07	1.23E-08	1.06E-10	0.00E+00	1.31E-10	4.10E-09	1.43E-09	1.43E-09	-2.06E-08
Acidification potential (AP)	mol H+ eq.	4.28E-02	1.29E-03	1.82E-03	0.00E+00	4.52E-05	4.29E-04	8.40E-04	2.39E-04	-1.64E-02
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	3.87E-03	4.19E-05	5.35E-06	0.00E+00	2.49E-07	1.40E-05	2.71E-06	1.74E-06	-1.76E-03
Eutrophication potential-marine (EP-marine)	kg N eq.	1.09E-02	3.09E-04	8.90E-04	0.00E+00	2.03E-05	1.03E-04	3.90E-04	1.02E-04	-4.00E-03
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	1.17E-01	3.34E-03	9.98E-03	0.00E+00	2.22E-04	1.11E-03	4.27E-03	1.12E-03	-4.32E-02
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	4.18E-02	2.14E-03	2.38E-03	0.00E+00	7.15E-05	7.13E-04	1.27E-03	4.50E-04	-1.48E-02
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	3.04E-05	2.01E-06	2.58E-07	0.00E+00	2.97E-09	6.70E-07	3.24E-08	4.78E-08	-3.10E-06
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	1.85E+02	8.70E+00	1.95E-01	0.00E+00	1.12E-01	2.90E+00	1.22E+00	9.54E-01	-4.80E+01
Water use ¹⁾	m ³ world eq. deprived.	8.40E+00	4.91E-02	2.23E-02	0.00E+00	3.28E-04	1.64E-02	3.57E-03	4.65E-02	-4.77E-01

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.
The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS per DU – 1 lm of Porotherm POT length 5.25–5.75 m (21.7 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Global warming potential – greenhouse gases (GWP-GHG) ¹⁾	kg CO ₂ eq.	1.24E+01	6.12E-01	4.62E-02	0.00E+00	8.52E-03	2.04E-01	9.22E-02	3.79E-02	-4.53E+00
Particulate matter emissions (PM)	disease incidence	8.25E-07	4.55E-08	1.87E-08	0.00E+00	8.74E-10	1.52E-08	1.37E-07	6.04E-09	-3.43E-07
Human toxicity potential, non-carcinogenic (HTP-nc)*	CTUh	1.00E-07	5.63E-09	3.78E-09	0.00E+00	2.62E-11	1.88E-09	1.65E-10	1.47E-10	-1.20E-08
Human toxicity potential, carcinogenic (HTP-c)*	CTUh	1.03E-08	4.39E-09	3.34E-10	0.00E+00	4.12E-11	1.46E-09	3.64E-10	1.61E-10	-6.32E-09
Freshwater ecotoxicity potential (ETP-fw)	CTUe	3.89E+01	2.37E+00	3.79E-01	0.00E+00	1.59E-02	7.90E-01	1.73E-01	9.75E-02	-1.23E+01
Land use related impacts / soil quality (LU)*	dimensionless	3.77E+01	5.25E+00	9.64E-02	0.00E+00	7.82E-03	1.75E+00	8.53E-02	1.93E+00	-1.10E+01
Ionising radiation, human health (IRP)**	kBq U-235 eq.	3.58E-01	1.13E-02	8.53E-03	0.00E+00	5.00E-05	3.76E-03	5.45E-04	8.16E-04	-6.02E-02

Note: ¹⁾ This indicator is identical to the impact category Global warming potential – total, however without taking into account biogenic carbon dioxide and carbon stored in the product.

* Statement: The results of this environmental impact indicator shall be used with caution because the uncertainties of these results are high or because there is limited experience with the indicator.

** Statement: This impact category mainly addresses the potential impact of low-dose ionising radiation on human health related to the nuclear fuel cycle. It does not consider effects resulting from possible nuclear accidents, occupational exposure, or from the disposal of radioactive waste in underground facilities. This indicator also does not measure potential ionising radiation from soil, radon, or certain construction materials.

PARAMETERS DESCRIBING RESOURCE USE per DU – 1 lm of product **PoroTherm POT** length 5.25–5.75 m (21.7 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ/DJ	1.86E+01	1.49E-01	1.71E-01	0.00E+00	6.83E-04	4.98E-02	7.45E-03	1.95E-02	-1.11E+00
Use of renewable primary energy resources used as raw materials (PERM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT)	MJ/DJ	1.86E+01	1.49E-01	1.71E-01	0.00E+00	6.83E-04	4.98E-02	7.45E-03	1.95E-02	-1.11E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE)	MJ/DJ	1.85E+02	8.70E+00	1.95E-01	0.00E+00	1.12E-01	2.90E+00	1.22E+00	9.54E-01	-4.80E+01
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT)	MJ/DJ	1.85E+02	8.70E+00	1.95E-01	0.00E+00	1.12E-01	2.90E+00	1.22E+00	9.54E-01	-4.80E+01
Use of secondary material (SM)	kg/DJ	1.05E+00	4.04E-03	4.10E-04	0.00E+00	4.64E-05	1.35E-03	5.06E-04	2.27E-04	-7.48E-03
Use of renewable secondary fuels (RSF)	MJ/DJ	5.61E-04	5.10E-05	1.06E-06	0.00E+00	1.21E-07	1.70E-05	1.32E-06	5.68E-06	-6.96E-05
Use of non-renewable secondary fuels (NRSF)	MJ/DJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water (FW)	m³/DJ	2.02E-01	1.21E-03	6.32E-04	0.00E+00	7.99E-06	4.03E-04	8.72E-05	1.09E-03	-1.15E-02

WASTE CATEGORIES per DU – 1 lm of product **PoroTherm POT** length 5.25–5.75 m (21.7 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Hazardous waste disposed (HWD)	kg	2.14E+00	1.27E-02	1.79E-03	0.00E+00	1.25E-04	4.23E-03	1.36E-03	7.22E-04	-4.10E-01
Non-hazardous waste disposed (NHWD)	kg	2.72E+01	2.68E-01	5.50E-02	0.00E+00	1.70E-03	8.93E-02	1.86E-02	1.73E-02	-9.05E+00
Radioactive waste disposed (RWD)	kg	8.96E-05	2.80E-06	1.94E-06	0.00E+00	1.23E-08	9.35E-07	1.34E-07	1.92E-07	-1.49E-05

OUTPUT FLOWS per DU – 1 lm of product **PoroTherm POT** length 5.25–5.75 m (21.7 kg/lm)

Impact category	unit	A1–A3	A4	A5	B1–B7	C1	C2	C3	C4	D
		Manufacturing	Transport	Installation	Use	Deconstruction	Transport	Waste processing	Disposal	Potential for reuse, recovery and recycling
Components for reuse (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	kg	6.27E-03	6.61E-05	1.42E-02	0.00E+00	3.02E-07	2.20E-05	3.29E-06	3.60E-06	0.00E+00
Materials for energy recovery (MER)	kg	1.53E-05	5.60E-07	2.79E-08	0.00E+00	1.53E-09	1.87E-07	1.67E-08	1.42E-08	0.00E+00
Exported electrical energy (EEE)	MJ based on net calorific value	4.80E-02	1.50E-03	1.57E-03	0.00E+00	5.06E-06	4.99E-04	5.51E-05	1.07E-04	0.00E+00
Exported thermal energy (EET)	MJ	6.20E-02	2.17E-03	5.01E-05	0.00E+00	2.66E-06	7.22E-04	2.90E-05	4.41E-05	0.00E+00

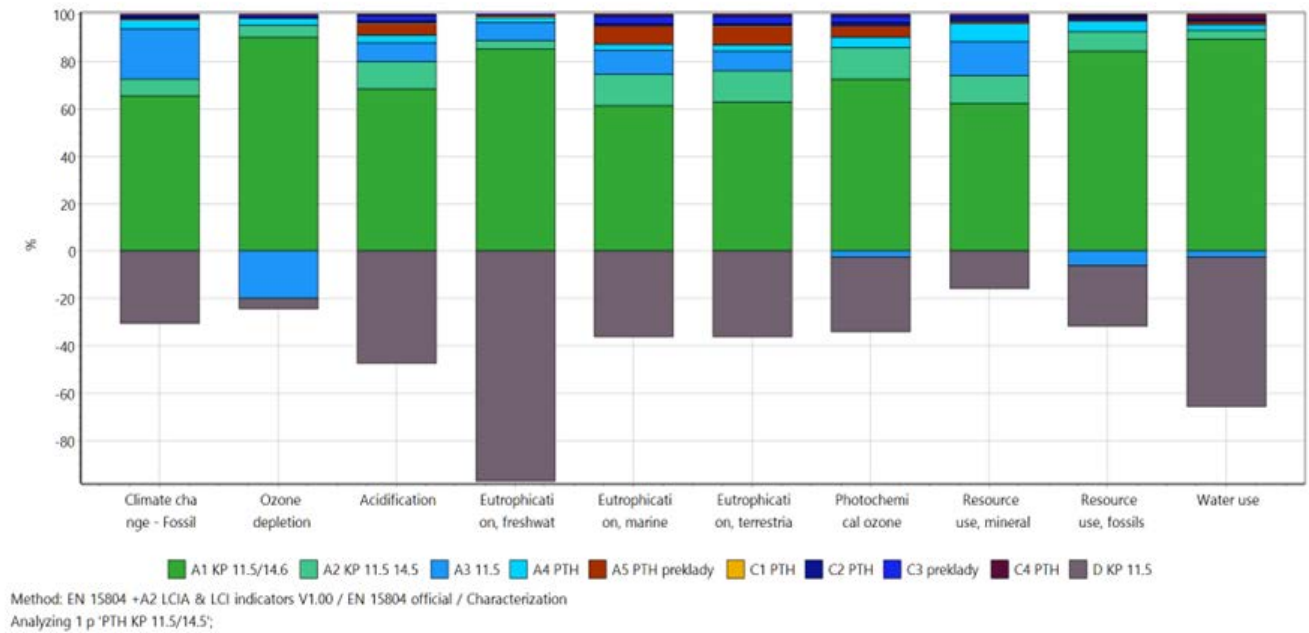
BIOGENIC CARBON CONTENT

BIOGENIC CARBON CONTENT 1 lm Lintels and ceiling beams							
Product	KP 11.5 1–2.75 m	KP 14.5 a KP 10/14.5 1–2.75 m	KP 7 1–3.5 m	POT 1.75–6.25 m	POT 6.5–8.25 m	KP Vario UNI 1–1.75 m	KP Vario UNI 1–3.5 m
Biogenic carbon content in the product	0	0	0	0	0	0	0
Biogenic carbon content in the asso- ciated packaging	2.19E-01	3.30E-01	5.15E-01	3.19E-01	3.77E-01	9.00E-01	5.61E-01

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg CO₂.

5. Interpretation of LCA results

The following graph shows the distribution of the contribution of individual life cycle stages to the overall results (products Porotherm KP 11.5, KP 14.5 and KP 10/14.5).



In all impact categories, the most significant stage is the extraction and processing of raw materials (A1), accounting for 60–80 % of the total results. Among the unit processes, the most significant are the production of cement for concrete production and steel reinforcement (A1), heat generation from natural gas combustion (A3), and transport between the individual modules (A4, A2, C2). Beyond the life cycle boundary, in Module D, potential compensation of 20–60 % of the total impacts is achieved through the use of recycled materials as substitutes for primary raw materials (steel and aggregate).

The results of the Environmental Product Declaration (EPD) are based on updated life cycle data relating to the reference year 2023. Compared with previous EPDs based on data from 2018, some environmental indicators, particularly those related to climate change and global warming potential (GWP), show higher values. This difference is largely due to a change in the methodological approach to calculating process CO₂ emissions between the reference years 2018 and 2023.

The updated methodology for calculating process emissions was approved by the competent public authority and verified by an independent third party.

The new approach more accurately reflects the chemical processes occurring during the production of fired clay products, particularly the release of CO₂ from carbonate components of the raw materials during firing.

Additional information

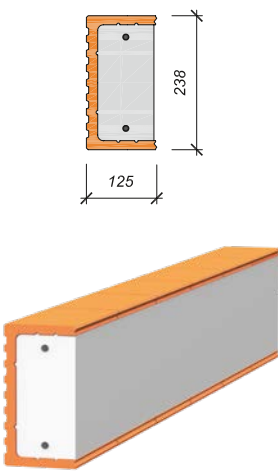
Results in modules A1–A3 for different product lengths

The following results relate to modules A1–A3 for 1 linear metre (1m) of products with an overall length different from that of the reference products for which the results are reported in the EPD. The results in modules A4–A5, B1–B7 and C1–C4 are identical to those of the reference products.

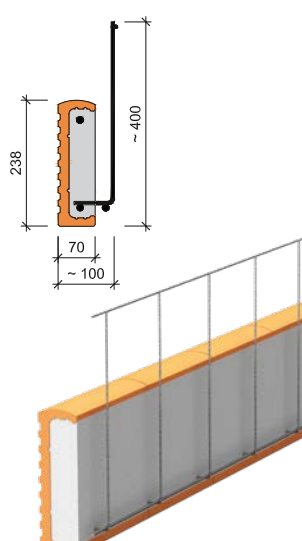
Impact category	unit	KP 11.5		KP 14.5 a KP 10/14.5		KP 7			
		length [m]							
		1.75–2.25	2.5–2.75	1.75–2.25	2.5–2.75	1	1.75–2	2.25–2.5	2.75–3.5
Global warming potential - total (GWP – total)	kg CO ₂ eq.	4.29E+00	4.80E+00	5.71E+00	6.35E+00	1.01E+01	1.08E+01	1.10E+01	1.15E+01
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	5.03E+00	5.54E+00	6.86E+00	7.49E+00	1.18E+01	1.24E+01	1.26E+01	1.32E+01
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-8.42E-01	-8.44E-01	-1.30E+00	-1.30E+00	-1.84E+00	-1.84E+00	-1.84E+00	-1.84E+00
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	9.84E-02	9.88E-02	1.55E-01	1.56E-01	2.01E-01	2.01E-01	2.02E-01	2.02E-01
Ozone depletion potential (ODP)	kg CFC11 eq.	3.37E-07	3.40E-07	5.28E-07	5.31E-07	7.02E-07	7.05E-07	7.06E-07	7.09E-07
Acidification potential (AP)	mol H+ eq.	1.57E-02	1.79E-02	2.17E-02	2.44E-02	3.28E-02	3.56E-02	3.66E-02	3.88E-02
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	9.62E-04	1.21E-03	1.26E-03	1.57E-03	1.57E-03	1.89E-03	2.00E-03	2.26E-03
Eutrophication potential-marine (EP-marine)	kg N eq.	4.66E-03	5.15E-03	6.54E-03	7.16E-03	1.02E-02	1.08E-02	1.10E-02	1.15E-02
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	4.90E-02	5.43E-02	6.87E-02	7.52E-02	1.08E-01	1.15E-01	1.17E-01	1.22E-01
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	1.85E-02	2.04E-02	2.64E-02	2.87E-02	3.92E-02	4.16E-02	4.25E-02	4.44E-02
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	1.06E-05	1.23E-05	1.46E-05	1.67E-05	2.10E-05	2.31E-05	2.39E-05	2.57E-05
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	1.02E+02	1.08E+02	1.53E+02	1.61E+02	2.06E+02	2.14E+02	2.16E+02	2.22E+02
Water use ¹⁾	m ³ world eq. deprived.	4.62E+00	4.83E+00	7.17E+00	7.44E+00	9.22E+00	9.50E+00	9.60E+00	9.82E+00

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks. The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

The following results relate to modules A1–A3 for 1 linear metre (1m) of products with an overall length different from that of the reference products for which the results are reported in the EPD. The results in modules A4–A5, B1–B7 and C1–C4 are identical to those of the reference products for product lengths of 2–3.5 m. For lengths of 1–1.75 m, due to the different mass, the results for the specified modules must be recalculated using the coefficient given in the table (last column).

Impact category	unit	KP Vario UNI				
		length [m]				Coefficient for lengths 1–1.75
		1	1.25	1.5	1.75	
Global warming potential - total (GWP – total)	kg CO ₂ eq.	1.89E+01	1.96E+01	2.12E+01	2.26E+01	 1.61
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	2.05E+01	2.12E+01	2.28E+01	2.42E+01	
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-1.92E+00	-1.92E+00	-1.93E+00	-1.93E+00	
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	3.30E-01	3.30E-01	3.31E-01	3.32E-01	
Ozone depletion potential (ODP)	kg CFC11 eq.	1.13E-06	1.14E-06	1.15E-06	1.15E-06	
Acidification potential (AP)	mol H+ eq.	5.55E-02	5.86E-02	6.51E-02	7.10E-02	
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	2.71E-03	3.07E-03	3.83E-03	4.50E-03	
Eutrophication potential-marine (EP-marine)	kg N eq.	1.68E-02	1.75E-02	1.90E-02	2.04E-02	
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	1.81E-01	1.89E-01	2.05E-01	2.19E-01	
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	6.41E-02	6.68E-02	7.26E-02	7.77E-02	
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	3.43E-05	3.67E-05	4.19E-05	4.65E-05	
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	3.35E+02	3.43E+02	3.61E+02	3.78E+02	
Water use ¹⁾	m ³ world eq. deprived.	1.54E+01	1.57E+01	1.64E+01	1.70E+01	

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks. The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

Impact category	unit	KP Vario UNI			
		length [m]			Coefficient for lengths 1–1.75
		1	2	2.75–3.5	
Global warming potential - total (GWP – total)	kg CO ₂ eq.	1.43E+01	1.39E+01	1.68E+01	
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	1.61E+01	1.57E+01	1.86E+01	
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-1.99E+00	-2.00E+00	-2.00E+00	
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	2.16E-01	2.16E-01	2.18E-01	
Ozone depletion potential (ODP)	kg CFC11 eq.	7.66E-07	7.64E-07	7.78E-07	
Acidification potential (AP)	mol H+ eq.	4.92E-02	4.93E-02	5.96E-02	
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	3.24E-03	3.41E-03	4.44E-03	
Eutrophication potential-marine (EP-marine)	kg N eq.	1.42E-02	1.41E-02	1.66E-02	
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	1.51E-01	1.49E-01	1.76E-01	
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	5.44E-02	5.43E-02	6.35E-02	
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	3.34E-05	3.40E-05	4.16E-05	
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	2.58E+02	2.60E+02	2.87E+02	
Water use ¹⁾	m ³ world eq. deprived.	1.12E+01	1.13E+01	1.23E+01	

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.

The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

The following results relate to modules A1–A3 for 1 linear metre (1m) of products with an overall length different from that of the reference products for which the results are reported in the EPD. The results in modules A4–A5, B1–B7 and C1–C4 are identical to those of the reference products for product lengths of 1.75–6.25 m. For lengths of 6.5–8.25 m, due to the different mass, the results for the specified modules must be recalculated using the coefficient given in the table (last column).

Impact category	unit	POT					
		length [m]					
		1.75–2.75	3–3.75	4–4.25	4.5	4.75	5
Global warming potential - total (GWP – total)	kg CO ₂ eq.	9.27E+00	1.01E+01	1.10E+01	1.14E+01	1.17E+01	1.22E+01
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	9.19E+00	1.00E+01	1.10E+01	1.14E+01	1.16E+01	1.21E+01
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-4.62E-02	-4.99E-02	-4.58E-02	-4.73E-02	-4.95E-02	-4.99E-02
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	1.27E-01	1.28E-01	1.27E-01	1.27E-01	1.27E-01	1.28E-01
Ozone depletion potential (ODP)	kg CFC11 eq.	4.23E-07	4.27E-07	4.27E-07	4.29E-07	4.31E-07	4.33E-07
Acidification potential (AP)	mol H+ eq.	2.92E-02	3.29E-02	3.65E-02	3.82E-02	3.94E-02	4.13E-02
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	2.31E-03	2.74E-03	3.14E-03	3.34E-03	3.49E-03	3.69E-03
Eutrophication potential-marine (EP-marine)	kg N eq.	7.79E-03	8.63E-03	9.48E-03	9.87E-03	1.01E-02	1.06E-02
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	8.39E-02	9.27E-02	1.02E-01	1.06E-01	1.09E-01	1.13E-01
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	3.00E-02	3.32E-02	3.63E-02	3.78E-02	3.88E-02	4.05E-02
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	1.97E-05	2.26E-05	2.54E-05	2.68E-05	2.77E-05	2.92E-05
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	1.49E+02	1.59E+02	1.68E+02	1.73E+02	1.76E+02	1.81E+02
Water use ¹⁾	m ³ world eq. deprived.	7.09E+00	7.46E+00	7.77E+00	7.94E+00	8.06E+00	8.25E+00

Impact category	unit	POT					Coefficient for lengths 6.5–8.25
		length [m]					
		6–6.25	6.5	6.75	7–7.5	7.75–8.25	
Global warming potential - total (GWP – total)	kg CO ₂ eq.	1.33E+01	1.66E+01	1.75E+01	1.80E+01	1.89E+01	1.18
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	1.32E+01	1.66E+01	1.74E+01	1.79E+01	1.89E+01	
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	-5.39E-02	-6.41E-02	-6.70E-02	-6.17E-02	-6.52E-02	
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	1.29E-01	1.52E-01	1.53E-01	1.52E-01	1.52E-01	
Ozone depletion potential (ODP)	kg CFC11 eq.	4.39E-07	5.22E-07	5.26E-07	5.24E-07	5.29E-07	
Acidification potential (AP)	mol H+ eq.	4.60E-02	5.84E-02	6.18E-02	6.37E-02	6.79E-02	
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	4.24E-03	5.48E-03	5.87E-03	6.08E-03	6.56E-03	
Eutrophication potential-marine (EP-marine)	kg N eq.	1.17E-02	1.47E-02	1.55E-02	1.60E-02	1.69E-02	
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	1.25E-01	1.57E-01	1.65E-01	1.70E-01	1.80E-01	
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	4.47E-02	5.62E-02	5.93E-02	6.09E-02	6.45E-02	
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	3.29E-05	4.21E-05	4.48E-05	4.63E-05	4.96E-05	
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	1.94E+02	2.40E+02	2.50E+02	2.54E+02	2.65E+02	
Water use ¹⁾	m ³ world eq. deprived.	8.73E+00	1.07E+01	1.11E+01	1.12E+01	1.16E+01	

Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.

The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

Results in Module D for different product lengths

The following results relate to Module D for 1 linear metre (1m) of products with an overall length different from that of the reference products for which the results are reported in the EPD. The results in modules A4–A5, B1–B7 and C1–C4 are identical to those of the reference products.

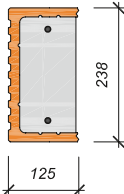
Impact category	unit	KP 11.5		KP 14.5 a KP 10/14.5		KP 7			
		length [m]							
		1.75–2.25	2.5–2.75	1.75–2.25	2.5–2.75	1	1.75–2	2.25–2.5	2.75–3.5
Global warming potential - total (GWP – total)	kg CO ₂ eq.	-8.16E-01	-1.13E+00	-8.41E-01	-1.17E+00	-8.66E-01	-1.27E+00	-1.42E+00	-1.74E+00
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	-8.18E-01	-1.13E+00	-8.43E-01	-1.17E+00	-8.67E-01	-1.27E+00	-1.42E+00	-1.75E+00
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	2.56E-03	3.77E-03	2.64E-03	3.89E-03	1.52E-03	3.07E-03	3.62E-03	4.86E-03
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	-2.39E-04	-3.11E-04	-2.46E-04	-3.21E-04	-3.66E-04	-4.59E-04	-4.92E-04	-5.67E-04
Ozone depletion potential (ODP)	kg CFC11 eq.	-4.08E-09	-5.44E-09	-4.21E-09	-5.61E-09	-5.61E-09	-7.35E-09	-7.97E-09	-9.37E-09
Acidification potential (AP)	mol H+ eq.	-3.11E-03	-4.23E-03	-3.21E-03	-4.36E-03	-3.87E-03	-5.29E-03	-5.80E-03	-6.94E-03
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	-3.09E-04	-4.36E-04	-3.19E-04	-4.49E-04	-2.99E-04	-4.60E-04	-5.17E-04	-6.47E-04
Eutrophication potential-marine (EP-marine)	kg N eq.	-7.75E-04	-1.05E-03	-7.99E-04	-1.08E-03	-1.01E-03	-1.35E-03	-1.47E-03	-1.75E-03
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	-8.44E-03	-1.13E-02	-8.70E-03	-1.17E-02	-1.12E-02	-1.49E-02	-1.62E-02	-1.92E-02
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	-2.84E-03	-3.84E-03	-2.93E-03	-3.96E-03	-3.63E-03	-4.90E-03	-5.36E-03	-6.38E-03
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	-8.20E-07	-9.80E-07	-8.45E-07	-1.01E-06	-1.79E-06	-1.99E-06	-2.06E-06	-2.22E-06
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	-8.82E+00	-1.21E+01	-9.09E+00	-1.25E+01	-9.89E+00	-1.42E+01	-1.57E+01	-1.91E+01
Water use ¹⁾	m ³ world eq. deprived.	-1.31E-01	-1.53E-01	-1.35E-01	-1.58E-01	-2.97E-01	-3.26E-01	-3.37E-01	-3.60E-01

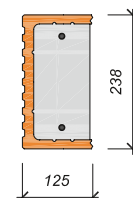
Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks.

The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

The following results relate to Module D for 1 linear metre (1m) of products with an overall length different from that of the reference products for which the results are reported in the EPD. The results in modules A4–A5, B1–B7 and C1–C4 are identical to those of the reference products. For lengths of 1–1.75 m, due to the different mass, the results for the specified modules must be recalculated using the coefficient given in the table (last column).

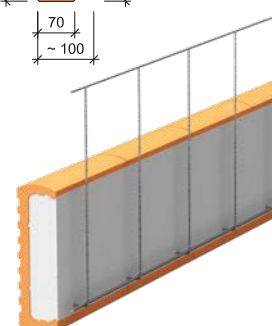
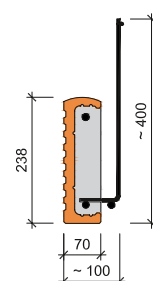
Impact category	unit	KP Vario UNI				Coefficient for lengths 1–1.75
		length [m]				
		1	1.25	1.5	1.75	
Global warming potential - total (GWP – total)	kg CO ₂ eq.	-1.48E+00	-1.94E+00	-2.89E+00	-3.75E+00	1.61
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	-1.48E+00	-1.94E+00	-2.89E+00	-3.76E+00	
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	2.19E-03	3.95E-03	7.58E-03	1.09E-02	
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	-6.62E-04	-7.67E-04	-9.85E-04	-1.18E-03	
Ozone depletion potential (ODP)	kg CFC11 eq.	-9.98E-09	-1.19E-08	-1.60E-08	-1.97E-08	
Acidification potential (AP)	mol H+ eq.	-6.78E-03	-8.39E-03	-1.17E-02	-1.47E-02	
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	-5.00E-04	-6.82E-04	-1.06E-03	-1.40E-03	
Eutrophication potential-marine (EP-marine)	kg N eq.	-1.78E-03	-2.17E-03	-2.97E-03	-3.70E-03	
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	-1.98E-02	-2.40E-02	-3.27E-02	-4.05E-02	
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	-6.38E-03	-7.82E-03	-1.08E-02	-1.35E-02	
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	-3.36E-06	-3.58E-06	-4.05E-06	-4.47E-06	
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	-1.70E+01	-2.19E+01	-3.19E+01	-4.09E+01	
Water use ¹⁾	m ³ world eq. deprived.	-5.59E-01	-5.91E-01	-6.60E-01	-7.22E-01	





Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks. The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

Impact category	unit	length [m]			KP Vario UNI
		1	2	2.75–3.5	Coefficient for lengths 1–1.75
Global warming potential - total (GWP – total)	kg CO ₂ eq.	-2.88E+00	-3.19E+00	-4.42E+00	1.61
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	-2.89E+00	-3.20E+00	-4.43E+00	
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	8.99E-03	1.04E-02	1.48E-02	
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	-8.51E-04	-8.99E-04	-1.20E-03	
Ozone depletion potential (ODP)	kg CFC11 eq.	-1.45E-08	-1.56E-08	-2.11E-08	
Acidification potential (AP)	mol H+ eq.	-1.11E-02	-1.20E-02	-1.64E-02	
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	-1.09E-03	-1.22E-03	-1.70E-03	
Eutrophication potential-marine (EP-marine)	kg N eq.	-2.75E-03	-2.97E-03	-4.05E-03	
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	-3.00E-02	-3.23E-02	-4.39E-02	
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	-1.01E-02	-1.09E-02	-1.49E-02	
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	-2.96E-06	-2.93E-06	-3.70E-06	
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	-3.12E+01	-3.43E+01	-4.73E+01	
Water use ¹⁾	m ³ world eq. deprived.	-4.72E-01	-4.64E-01	-5.82E-01	



Note: ¹⁾ The estimated impact results are only relative statements and do not indicate endpoints of impact categories, exceedance of threshold values, safety margins or risks. The results of this environmental impact indicator shall be used with caution because the uncertainty of these results is high or because there is limited experience with the indicator.

The following results relate to modules A1–A3 for 1 linear metre (1m) of products with an overall length different from that of the reference products for which the results are reported in the EPD. The results in modules A4–A5, B1–B7 and C1–C4 are identical to those of the reference products for product lengths of 1.75–6.25 m. For lengths of 6.5–8.25 m, due to the different mass, the results for the specified modules must be recalculated using the coefficient given in the table (last column).

Impact category	unit	POT					
		length [m]					
		1.75–2.75	3–3.75	4–4.25	4.5	4.75	5
Global warming potential - total (GWP – total)	kg CO ₂ eq.	-2.34E+00	-2.88E+00	-3.55E+00	-3.81E+00	-4.01E+00	-4.28E+00
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	-2.34E+00	-2.89E+00	-3.56E+00	-3.82E+00	-4.02E+00	-4.29E+00
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	7.83E-03	9.93E-03	1.24E-02	1.34E-02	1.42E-02	1.52E-02
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	-6.38E-04	-7.62E-04	-9.22E-04	-9.82E-04	-1.03E-03	-1.09E-03
Ozone depletion potential (ODP)	kg CFC11 eq.	-1.12E-08	-1.35E-08	-1.64E-08	-1.76E-08	-1.84E-08	-1.96E-08
Acidification potential (AP)	mol H+ eq.	-8.70E-03	-1.06E-02	-1.30E-02	-1.39E-02	-1.46E-02	-1.55E-02
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	-9.00E-04	-1.12E-03	-1.38E-03	-1.48E-03	-1.56E-03	-1.67E-03
Eutrophication potential-marine (EP-marine)	kg N eq.	-2.14E-03	-2.61E-03	-3.18E-03	-3.40E-03	-3.57E-03	-3.80E-03
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	-2.33E-02	-2.82E-02	-3.44E-02	-3.68E-02	-3.86E-02	-4.11E-02
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	-7.90E-03	-9.61E-03	-1.17E-02	-1.26E-02	-1.32E-02	-1.40E-02
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	-1.97E-06	-2.24E-06	-2.62E-06	-2.75E-06	-2.84E-06	-2.98E-06
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	-2.50E+01	-3.08E+01	-3.78E+01	-4.06E+01	-4.27E+01	-4.55E+01
Water use ¹⁾	m ³ world eq. deprived.	-3.11E-01	-3.49E-01	-4.08E-01	-4.26E-01	-4.39E-01	-4.60E-01

Impact category	unit	POT					
		length [m]					
		6–6.25	6.5	6.75	7–7.5	7.75–8.25	Coefficient for lengths 6.5–8.25
Global warming potential - total (GWP – total)	kg CO ₂ eq.	-5.01E+00	-5.54E+00	-5.99E+00	-6.50E+00	-7.07E+00	1.18
Global warming potential - fossil (GWP – fossil)	kg CO ₂ eq.	-5.03E+00	-5.56E+00	-6.01E+00	-6.52E+00	-7.09E+00	
Global warming potential - biogenic (GWP – biogenic)	kg CO ₂ eq.	1.80E-02	2.00E-02	2.17E-02	2.36E-02	2.57E-02	
Global warming potential - land use and land use change (GWP – luluc)	kg CO ₂ eq.	-1.26E-03	-1.38E-03	-1.48E-03	-1.61E-03	-1.74E-03	
Ozone depletion potential (ODP)	kg CFC11 eq.	-2.27E-08	-2.50E-08	-2.69E-08	-2.92E-08	-3.16E-08	
Acidification potential (AP)	mol H+ eq.	-1.81E-02	-2.00E-02	-2.15E-02	-2.34E-02	-2.54E-02	
Eutrophication potential-freshwater (EP-freshwater)	kg P eq.	-1.96E-03	-2.17E-03	-2.35E-03	-2.55E-03	-2.77E-03	
Eutrophication potential-marine (EP-marine)	kg N eq.	-4.42E-03	-4.87E-03	-5.25E-03	-5.69E-03	-6.17E-03	
Eutrophication potential-terrestrial (EP-terrestrial)	mol N eq.	-4.77E-02	-5.26E-02	-5.67E-02	-6.14E-02	-6.66E-02	
Photochemical ozone formation potential (POCP)	kg NMVOC eq.	-1.63E-02	-1.80E-02	-1.94E-02	-2.11E-02	-2.28E-02	
Abiotic depletion potential for fossil resources (ADP-fossil) ¹⁾	kg Sb eq.	-3.34E-06	-3.60E-06	-3.82E-06	-4.13E-06	-4.40E-06	
Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) ¹⁾	MJ	-5.32E+01	-5.88E+01	-6.35E+01	-6.89E+01	-7.49E+01	
Water use ¹⁾	m ³ world eq. deprived.	-5.13E-01	-5.51E-01	-5.83E-01	-6.29E-01	-6.70E-01	

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