ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH
EN 15804+A2+AC,
ISO 14025,
ISO 21930

SANITARY CERAMIC

Geberit International AG

EPD HUB, HUB-627
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GENERAL INFORMATION

MANUFACTURER

Manufacturer	Geberit International AG
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Website	www.geberit.com

EPD STANDARDS, SCOPE AND VERIFICATION

Programme operator	EPD Hub, hub@epdhub.com
Reference standards	EN 15804+A2:2019+AC:2021 ISO 14025 ISO 21930
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third-party-verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5 and modules C1-C4 and D
EPD author	Georg Nauenburg
EPD verification	Independent verification of this EPD and data according to ISO 14025 ☐ Internal certification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorised verifier acting for EPD Hub Limited

The manufacturer has sole ownership of, liability and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Sanitary ceramic
Additional labels	-
Product reference	-
Place of production	Bromölla (SE), Carregado (PT), Ekenäs (FI), Gaeta (IT), Haldensleben (DE), Koło (PL), Limoges (FR), Slavuta (UA), Wesel (DE), Włocławek (PL)
Period for data	2022
Averaging in EPD	Multiple products and multiple factories
Variation in GWP-fossil for A1-A3	45%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg sanitary ceramic
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1.45
GWP-total, A1-A3 ($kgCO_2e$)	1.25
Secondary material, inputs (%)	0.1
Secondary material, outputs (%)	0.0
Total energy use, A1-A3 (kWh)	7.32
Total water use, A1-A3 (m^3e)	0.01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Geberit wants to play a leading role in the transition towards a sustainable sanitary industry. Sustainability has formed an integral component of the corporate strategy for more than 30 years. The Geberit Group has a group ISO certificate in accordance with ISO 9001 (quality), ISO 14001 (environment) and ISO 45001 (occupational health and safety). The company prepared life cycle assessments for key products from an early stage, and eco-design has been an integral part of the product development process since 2007. You can find comprehensive information on sustainability in the current annual report or at https://www.geberit.com/company/sustainability

PRODUCT DESCRIPTION

Geberit manufactures sanitary ceramic products made from clays, kaolin, feldspar and quartz mixed according to special formulas. The products are available in different sizes and designs, e.g. wall-hung, floor-standing, shrouded, and therefore weigh different amounts. The sanitary products and their average weights are listed in the following table.

Product		Weight
Washbasin	Width 60 cm	15 kg
Bidet	Wall-hung	16 kg
	Floor-standing	21 kg
WC	Wall-hung	19 kg
	Floor-standing	20 kg
	Squatting pan	19 kg
Exposed flushing cistern		11 kg
Shower tray	90 x 90 cm	33 kg
Urinal		16 kg
Kitchen sink		44 kg
Additional sanitary appliance	Disposal sink	19 kg
	Utility sink	33 kg
	Laboratory sink	23 kg
	Plaster sink	25 kg
	Foot basin	16 kg

The individual ceramic product can be also part of a set to form a single sales article, for example a WC with a WC seat, a flushing cistern with a fill valve and a flush valve, a washbasin with a cabinet etc. Further information is available in the local online catalogue.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	100	Europe
Fossil materials	0	-
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.052

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg sanitary ceramic
Mass per declared unit	1 kg
Functional unit	-
Reference service life	40 years

REACH – SUBSTANCES OF VERY HIGH CONCERN (SVHC)

The product does not contain any REACH SVHC substances in amounts greater than 0.1 % (1,000 ppm).

PRODUCT LIFE CYCLE

SYSTEM BOUNDARY

This EPD covers the life cycle modules listed in the following table.

Product stage			Construction stage		Use stage							End-of-life stage				Beyond system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

MND = Modules not declared.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. The energy used by machines and handling of waste formed in the production processes at the manufacturing facilities are also included in this stage. Furthermore, the study considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The product is made of the main mineral raw materials kaolin, ball clay, feldspar and quartz. Other materials account for less than 10 %. The ceramic has a glaze. The product does not contain external secondary materials. As the ceramic is fired at temperatures > 1,000 °C, the product does not contain volatile organic compounds (VOC).

For the supply of raw materials, the input of raw materials was mapped with corresponding European data as the source is mainly Europe. Further information on purchasing can be found in the Geberit annual report.

Transport from suppliers to Geberit is modelled based on material class-specific transport distances. The individual transport distances of each supplier are averaged according to the corresponding sales volumes. Nearly all A2 transport operations are carried out by lorry. Transport by rail, air and sea freight is not considered due to lack of relevance. On average, the transport distance from suppliers of raw and semifinished materials is about 740 km.

The production and packaging of the ceramic products takes place at the production sites in Bromölla (SE), Carregado (PT), Ekenäs (FI), Gaeta (IT), Haldensleben (DE), Koło (PL), Limoges (FR), Slavuta (UA), Wesel (DE) and Włocławek (PL). The Geberit plants are certified according to ISO 9001, ISO 14001 and ISO 45001. The plants in Haldensleben (DE) and Wesel (DE) are additionally certified according to ISO 50001 (energy). A current Group ISO certificate can be downloaded from https://www.geberit.com. The moulds are made of plaster or plastic depending on the casting process used. The mass is cast into the moulds using static pressure or the high-pressure casting process. Production waste before firing is recycled internally. Material and production-related external product waste is included. This covers wastewater, sludge, mould waste and waste of fired ceramics. The manufacturing process is modelled with the energy and electricity consumption measured in the plants. The major source of heat is natural gas, followed by liquefied petroleum gas (LPG) and district heating. About 60 % of electricity consumed comes from renewable sources. The remaining part is modelled with the country-specific electricity mixes.

Ancillary materials, such as water and moulds, are included. The production and provision of packaging material are also modelled in A3. The finished product is packaged and transported in different ways. On average, 0.048 kg cardboard, 0.009 kg foils, 0.051 kg chipboard and 0.024 kg one-way pallets are used.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts resulting from final product delivery to construction sites (A4) cover direct fuel exhaust emissions and

environmental impacts of fuel production, as well as related infrastructure emissions.
Transport of ceramic products from Geberit to customers within Europe is carried out by logistics partners via several local logistics centres mostly close to the production plants, which are also certified according to ISO 9001, ISO 14001 and ISO 45001. Distribution to countries outside Europe is not taken into account due lack of relevance.
The following information has been considered:

- The majority of transport operations within Europe are carried out by truck. Therefore, intercontinental transport by sea and air is not considered.
- The majority of vehicles in use are > 32 t Euro 6 class (> 85 %).
- The average transport distance in Europe from the production sites via the logistics centres to the customers is approximately 580 km.

Further information on logistics can be found in the Geberit annual report.

In A5, there are no specific requirements for the machinery to be used or any relevant environmental impact during installation. The tools and materials required for installation are specified in the installation manuals supplied with each product. Therefore, only the preparation of the waste treatment of packaging materials is taken into account in A5. Cardboard is assumed to be fully recycled. Plastic foils and wood are assumed to be disposed of in the municipal waste incineration plant.

PRODUCT USE AND MAINTENANCE (B1-B7)

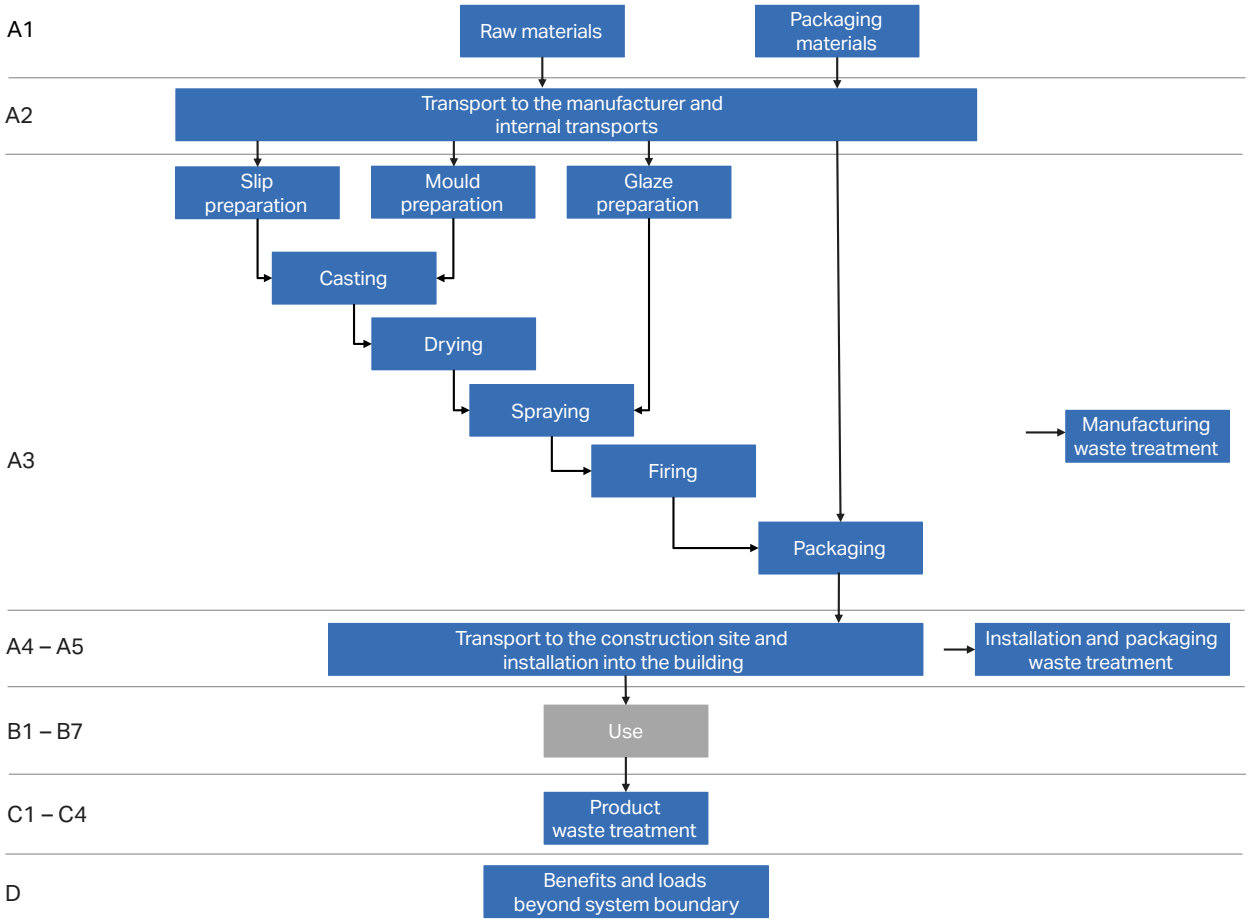
The product use and maintenance phases are not considered. Air, soil and water impacts during the use phase have not been studied.
The products are used mainly in bathrooms, but also in kitchens and special rooms such as surgery rooms, laboratories, laundry rooms, etc., to collect and drain dirt and waste water. The energy and/or water consumption is directly related to the type of product and any additional components or products installed. The design of the ceramic product, together with the flushing system, helps save water. In addition, the design and the glaze make the products easy to clean and thus improve hygiene. There is a lifetime warranty. According to EN 16578:2016, the average service life of ceramic sanitary appliances can be estimated at 40 years.

PRODUCT END-OF-LIFE (C1-C4, D)

As the consumption of energy and natural resources is negligible for disassembling the end-of-life product, the impacts of demolition are assumed to be zero (C1). The end-of-life product is assumed to be sent to the closest waste disposal facilities by lorry, which is estimated to be 50 km away (C2). It is generally assumed that all waste is collected and professionally separated after demolition on the construction site. The type of waste treatment is determined on the basis of the material class. Although the mineral material of the product is basically suitable for reuse or recycling thanks to the material properties, it is conservatively assumed to be disposed of in the inert material landfill. The product is not biodegradable.

In module D, materials that are recycled generate benefits. The secondary material content of the recycled material is considered in order to avoid overcounting benefits in module D. Waste of ancillary, packaging and installation materials in A3 and A5 have benefits and loads that are considered. Plastics from packaging are thermally recycled in a waste incineration plant, with energy and heat produced from their incineration.

MANUFACTURING PROCESS



LIFE CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes that are stated as mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes for which data is available are included in the calculation. There is no neglected unit process with more than 1 % of total mass or energy flows. Furthermore, the module-specific totals of neglected input and output flows do not exceed 5 % of energy use or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy and waste data cannot be measured separately for the product under investigation. All allocations are made as per the reference standards and the applied PCR. In this study, allocations have been made as follows:

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

AVERAGES AND VARIABILITY

Type of average	Multiple products and multiple factories
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3	45%

Primary data refers to the manufacturing sites in Bromölla (SE), Carregado (PT), Ekenäs (FI), Gaeta (IT), Haldensleben (DE), Koło (PL), Limoges (FR), Slavuta (UA), Wesel (DE) and Włocławek (PL). All sanitary ceramic products are covered. The maximum variation in GWP-fossil for modules A1-A3 is 45 %. This is primarily caused by different share of product types produced and share of renewable electricity consumed per manufacturing site.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using the One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards, ISO 14040 and ISO 14044. ecoinvent 3.8 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP[1)]–total	kg CO_2e	1,24E-1	1,16E-1	1,01E0	1,25E0	5,84E-2	2,24E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,5E-3	0E0	5,27E-3	-8,81E-2
GWP–fossil	kg CO_2e	1,24E-1	1,16E-1	1,21E0	1,45E0	5,9E-2	2,49E-2	MND	MND	MND	MND	MND	MND	MND	0E0	4,5E-3	0E0	5,27E-3	-8,86E-2
GWP–biogenic	kg CO_2e	0E0	0E0	-1,99E-1	-1,99E-1	0E0	1,99E-1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
GWP–luluc[2)]	kg CO_2e	1,28E-4	4,5E-5	8,39E-4	1,01E-3	2,29E-5	2,31E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1,75E-6	0E0	4,97E-6	4,81E-4
Ozone depletion pot.	kg $CFC_{-11}e$	1,72E-8	2,72E-8	1,46E-7	1,9E-7	1,39E-8	3,33E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,06E-9	0E0	2,13E-9	-3,78E-9
Acidification potential	mol H^+e	6,88E-4	3,77E-4	4,64E-3	5,71E-3	1,92E-4	3,73E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,46E-5	0E0	4,95E-5	-7E-4
EP[3)]-freshwater	kg Pe	5,06E-6	9,81E-7	1,97E-5	2,58E-5	5E-7	7,71E-8	MND	MND	MND	MND	MND	MND	MND	0E0	3,81E-8	0E0	5,52E-8	-6,33E-6
EP-marine	kg Ne	1,49E-4	8,3E-5	6,18E-4	8,5E-4	4,22E-5	1,58E-5	MND	MND	MND	MND	MND	MND	MND	0E0	3,22E-6	0E0	1,71E-5	-8,69E-5
EP-terrestrial	mol Ne	1,62E-3	9,21E-4	6,07E-3	8,62E-3	4,69E-4	1,74E-4	MND	MND	MND	MND	MND	MND	MND	0E0	3,57E-5	0E0	1,89E-4	-1,02E-3
POCP[4)] ('smog')	kg NMVOCe	4,57E-4	3,57E-4	2E-3	2,81E-3	1,82E-4	4,62E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,38E-5	0E0	5,48E-5	-2,79E-4
ADP-minerals & metals	kg Sbe	1,77E-6	2,82E-7	5,43E-6	7,48E-6	1,44E-7	3,18E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1,1E-8	0E0	1,21E-8	-3,02E-6
ADP[5)]-fossil resources	MJ	1,95E0	1,81E0	1,96E1	2,34E1	9,24E-1	3,26E-2	MND	MND	MND	MND	MND	MND	MND	0E0	7,04E-2	0E0	1,44E-1	-1,26E0
Water use	m^3e depr.	7,87E-2	8,1E-3	1,7E2	1,7E2	4,13E-3	2,83E-3	MND	MND	MND	MND	MND	MND	MND	0E0	3,14E-4	0E0	4,58E-4	-1,77E-2

1) GWP = Global warming potential; 2) luluc = land use and land use change; 3) EP = Eutrophication potential; 4) POCP = Photochemical ozone creation potential; 5) ADP = Abiotic depletion potential

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	7,69E-9	1,32E-8	2,94E-8	5,03E-8	6,71E-9	4,07E-10	MND	MND	MND	MND	MND	MND	MND	0E0	5,11E-10	0E0	9,97E-10	-4,83E-9
Ionising radiation	kBq U235e	2,08E-2	8,69E-3	7,68E-2	1,06E-1	4,43E-3	2,48E-4	MND	MND	MND	MND	MND	MND	MND	0E0	3,37E-4	0E0	6,53E-4	-2,34E-2
Ecotoxicity, freshwater	CTUe	3,62E0	1,61E0	7,47E0	1,27E1	8,22E-1	1,24E-1	MND	MND	MND	MND	MND	MND	MND	0E0	6,27E-2	0E0	9,42E-2	-1,76E0
Human toxicity, cancer	CTUh	6,19E-11	3,95E-11	3,25E-10	4,26E-10	2,01E-11	2,88E-11	MND	MND	MND	MND	MND	MND	MND	0E0	1,53E-12	0E0	2,35E-12	-3,84E-11
Human tox. non-cancer	CTUh	1,8E-9	1,55E-9	5,37E-9	8,72E-9	7,91E-10	1,87E-10	MND	MND	MND	MND	MND	MND	MND	0E0	6,03E-11	0E0	6,16E-11	-9,01E-10
SQP[6)]	-	1,46E0	2,09E0	7,4E0	1,09E1	1,06E0	2,81E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8,1E-2	0E0	3,09E-1	-4,67E0

6) SQP = Potential soil quality index

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER[7] as energy	MJ	1,58E-1	2,04E-2	3,21E0	3,38E0	1,04E-2	2,11E-3	MND	MND	MND	MND	MND	MND	MND	0E0	7,93E-4	0E0	1,25E-3	-2,82E-1
Renew. PER as material	MJ	0E0	0E0	1,17E0	1,17E0	0E0	-1,17E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	2,12E-2
Total use of renew. PER	MJ	1,58E-1	2,04E-2	4,38E0	4,55E0	1,04E-2	-1,17E0	MND	MND	MND	MND	MND	MND	MND	0E0	7,93E-4	0E0	1,25E-3	-2,61E-1
Non-ren. PER as energy	MJ	1,94E0	1,81E0	1,92E1	2,3E1	9,24E-1	3,25E-2	MND	MND	MND	MND	MND	MND	MND	0E0	7,05E-2	0E0	1,44E-1	-1,27E0
Non-ren. PER as material	MJ	1,05E-2	0E0	4,14E-1	4,24E-1	0E0	-4,14E-1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	-1,05E-2	9,8E-3
Total use of non-ren. PER	MJ	1,96E0	1,81E0	1,96E1	2,34E1	9,24E-1	-3,81E-1	MND	MND	MND	MND	MND	MND	MND	0E0	7,05E-2	0E0	1,34E-1	-1,26E0
Secondary materials	kg	1,16E-3	5,03E-4	5,06E-2	5,22E-2	2,56E-4	8,33E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,95E-5	0E0	3,03E-5	3,7E-2
Renew. secondary fuels	MJ	3,43E-5	5,07E-6	2,19E-2	2,19E-2	2,59E-6	5,22E-7	MND	MND	MND	MND	MND	MND	MND	0E0	1,97E-7	0E0	7,93E-7	-3,37E-6
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m^3	3,11E-3	2,34E-4	7,27E-3	1,06E-2	1,19E-4	8,01E-5	MND	MND	MND	MND	MND	MND	MND	0E0	9,09E-6	0E0	1,58E-4	-1,14E-3

7) PER = Primary energy resources

END-OF-LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	6,6E-3	2,39E-3	2,58E-2	3,48E-2	1,22E-3	2,27E-4	MND	MND	MND	MND	MND	MND	MND	0E0	9,28E-5	0E0	0E0	-3,26E-3
Non-hazardous waste	kg	1,25E0	3,92E-2	8,72E-1	2,16E0	2E-2	8,79E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,52E-3	0E0	1E0	-3,81E-1
Radioactive waste	kg	7,44E-6	1,22E-5	2,88E-5	4,84E-5	6,23E-6	1,2E-7	MND	MND	MND	MND	MND	MND	MND	0E0	4,75E-7	0E0	0E0	-7,33E-6

END-OF-LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for reuse	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	5,51E0	5,51E0	0E0	4,78E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec.	kg	0E0	0E0	5,62E-4	5,62E-4	0E0	8,38E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	1,14E-2	1,14E-2	0E0	1,01E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global warming pot.	kg CO_2e	1,22E-1	1,15E-1	1,19E0	1,43E0	5,84E-2	2,52E-2	MND	MND	MND	MND	MND	MND	MND	0E0	4,45E-3	0E0	5,16E-3	-8,66E-2
Ozone depletion pot.	kg CFC_{-11}e	1,53E-8	2,16E-8	1,27E-7	1,64E-7	1,1E-8	2,83E-10	MND	MND	MND	MND	MND	MND	MND	0E0	8,38E-10	0E0	1,69E-9	-3,01E-9
Acidification	kg SO_2e	5,59E-4	3,06E-4	3,97E-3	4,83E-3	1,56E-4	2,63E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,19E-5	0E0	3,74E-5	-5,95E-4
Eutrophication	kg PO_4^3e	2,1E-4	6,69E-5	8,77E-4	1,15E-3	3,41E-5	3,51E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-6	0E0	8,07E-6	-2,2E-4
POCP ('smog')	kg C_2H_4e	2,36E-5	1,41E-5	2,12E-4	2,49E-4	7,18E-6	1,39E-6	MND	MND	MND	MND	MND	MND	MND	0E0	5,47E-7	0E0	1,57E-6	-2,41E-5
ADP-elements	kg Sbe	1,46E-6	2,74E-7	1,66E-6	3,39E-6	1,4E-7	3,06E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1,06E-8	0E0	1,19E-8	-7,51E-8
ADP-fossil	MJ	1,95E0	1,81E0	1,96E1	2,34E1	9,24E-1	3,25E-2	MND	MND	MND	MND	MND	MND	MND	0E0	7,04E-2	0E0	1,44E-1	-1,26E0

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier. The process involved reviewing results, documents and compliance with the reference standards, ISO 14025, ISO 14040 and ISO 14044 following the process and checklists of the programme operator for:

- This Environmental Product Declaration
- The Life Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by the One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Magaly González Vázquez, as an authorised verifier acting for EPD Hub Limited

10.08.2023