

ENVIRONMENTAL PRODUCT DECLARATION

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

GEBERIT DUOFIX ELEMENT FOR WALL-HUNG WC

Geberit International AG

EPD HUB, HUB- 3770

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HOW**
INSTALLED



GENERAL INFORMATION

MANUFACTURER

| | |
|-----------------|--|
| Manufacturer | Geberit International AG |
| Address | Schachenstrasse 77, 8645 Jona, Switzerland |
| Contact details | sustainability@geberit.com |
| 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 |
| PCR | EPD Hub Core PCR Version 1.1, 5 Dec 2023 |
| 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 | Geberit International AG, Corporate Sustainability |
| EPD verification | Independent verification of this EPD and data according to ISO 14025 <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification |
| EPD verifier | Magaly Gonzalez, as an authorised verifier acting for EPD Hub Limited |

The manufacturer retains the 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 | Geberit Duofix element for wall-hung WC |
| Additional labels | - |
| Product reference | 111.300.00.6 |
| Place of production | Pfullendorf, Germany |
| Period for data | 01.01.2024 – 31.12.2024 |
| Averaging in EPD | Multiple products |
| Variation in GWP-fossil for A1-A3 | 26 % |

ENVIRONMENTAL DATA SUMMARY

| | |
|---|---|
| Declared unit | 1 piece Geberit Duofix element for wall-hung WC |
| Declared unit mass | 12.4 kg |
| GWP-fossil, A1-A3 (kgCO ₂ e) | 38.3 |
| GWP-total, A1-A3 (kgCO ₂ e) | 36.5 |
| Secondary material, inputs (%) | 29.3 |
| Secondary material, outputs (%) | 96.5 |
| Total energy use, A1-A3 (kWh) | 145 |
| Total water use, A1-A3 (m ³ e) | 0.51 |

The EPD is valid for all variants of Geberit Duofix element for wall-hung WC. A formula is given for independent calculation of the values for other product variants.

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 www.geberit.com/company/sustainability

PRODUCT DESCRIPTION

Geberit Duofix elements are self-supporting installation elements for mounting sanitary appliances in drywall constructions. The elements are suitable for prewall and partition wall installation. The Geberit Duofix element for wall-hung WC consists of a self-supporting, powder-coated frame with adjustable, galvanised leg supports. The Geberit concealed cistern also includes the following features:

- Two positions for water supply connection (rear or top centre)
- Tool-free assembly and maintenance work
- Protection plate for service opening to protect against moisture and dirt
- Single or dual flush with adjustable flush volume
- Full condensation insulation
- Defined position for electrical connection
- Conduit pipe for feed pipe for Geberit AquaClean shower toilets

After installation, a wall-hung WC and an actuator plate can be mounted on the Geberit Duofix element (not part of the product).

The Geberit Duofix element for wall-hung WC, 112 cm, with Sigma concealed cistern 12 cm (article number 111.300.00.6) was chosen as the reference product. This product has an installation height of 112 cm, is suitable for all Geberit Sigma actuator plates and requires actuation from the front.

Further information is available in the local online product catalogue.

PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin |
|-----------------------|----------------|-----------------|
| Metals | 71 | Europe |
| Minerals | 0 | - |
| Fossil materials | 29 | Europe |
| 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 | 0.51 |

FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|------------------------|---|
| Declared unit | 1 piece Geberit Duofix element for wall-hung WC |
| Mass per declared unit | 12.4 kg |
| Functional unit | |
| Reference service life | 50 years |

REACH – SUBSTANCES OF VERY HIGH CONCERN (SVHC)

The product contains the REACH SVHC substances listed below. The amount can be > 0.1 % (1,000 ppm) in individual components. In relation to the total product weight, they make up < 0.1 %.

| Substances of very high concern | EC Number | CAS Number |
|---------------------------------|-----------|------------|
| Lead | 231-100-4 | 7439-92-1 |

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. MNR = Modules not relevant.

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 consists of a metal frame, a cistern, assembly parts, a connection set and other components. The frame is made of hot-rolled powder-coated steel and includes two legs for floor fixation. The cistern is made of blow-moulded high-density polyethylene and contains a fill valve and a flush valve, both assembled from various injection-moulded

plastic components. The product does not contain any volatile organic compounds (VOCs).

For raw material sourcing, the total input of materials was mapped using corresponding European data. Further information on supply chain sustainability and material procurement 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. All A2 transports are carried out by lorry. Transport by rail, air and sea freight is not considered due to lack of relevance.

Metalworking and powder coating take place at the production site in Lichtenstein, Germany. Blow moulding, injection moulding, assembly and packaging take place at the production site in Pfullendorf, Germany. Both Geberit plants are certified according to ISO 9001, ISO 14001, ISO 45001 and ISO 50001. The current Group ISO certificate can be downloaded from <https://www.geberit.com>.

Material- and production-related losses are included. Production waste from metalworking is collected and recycled externally, while waste from plastic component manufacturing is recycled internally. The sources of electricity consumed in the Lichtenstein and Pfullendorf plants for the manufacturing process are modelled as 100 % renewable. The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD. As the product is a new version, 2024 data was used.

The production and provision of packaging material are modelled in A3. The finished product is packaged with plastic bags, cardboard and the user manual. Other packaging materials fall under the cut-off rules. Manufacturing waste is transported to the closest waste disposal facilities by lorry, estimated to be 50 km away.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts resulting from final products delivery to construction site (A4) cover direct fuel exhaust emissions and environmental impacts of fuel production, as well as related infrastructure emissions.

Transport from Geberit to customers within Europe is carried out by logistics partners via the modern, efficient Logistics Centre in Pfullendorf (DE) which is certified according to ISO 9001, ISO 14001 and ISO 45001. Distribution to countries outside Europe is not taken into account due to lack of relevance.

The following information has been considered:

- The majority of transport within Europe is carried out by lorry. 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 site to the Logistics Centre and to the customer is approximately 600 km.

Further information on logistics can be found in the Geberit Annual Report.

In A5, there is no relevant environmental impact during installation. Installation is carried out by a professional plumber. Detailed installation information (e.g. in video format) is available. Therefore, only the preparation for waste treatment of packaging materials is included in A5. Cardboard and paper are assumed to be fully recycled. Plastics are assumed to be disposed of in a 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.

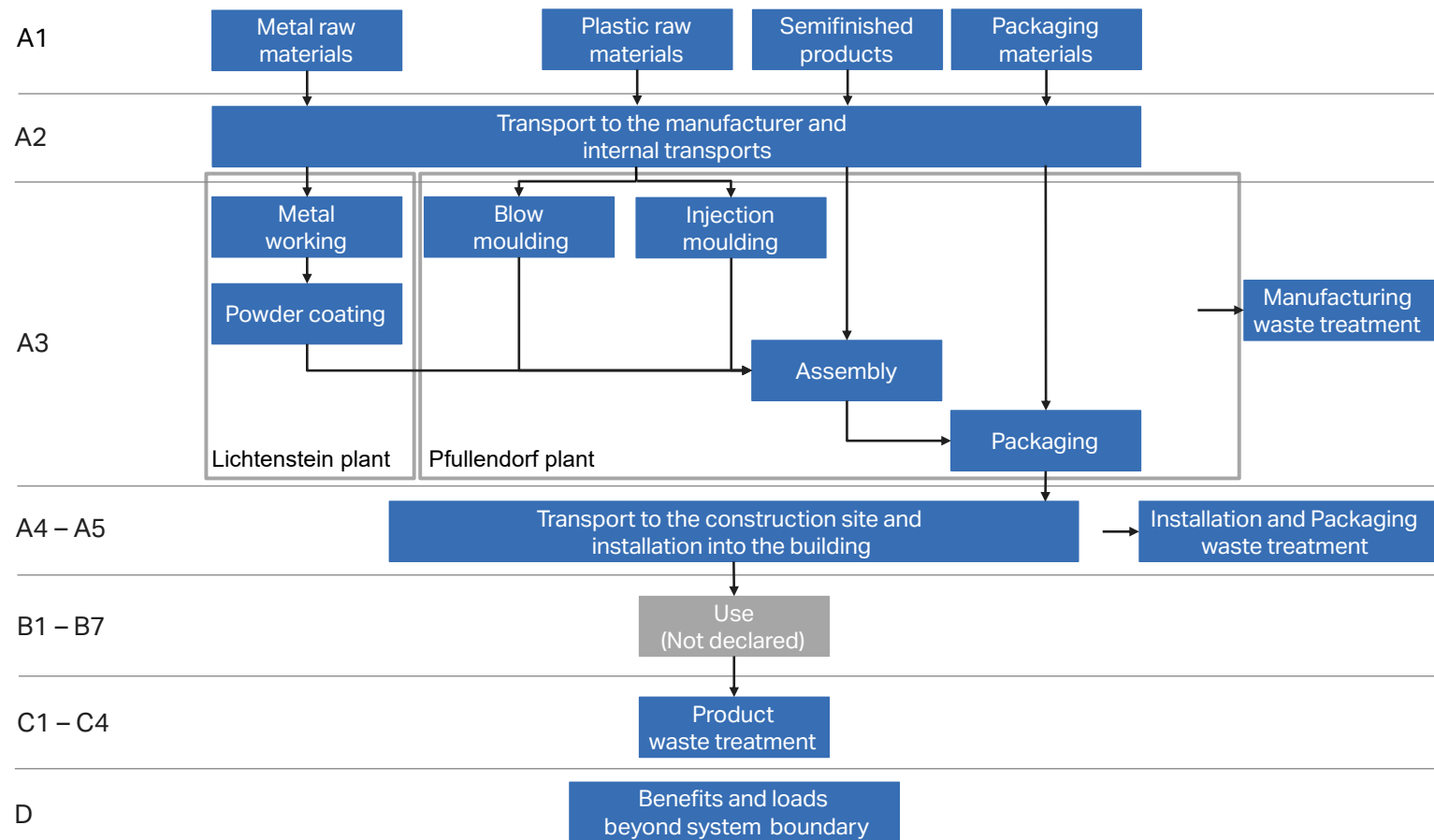
The product does not consume any electricity in use, as all components operate mechanically. Periodic maintenance is not necessary. During use, the cistern is filled with water. The flush valve allows the flush volume to be adjusted and can therefore be set to a low water volume per flush. As such, the product can contribute to water savings. The frame and cistern have a service life of around 50 years, which generally exceeds the average renovation interval for sanitary rooms. The design of the cistern and valves allows for easy maintenance. Repair and replacement of the fill and flush valves are possible. Spare parts are available for up to 50 years, depending on the country of sale.

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

As the consumption of energy and natural resources for disassembling the product at its end-of-life is negligible, the impact of demolition is assumed to be zero (C1). It is assumed that all waste is collected and professionally separated after demolition at the construction site. The end-of-life product is transported by lorry to the closest waste disposal facilities, which are estimated to be 50 km away (C2). The type of waste treatment is determined based on the material class. Plastics are disposed of in a municipal waste incineration plant. Although the plastic components of the product are very well suited for recycling due to their material properties, they are conservatively modelled with thermal energy recovery (C3). Metals are assumed to be 95 % recycled (C3), with the remaining 5 % going to landfill (C4). The product is not biodegradable.

In Module D, the thermal treatment of plastic generates benefits in the form of energy and heat produced during incineration. Benefits and loads associated with packaging material waste in A5 are also considered.

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. The module-specific total neglected input and output flows also 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 in the following ways:

| Data type | Allocation |
|--------------------------------|-----------------------------|
| Raw materials | No allocation |
| Packaging materials | No allocation |
| Ancillary materials | No allocation |
| Manufacturing energy and waste | Allocated by mass or volume |

AVERAGES AND VARIABILITY

| | |
|-----------------------------------|------------------------|
| Type of average | Multiple products |
| Averaging method | Representative product |
| Variation in GWP-fossil for A1-A3 | 26 % |

The data for a Geberit Duofix element for wall-hung WC, 112 cm, with Sigma concealed cistern 12 cm (article number 111.300.00.6) was chosen as the reference product. All products with an identical function and similar material composition are covered by this reference product. The variability of the primary data or CO₂-emissions between the different product variants did not exceed 50 % in GWP-fossil. The product variant with the lowest GWP fossil is article number 111.309.00.6, and the one with the highest is 111.355.00.6.

To calculate results for other product variants, please use this scaling formula:

GWP-fossil of product variant = Product variant weight in kg / 13.7 kg * 38.3 kg CO₂

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 3.10.1 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

| 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 ₂ e | 3,57E+01 | 1,13E+00 | -3,72E-01 | 3,65E+01 | 8,51E-01 | 3,84E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 6,68E-02 | 1,16E+01 | 2,76E-03 | -1,77E+01 |
| GWP-fossil | kg CO ₂ e | 3,56E+01 | 1,13E+00 | 1,52E+00 | 3,83E+01 | 8,50E-01 | 8,95E-02 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 6,68E-02 | 1,16E+01 | 2,76E-03 | -1,75E+01 |
| GWP-biogenic | kg CO ₂ e | 8,60E-02 | 2,39E-04 | -1,94E+00 | -1,85E+00 | 1,86E-04 | 3,75E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,51E-05 | -4,71E-04 | -8,79E-07 | -1,81E-01 |
| GWP-luluc ²⁾ | kg CO ₂ e | 2,71E-02 | 4,38E-04 | 5,13E-02 | 7,89E-02 | 3,31E-04 | 2,50E-05 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 2,99E-05 | 4,18E-04 | 1,58E-06 | -6,38E-03 |
| Ozone depletion pot. | kg CFC-11e | 2,38E-06 | 2,35E-08 | 3,86E-08 | 2,44E-06 | 1,77E-08 | 2,86E-10 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 9,86E-10 | 1,16E-08 | 8,00E-11 | -9,92E-08 |
| Acidification potential | mol H ⁺ e | 3,12E-01 | 2,66E-03 | 7,26E-03 | 3,22E-01 | 2,01E-03 | 1,43E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 2,28E-04 | 7,19E-03 | 1,96E-05 | -1,62E-01 |
| EP ³⁾ -freshwater | kg Pe | 1,91E-02 | 7,86E-05 | 7,86E-04 | 2,00E-02 | 5,94E-05 | 9,03E-06 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 5,20E-06 | 9,36E-05 | 2,27E-07 | -4,14E-02 |
| EP-marine | kg Ne | 3,72E-02 | 6,97E-04 | 3,29E-03 | 4,12E-02 | 5,26E-04 | 6,02E-05 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 7,48E-05 | 3,56E-03 | 7,47E-06 | -2,81E-02 |
| EP-terrestrial | mol Ne | 7,37E-01 | 7,54E-03 | 2,34E-02 | 7,68E-01 | 5,69E-03 | 4,05E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 8,14E-04 | 3,46E-02 | 8,16E-05 | -3,54E-01 |
| POCP ⁴⁾ ('smog') | kg NMVOCe | 1,48E-01 | 4,62E-03 | 6,42E-03 | 1,59E-01 | 3,49E-03 | 1,27E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 3,36E-04 | 9,96E-03 | 2,92E-05 | -9,09E-02 |
| ADP-minerals & metals | kg Sbe | 2,09E-03 | 3,22E-06 | 6,23E-06 | 2,09E-03 | 2,43E-06 | 3,24E-07 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,86E-07 | 2,81E-06 | 4,39E-09 | -1,12E-03 |
| ADP ⁵⁾ -fossil resources | MJ | 5,66E+02 | 1,69E+01 | 2,31E+01 | 6,06E+02 | 1,28E+01 | 3,28E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 9,69E-01 | 9,97E+00 | 6,78E-02 | -1,90E+02 |
| Water use | m ³ e depr. | 1,70E+01 | 8,66E-02 | 7,47E+00 | 2,45E+01 | 6,54E-02 | 1,07E-02 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 4,79E-03 | 4,27E-01 | 1,96E-04 | -3,18E+00 |

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

| 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 | 3,37E-06 | 1,10E-07 | 7,79E-08 | 3,56E-06 | 8,29E-08 | 1,96E-09 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 6,68E-09 | 1,57E-07 | 4,46E-10 | -1,38E-06 |
| Ionizing radiation | kBq U235e | 2,30E+00 | 2,04E-02 | 1,89E-01 | 2,50E+00 | 1,54E-02 | 3,00E-03 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 8,44E-04 | 2,55E-02 | 4,26E-05 | -9,85E-01 |
| Ecotoxicity, freshwater | CTUe | 4,39E+02 | 1,99E+00 | 1,19E+01 | 4,53E+02 | 1,50E+00 | 3,59E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,37E-01 | 9,62E+00 | 5,69E-03 | -4,50E+02 |
| Human toxicity, cancer | CTUh | 4,66E-08 | 1,87E-10 | 4,90E-10 | 4,73E-08 | 1,42E-10 | 2,64E-11 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,10E-11 | 7,44E-10 | 5,09E-13 | 5,33E-10 |
| Human tox. non-cancer | CTUh | 1,53E-06 | 1,09E-08 | 1,21E-08 | 1,55E-06 | 8,25E-09 | 8,96E-10 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 6,27E-10 | 2,36E-08 | 1,17E-11 | -4,50E-07 |
| SQP ⁶⁾ | - | 1,38E+02 | 1,70E+01 | 5,67E+01 | 2,12E+02 | 1,29E+01 | 2,70E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 9,76E-01 | 4,37E+00 | 1,34E-01 | -1,55E+02 |

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 | 4,04E+01 | 2,75E-01 | 1,46E+01 | 5,53E+01 | 2,08E-01 | -1,77E+01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,33E-02 | 4,22E-01 | 6,55E-04 | -3,13E+01 |
| Renew. PER as material | MJ | 1,80E-02 | 0,00E+00 | 1,62E+01 | 1,62E+01 | 0,00E+00 | -1,62E+01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | -1,80E-02 | 0,00E+00 | -1,17E-01 |
| Total use of renew. PER | MJ | 4,04E+01 | 2,75E-01 | 3,08E+01 | 7,15E+01 | 2,08E-01 | -3,39E+01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,33E-02 | 4,04E-01 | 6,55E-04 | -3,14E+01 |
| Non-ren. PER as energy | MJ | 4,29E+02 | 1,69E+01 | 1,94E+01 | 4,65E+02 | 1,28E+01 | -1,27E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 9,69E-01 | -2,75E+02 | 6,78E-02 | -1,91E+02 |
| Non-ren. PER as material | MJ | 1,38E+02 | 0,00E+00 | -1,49E+00 | 1,36E+02 | 0,00E+00 | -9,31E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | -1,35E+02 | 0,00E+00 | 1,01E-01 |
| Total use of non-ren. PER | MJ | 5,66E+02 | 1,69E+01 | 1,79E+01 | 6,01E+02 | 1,28E+01 | -2,20E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 9,69E-01 | -4,10E+02 | 6,78E-02 | -1,90E+02 |
| Secondary materials | kg | 3,63E+00 | 7,31E-03 | 1,22E+00 | 4,87E+00 | 5,52E-03 | 7,89E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 4,12E-04 | 1,64E-02 | 1,70E-05 | 5,76E+00 |
| Renew. secondary fuels | MJ | 1,04E-02 | 9,22E-05 | 1,12E-01 | 1,23E-01 | 6,96E-05 | 4,20E-06 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 5,24E-06 | 1,21E-04 | 3,53E-07 | -1,11E-03 |
| Non-ren. secondary fuels | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Use of net fresh water | m ³ | 3,33E-01 | 2,49E-03 | 1,75E-01 | 5,10E-01 | 1,88E-03 | 2,13E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,43E-04 | 5,78E-03 | 7,05E-05 | -1,21E-01 |

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 | 9,55E+00 | 2,45E-02 | 9,70E-02 | 9,68E+00 | 1,85E-02 | 4,33E-03 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,64E-03 | 1,55E-01 | 7,49E-05 | -1,23E+00 |
| Non-hazardous waste | kg | 1,87E+02 | 4,90E-01 | 2,87E+00 | 1,90E+02 | 3,70E-01 | 1,38E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 3,04E-02 | 5,09E+00 | 1,71E-03 | -5,26E+01 |
| Radioactive waste | kg | 5,85E-04 | 5,04E-06 | 4,82E-05 | 6,38E-04 | 3,81E-06 | 7,66E-07 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 2,07E-07 | 6,33E-06 | 1,04E-08 | -2,61E-04 |

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 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Materials for recycling | kg | 0,00E+00 | 0,00E+00 | 5,72E-01 | 5,72E-01 | 0,00E+00 | 1,26E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 8,40E+00 | 0,00E+00 | 0,00E+00 |
| Materials for energy rec. | kg | 0,00E+00 | 0,00E+00 | 7,05E-02 | 7,05E-02 | 0,00E+00 | 2,00E-02 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 3,57E+00 | 0,00E+00 | 0,00E+00 |
| Exported energy | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 6,23E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 9,60E+01 | 0,00E+00 | 0,00E+00 |

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 ₂ e | 3,55E+01 | 1,12E+00 | 1,59E+00 | 3,82E+01 | 8,44E-01 | 1,01E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 6,64E-02 | 1,16E+01 | 2,74E-03 | -1,74E+01 |
| Ozone depletion pot. | kg CFC-11e | 1,67E-06 | 1,87E-08 | 3,17E-08 | 1,72E-06 | 1,41E-08 | 2,39E-10 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 7,86E-10 | 9,36E-09 | 6,36E-11 | -9,22E-08 |
| Acidification | kg SO ₂ e | 2,37E-01 | 2,11E-03 | 5,35E-03 | 2,45E-01 | 1,59E-03 | 1,11E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,74E-04 | 5,13E-03 | 1,45E-05 | -1,30E-01 |
| Eutrophication | kg PO ₄ ³ e | 4,87E-02 | 5,26E-04 | 3,56E-03 | 5,27E-02 | 3,97E-04 | 3,61E-05 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 4,24E-05 | 1,32E-03 | 4,61E-06 | -2,06E-02 |
| POCP ('smog') | kg C ₂ H ₄ e | 1,61E-02 | 2,15E-04 | 4,84E-04 | 1,68E-02 | 1,62E-04 | 1,54E-05 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,55E-05 | 3,93E-04 | 1,37E-06 | -9,53E-03 |
| ADP-elements | kg Sbe | 2,08E-03 | 3,14E-06 | 6,18E-06 | 2,09E-03 | 2,37E-06 | 3,20E-07 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,82E-07 | 2,69E-06 | 4,30E-09 | -1,12E-03 |
| ADP-fossil | MJ | 5,25E+02 | 1,66E+01 | 1,97E+01 | 5,61E+02 | 1,25E+01 | 2,75E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 9,56E-01 | 9,54E+00 | 6,71E-02 | -1,73E+02 |

ENVIRONMENTAL IMPACTS – FRENCH NATIONAL COMPLEMENTS

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|--------------------------|----------------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| ADP-elements | kg Sbe | 2,08E-03 | 3,14E-06 | 6,18E-06 | 2,09E-03 | 2,37E-06 | 3,20E-07 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,82E-07 | 2,69E-06 | 4,30E-09 | -1,12E-03 |
| Hazardous waste disposed | kg | 9,55E+00 | 2,45E-02 | 9,70E-02 | 9,68E+00 | 1,85E-02 | 4,33E-03 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,64E-03 | 1,55E-01 | 7,49E-05 | -1,23E+00 |
| Non-haz. waste disposed | kg | 1,87E+02 | 4,90E-01 | 2,87E+00 | 1,90E+02 | 3,70E-01 | 1,38E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 3,04E-02 | 5,09E+00 | 1,71E-03 | -5,26E+01 |
| Air pollution | m ³ | 1,67E+04 | 2,59E+02 | 4,20E+02 | 1,74E+04 | 1,95E+02 | 1,08E+01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 1,61E+01 | 1,86E+02 | 6,30E-01 | -1,33E+04 |
| Water pollution | m ³ | 2,42E+02 | 9,25E+00 | 1,52E+01 | 2,67E+02 | 6,98E+00 | 1,71E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 4,45E-01 | 5,17E+00 | 3,45E-02 | -1,00E+02 |

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 Gonzalez, as an authorised verifier acting for EPD Hub Limited

08.08.2025

