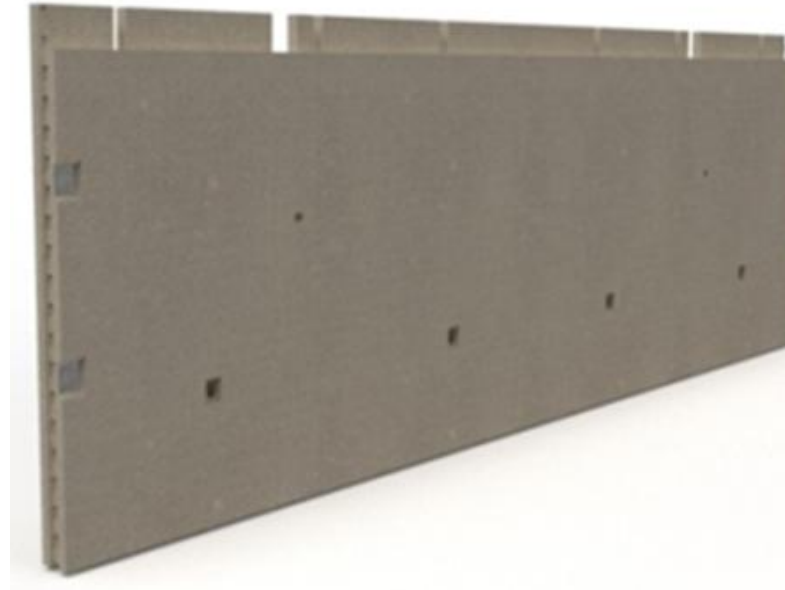




ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Solid wall element
SKAR Byggsystem



EPD HUB, HUB-1628

Publishing date 21 June 2024, last updated on 21 September 2025, valid until 21 June 2029.

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

GENERAL INFORMATION

MANUFACTURER

| | |
|-----------------|---|
| Manufacturer | SKAR Byggsystem |
| Address | Mariefredsvägen 41 |
| Contact details | info@skarbyggssystem.se |
| Website | https://www.skarbyggssystem.se/ |

EPD STANDARDS, SCOPE AND VERIFICATION

| | |
|--------------------|--|
| Program operator | EPD Hub, hub@epdhub.com |
| Reference standard | EN 15804:2012+A2:2019/AC:2021 and ISO 14025 |
| PCR | EPD Hub Core PCR Version 1.1, 5 Dec 2023 EN 16757 Product Category Rules for concrete and concrete elements |
| Sector | Construction product |
| Category of EPD | Third party verified EPD |
| Parent EPD number | - |
| Scope of the EPD | Cradle to gate with options, A4-A5, and modules C1-C4, D |
| EPD author | Johan Swahn |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification |
| EPD verifier | Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited |

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs 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 | ECO Wall element |
| Additional labels | - |
| Product reference | - |
| Place(s) of raw material origin | Sverige |
| Place of production | Sweden |
| Period for data | 2023 |
| Averaging in EPD | No grouping |
| Variation in GWP-fossil for A1-A3 (%) | - |
| GTIN (Global Trade Item Number) | - |
| NOBB (Norwegian Building Product Database) | - |
| A1-A3 Specific data (%) | 90 |

ENVIRONMENTAL DATA SUMMARY

| | |
|---|----------|
| Declared unit | 1 ton |
| Declared unit mass | 1000 kg |
| GWP-fossil, A1-A3 (kgCO ₂ e) | 1,06E+02 |
| GWP-total, A1-A3 (kgCO ₂ e) | 1,06E+02 |
| Secondary material, inputs (%) | 2,64 |
| Secondary material, outputs (%) | 80,2 |
| Total energy use, A1-A3 (kWh) | 280 |
| Net freshwater use, A1-A3 (m ³) | 1,42 |

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

SKAR BYGGSYSTEM is a part of the CG group. BYGGSYSTEM produces and markets competitive high-quality products and services for the construction and civil engineering sector.

PRODUCT DESCRIPTION

Wall elements are made of a concrete slab without intermediate insulation. Application: Staircase walls, housing walls and stabilizing wall panels. The technical standard followed is: SS-EN 14992. The product number is: SS-EN 14992 V-vägg. Technical information: Concrete: Compressive strength - fck= 30-45N/mm² Reinforcing steel: Ultimate tensile strength - ftk = 500 N/mm² Tensile yield strength - fyk= 540N/mm²

Further information can be found at:
<https://www.skarbyggsystem.se/>

PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin |
|-----------------------|----------------|-----------------|
| Metals | 1,9 | Sweden |
| Minerals | 98,1 | Sweden |
| 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 | - |
| Biogenic carbon content in packaging, kg C | - |

FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|------------------------|---------|
| Declared unit | 1 ton |
| Mass per declared unit | 1000 kg |
| Functional unit | - |
| Reference service life | - |

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

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

| Product stage | | | Assembly stage | | Use stage | | | | | | | End of life stage | | | | Beyond the 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 | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction/ demolition | Transport | Waste processing | Disposal | Reuse | Recovery | Recycling |

Modules not declared = MND. Modules not relevant = MNR

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. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The production starts by transporting the raw materials from our suppliers to the factory. The casting table/pallet is prepared and form oil is applied.

Reinforcement steel and cast in materials are placed according to the element drawing. The mold is then filled with the concrete mixture and the wall is left to cure. After curing, the wall is lifted out from the mold and placed into storage. Eventually, the elements are moved out and transported to the construction site. Production losses are taken into account by measuring the concrete waste used as landfill. The factory uses hydro based electricity. Waste is transported to a waste facility.

TRANSPORT AND INSTALLATION (A4-A5)

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

The transportation distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 100 km and the transportation method is assumed to be lorry. Vehicle fuel is biodiesel. Vehicle capacity utilization volume factor is assumed to be 100 % which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as products are loaded properly. Also, volume capacity utilisation factor is assumed to be 100 % for the loaded products.

Installation includes the energy use and material consumption. No waste is generated during installation. Energy consumption of a construction process for a precast element is on the average 132.5 MJ/m³ (Abey and Anand, 2019). Therefore, energy consumption is 132,5/2,4=55,2 MJ/ton product. (Concrete

density 2,4 ton/m³). The source of energy is diesel fuel used by work machines.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

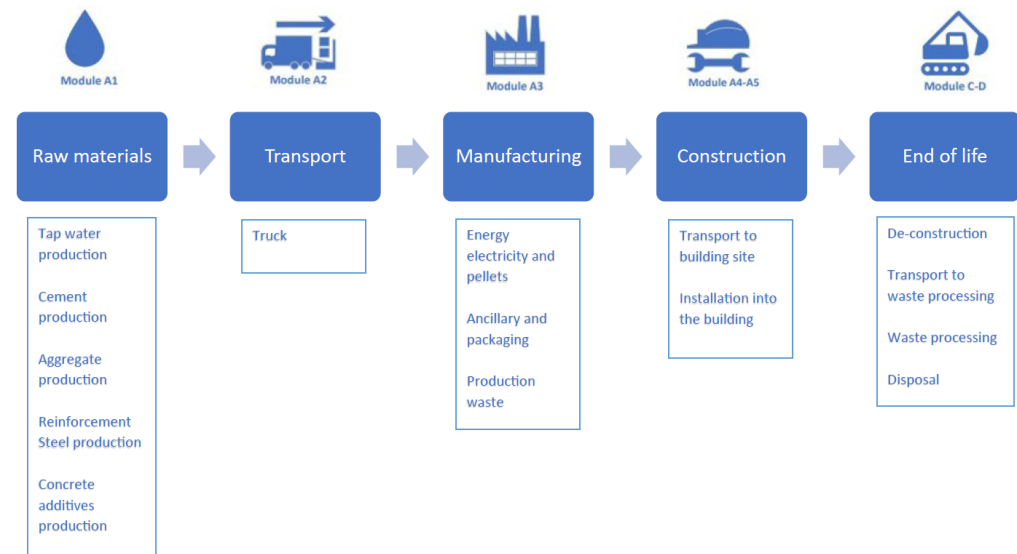
At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. The demolition process consumes energy in the form of diesel fuel used by building machines. Energy consumption of a demolition process is on the average 10 kWh/m² (Bozdağ, Ö & Seçer, M. 2007). Basing on a Level(s) project, an average mass of a reinforced concrete building is about 1000 kg/m². Therefore, energy consumption demolition is assumed to be 10 kWh/1000 kg = 0,01 kWh/kg. The source of energy is diesel fuel used by work machines (C1).

The dismantled solid wall element is delivered to the nearest construction waste plant. It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed that it has the same weight with the declared product. Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is lorry which is the most common (C2). At the waste treatment plant, waste that can be reused, recycled or recovered for energy is separated and diverted for further use. It can be assumed that 100% of solid wall element are transported to a waste treatment plant, where the walls are crushed and steel is separated. About 95% of steel (World Steel Association. 2020) and 80% of concrete (Betoniteollisuus ry, 2020) are recycled. The process losses of the waste treatment plant are assumed to be negligible (C3). The

remaining 20% of concrete and 5% of steel are assumed to be send to the landfill (C4).

Due to the recycling potential of reinforcement steel and concrete, they can be used as secondary raw material, which avoids the use of virgin raw materials. The 80 % of concrete and 95% of steel going to waste processing are converted into secondary raw materials after recycling. The recycled material content in the concrete itself is assumed to be 0 % but in steel it is assumed to be 100% according to the supplier (D).

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated 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 for, are included in the calculation. There is no neglected unit process 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 usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

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 done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

| Data type | Allocation |
|--------------------------------|-----------------------------|
| Raw materials | Allocated by mass or volume |
| Packaging material | Allocated by mass or volume |
| Ancillary materials | Allocated by mass or volume |
| Manufacturing energy and waste | Allocated by mass or volume |

PRODUCT & MANUFACTURING SITES GROUPING

| | |
|--------------------------------------|----------------|
| Type of grouping | No grouping |
| Grouping method | Not applicable |
| Variation in GWP-fossil for A1-A3, % | - |

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

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 – total ¹⁾ | kg CO ₂ e | 1,00E+02 | 2,68E+00 | 2,67E+00 | 1,06E+02 | 1,08E+01 | 1,70E+00 | MND | MND | MND | MND | MND | MND | MND | 1,00E+00 | 5,49E+00 | 6,03E+00 | 4,82E+00 | -9,83E+00 |
| GWP – fossil | kg CO ₂ e | 1,00E+02 | 2,68E+00 | 2,66E+00 | 1,06E+02 | 1,08E+01 | 1,70E+00 | MND | MND | MND | MND | MND | MND | MND | 1,00E+00 | 5,48E+00 | 6,03E+00 | 4,81E+00 | -9,82E+00 |
| GWP – biogenic | kg CO ₂ e | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,44E-03 | 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 |
| GWP – LULUC | kg CO ₂ e | 4,30E-02 | 1,20E-03 | 5,49E-03 | 4,97E-02 | 4,82E-03 | 1,18E-03 | MND | MND | MND | MND | MND | MND | MND | 1,03E-04 | 2,45E-03 | 6,18E-04 | 9,20E-03 | -8,88E-03 |
| Ozone depletion pot. | kg CFC-11e | 1,20E-06 | 3,96E-08 | 1,17E-07 | 1,36E-06 | 1,59E-07 | 9,85E-08 | MND | MND | MND | MND | MND | MND | MND | 1,53E-08 | 8,10E-08 | 9,24E-08 | 9,38E-08 | -7,65E-08 |
| Acidification potential | mol H ⁺ e | 2,26E-01 | 9,14E-03 | 3,45E-02 | 2,70E-01 | 3,67E-02 | 5,66E-03 | MND | MND | MND | MND | MND | MND | MND | 9,04E-03 | 1,87E-02 | 5,45E-02 | 3,06E-02 | -6,00E-02 |
| EP-freshwater ²⁾ | kg Pe | 8,55E-03 | 2,09E-04 | 3,81E-04 | 9,14E-03 | 8,38E-04 | 2,97E-04 | MND | MND | MND | MND | MND | MND | MND | 2,89E-05 | 4,27E-04 | 1,74E-04 | 3,29E-04 | -2,99E-03 |
| EP-marine | kg Ne | 3,35E-02 | 3,00E-03 | 1,36E-02 | 5,01E-02 | 1,21E-02 | 1,34E-03 | MND | MND | MND | MND | MND | MND | MND | 4,19E-03 | 6,14E-03 | 2,53E-02 | 1,26E-02 | -1,42E-02 |
| EP-terrestrial | mol Ne | 7,98E-01 | 3,27E-02 | 1,64E-01 | 9,95E-01 | 1,31E-01 | 1,48E-02 | MND | MND | MND | MND | MND | MND | MND | 4,59E-02 | 6,69E-02 | 2,77E-01 | 1,37E-01 | -1,72E-01 |
| POCP (“smog”) ³⁾ | kg NMVOCe | 2,12E-01 | 1,35E-02 | 4,08E-02 | 2,66E-01 | 5,41E-02 | 4,11E-03 | MND | MND | MND | MND | MND | MND | MND | 1,37E-02 | 2,76E-02 | 8,25E-02 | 4,51E-02 | -4,76E-02 |
| ADP-minerals & metals ⁴⁾ | kg Sbe | 6,46E-05 | 7,48E-06 | 6,14E-06 | 7,82E-05 | 3,00E-05 | 1,39E-04 | MND | MND | MND | MND | MND | MND | MND | 3,59E-07 | 1,53E-05 | 2,16E-06 | 9,96E-06 | -5,25E-05 |
| ADP-fossil resources | MJ | 3,64E+02 | 3,89E+01 | 3,68E+01 | 4,39E+02 | 1,56E+02 | 1,34E+01 | MND | MND | MND | MND | MND | MND | MND | 1,31E+01 | 7,96E+01 | 7,89E+01 | 8,00E+01 | -1,18E+02 |
| Water use ⁵⁾ | m ³ e depr. | 1,77E+01 | 1,92E-01 | 6,86E-01 | 1,85E+01 | 7,72E-01 | 4,41E+01 | MND | MND | MND | MND | MND | MND | MND | 3,27E-02 | 3,93E-01 | 1,97E-01 | 2,96E-01 | -1,47E+01 |

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

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 | 2,47E-06 | 2,68E-07 | 6,93E-07 | 3,43E-06 | 1,08E-06 | 6,26E-08 | MND | MND | MND | MND | MND | MND | MND | 2,57E-07 | 5,49E-07 | 7,50E-06 | 2,23E-06 | -9,11E-07 |
| Ionizing radiation ⁶⁾ | kBq | 5,19E+03 | 3,39E-02 | 1,20E-01 | 5,19E+03 | 1,36E-01 | 8,23E-02 | MND | MND | MND | MND | MND | MND | MND | 5,80E-03 | 6,93E-02 | 3,50E-02 | 5,58E-02 | -8,28E-01 |
| Ecotoxicity (freshwater) | CTUe | 2,78E+01 | 5,50E+00 | 1,71E+01 | 5,04E+01 | 2,21E+01 | 2,82E-01 | MND | MND | MND | MND | MND | MND | MND | 7,21E-01 | 1,13E+01 | 4,35E+00 | 1,60E+01 | -2,81E+01 |
| Human toxicity, cancer | CTUh | 1,26E-07 | 4,42E-10 | 1,99E-09 | 1,28E-07 | 1,78E-09 | 4,49E-10 | MND | MND | MND | MND | MND | MND | MND | 1,03E-10 | 9,05E-10 | 6,20E-10 | 9,33E-10 | -2,62E-09 |
| Human tox. non-cancer | CTUh | 1,13E-06 | 2,52E-08 | 7,48E-08 | 1,23E-06 | 1,01E-07 | 3,04E-08 | MND | MND | MND | MND | MND | MND | MND | 1,63E-09 | 5,15E-08 | 9,82E-09 | 3,10E-08 | -7,66E-08 |
| SQP ⁷⁾ | - | 2,73E+02 | 3,92E+01 | 3,47E+02 | 6,59E+02 | 1,57E+02 | 1,47E+01 | MND | MND | MND | MND | MND | MND | MND | 9,18E-01 | 8,01E+01 | 5,53E+00 | 8,80E+01 | -1,10E+02 |

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

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 as energy ⁸⁾ | MJ | 1,33E+02 | 5,33E-01 | 1,44E+02 | 2,77E+02 | 2,14E+00 | 7,85E-01 | MND | MND | MND | MND | MND | MND | MND | 8,30E-02 | 1,09E+00 | 5,00E-01 | 8,98E-01 | -1,07E+01 |
| Renew. PER as material | 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 |
| Total use of renew. PER | MJ | 1,33E+02 | 5,33E-01 | 1,44E+02 | 2,77E+02 | 2,14E+00 | 7,85E-01 | MND | MND | MND | MND | MND | MND | MND | 8,30E-02 | 1,09E+00 | 5,00E-01 | 8,98E-01 | -1,07E+01 |
| Non-re. PER as energy | MJ | 4,49E+02 | 3,89E+01 | 3,44E+01 | 5,22E+02 | 1,56E+02 | 1,43E+01 | MND | MND | MND | MND | MND | MND | MND | 1,31E+01 | 7,96E+01 | 7,89E+01 | 8,01E+01 | -1,18E+02 |
| Non-re. PER as material | 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 |
| Total use of non-re. PER | MJ | 4,49E+02 | 3,89E+01 | 3,44E+01 | 5,22E+02 | 1,56E+02 | 1,43E+01 | MND | MND | MND | MND | MND | MND | MND | 1,31E+01 | 7,96E+01 | 7,89E+01 | 8,01E+01 | -1,18E+02 |
| Secondary materials | kg | 2,64E+01 | 1,66E-02 | 2,30E-02 | 2,65E+01 | 6,65E-02 | 6,51E-03 | MND | MND | MND | MND | MND | MND | MND | 5,44E-03 | 3,39E-02 | 3,28E-02 | 2,93E-02 | -1,31E-01 |
| Renew. secondary fuels | MJ | 7,94E+01 | 2,10E-04 | 1,24E-04 | 7,94E+01 | 8,45E-04 | 2,07E-02 | MND | MND | MND | MND | MND | MND | MND | 1,42E-05 | 4,30E-04 | 8,57E-05 | 3,66E-04 | -9,07E-04 |
| Non-ren. secondary fuels | MJ | 1,30E+02 | 0,00E+00 | 0,00E+00 | 1,30E+02 | 0,00E+00 | 1,36E-02 | 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 | 1,40E+00 | 5,75E-03 | 8,83E-03 | 1,42E+00 | 2,31E-02 | 6,29E-01 | MND | MND | MND | MND | MND | MND | MND | 8,66E-04 | 1,18E-02 | 5,22E-03 | 3,81E-02 | -3,49E-01 |

8) 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 | 7,72E-01 | 6,59E-02 | 1,01E-01 | 9,39E-01 | 2,65E-01 | 4,30E-02 | MND | MND | MND | MND | MND | MND | MND | 1,46E-02 | 1,35E-01 | 8,79E-02 | 1,12E-01 | -9,20E-01 |
| Non-hazardous waste | kg | 5,34E+02 | 1,22E+00 | 5,11E+02 | 1,05E+03 | 4,90E+00 | 1,64E+00 | MND | MND | MND | MND | MND | MND | MND | 1,99E-01 | 2,50E+00 | 1,20E+00 | 2,22E+00 | -1,64E+01 |
| Radioactive waste | kg | 5,44E-03 | 8,29E-06 | 3,58E-05 | 5,49E-03 | 3,33E-05 | 5,14E-05 | MND | MND | MND | MND | MND | MND | MND | 1,42E-06 | 1,70E-05 | 8,58E-06 | 1,37E-05 | -2,00E-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 re-use | kg | 3,13E-04 | 0,00E+00 | 0,00E+00 | 3,13E-04 | 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 | 1,81E+01 | 0,00E+00 | 8,99E-01 | 1,89E+01 | 0,00E+00 | 4,69E-03 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 8,18E+02 | 0,00E+00 | 0,00E+00 |
| Materials for energy rec | kg | 0,00E+00 | 0,00E+00 | 7,10E-01 | 7,10E-01 | 0,00E+00 | 2,21E-04 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+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 | 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 |
| Exported energy – Electricity | 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 |
| Exported energy – | 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 |

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

| 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 | 1,05E+02 | 2,67E+00 | 2,92E+00 | 1,10E+02 | 1,07E+01 | 1,70E+00 | MND | MND | MND | MND | MND | MND | MND | 9,96E-01 | 5,45E+00 | 6,00E+00 | 4,78E+00 | -9,77E+00 |
| Ozone depletion Pot. | kg CFC _{11e} | 2,70E-06 | 3,16E-08 | 1,21E-07 | 2,85E-06 | 1,27E-07 | 8,08E-08 | MND | MND | MND | MND | MND | MND | MND | 1,21E-08 | 6,46E-08 | 7,32E-08 | 7,47E-08 | -6,45E-08 |
| Acidification | kg SO ₂ e | 2,45E-01 | 6,98E-03 | 2,33E-02 | 2,76E-01 | 2,80E-02 | 5,39E-03 | MND | MND | MND | MND | MND | MND | MND | 6,36E-03 | 1,43E-02 | 3,83E-02 | 2,23E-02 | -4,66E-02 |
| Eutrophication | kg PO ₄ ^{3e} | 7,46E-02 | 1,70E-03 | 7,72E-03 | 8,41E-02 | 6,83E-03 | 1,42E-03 | MND | MND | MND | MND | MND | MND | MND | 1,48E-03 | 3,48E-03 | 8,95E-03 | 6,28E-03 | -9,04E-03 |
| POCP (“smog”) | kg C ₂ H ₄ e | 1,16E-02 | 6,22E-04 | 2,07E-03 | 1,43E-02 | 2,50E-03 | 2,17E-04 | MND | MND | MND | MND | MND | MND | MND | 4,76E-04 | 1,27E-03 | 2,87E-03 | 1,87E-03 | -4,10E-03 |
| ADP-elements | kg Sbe | 7,76E-03 | 7,29E-06 | 5,94E-06 | 7,77E-03 | 2,93E-05 | 1,39E-04 | MND | MND | MND | MND | MND | MND | MND | 3,49E-07 | 1,49E-05 | 2,10E-06 | 9,72E-06 | -5,17E-05 |
| ADP-fossil | MJ | 6,53E+02 | 3,84E+01 | 3,49E+01 | 7,27E+02 | 1,54E+02 | 1,34E+01 | MND | MND | MND | MND | MND | MND | MND | 1,30E+01 | 7,85E+01 | 7,84E+01 | 7,92E+01 | -1,05E+02 |

ENVIRONMENTAL IMPACTS – GWP-GHG

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|-----------------------|----------------------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| GWP-GHG ⁹⁾ | kg CO ₂ e | 1,00E+02 | 2,68E+00 | 2,67E+00 | 1,06E+02 | 1,08E+01 | 1,70E+00 | MND | MND | MND | MND | MND | MND | MND | 1,00E+00 | 5,49E+00 | 6,03E+00 | 4,82E+00 | -9,83E+00 |

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program 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 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 authorized verifier acting for EPD Hub Limited
21.09.2025

