ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Paebbl Product Gen 1

Paebbl

EPD HUB, HUB-3637
Published on 19.07.2025, last updated on 19.07.2025, valid until 18.01.2027

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.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Paebbl
Address	Scheepsbouwweg 29, 3089 JW Rotterdam, The Netherlands
Contact details	Product-support@paebbl.com
Website	paebbl.com

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
Sector	Construction product
Category of EPD	Design phase EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Ikaros Altantzis, Paebbl
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Elisabet Amat, 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	Paebbl Product Gen 1
Additional labels	-
Product reference	-
Place(s) of raw material origin	Italy & The Netherlands
Place of production	Netherlands
Place(s) of installation and use	Europe
Period for data	September 2024 - November 2024
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 (%)	-33,2

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Tonne
Declared unit mass	1000 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,87E+01
GWP-total, A1-A3 ($kgCO_2e$)	-1,44E+01
Secondary material, inputs (%)	0
Secondary material, outputs (%)	96,5
Total energy use, A1-A3 (kWh)	3880
Net freshwater use, A1-A3 (m^3)	6,21

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Paebbl is a mission-driven organisation focused on combating global warming at unprecedented scale. We believe the immense volumes of greenhouse gases humanity needs to find a home for are a huge opportunity - CO2 can be a literal building block for our society.
Turning CO2 into a raw material quickly enough for it to matter requires building up one of the largest operations on the planet - in a fraction of the time the giants in oil and gas had.
We are acutely aware of the unprecedented speed required and are re-imagining engineering and construction processes to meet the need - safely.

PRODUCT DESCRIPTION

Paebbl's innovative material is a high-performance, engineered mineral binder and filler, designed for use and easy to integrate in cement-based applications. Developed through an accelerated mineralization process, this light grey powder consists primarily of silica-enriched magnesium carbonate, offering both structural integrity and environmental benefits.
The production process involves reacting CO_2 with mineral aggregates such as olivine ($Mg_2SiO_4 + 2CO_2$ + inactive material → $2MgCO_3 + SiO_2$ + unreacted material), resulting in a material that requires only drying before use. By permanently binding CO_2 into its composition, Paebbl provides a carbon-sequestering alternative to conventional cement binders, supporting the transition to lower-emission construction materials.
Paebbl's mineral binder represents a scalable, eco-friendly solution for the construction industry, delivering both practical performance benefits and climate-positive impact.

For further details, visit paebbl.com.

Further information can be found at:
paebbl.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

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	9,79

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Tonne
Mass per declared unit	1000 kg
Functional unit	-
Reference service life	50

SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
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.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The environmental assessment of Paebbl's product evaluates the raw materials used, the mineralization reaction, and the final drying process. Transport logistics for raw materials are assessed using estimated distances derived from Google Maps data and supplier locations. Additionally, the energy requirements for production and the management of waste byproducts are taken into account. For packaging and ancillary materials, factors such as material composition, weight, and recyclability are analyzed. Estimated material losses during handling and processing are estimated to be negligible. The study also addresses end-of-life considerations, detailing how production waste is processed, reused, or transported to the nearest recycling or disposal facilities relative to the company's location. The assessment also addresses the end-of-life (EoL) considerations for manufacturing waste, outlining the assumed percentages, and referencing the data used. Furthermore, it includes the transportation logistics and distances involved in moving the production waste to the closest waste treatment facility relative to the manufacturing plant's location. The production process of Paebbl's product begins with the transfer of the necessary chemicals to a silo where they are mixed. Afterwards, olivine, water and CO_2 are pumped into the reactor alongside the chemicals in a controlled manner. CO_2 mineralization then occurs under high pressures and temperatures. The olivine reacts with carbon dioxide to form a stable magnesium carbonate and silica-based material. Once the reaction is complete, the product undergoes drying to achieve the required powder consistency for use as a binder or filler. The processed powder is then transferred to storage silos and packaged in bags or bulk containers, depending on customer requirements. For distribution, the packaged material is secured on pallets and wrapped for moisture protection and to avoid losses. Transportation logistics are carefully managed to reduce emissions, focusing on efficient routing by truck and minimal handling.

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.

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.

The material is collected from the factory and delivered to the client's site, with the transportation distance determined by their respective locations. On average, this distance is estimated at 50 km, involving lorry. It is assumed that vehicle capacity utilization is at 100%, meaning each transport vehicle carries a full load. While actual utilization may vary, such variations are considered negligible as transportation emissions have a minor overall environmental impact. Additionally, empty return trips are accounted for, as transportation companies typically do not use them to serve other clients. The study also assumes no product losses during transport, as the material is packaged securely, ensuring that it arrives at the site intact. The environmental assessment also considers end-of-life (EoL) impacts for installation waste. It specifies assumed waste percentages and references data from ancillary and packaging materials categorized under A3 (wooden structures).
Packaging materials, such as pallets and wooden structures, are shredded and incinerated. According to the RICS standard (Whole Life Carbon Assessment for the Built Environment), 80% of wood can be recycled, while 20% ends up in incineration. During incineration it is was assumed that wood and paper were incinerated together. Given that incinerators operate at less than 60% efficiency, the shredded wood is assumed to contribute to energy production (D).

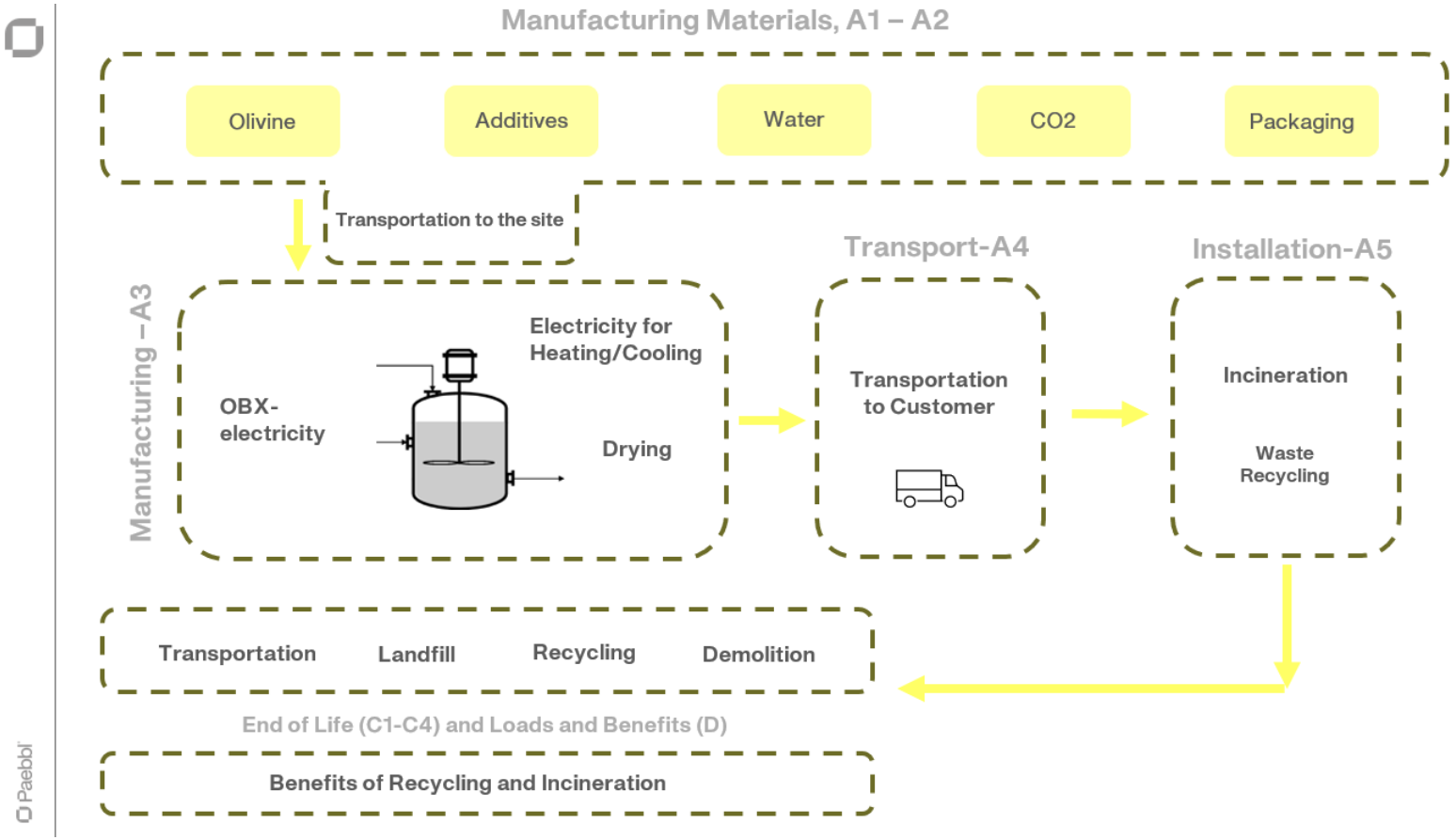
PRODUCT USE AND MAINTENANCE (B1-B7)

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)

In the end-of-life phase, specifically during demolition, its assumed that 100% of the waste is collected as distinct construction waste. The demolition process itself requires energy, predominantly in the form of diesel fuel used by construction machinery. The average energy consumption for such a demolition process is considered (Bozdağ, Ö & Seçer, M. 2007). The post-demolition product is transported to the nearest construction waste treatment facility. No mass loss is assumed during the product's lifespan, so the end-of-life product maintains the same weight as the originally declared product. The assumed transportation distance to the nearest disposal site is 50 km, with lorry being the selected mode of transport, since it is the a common way of transporting goods.
According to the RCIS V2 standard, 96.5% of concrete can be recycled. The losses during the waste treatment process are considered negligible (C3). The rest 3.5% of concrete is assumed to be sent to landfill (C4) (RICS V2 standard). Recycled concrete has the benefit of reducing the need for virgin raw materials for concrete production, since it substitutes the new concrete. 96.5% of concrete sent for waste processing is transformed into secondary raw materials after recycling. Finally, at the end of its life, 100% of the packaging bag is presumed to be directed to incineration contributing to energy production (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	No allocation
Packaging material	No allocation
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‘.

References:

- Whole life carbon assessment for the built environment’, Version 2, issued November 2023, Royal Institution of Chartered Surveyors (RICS), London.

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, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	5,13E+00	9,39E+01	-1,13E+02	-1,44E+01	9,95E+00	3,64E+01	3,61E+00	5,38E+00	4,22E+00	2,19E-01	-4,01E+00
GWP – fossil	kg CO_2e	5,12E+00	9,39E+01	-8,03E+01	1,87E+01	9,95E+00	5,28E-01	3,60E+00	5,38E+00	4,22E+00	2,18E-01	-9,92E+00
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-3,59E+01	-3,59E+01	0,00E+00	3,59E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,91E+00
GWP – LULUC	kg CO_2e	7,33E-03	4,17E-02	2,72E+00	2,77E+00	3,52E-03	5,42E-04	3,69E-04	2,41E-03	4,33E-04	1,25E-04	-1,07E-02
Ozone depletion pot.	kg $CFC\text{-}_{11}e$	8,17E-08	1,40E-06	1,43E-06	2,91E-06	1,98E-07	8,59E-09	5,52E-08	7,95E-08	6,47E-08	6,33E-09	-8,84E-08
Acidification potential	mol H^+e	6,38E-02	3,19E-01	1,66E+00	2,04E+00	3,11E-02	2,71E-03	3,25E-02	1,84E-02	3,81E-02	1,55E-03	-6,11E-02
EP-freshwater[2)]	kg Pe	1,56E-03	7,28E-03	3,10E-01	3,19E-01	6,60E-04	1,73E-04	1,04E-04	4,19E-04	1,22E-04	1,80E-05	-3,36E-03
EP-marine	kg Ne	2,30E-02	1,05E-01	2,91E-01	4,18E-01	1,05E-02	1,23E-03	1,51E-02	6,03E-03	1,77E-02	5,91E-04	-1,42E-02
EP-terrestrial	mol Ne	2,93E-01	1,14E+00	4,42E+00	5,86E+00	1,14E-01	9,87E-03	1,65E-01	6,56E-02	1,94E-01	6,45E-03	-1,72E-01
POCP ("smog")[3)]	kg NMVOCe	7,29E-02	4,71E-01	5,66E-01	1,11E+00	4,88E-02	3,16E-03	4,93E-02	2,70E-02	5,77E-02	2,31E-03	-4,77E-02
ADP-minerals & metals[4)]	kg Sbe	9,63E-06	2,65E-04	6,84E-03	7,11E-03	3,25E-05	1,43E-06	1,29E-06	1,50E-05	1,51E-06	3,47E-07	-5,22E-05
ADP-fossil resources	MJ	8,34E+01	1,36E+03	1,70E+03	3,15E+03	1,40E+02	7,54E+00	4,72E+01	7,81E+01	5,52E+01	5,36E+00	-1,25E+02
Water use[5)]	m^3e depr.	1,25E+00	6,73E+00	2,61E+02	2,69E+02	6,86E-01	2,67E-01	1,18E-01	3,86E-01	1,38E-01	1,55E-02	-1,46E+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, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Incidence	1,09E-06	9,31E-06	1,44E-05	2,48E-05	7,82E-07	3,26E-08	9,25E-07	5,39E-07	8,26E-06	3,53E-08	-9,84E-07
Ionizing radiation[6)]	kBq U235e	1,05E+00	1,21E+00	1,00E+01	1,23E+01	1,78E-01	9,15E-02	2,09E-02	6,80E-02	2,45E-02	3,37E-03	-1,15E+00
Ecotoxicity (freshwater)	CTUe	2,68E+01	1,93E+02	7,87E+03	8,08E+03	1,83E+01	3,39E+00	2,60E+00	1,10E+01	3,04E+00	4,50E-01	-2,69E+01
Human toxicity, cancer	CTUh	8,28E-10	1,55E-08	1,28E-07	1,45E-07	1,70E-09	5,03E-10	3,71E-10	8,88E-10	4,34E-10	4,03E-11	-2,32E-09
Human tox. non-cancer	CTUh	2,48E-08	8,80E-07	3,78E-06	4,68E-06	8,78E-08	2,07E-08	5,87E-09	5,06E-08	6,87E-09	9,25E-10	-6,44E-08
SQP[7)]	-	2,35E+03	1,35E+03	4,13E+03	7,83E+03	8,32E+01	3,16E+00	3,30E+00	7,87E+01	3,87E+00	1,06E+01	-1,24E+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	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	9,18E+00	1,89E+01	1,13E+04	1,13E+04	2,42E+00	-6,25E+01	2,99E-01	1,07E+00	3,50E-01	5,18E-02	-8,50E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,71E+02	3,71E+02	0,00E+00	-3,71E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,35E+01
Total use of renew. PER	MJ	9,18E+00	1,89E+01	1,16E+04	1,17E+04	2,42E+00	-4,33E+02	2,99E-01	1,07E+00	3,50E-01	5,18E-02	-2,15E+01
Non-re. PER as energy	MJ	8,35E+01	1,36E+03	1,22E+03	2,66E+03	1,40E+02	7,54E+00	4,72E+01	7,81E+01	5,52E+01	5,36E+00	-1,25E+02
Non-re. PER as material	MJ	0,00E+00	0,00E+00	2,10E+01	2,10E+01	0,00E+00	-2,10E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	8,35E+01	1,36E+03	1,24E+03	2,68E+03	1,40E+02	-1,35E+01	4,72E+01	7,81E+01	5,52E+01	5,36E+00	-1,25E+02
Secondary materials	kg	2,41E-02	5,82E-01	5,61E+00	6,22E+00	6,40E-02	4,29E-03	1,96E-02	3,32E-02	2,29E-02	1,35E-03	-1,28E-01
Renew. secondary fuels	MJ	5,43E-04	7,38E-03	1,08E+01	1,08E+01	8,08E-04	3,26E-05	5,12E-05	4,22E-04	6,00E-05	2,79E-05	-8,78E-04
Non-ren. secondary fuels	MJ	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	0,00E+00	0,00E+00
Use of net fresh water	m^3	4,77E-02	2,01E-01	5,96E+00	6,21E+00	1,88E-02	5,07E-03	3,12E-03	1,15E-02	3,65E-03	5,58E-03	-3,51E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	1,67E-01	2,30E+00	2,50E+01	2,75E+01	2,00E-01	1,69E-01	5,25E-02	1,32E-01	6,15E-02	5,92E-03	-7,69E-01
Non-hazardous waste	kg	8,37E+00	4,27E+01	4,24E+03	4,29E+03	4,23E+00	5,27E+00	7,15E-01	2,45E+00	8,38E-01	1,35E-01	-1,37E+01
Radioactive waste	kg	2,69E-04	2,97E-04	2,60E-03	3,17E-03	4,43E-05	2,35E-05	5,12E-06	1,67E-05	6,00E-06	8,22E-07	-2,81E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	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	0,00E+00	0,00E+00
Materials for recycling	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	9,65E+02	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,40E+01	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,86E+00
Exported energy – Electricity	MJ	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	0,00E+00	-1,04E+00
Exported energy – Heat	MJ	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	0,00E+00	-1,82E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	5,12E+00	9,34E+01	-7,66E+01	2,19E+01	9,89E+00	7,92E-01	3,59E+00	5,35E+00	4,20E+00	2,16E-01	-9,87E+00
Ozone depletion Pot.	kg CFC_{-11}e	6,56E-08	1,12E-06	1,26E-06	2,44E-06	1,58E-07	6,99E-09	4,37E-08	6,34E-08	5,12E-08	5,03E-09	-7,73E-08
Acidification	kg SO_2e	4,40E-02	2,44E-01	1,21E+00	1,50E+00	2,36E-02	2,06E-03	2,29E-02	1,40E-02	2,68E-02	1,15E-03	-4,76E-02
Eutrophication	kg PO_4^3e	1,01E-02	5,95E-02	5,41E-01	6,10E-01	6,01E-03	6,83E-04	5,34E-03	3,41E-03	6,26E-03	3,64E-04	-9,09E-03
POCP (“smog”)	kg C_2H_4e	2,68E-03	2,18E-02	6,01E-02	8,45E-02	2,25E-03	2,11E-04	1,71E-03	1,25E-03	2,01E-03	1,08E-04	-4,22E-03
ADP-elements	kg Sbe	9,51E-06	2,58E-04	4,47E-03	4,73E-03	3,18E-05	1,32E-06	1,26E-06	1,46E-05	1,47E-06	3,40E-07	-5,15E-05
ADP-fossil	MJ	6,50E+01	1,34E+03	1,52E+03	2,93E+03	1,37E+02	5,93E+00	4,68E+01	7,70E+01	5,48E+01	5,31E+00	-1,07E+02

ENVIRONMENTAL IMPACTS – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	5,13E+00	9,39E+01	-7,75E+01	2,15E+01	9,95E+00	5,29E-01	3,61E+00	5,38E+00	4,22E+00	2,19E-01	-9,93E+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.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Green/wind energy through contract
Electricity CO2e / kWh	0,0167
District heating data source and quality	Not applicable
District heating CO2e / kWh	-

Installation scenario documentation A5

Scenario Information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	29
Water use / m^3	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kwh or mj	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	25kg from pallet and 4kg from paper packaging
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	25 kg wood (20kg recycled and 5kg incineration) and 4kg paper to incineration
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	1000kg from construction waste
Collection process – kg collected with mixed waste	1000kg
Recovery process – kg for re-use	0kg
Recovery process – kg for recycling	965kg material from construction recycled as gravel
Recovery process – kg for energy recovery	0kg
Disposal (total) – kg for final deposition	35kg
Scenario assumptions e.g. transportation	50km

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15802+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Elisabet Amat
Tool verification validity: 27 March 2025 - 26 March 2028

Elisabet Amat, an authorized verifier acting for EPD Hub Limited
19.07.2025