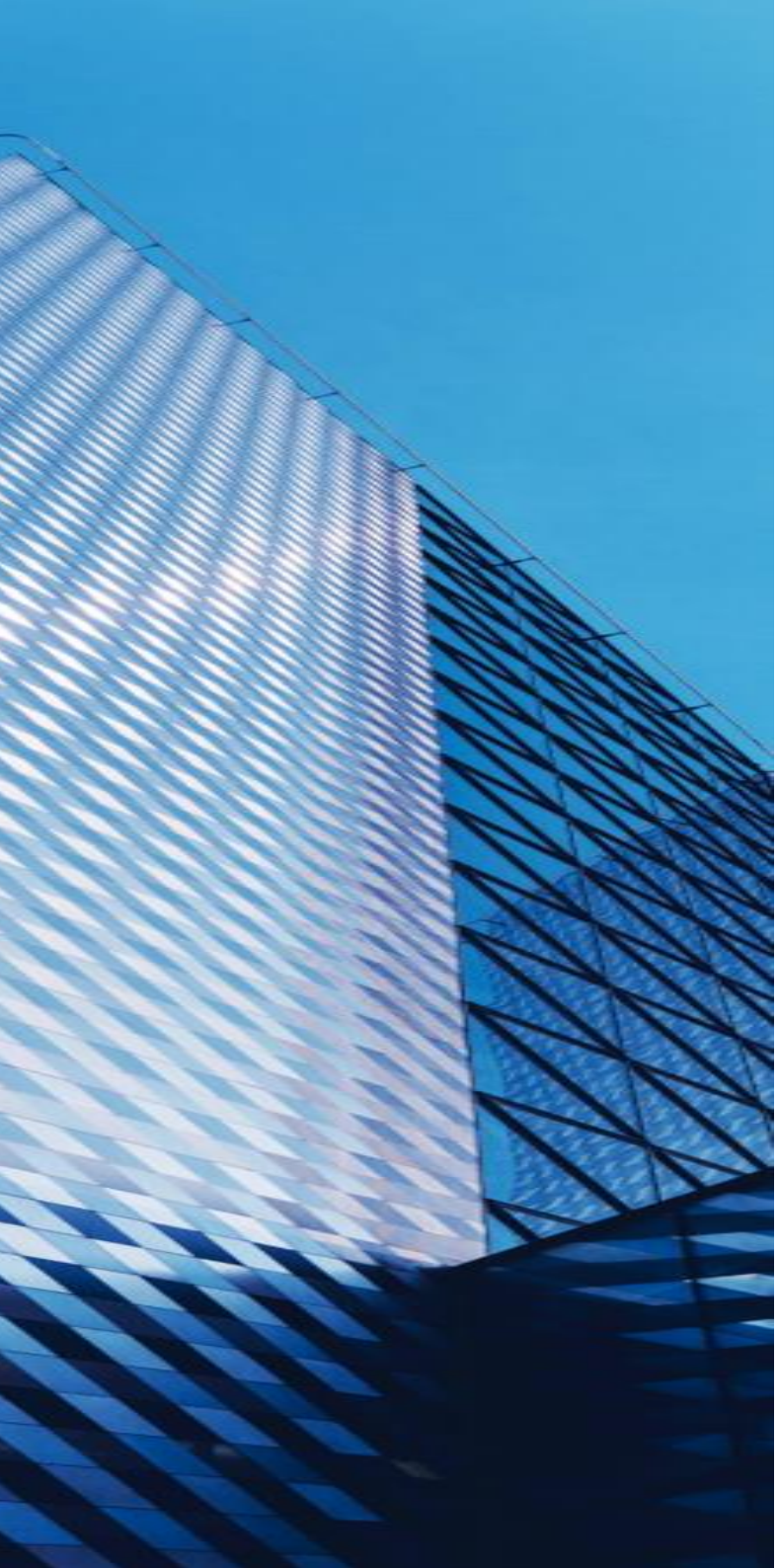
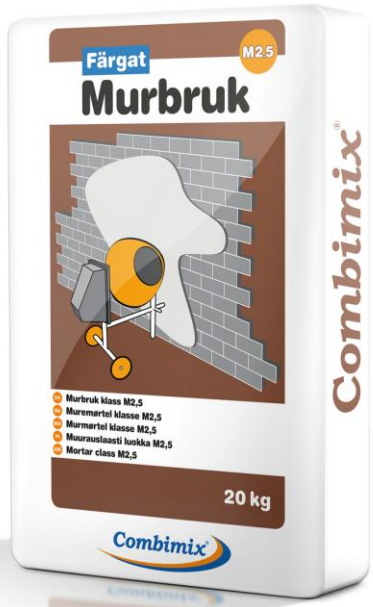


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Färgat Murbruk M2,5
Combimix AB



EPD HUB, HUB-1534
Publishing date 26 June 2024, last updated on 26 June 2024, valid until 26 June 2029.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Combimix AB
Address	Backamo 620, 459 91 Ljungskile, Sweden
Contact details	miljo@combimix.se
Website	https://www.combimix.com/se/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.1, 5 Dec 2023 NPCR PART A: Construction products and services NPCR 009 Part B for Technical - Chemical products for building and construction industry
Sector	Manufactured product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4
EPD author	Niklas Fröberg, VEGA Systems AB & Johan Schiller, Combimix AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

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	Färgat Murbruk M2,5
Additional labels	-
Product reference	114XXX, 115XXX
Place of production	Backamo, Sweden
Period for data	10/2022 - 9/2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	10 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of manufactured product
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	1,65E-01
GWP-total, A1-A3 (kgCO2e)	1,65E-01
Secondary material, inputs (%)	0.41
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	0.48
Net fresh water use, A1-A3 (m3)	0.01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Combimix develops and manufactures mineral-based products for the construction industry. The assortments includes products for floor leveling, facade plastering, masonry, casting, concrete renovation and restoration mortar for cultural buildings.

PRODUCT DESCRIPTION

Pigmented mortar based on masonry cement for normal masonry work in compressive strength class M2,5. The product is available in 8 standard colours. For masonry of bricks, lightweight clinker blocks and lightweight concrete blocks. Can be used below and above ground level, both indoors and outdoors. Can also be used for priming, grouting and rough sanding.

Further information can be found at https://www.combimix.com/se/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	-
Minerals	>99	EU, China
Fossil materials	<1	EU, China
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	0.00039

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of manufactured product
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
-	-	-
-	-	-
-	-	-
-	-	-

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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	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.

All raw materials are shipped to the manufacturing facility by truck and/or boat. The product is manufactured through a dry-mix process in a plough-shear mixer. Raw materials are automatically fed from silos, and additives are either premixed and added as a compound or incorporated directly, either automatically or manually, depending on the type of additive.

The final mixed product is packaged in small bags, large bags, made of paper and plastic, or delivered in bulk. Bags are delivered on EU-pallets and wrapped in plastic film.

Most of the energy used in the manufacturing process is electricity, which is roughly 70% renewable and 30% nuclear power (Swedish electricity generation mix). Only a small portion of energy comes from LPG which is used to dry sand.

Waste generation from the manufacturing phase consists of 18% combustible (energy recovery) and 82% inert material (landfill). A standard distance of 50 km to waste handling facility has been assumed in accordance with the cPCR used.

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 finished product is transported by truck (16-32t, Euro 6). A default travel distance of 300 km from factory to building site has been used. Installation (A5) is not included in this EPD.

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.

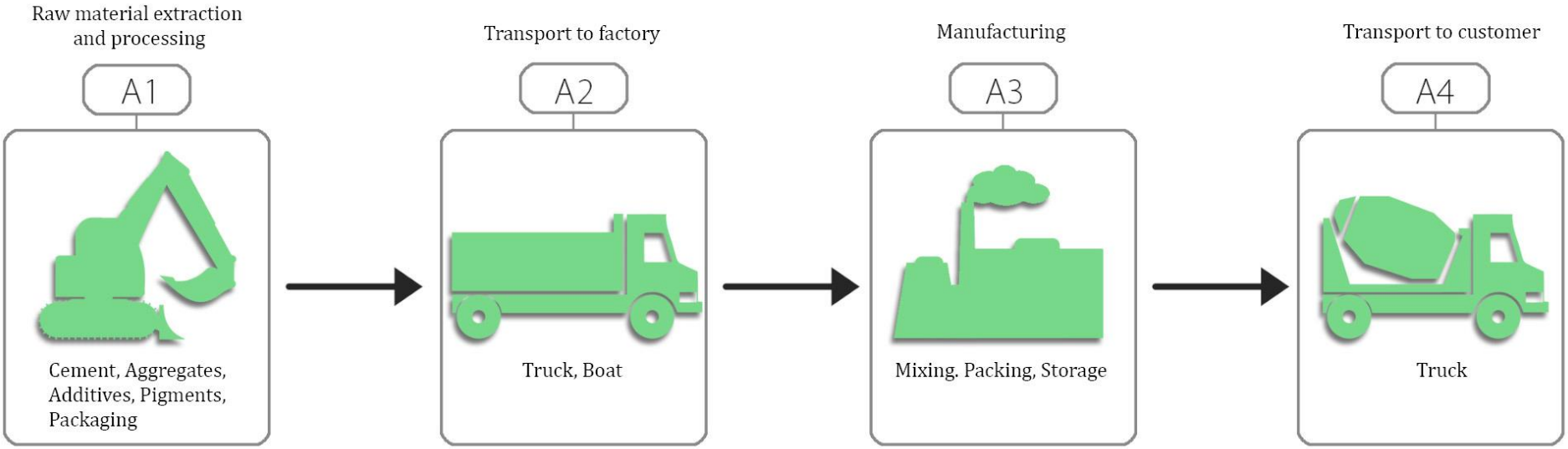
PRODUCT END OF LIFE (C1-C4, D)

According to EN15804+A2-2019, products which fulfill all the 3 conditions below shall be permitted to omit the declaration of modules C1-C4 and module D:

- The product or material is physically integrated with other products during installation so they cannot be physically separated from them at end of life.
- The product or material is no longer identifiable at end of life as a result of a physical or chemical transformation process.
- The product or material does not contain biogenic carbon.

As the product studied in this EPD complies with all 3 conditions, the modules are not included.

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.

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 materials	Allocated by mass or volume
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3	50 %

This EPD is an average of several different colours of the same product.

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 v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases 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 – total[1)]	kg CO_2e	1,43E-01	2,01E-02	1,45E-03	1,65E-01	2,57E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
GWP – fossil	kg CO_2e	1,43E-01	2,01E-02	1,44E-03	1,65E-01	2,57E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,04E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
GWP – LULUC	kg CO_2e	3,34E-05	7,67E-06	1,76E-06	4,28E-05	1,03E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ozone depletion pot.	kg CFC_{-11}e	5,47E-09	4,61E-09	1,03E-10	1,02E-08	5,94E-09	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Acidification potential	mol H^+e	5,26E-04	8,79E-05	1,55E-05	6,30E-04	7,29E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP-freshwater[2)]	kg Pe	7,13E-06	1,57E-07	1,75E-08	7,30E-06	1,83E-07	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP-marine	kg Ne	9,32E-05	2,46E-05	1,83E-06	1,20E-04	1,45E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP-terrestrial	mol Ne	1,30E-03	2,72E-04	5,17E-05	1,62E-03	1,62E-04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
POCP ("smog")[3)]	kg NMVOCe	3,47E-04	8,64E-05	5,57E-06	4,39E-04	6,21E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP-minerals & metals[4)]	kg Sbe	4,64E-07	5,37E-08	2,53E-09	5,20E-07	9,28E-08	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP-fossil resources	MJ	8,69E-01	3,00E-01	6,32E-03	1,18E+00	3,82E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Water use[5)]	m^3e depr.	2,29E+00	1,35E-03	3,02E-02	2,32E+00	1,79E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

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, 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	7,73E-09	2,10E-09	1,26E-10	9,96E-09	2,07E-09	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ionizing radiation[6)]	kBq U235e	4,34E+00	1,47E-03	7,01E-03	4,35E+00	2,00E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ecotoxicity (freshwater)	CTUe	1,57E+00	2,63E-01	5,32E-02	1,89E+00	3,19E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Human toxicity, cancer	CTUh	4,62E-10	7,02E-12	2,94E-12	4,72E-10	9,80E-12	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Human tox. non-cancer	CTUh	2,64E-09	2,60E-10	3,27E-11	2,93E-09	3,12E-10	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
SQP[7)]	-	1,30E+00	3,05E-01	1,19E-01	1,72E+00	2,71E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

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	9,75E-02	3,63E-03	7,67E-02	1,78E-01	5,55E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Total use of renew. PER	MJ	9,75E-02	3,63E-03	7,67E-02	1,78E-01	5,55E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-re. PER as energy	MJ	1,01E+00	3,00E-01	1,49E-01	1,46E+00	3,82E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-re. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Total use of non-re. PER	MJ	1,01E+00	3,00E-01	1,49E-01	1,46E+00	3,82E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Secondary materials	kg	4,15E-03	8,90E-05	4,74E-05	4,29E-03	1,30E-04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Renew. secondary fuels	MJ	2,86E-02	9,11E-07	4,25E-04	2,90E-02	1,43E-06	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-ren. secondary fuels	MJ	6,95E-02	0,00E+00	0,00E+00	6,95E-02	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of net fresh water	m^3	9,34E-03	3,84E-05	1,75E-04	9,56E-03	4,87E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

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	8,12E-03	3,82E-04	9,43E-05	8,59E-03	4,34E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	MND	MND	MND	MND
Non-hazardous waste	kg	1,64E-01	6,35E-03	5,90E-03	1,76E-01	7,72E-03	MND	MND	MND	MND	MND	MND	MND	MND	MNR	MND	MND	MND	MND
Radioactive waste	kg	3,12E-04	2,02E-06	2,68E-06	3,17E-04	2,63E-06	MND	MND	MND	MND	MND	MND	MND	MND	MNR	MND	MND	MND	MND

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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Materials for energy rec	kg	0,00E+00	0,00E+00	7,00E-04	7,00E-04	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

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

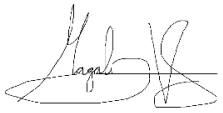
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried 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
26.06.2024



VERIFIED ISO 14025