ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

CEM III/A 42,5 N IPERCEM
Cal.me. S.p.a.

EPD HUB, HUB-4416
Published on 25.06.2026, last updated on 25.06.2026, valid until 24.06.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Cal.me. S.p.a.
Address	Via Caduti sul Lavoro,9 - 88100 Santa Maria di Catanzaro, IT
Contact details	calmespa@pec.it
Website	www.calme.it

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 1.2, 24 Mar 2025 EN 16908 Construction cement and lime
Sector	Construction Product
Category of EPD	Third-party Verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate
EPD author	Ugo Puzzonia
EPD verification	Independent verification of this EPD and data, according to ISO 14025: o Internal verification þ External verification
EPD verifier	Yazan Badour as an authorized verifier for EPD Hub

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	CEM III/A 42,5 N IPERCEM
Additional labels	-
Product reference	-
Place(s) of raw material origin	Italy & West Asia
Place of production	Taranto, Italy
Place(s) of installation and use	Europe
Period for data	Calendar year 2024
Averaging in EPD	N.A.
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	10,3

ENVIRONMENTAL DATA SUMMARY

Declared unit	1000 kg of CEM III/A 42,5 N
Declared unit mass	1000 kg
Mass of packaging	0 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	5,6E+02
GWP-total, A1-A3 ($kgCO_2e$)	5,6E+02
Secondary material, inputs (%)	4,72
Total energy use, A1-A3 (kWh)	859
Net freshwater use, A1-A3 (m^3)	1,42

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

With 45 years of experience in the construction industry, Calme is an established leader who continues to strive for a sustainable future every day. Our long history is marked by the constant search for innovative solutions that combine excellence with environmental responsibility.
Our sustainable product range has been specifically developed to reduce the environmental impact of construction.
We actively support the communities in which we operate. We invest in social, educational and healthcare projects that improve people's quality of life. Our responsibility goes beyond the construction site, supporting the well-being of the community.
Innovation is our engine for sustainable development. We constantly develop cutting-edge solutions that improve construction efficiency.
Our offices distributed throughout Italy allow us to best serve our customers throughout the country. Our deep-rooted presence allows us to understand the specific needs of different regions and offer tailor-made solutions.
Our production is synonymous with excellence and innovation. Every product we bring to the market is the result of careful research and a constant commitment to improve quality and performance. This has allowed us to achieve important goals and sustain continuous growth.

PRODUCT DESCRIPTION

It is a blast furnace cement with a strength class of 42.5, with ordinary initial resistance (N). It contains in its core a mass percentage of clinker (K) between 35% and 64% and with an overall content of blast furnace slag (coming from the rapid cooling of the slag produced in the melting of iron ore in blast furnaces) between 36% and 65% by mass, as well as a percentage of less than 5% of appropriately selected secondary constituents.
The content of granulated blast furnace slag provides resistance to chemical attacks in moderately aggressive environments (sulphates and chlorides) and a low heat of hydration.
The peculiarities of its compositional characteristics make it ideal for use in: works and structures in maritime and river environments; all works in reinforced and non-reinforced concrete, which require high final resistance in the presence of chemically aggressive environments; foundation structures; cast-in-place structures not pre-stressed in elevation, industrial flooring; artefacts; water purification plants (with moderate sulphate content); roads; road foundations and soil stabilization; parking lots. The lower heat of hydration developed by a blast furnace cement compared to a Portland (or Portland composite) of the same class, allows the creation of massive structures, where a low rise in temperatures is foreseen in the design or execution phase, combined with a sufficient hardening speed.

Further information can be found at:
www.calme.it

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	100	Italy & West Asia
Fossil materials	0	-
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

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

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1000 kg of CEM III/A 42,5 N
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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
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

Not declared = ND.

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 process of making cement starts by crushing the raw materials down to the appropriate granularity. Crushed limestone, clay, marl, iron ore, aluminium hydroxide are then mixed in the appropriate proportions and fed into a grinder to further reduce particle size. The mix is then preheated to a temperature of 750°C before being mixed with feedstock fuels into a rotary kiln where clinker is produced at a temperature of 1400°C. The product then goes through cooling and crushing before a small quantity of gypsum is added to achieve proper settling time. The final cement product is obtained after one last grinding step. Cement packaging is not considered, due to it being shipped in bulk. Eventually, the cement is moved to the site of use.

TRANSPORT AND INSTALLATION (A4-A5)

Transport and installation phase burdens were not considered within the scope of this EPD.

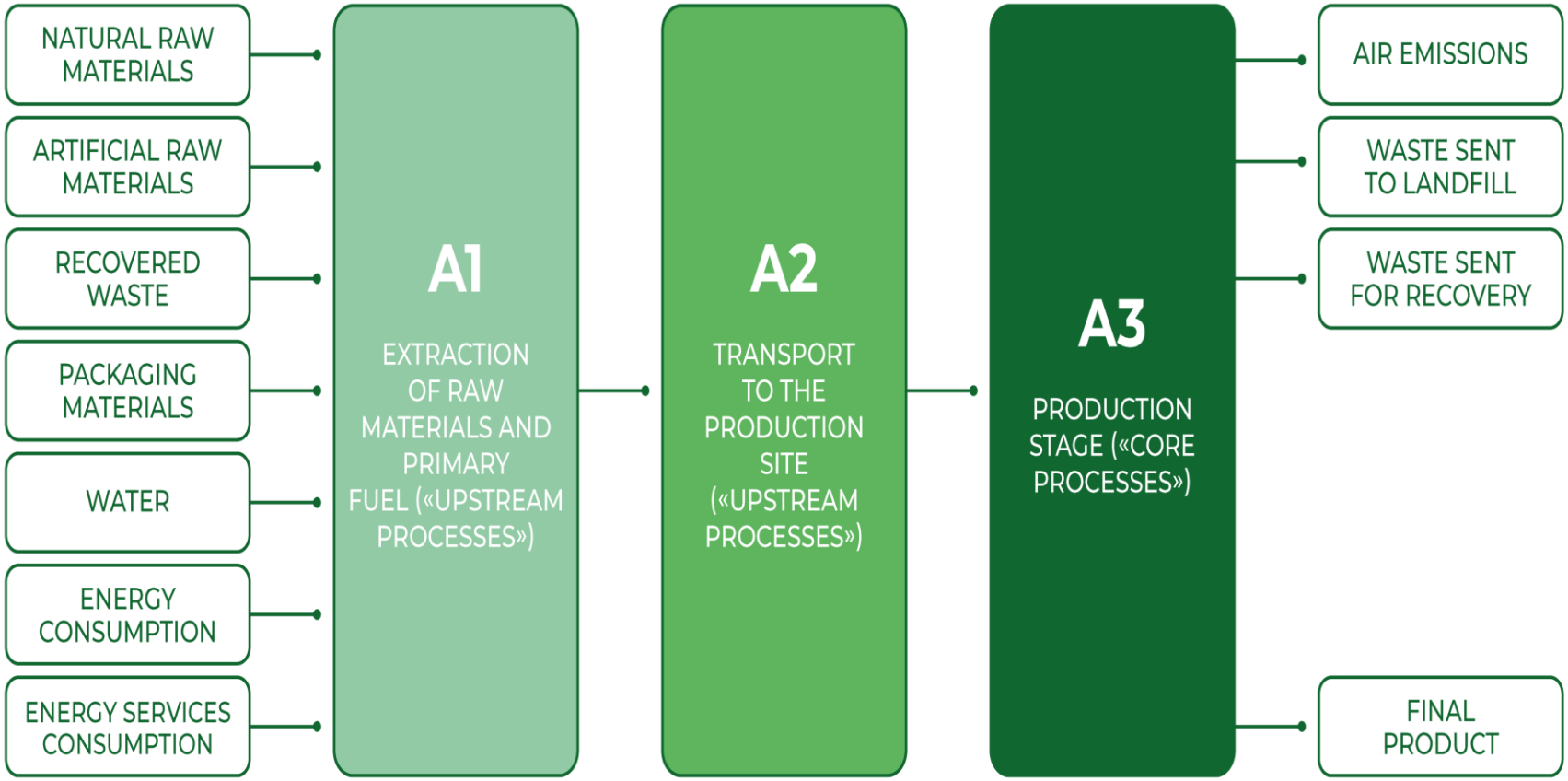
PRODUCT USE AND MAINTENANCE (B1-B7)

The use phase burdens were not considered within the scope of this EPD. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The end-of-life phase (modules C1-C4, and D) is excluded as per EN 15804+A2 exclusion criteria for products that become chemically bonded and inseparable with other products. For an end-of-life scenario for cement that becomes a part of either concrete, plaster, or mortar, please refer to an EPD representing the respective products.

LIFE CYCLE FLOW DIAGRAM



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	Economic allocation was considered for the modelling of GGBFS as it is defined as a co-product as per the EN 16757.
Packaging material	Not applicable
Ancillary materials	Allocation by mass
Manufacturing energy and waste	Allocation by mass

PRODUCT & MANUFACTURING SITES GROUPING

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

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 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, EF 3.1

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	5,02E+02	1,19E+01	4,56E+01	5,60E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP – fossil	kg CO_2e	5,02E+02	1,19E+01	4,56E+01	5,60E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP – biogenic	kg CO_2e	5,04E-02	2,11E-03	2,39E-02	7,65E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP – LULUC	kg CO_2e	1,25E-01	5,98E-03	3,95E-03	1,35E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ozone depletion pot.	kg CFC-$_{11}$e	1,85E-06	1,73E-07	1,13E-06	3,15E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acidification potential	mol H^+e	1,26E+00	2,25E-01	1,17E-01	1,60E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-freshwater[2)]	kg Pe	5,24E-02	5,95E-04	4,87E-03	5,79E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg Ne	3,14E-01	5,73E-02	2,87E-02	4,00E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol Ne	3,54E+00	6,35E-01	3,03E-01	4,48E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP ("smog")[3)]	kg NMVOCe	1,01E+00	1,80E-01	1,29E-01	1,32E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals[4)]	kg Sbe	6,20E-04	2,02E-05	4,23E-05	6,83E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil resources	MJ	2,10E+03	1,56E+02	6,77E+02	2,94E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Water use[5)]	m^3e depr.	4,28E+01	5,85E-01	2,95E+00	4,63E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	9,03E-06	6,89E-07	9,45E-07	1,07E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ionizing radiation[6)]	kBq U235e	1,23E+01	9,95E-02	1,44E+00	1,38E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ecotoxicity (freshwater)	CTUe	1,27E+03	1,62E+01	4,44E+01	1,33E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Human toxicity, cancer	CTUh	5,59E-08	2,29E-09	5,02E-09	6,33E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Human tox. non-cancer	CTUh	3,06E-06	6,61E-08	1,62E-07	3,29E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP[7)]	-	4,72E+02	7,66E+01	3,94E+01	5,88E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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	1,46E+02	1,61E+00	9,78E+00	1,57E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total use of renew. PER	MJ	1,46E+02	1,61E+00	9,78E+00	1,57E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-re. PER as energy	MJ	2,10E+03	1,56E+02	6,77E+02	2,94E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-re. PER as material	MJ	0,00E+00	0,00E+00	6,59E-01	6,59E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total use of non-re. PER	MJ	2,10E+03	1,56E+02	6,77E+02	2,94E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Secondary materials	kg	4,72E+01	7,10E-02	9,23E-02	4,74E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Renew. secondary fuels	MJ	1,07E-02	4,65E-04	2,31E-04	1,13E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Use of net fresh water	m^3	1,13E+00	1,62E-02	2,72E-01	1,42E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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	1,03E+01	2,32E-01	1,46E+00	1,20E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-hazardous waste	kg	3,25E+02	3,73E+00	4,54E+01	3,74E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Radioactive waste	kg	3,13E-03	2,43E-05	3,54E-04	3,51E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Materials for recycling	kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Materials for energy rec	kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Exported energy	MJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Exported energy – Electricity	MJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Exported energy – Heat	MJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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_2e	5,02E+02	1,18E+01	4,53E+01	5,59E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ozone depletion Pot.	kg $CFC_{-11}e$	1,48E-06	1,37E-07	9,23E-07	2,54E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acidification	kg SO_2e	9,92E-01	1,79E-01	9,40E-02	1,27E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eutrophication	kg PO_4^3e	1,40E-01	2,13E-02	1,35E-02	1,75E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP (“smog”)	kg C_2H_4e	6,21E-02	9,36E-03	7,62E-03	7,90E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-elements	kg Sbe	4,01E-04	1,98E-05	4,02E-05	4,61E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	1,89E+03	1,55E+02	6,53E+02	2,70E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ADDITIONAL INDICATOR – 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_2e	5,02E+02	1,19E+01	4,56E+01	5,60E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity, medium voltage, residual mix, Italy, Ecoinvent, 0.64 kgCO2e/kWh
2. Heat production, natural gas, at industrial furnace >100kW, Albania, Ecoinvent, 0.0773 kgCO2e/MJ
3. Diesel, burned in building machine, World, Ecoinvent, 0.10 kgCO2e/MJ

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 15804+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: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Yazan Badour as an authorized verifier for EPD Hub Limited 25.06.2026

VERIFIED ISO 14025