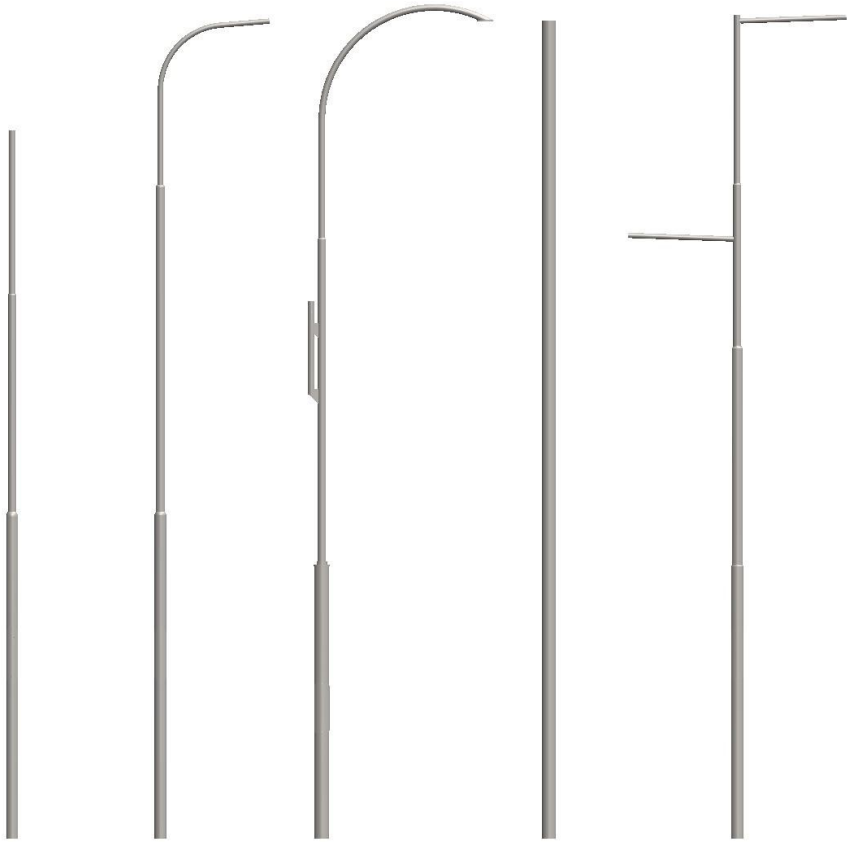
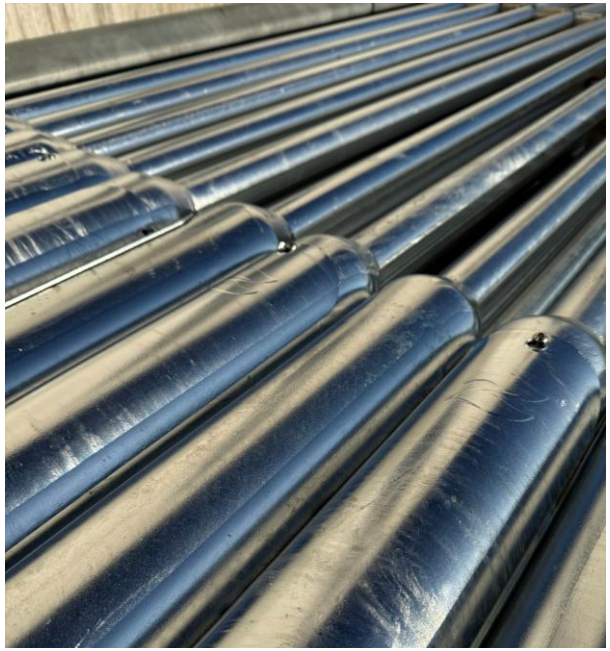


ENVIRONMENTAL PRODUCT DECLARATION

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

Pole - Partly Coated
AB Varmförzinkning



EPD HUB, HUB-3285
Published on 08.05.2025, last updated on 15.05.2025, valid until 07.05.2030

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	AB Varmförzinkning
Address	Fållinge Industriområde 1, 333 91 Smålandsstenar, Sweden
Contact details	info@varmforzinkning.se
Website	www.varmforzinkning.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
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4, and modules C1-C4, D
EPD author	Maja Welandson & Therese Nygren, AB Varmförzinkning
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Sarah Curpen, 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 product 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	Pole - Partly Coated
Additional labels	Stepped pole, stepped pole with one or several arms, tension pole
Product reference	-
Place(s) of raw material origin	EU
Place of production	Smålandsstenar, Sweden
Place(s) of installation and use	-
Period for data	01/01/2022 - 31/12/2022
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	0 % / + 12,4 %
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2,82E+00
GWP-total, A1-A3 ($kgCO_2e$)	3,19E+00
Secondary material, inputs (%)	3,11
Secondary material, outputs (%)	1,07
Total energy use, A1-A3 (kWh)	16,5
Net freshwater use, A1-A3 (m^3)	0,08

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

AB Varmförzinkning is since the 1960s located in Smålandsstenar, Sweden. We are a family-owned company that now has the third generation engaged in the company to build towards the future. With hot dip galvanized steel products such as lightning poles, mast and railing we´re looking for solutions and prefer a close collaboration with our clients. AB Varmförzinkning develop, produce and sell our products with trust, vicinity and simplicity. In our factory we have the whole chain, from the first raw material to the finished galvanized product.
This gives us the opportunity for a delivery to be correctly executed and to be more environmentally friendly.
AB Varmförzinkning is driven towards new goals and to continuously improve ourselves in order to fulfill our clients´ expectations and requirements.

PRODUCT DESCRIPTION

A hot dip galvanized steel pole that comes in different shapes with a bottom coating for extra corrosion protection. The different shapes can for example be a stepped pole, a stepped pole with one or several straight arms or arms that are bent in different angels and just one straight pole (tension pole). This different variation of poles is illustrated on the front page.
We produce these poles and adapt them for different type of traffic environment, for example parks, streets and market places. The length of the poles can vary from 0,5 - 15 meters and are CE-certified according to EN 40-5:2002 - Specification for steel lightning columns.
The galvanized steel gives the pole a corrosion protection and follow the standard of SS-EN ISO 1461 Hot dip galvanized coatings on fabricated iron and steel articles.
The bottom coating gives the pole extra protection and follow the standard SS-ISO 19840 Paints and varnishes - Corrosion protection of steel structures by protective paint systems.

Further information can be found at www.varmforzinkning.se

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	99,8	EU
Minerals	0	-
Fossil materials	0,2	EU
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	1,98

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
Mass per declared unit	1 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	MND	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 product consists mainly of steel coils manufactured in Sweden and transported to the manufactures site. The coils are cold formed to a hollow round shape and cut to predetermined length and put to stock for further production. The dimensions of the hollow profile that is not produced at our manufacturing site is bought from a Swedish supplier.

The different kind of details that are produced (for example pole or arm) to become the finished pole product go through different stages in the manufacturing process. The different kind of details are being cut to different lengths, shaped (bent, collaring, spraining etc.) and welded together. After being welded together the product is hot dipped galvanized (HDG) and thereafter sent to an external supplier for a bottom coating that gives the product extra corrosion protection.
In the producing process the use of hydraulic oils, cutting emulsions and other lubrication oils are being used to reduce the wear and to protect the machines. The manufacturing process requires electricity (in our case 100 % renewable) for powering the machinery and also fuels for heating the facility. The finished product is being packed and prepared for distribution, which includes wooden litter and polyethylene plastic strap.

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.

Transportation distance is defined according to PCR. Average distance of transportation from production plant to retailers' site is assumed in average to be 181 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 1 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. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as product is packaged properly.

This EPD does not cover A5 the installation.

PRODUCT USE AND MAINTENANCE (B1-B7)

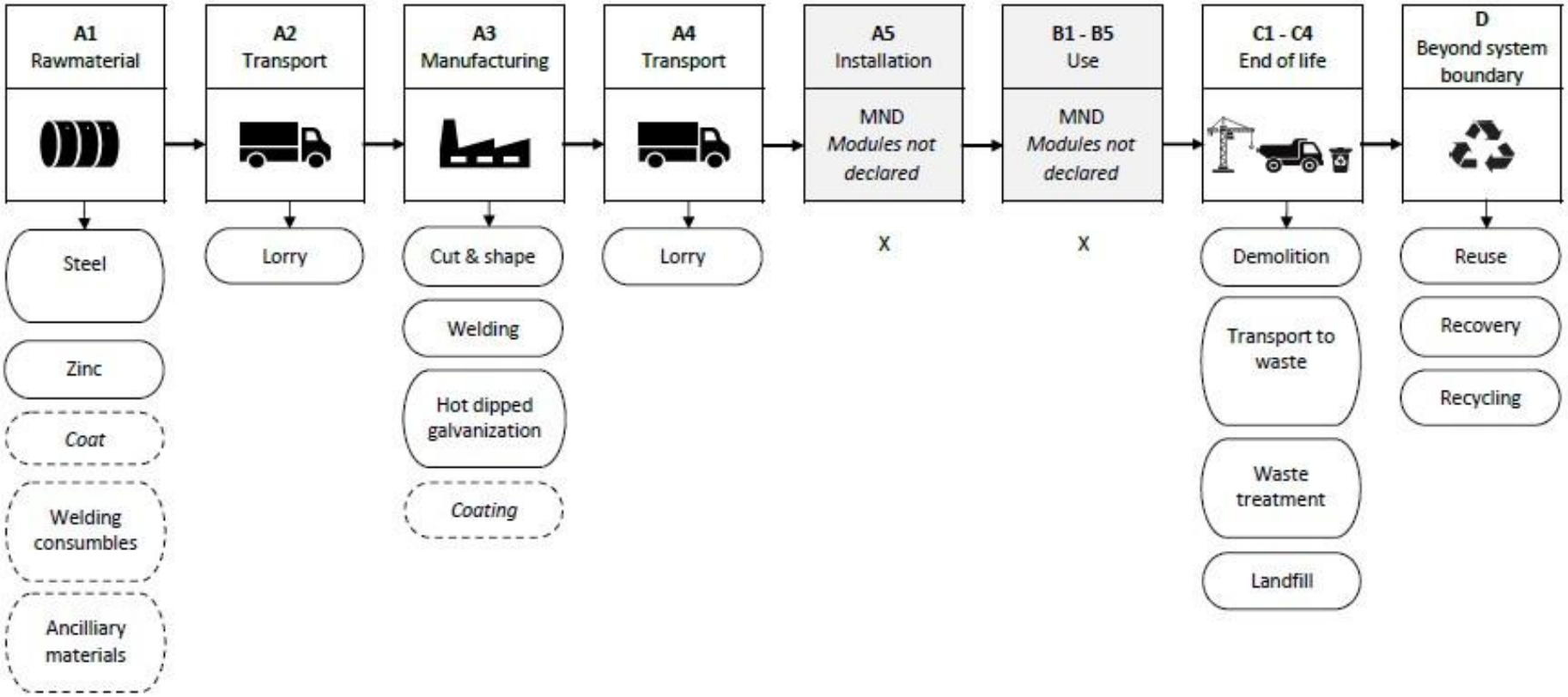
This EPD does not cover the use phase.

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

PRODUCT END OF LIFE (C1-C4, D)

The product is considered to be dismantled by a power tool and energy use is estimated to be 0,01kWh / kg. It is assumed that the steel waste is collected separately and transported to the waste treatment facility. Transportation distance to waste treatment plant is assumed to be 50 km and the transportation method is assumed to be lorry (C2). Module C3 accounts for energy and resource inputs for sorting and treating of steel for recycling, 85 % according to World steel association. Landfilled material is included in module C4, approximately 15 % of the steel according to World steel association. Due to the material recovery potential of the product and material and energy recovery potential of its packaging, recycled raw materials lead to avoided virgin material production and the energy recovered from incineration replaces electricity and heat from primary sources. Benefits and loads from incineration and recycling are included in Module 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.

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/AC2021 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

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total volume
Variation in GWP-fossil for A1-A3 (%)	0 % / + 12,4 %

The averaging of products is calculated based on a representative sum of products. The declared unit 1 kg of hot-dip galvanized pole is representative for a product consisting of an average weight of steel 0.931 kg, zinccoat with average weight 0,067 kg and bottomcoat with average weight 0,002 kg.

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

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	2,80E+00	5,80E-02	3,34E-01	3,19E+00	2,03E-02	MND	MND	MND	MND	MND	MND	MND	MND	3,61E-03	6,04E-03	9,35E-02	1,07E-03	-1,53E+00
GWP – fossil	kg CO_2e	2,41E+00	5,80E-02	3,46E-01	2,82E+00	2,03E-02	MND	MND	MND	MND	MND	MND	MND	MND	3,60E-03	6,04E-03	2,10E-02	1,07E-03	-1,51E+00
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-7,24E-02	-7,24E-02	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,24E-02	0,00E+00	-1,70E-02
GWP – LULUC	kg CO_2e	3,87E-01	2,59E-05	6,05E-02	4,48E-01	9,09E-06	MND	MND	MND	MND	MND	MND	MND	MND	3,69E-07	2,70E-06	2,40E-05	6,06E-07	-2,43E-03
Ozone depletion pot.	kg CFC_{-11}e	7,32E-09	8,56E-10	5,28E-09	1,35E-08	3,00E-10	MND	MND	MND	MND	MND	MND	MND	MND	5,52E-11	8,92E-11	2,63E-10	3,00E-11	-8,25E-09
Acidification potential	mol H^+e	7,95E-03	1,98E-04	1,10E-03	9,25E-03	6,93E-05	MND	MND	MND	MND	MND	MND	MND	MND	3,25E-05	2,06E-05	2,32E-04	7,42E-06	-7,12E-03
EP-freshwater[2)]	kg Pe	2,52E-04	4,51E-06	5,50E-05	3,12E-04	1,58E-06	MND	MND	MND	MND	MND	MND	MND	MND	1,04E-07	4,70E-07	1,26E-05	1,60E-07	-7,50E-04
EP-marine	kg Ne	1,93E-03	6,49E-05	2,57E-04	2,25E-03	2,28E-05	MND	MND	MND	MND	MND	MND	MND	MND	1,51E-05	6,77E-06	5,25E-05	6,12E-06	-1,38E-03
EP-terrestrial	mol Ne	2,08E-02	7,07E-04	2,62E-03	2,41E-02	2,48E-04	MND	MND	MND	MND	MND	MND	MND	MND	1,65E-04	7,36E-05	5,90E-04	3,08E-05	-1,49E-02
POCP ("smog")[3)]	kg NMVOCe	5,92E-03	2,91E-04	1,00E-03	7,21E-03	1,02E-04	MND	MND	MND	MND	MND	MND	MND	MND	4,93E-05	3,04E-05	1,74E-04	1,12E-05	-5,02E-03
ADP-minerals & metals[4)]	kg Sbe	1,21E-04	1,62E-07	1,67E-06	1,23E-04	5,67E-08	MND	MND	MND	MND	MND	MND	MND	MND	1,29E-09	1,68E-08	1,36E-06	1,73E-09	-8,32E-05
ADP-fossil resources	MJ	3,13E+01	8,41E-01	1,21E+01	4,42E+01	2,95E-01	MND	MND	MND	MND	MND	MND	MND	MND	4,72E-02	8,76E-02	2,62E-01	2,54E-02	-1,56E+01
Water use[5)]	m^3e depr.	2,66E+00	4,15E-03	2,22E+00	4,88E+00	1,46E-03	MND	MND	MND	MND	MND	MND	MND	MND	1,18E-04	4,33E-04	5,37E-03	7,80E-05	-5,33E-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, 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	1,01E-08	5,80E-09	1,45E-08	3,05E-08	2,03E-09	MND	MND	MND	MND	MND	MND	MND	MND	9,25E-10	6,05E-10	3,14E-09	1,69E-10	-1,12E-07
Ionizing radiation[6]	kBq U235e	4,99E-02	7,32E-04	6,68E-01	7,19E-01	2,57E-04	MND	MND	MND	MND	MND	MND	MND	MND	2,09E-05	7,63E-05	2,23E-03	1,68E-05	-4,73E-02
Ecotoxicity (freshwater)	CTUe	3,34E+01	1,19E-01	1,81E+00	3,53E+01	4,17E-02	MND	MND	MND	MND	MND	MND	MND	MND	2,60E-03	1,24E-02	1,53E-01	3,15E-03	-2,33E+01
Human toxicity, cancer	CTUh	1,20E-09	9,57E-12	1,90E-10	1,40E-09	3,35E-12	MND	MND	MND	MND	MND	MND	MND	MND	3,71E-13	9,97E-13	1,78E-11	2,07E-13	-2,36E-09
Human tox. non-cancer	CTUh	2,71E-08	5,45E-10	2,48E-09	3,01E-08	1,91E-10	MND	MND	MND	MND	MND	MND	MND	MND	5,87E-12	5,67E-11	1,21E-09	6,79E-12	-2,68E-08
SQP[7]	-	1,48E+00	8,47E-01	6,79E+00	9,12E+00	2,97E-01	MND	MND	MND	MND	MND	MND	MND	MND	3,30E-03	8,83E-02	5,03E-01	5,10E-02	-4,99E+00

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+00	1,15E-02	1,41E+01	1,56E+01	4,04E-03	MND	MND	MND	MND	MND	MND	MND	MND	2,99E-04	1,20E-03	-2,90E-01	-1,62E-01	-2,09E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	4,08E-01	4,08E-01	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-4,08E-01	0,00E+00	1,20E-01
Total use of renew. PER	MJ	1,46E+00	1,15E-02	1,45E+01	1,60E+01	4,04E-03	MND	MND	MND	MND	MND	MND	MND	MND	2,99E-04	1,20E-03	-6,98E-01	-1,62E-01	-1,97E+00
Non-re. PER as energy	MJ	3,14E+01	8,41E-01	1,14E+01	4,37E+01	2,95E-01	MND	MND	MND	MND	MND	MND	MND	MND	4,72E-02	8,77E-02	2,36E-01	1,60E-02	-1,56E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	3,82E-02	3,82E-02	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-3,82E-02	0,00E+00	9,30E-05
Total use of non-re. PER	MJ	3,14E+01	8,41E-01	1,15E+01	4,38E+01	2,95E-01	MND	MND	MND	MND	MND	MND	MND	MND	4,72E-02	8,77E-02	1,97E-01	1,60E-02	-1,56E+01
Secondary materials	kg	3,11E-02	3,58E-04	2,56E-03	3,41E-02	1,25E-04	MND	MND	MND	MND	MND	MND	MND	MND	1,96E-05	3,73E-05	3,23E-04	6,66E-06	-5,79E-02
Renew. secondary fuels	MJ	1,14E-05	4,55E-06	4,70E-05	6,29E-05	1,59E-06	MND	MND	MND	MND	MND	MND	MND	MND	5,12E-08	4,74E-07	1,46E-05	1,36E-07	-1,62E-04
Non-ren. secondary fuels	MJ	6,78E-08	0,00E+00	0,00E+00	6,78E-08	0,00E+00	MND	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	1,84E-02	1,24E-04	5,99E-02	7,85E-02	4,36E-05	MND	MND	MND	MND	MND	MND	MND	MND	3,12E-06	1,30E-05	1,42E-04	-1,25E-05	-1,21E-02

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	2,98E-02	1,42E-03	3,55E-02	6,67E-02	4,99E-04	MND	MND	MND	MND	MND	MND	MND	MND	5,25E-05	1,48E-04	1,83E-03	2,96E-05	-6,21E-01
Non-hazardous waste	kg	7,98E-01	2,64E-02	2,79E-01	1,10E+00	9,24E-03	MND	MND	MND	MND	MND	MND	MND	MND	7,15E-04	2,75E-03	8,22E-02	4,95E-02	-3,84E+00
Radioactive waste	kg	2,19E-04	1,79E-07	1,43E-04	3,62E-04	6,28E-08	MND	MND	MND	MND	MND	MND	MND	MND	5,12E-09	1,87E-08	5,72E-07	4,11E-09	-1,21E-05

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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	6,24E-03	0,00E+00	1,41E-06	6,24E-03	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,07E-02	0,00E+00	0,00E+00
Materials for energy rec	kg	1,04E-05	0,00E+00	2,53E-04	2,64E-04	0,00E+00	MND	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	1,34E-03	0,00E+00	0,00E+00	1,34E-03	0,00E+00	MND	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	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	4,28E-02	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	5,78E-02	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2,36E+00	5,76E-02	4,17E-01	2,84E+00	2,02E-02	MND	MND	MND	MND	MND	MND	MND	MND	3,59E-03	6,01E-03	2,09E-02	1,62E-03	-1,50E+00
Ozone depletion Pot.	kg $CFC_{-11}e$	3,53E-09	6,83E-10	4,80E-09	9,01E-09	2,39E-10	MND	MND	MND	MND	MND	MND	MND	MND	4,37E-11	7,11E-11	2,17E-10	2,38E-11	-7,87E-09
Acidification	kg SO_2e	5,59E-03	1,51E-04	9,02E-04	6,64E-03	5,29E-05	MND	MND	MND	MND	MND	MND	MND	MND	2,29E-05	1,57E-05	1,86E-04	5,49E-06	-5,84E-03
Eutrophication	kg PO_4^3e	7,05E-04	3,68E-05	1,89E-04	9,31E-04	1,29E-05	MND	MND	MND	MND	MND	MND	MND	MND	5,34E-06	3,83E-06	2,76E-05	2,01E-06	-9,21E-04
POCP (“smog”)	kg C_2H_4e	5,33E-04	1,34E-05	6,74E-05	6,13E-04	4,71E-06	MND	MND	MND	MND	MND	MND	MND	MND	1,71E-06	1,40E-06	1,11E-05	6,35E-07	-7,06E-04
ADP-elements	kg Sbe	1,21E-04	1,58E-07	1,53E-06	1,23E-04	5,53E-08	MND	MND	MND	MND	MND	MND	MND	MND	1,26E-09	1,64E-08	1,36E-06	1,70E-09	-8,31E-05
ADP-fossil	MJ	2,61E+01	8,29E-01	3,28E+00	3,02E+01	2,91E-01	MND	MND	MND	MND	MND	MND	MND	MND	4,68E-02	8,64E-02	2,23E-01	2,52E-02	-1,48E+01

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

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	2,80E+00	5,80E-02	4,07E-01	3,27E+00	2,03E-02	MND	MND	MND	MND	MND	MND	MND	MND	3,61E-03	6,04E-03	2,10E-02	1,07E-03	-1,51E+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.

Sarah Curpen, as an authorized verifier acting for EPD Hub Limited.
08.05.2025

VERIFIED ISO 14025