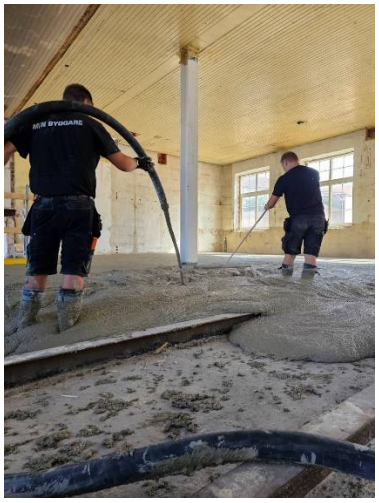
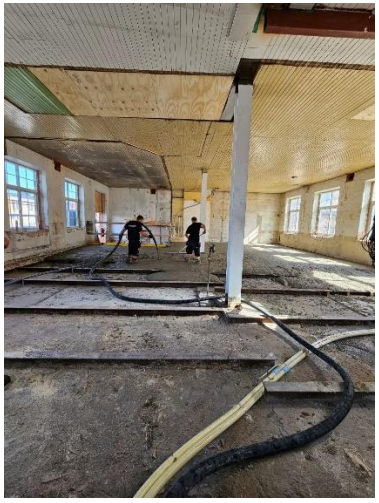
ENVIRONMENTAL PRODUCT DECLARATION

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

EPSCement- EC350P
EPSCement AB





EPD HUB, HUB-1052
Publishing date 26 January 2024, last updated on 26 January 2024, valid until 26 January 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	EPSCement AB
Address	Skyttevägen 17, 186 91 Vallentuna
Contact details	info@epscement.com
Website	www.epscement.com

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 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Magnus Kemi - Gidås Sustainability Agency
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ 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	EPSCement EC350P
Additional labels	Product no. 135
Product reference	EC350P
Place of production	Vallentuna, Sweden
Period for data	01/01/2022 - 31/12/2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m3
Declared unit mass	347 kg
GWP-fossil, A1-A3 (kgCO2e)	2,67E+02
GWP-total, A1-A3 (kgCO2e)	2,67E+02
Secondary material, inputs (%)	14.4
Secondary material, outputs (%)	49.0
Total energy use, A1-A3 (kWh)	627.0
Total water use, A1-A3 (m3e)	3,35E+02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

EPSCement was founded in 1999 and was then first with using expandable polystyrene to form a concrete that is lightweight and with good enough insulation properties to be used as liquid insulation. EPSCement can be used for a large variety of purposes in floors, walls, and ceilings, and is quick drying and easy to handle. EPSCement is the Swedish market leader within the product segment and is unique in offering direct delivery with pump trucks where the EPSCement is mixed at the construction site and pumped into the construction. Besides pump truck delivery, EPSCement can also be delivered in 50kg bags for mixing at the construction site.

PRODUCT DESCRIPTION

This EPD covers EPSCement EC350P. EC350P is a lightweight concrete mixture which uses expandable polystyrene (EPS) to decrease the weight and increase the insulation properties of the cement. The dry weight before installation of 1 m^3 EC350P is approximately 350 kg, while installed and cured it weighs approximately 440 kg, which is only 17% compared to normal concrete. It can be used to replace conventional insulation materials and meets most demands for construction strength. EC350P is delivered to the construction site in pump trucks which combines mixing and delivery without the use of any packaging materials. The truck mixes cement, EPS and admixtures (plasticizers and air entrainer) with water and pumps the ready mixture to where it is needed in the construction. The production and construction is highly efficient and dust free. The use of EPSCement ECP350 produces almost zero waste as the only material loss is small amounts of spillage and cement stuck in the pumping equipment, which corresponds to approximately 0,01% of the total mass per declared unit and no packaging and transportation materials are needed.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	-
Minerals	93	SE
Fossil materials	7	SE / 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	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^3
Mass per declared unit	347 kg
Functional unit	Not relevant
Reference service life	Use stage not included

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	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 other ancillary materials. No packaging materials are included as such are not needed for production or delivery. 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 considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The EPSCement EC350P is produced by first moving cement and expandable polystyrene (EPS) granulate from their storage into the pump truck where they are mixed with concrete admixtures (plasticizer, superplasticizer, and air entrainer). The storage is kept warm by an electric steam boiler and an electric pump is used to move the EPS into the truck. Manufacturing losses only occur as small amounts of spillage and residual concrete that is stuck in the pumping system during installation. The losses are set to 0,01% based on the manufacturer's experience. The concrete admixtures are modelled based on group EPDs for European production of such products. The EPS granulate is modelled as generic European production.

Transport modes and distances are based on the manufacturer's information. The cement is produced in Sweden and is transported by a ship with an estimated brut weight of 4000 tonnes to a terminal in Stockholm. All other transport is modelled as a >32 tonne EURO 6 lorry based on the manufacturer's information. Transportation distances are provided by the manufacturer or approximated by using Google Maps.

The electricity mix used for all manufacturing energy consumption is the energy company Skellefteå Kraft's electricity mix for 2022, composed of 76,72% hydro power, 2,83% CHP with biofuel, and 20,44% wind power.

No further manufacturing processes and packaging is needed to deliver the product as it is mixed and delivered directly by pump truck.

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 specific energy and water consumption used for installation depends on the specific project. The installation is done by adding water from the urban water supply system into the cement mixture and pump it into the construction. The water use represents an average case according to the manufacturer. The pump is driven by a diesel generator which is modelled as diesel used in a construction vehicle. The fuel consumption of the diesel generator in MJ is based on the manufacturer's information that 0,75l of diesel is needed to pump 1 m^3 of EC350P and that the energy content of 1l diesel is 35,3 MJ.

According to the manufacturer, 0,05l of lubricating grease per DU is needed for maintenance of the pump truck. The lubricating grease is modelled as generic data for lubricating oil. For the lubricant, the first leg of transport is based on the distance between the manufacturer and the supplier. The lubricant manufacturer is assessed based on information in the safety data sheet of the supplier.

The transport to the construction site is set to 100km with a >32 tonne EURO 6 lorry to represent an average installation based on the manufacturers experience.

Losses during installation are the same as production losses, see the section above for details.

After installation, water from the urban water system is used for washing and surface treatment. After washing the waste water is collected and transported 50km to a water treatment facility. The installation losses described above are assessed to be transported 50km. The concrete waste from installation losses is assessed to be treated similarly as the end of life concrete waste, see below for details. Based on the manufacturer's information it is assessed that in average 50kg of the water added during installation is emitted as water vapour during concrete curing.

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 end-of-life stage C1-C4 & D includes:

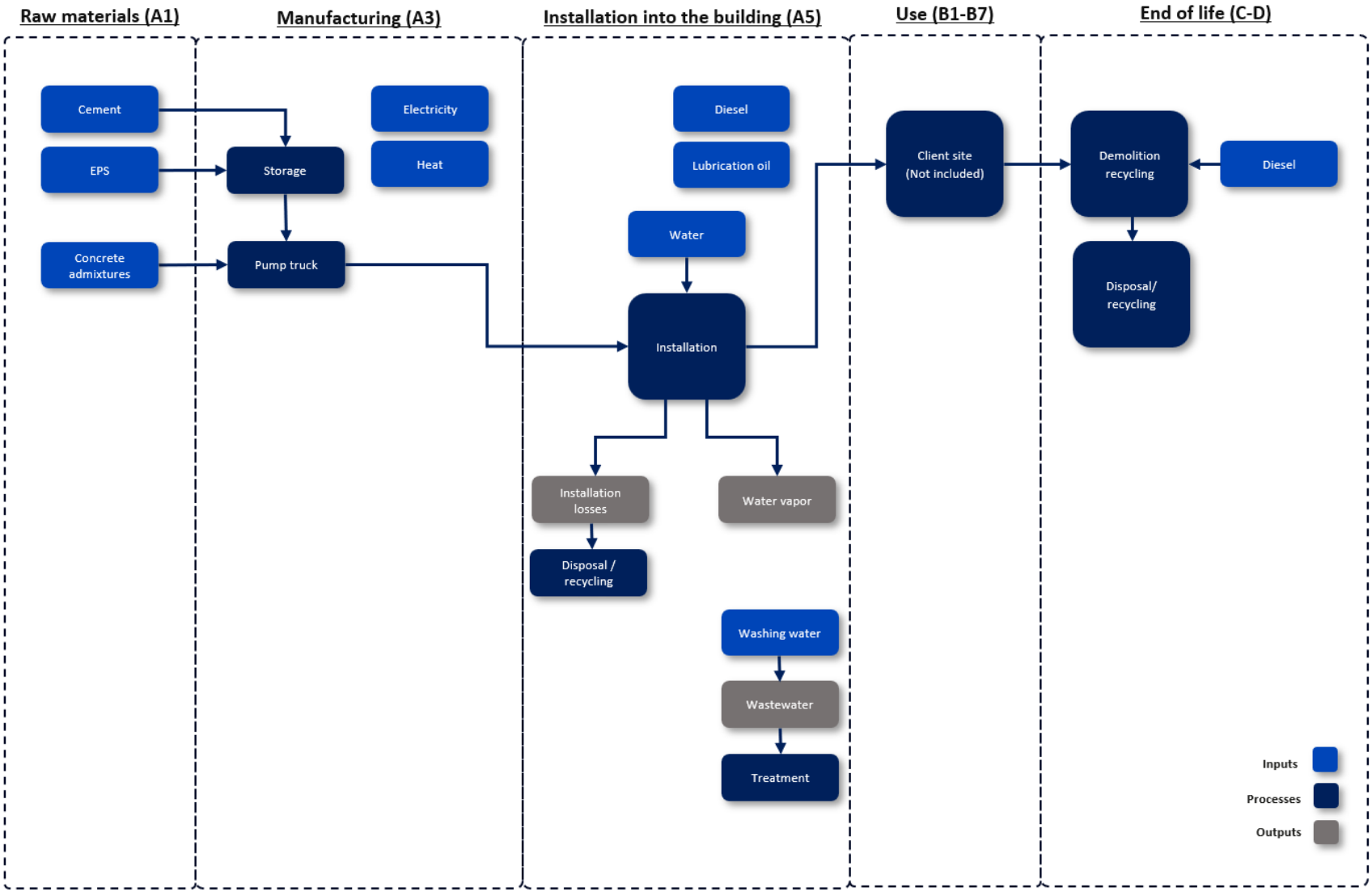
- Deconstruction/demolition (C1)
- Transport to waste management facility (C2)
- Waste processing for reuse, recovery and/or recycling (C3)
- Waste disposal (C4)
- Net benefits and loads beyond the system boundary (D)

At the end of life, 100% of the waste is assumed to be collected as separate construction waste. The end-of-life is assumed to take place in Sweden. Therefore, all assumptions and scenarios are made to be representative of Swedish waste treatment processes. The demolition processes are modelled as diesel use in a building machine. The diesel consumption is based on that demolition work consumes 10 kWh/ton of building material, which is based on an IVL-report by Erlandsson & Petterson (2015).

The transport of crushed concrete to waste treatment is assessed to be 50 km with a >32 tonne, EURO 6 lorry. It is assumed that there are no or negligible mass losses during demolition, transport, and handling of the waste. However, the waste mass is higher than the mass of the declared unit as water is added during the installation phase. The waste is sorted and crushed in the waste treatment plant. It is assessed that 80% of the waste concrete is recycled and 20% is sent to landfill based on Betoniteollisuus ry (2020).

Module D includes reuse, recovery and/or recycling potentials conveyed as benefits and net impacts. Based on an IVL-report by Erlandsson & Holm (2015) is assumed that the recycled EPSCement is used as secondary material for construction work in landfills and thereby replaces the production of crushed gravel. No loads from the recycling processes are included since it is assumed that the demolition and crushing processes in Module C are sufficient to enable use as construction material in landfills. The recycled content in the original product is set to 0% based on raw material data.

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	No allocation
Packaging materials	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	0 %

The results of this EPD represents the average production, installation and end of life treatment of EPSCement EC350P. No other products are produced and installed with the same procedures as for EC350P.

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. Ecoinvent v3.8 and One Click LCA databases were used 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	2,65E+02	2,62E+00	8,22E-02	2,67E+02	3,03E+00	2,99E+00	MND	MND	MND	MND	MND	MND	MND	1,15E+00	3,80E+00	6,09E+00	3,93E-01	-2,09E-03
GWP – fossil	kg CO_2e	2,64E+02	2,62E+00	4,91E-02	2,67E+02	3,02E+00	2,99E+00	MND	MND	MND	MND	MND	MND	MND	1,15E+00	3,80E+00	6,36E+00	4,60E-01	-2,09E-03
GWP – biogenic	kg CO_2e	3,40E-01	0,00E+00	0,00E+00	3,40E-01	2,29E-03	1,99E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,72E-01	-6,80E-02	0,00E+00
GWP – LULUC	kg CO_2e	5,06E-02	1,39E-03	3,31E-02	8,51E-02	9,50E-04	7,20E-04	MND	MND	MND	MND	MND	MND	MND	1,14E-04	1,43E-03	5,26E-03	4,35E-04	-5,98E-07
Ozone depletion pot.	kg CFC_{-11}e	2,85E-06	6,11E-07	2,69E-09	3,46E-06	7,42E-07	6,33E-07	MND	MND	MND	MND	MND	MND	MND	2,46E-07	9,48E-07	1,41E-06	1,86E-07	-1,57E-10
Acidification potential	mol H^+e	5,07E-01	2,86E-02	2,49E-04	5,36E-01	9,72E-03	2,86E-02	MND	MND	MND	MND	MND	MND	MND	1,19E-02	1,21E-02	5,75E-02	4,33E-03	-1,85E-05
EP-freshwater[2)]	kg Pe	1,71E-04	1,63E-05	2,35E-06	1,89E-04	2,57E-05	2,08E-04	MND	MND	MND	MND	MND	MND	MND	3,81E-06	2,72E-05	1,10E-04	4,82E-06	0,00E+00
EP-marine	kg Ne	3,46E-02	6,43E-03	5,97E-05	4,11E-02	2,14E-03	1,59E-02	MND	MND	MND	MND	MND	MND	MND	5,29E-03	2,67E-03	2,28E-02	1,50E-03	-3,52E-06
EP-terrestrial	mol Ne	1,49E+00	7,16E-02	7,31E-04	1,56E+00	2,38E-02	1,31E-01	MND	MND	MND	MND	MND	MND	MND	5,80E-02	2,96E-02	2,50E-01	1,65E-02	-4,58E-05
POCP ("smog")[3)]	kg NMVOCe	4,36E-01	2,07E-02	1,78E-04	4,57E-01	9,34E-03	3,71E-02	MND	MND	MND	MND	MND	MND	MND	1,59E-02	1,17E-02	6,96E-02	4,79E-03	-1,09E-05
ADP-minerals & metals[4)]	kg Sbe	4,88E-05	5,81E-06	4,54E-07	5,51E-05	5,38E-05	4,92E-06	MND	MND	MND	MND	MND	MND	MND	5,83E-07	9,31E-06	1,50E-05	1,06E-06	0,00E+00
ADP-fossil resources	MJ	4,95E+02	3,91E+01	6,17E+00	5,41E+02	4,91E+01	4,27E+01	MND	MND	MND	MND	MND	MND	MND	1,55E+01	6,07E+01	1,06E+02	1,26E+01	0,00E+00
Water use[5)]	m^3e depr.	1,82E+01	1,69E-01	1,20E+00	1,96E+01	1,83E-01	1,11E+00	MND	MND	MND	MND	MND	MND	MND	4,16E-02	2,80E-01	7,27E-01	4,00E-02	-1,25E-03

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	5,60E-06	2,37E-07	4,06E-09	5,84E-06	2,65E-07	7,36E-07	MND	MND	MND	MND	MND	MND	MND	3,20E-07	4,41E-07	7,84E-06	8,72E-08	-1,42E-10
Ionizing radiation[6)]	kBq U235e	1,35E+04	1,96E-01	4,36E-01	1,35E+04	2,15E-01	1,58E+00	MND	MND	MND	MND	MND	MND	MND	7,10E-02	3,13E-01	8,12E-01	5,71E-02	-2,40E-04
Ecotoxicity (freshwater)	CTUe	5,38E+02	3,08E+01	2,22E+00	5,71E+02	3,75E+01	1,08E+02	MND	MND	MND	MND	MND	MND	MND	9,29E+00	5,05E+01	7,22E+01	8,24E+00	-2,93E-02
Human toxicity, cancer	CTUh	3,32E-07	1,18E-09	8,61E-11	3,33E-07	9,45E-10	2,15E-09	MND	MND	MND	MND	MND	MND	MND	3,56E-10	1,31E-09	2,90E-09	2,06E-10	-1,54E-12
Human tox. non-cancer	CTUh	3,28E-06	2,90E-08	1,16E-09	3,31E-06	4,28E-08	4,58E-08	MND	MND	MND	MND	MND	MND	MND	6,72E-09	5,14E-08	5,78E-08	5,38E-09	-2,90E-11
SQP[7)]	-	4,76E+02	3,55E+01	1,06E+00	5,13E+02	7,41E+01	1,10E+01	MND	MND	MND	MND	MND	MND	MND	2,01E+00	7,08E+01	9,77E+01	2,70E+01	-5,39E-03

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	1,25E+02	4,57E-01	6,23E+00	1,31E+02	6,18E-01	6,97E-01	MND	MND	MND	MND	MND	MND	MND	8,84E-02	7,86E-01	3,75E+00	1,10E-01	-2,79E-03
Renew. PER as material	MJ	1,06E+01	0,00E+00	0,00E+00	1,06E+01	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-8,46E+00	-2,11E+00	0,00E+00
Total use of renew. PER	MJ	1,35E+02	4,57E-01	6,23E+00	1,42E+02	6,18E-01	6,97E-01	MND	MND	MND	MND	MND	MND	MND	8,84E-02	7,86E-01	-4,70E+00	-2,00E+00	-2,79E-03
Non-re. PER as energy	MJ	1,54E+03	3,91E+01	6,14E+00	1,58E+03	4,91E+01	4,08E+01	MND	MND	MND	MND	MND	MND	MND	1,55E+01	6,08E+01	1,06E+02	1,26E+01	-2,88E-02
Non-re. PER as material	MJ	8,87E+02	0,00E+00	0,00E+00	8,87E+02	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-7,10E+02	-1,77E+02	0,00E+00
Total use of non-re. PER	MJ	2,43E+03	3,91E+01	6,14E+00	2,47E+03	4,91E+01	4,08E+01	MND	MND	MND	MND	MND	MND	MND	1,55E+01	6,08E+01	-6,04E+02	-1,65E+02	-2,88E-02
Secondary materials	kg	4,99E+01	1,37E-02	9,71E-04	4,99E+01	0,00E+00	3,02E-02	MND	MND	MND	MND	MND	MND	MND	6,05E-03	1,71E-02	3,75E-02	2,65E-03	-1,73E-05
Renew. secondary fuels	MJ	2,06E+02	8,66E-05	2,46E-06	2,06E+02	0,00E+00	2,07E-02	MND	MND	MND	MND	MND	MND	MND	1,98E-05	1,51E-04	4,46E-04	6,93E-05	0,00E+00
Non-ren. secondary fuels	MJ	3,37E+02	0,00E+00	0,00E+00	3,37E+02	0,00E+00	3,37E-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	3,35E+02	4,60E-03	3,58E-02	3,35E+02	1,02E-02	2,00E-01	MND	MND	MND	MND	MND	MND	MND	9,39E-04	8,06E-03	5,06E-02	1,38E-02	-1,60E-05

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	5,95E-02	4,71E-02	6,12E-03	1,13E-01	4,77E-02	7,93E-02	MND	MND	MND	MND	MND	MND	MND	2,07E-02	6,51E-02	1,92E-01	0,00E+00	-1,17E-04
Non-hazardous waste	kg	1,34E+03	6,73E-01	9,83E-02	1,34E+03	5,28E+00	1,19E+00	MND	MND	MND	MND	MND	MND	MND	1,45E-01	1,13E+00	8,09E+01	8,74E+01	-3,70E-03
Radioactive waste	kg	2,48E-03	2,71E-04	9,37E-05	2,84E-03	3,37E-04	2,90E-04	MND	MND	MND	MND	MND	MND	MND	1,09E-04	4,19E-04	7,20E-04	0,00E+00	-1,27E-07

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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,00E+02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	6,99E+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	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 / 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	2,57E+02	6,89E-01	8,61E-02	2,58E+02	3,00E+00	2,95E+00	MND	MND	MND	MND	MND	MND	MND	1,14E+00	3,77E+00	6,28E+00	4,51E-01	-2,09E-03
Ozone depletion Pot.	kg CFC_{-11}e	4,01E-06	1,37E-07	2,39E-09	4,15E-06	5,90E-07	5,03E-07	MND	MND	MND	MND	MND	MND	MND	1,95E-07	7,51E-07	1,12E-06	1,47E-07	-1,26E-10
Acidification	kg SO_2e	3,25E-01	1,80E-03	1,90E-04	3,27E-01	6,42E-03	2,06E-02	MND	MND	MND	MND	MND	MND	MND	8,51E-03	9,83E-03	4,22E-02	3,27E-03	-1,29E-05
Eutrophication	kg PO_4^3e	7,80E-02	3,81E-04	1,14E-04	7,85E-02	1,30E-03	7,53E-03	MND	MND	MND	MND	MND	MND	MND	1,97E-03	2,08E-03	1,20E-02	7,05E-04	-3,19E-06
POCP (“smog”)	kg C_2H_4e	4,77E-02	8,38E-05	1,16E-05	4,78E-02	3,70E-04	5,14E-04	MND	MND	MND	MND	MND	MND	MND	1,86E-04	4,58E-04	1,20E-03	1,37E-04	-5,48E-07
ADP-elements	kg Sbe	6,12E-05	1,66E-06	4,53E-07	6,34E-05	5,38E-05	4,58E-06	MND	MND	MND	MND	MND	MND	MND	5,73E-07	9,05E-06	1,48E-05	1,04E-06	-2,01E-07
ADP-fossil	MJ	2,21E+03	1,11E+01	6,14E+00	2,23E+03	4,91E+01	4,29E+01	MND	MND	MND	MND	MND	MND	MND	1,55E+01	6,07E+01	1,06E+02	1,26E+01	-2,88E-02

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
26.01.2024