Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

ALUMINIUM INGOT RE

from

ALUEUROPA

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System, www.environdec.com
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *International EPD System, PCR for Construction Products, 2019:14, version 1.3.4.*
PCR review was conducted by: *International EPD® System, Technical Comittee. Chair: Claudia A. Peña. Contact info@environdec.com .*
Life Cycle Assessment (LCA)
LCA accountability: *Marcel Gómez Consultoría Ambiental, S.L..*
Third-party verification
Independent third-party verification of the declaration and data. In accordance with ISO 14025:2006, via: Third-party verification: *DNV Business Assurance Italy Srl Accredited by the Italian Accreditation Body Accredia*
Procedure for follow-up of data during EPD validity involves third party verifier: ☒ Yes ☐ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: ALUEUROPA S.A.

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Description of the organisation: Alueuropa manufactures aluminum ingots of the highest quality for all types of industries and sectors, fully meeting the specifications required by the client.
The company aims to provide maximum added value to its clients by applying the necessary finishes and processes to the ingot, offering competitive prices, and delivering the product in the shortest possible time.
Alueuropa continuously works to increase customer satisfaction, as well as the competitiveness and recognition of the company by improving:
• The quality and efficiency of its processes.
• The reliability and excellence of its product, services, and organization.

ALUEUROPA strives to achieve recognition for its excellence and reliability from leading companies in each sector.

Name and location of production site(s): Fundición ALUEUROPA, Ctra. Madrid-Cádiz, 552,6, 41700 Dos Hermanas, Sevilla – Spain.

Product information

Product name: Aluminium ingot RE

Product description: RE - 75% RECYCLED ALUMINIUM INGOT with the most modern and state-of-the-art alloys. Composed of 23% virgin aluminum, 36% post-consumer aluminum, 1% alloys, and 40% external pre-consumer aluminum. The billets are produced in 178 mm and 203 mm diameters.

Table 1. Technical Characteristics

Technical properties	Typical values	Units
Product density	2700	Kg/m3
Melting point	660,32	ºC
Modulus of elasticity	400	MPa
Thermal conductivity	200	W/(m*K))
Thermal expansion coefficient	23	$\mu m ºC^{-1}$

UN CPC code: 415 Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys.

Geographical scope: The primary data, including raw material and energy consumption, transportation distances, and waste generation, come from the factory located in Seville, Spain.

This document will be used for B2B communication with a global scope.

LCA information

Declared unit: 1 kg

Reference service life: Non Applicable

Time representativeness: 2023.

Database(s) and LCA software used: Software Simapro 9.5.0.2 and Database Ecoinvent 3.9.1.
The impact assessment models used are those specified in UNE-EN 15804:2012 + A2:2019.

Database: Specific data on the quantities of materials and energy used throughout the product's life cycle have been collected. These data were provided by Alueuropa, corresponding to the year 2023 and originate from direct factory data. The results presented in this document are valid for the EPD® until substantial modifications occur that impact the environmental effect. Substantial modifications are considered those that increase the environmental impact per Declared Unit by more than 10%.

Generic data on the impact per unit of material or energy have been taken from the internationally recognized Ecoinvent Life Cycle Assessment database, version 3.9.1. This database has been selected as the reference database as it aligns with the input flows of materials and energy in the following aspects:
- Technological equivalence: The data derive from the same physical and chemical processes or at least provide the same technological coverage.
- Boundaries towards nature: The data include all quantitative information necessary for the EPD®.
- Boundaries towards technical systems: The life cycle stages considered are equivalent.

Data Quality: Data qualification is based on three aspects: temporal, technological, and geographical. The quality has been categorized as good.

Description of system boundaries:
The EPD® presented is structured according to the life cycle stages established by the reference standard PCR: Construction Products, based on the EN 15804 standard. This EPD® covers the cradle-to-gate approach with options: module A4, modules C1-C4 and module D (A1-A3+A4+C+D).

A1-A3 PRODUCT STAGE
The product stage consists of the raw material supply stage (A1), raw material transportation (A2), and manufacturing (A3). As permitted by the EN 15804 standard, the results from stages A1-A3 have been grouped into a single product stage (A).

A1 - Raw Material Supply
This module takes into account the extraction and processing of the raw materials that make up the product. The generation of the energy consumed in module A3 during the manufacture of the product is also assigned to this module.

A2 - Raw Material Transport
This module includes the transportation of raw materials from the supplier to the factory where the final product is produced. For the calculation of this module, the distances between the suppliers and the factory considered for the study have been taken into account. For the transport of raw materials, road

transport by small truck (3,5 to 7,5 tons), medium truck (16 to 32 tons), and large truck (>32 tons) Euro 6, by train and by ship have been considered.

A3 - Manufacturing
This module includes the consumption of electricity, diesel, natural gas, propane gas, well water, lubricating oils, greases, and the packaging necessary for shipping the ingot produced. At the same time, the emissions from the transport and management of the waste produced in the plant and treated at an external center are analyzed; the waste produced has been classified into different types of waste according to the treatment required. The distance between the plant and the waste manager has been considered in terms of transport distances to centers located in Zaragoza, Navarra, and Madrid.

During the manufacturing stage, 9,11% of wastage has been considered, which occurs when preparing the materials.

The primary data used in the study have been obtained from the aforementioned factory for the production year 2023.

The electricity mix used is specific to the guarantee of origin provided by Global Factor Commodity Trading to Alueuropa S.A. for the year 2023. This mix includes 100% renewable energy and river hydropower, resulting in total emissions of 0,0029 kg CO2 eq/kwh

Packaging is also considered at this stage of the process. The packaging considered in this case has been wood and polyethylene terephthalate

A4-A5 CONSTRUCTION STAGE
The Construction Process stage consists of the modules A4 Transportation and A5 Construction Process-Installation.

A4 - Transportation
Module A4 Transportation includes the transportation of finished and packaged products from the factory gate to distributors. For the products, their distribution is considered a transport distance by truck of a minimum of 508 km and a maximum of 862 km. For the calculation, a weighted average transport distance has been considered, taking into account the percentage of sales and the distance between the factory and the different sales destinations of the ingots. This average product distribution distance is 639 km per truck per kg of ingot.

Table 2. Transportation specifications used for the products (average value).

Parameter	Value/Description per Declared Unit
Type and fuel consumption of vehicle, type of vehicles used for transportation	• Truck 16 to 32 tons EURO 6 • Diesel consumption $2{,}1 \cdot 10^{-2}$ kg/tkm
Distance	• 639 km by truck
Capacity utilization (including return with empty load)	• % Percentage assumed in Ecoinvent

Weight (product and packaging)	• 1.004 kg

A5 - Construction Process-Installation
Undeclared.

B1-B7 USE STAGE
Undeclared.

C1-C4 END-OF-LIFE STAGE

C1 - Deconstruction/Demolition
No information was found in the life cycle databases consulted on the dismantling operations of aluminium elements, nor in the bibliography on the inputs or waste generated during these operations. In many cases, these operations are performed manually. It has been estimated that these operations are not significant in the life cycle of the products, and therefore, in this module there is no contribution to the impact categories evaluated. The uninstallation has been considered to have an efficiency of 96%.

C2 - Transport
For the transport of the product at the end of the life cycle, a transport distance of 50 km was considered since the exact location to the waste managers was not available and it was carried out with a large truck.

C3 - Waste Treatment
This module reports the operations related to the treatment of post-consumer aluminium scrap, i.e., collection, sorting, cleaning, and pressing. After deinstallation, 93.7% of the material is recycled, leading to a total recycling rate of 90%.

C4 - Waste Disposal
For this phase, it has been considered that 10% of the ingot, once uninstalled, is sent to a construction materials landfill. Disposal of waste generated during the end of life of the product.

Table 3. End-of-Life Stage Specifications.

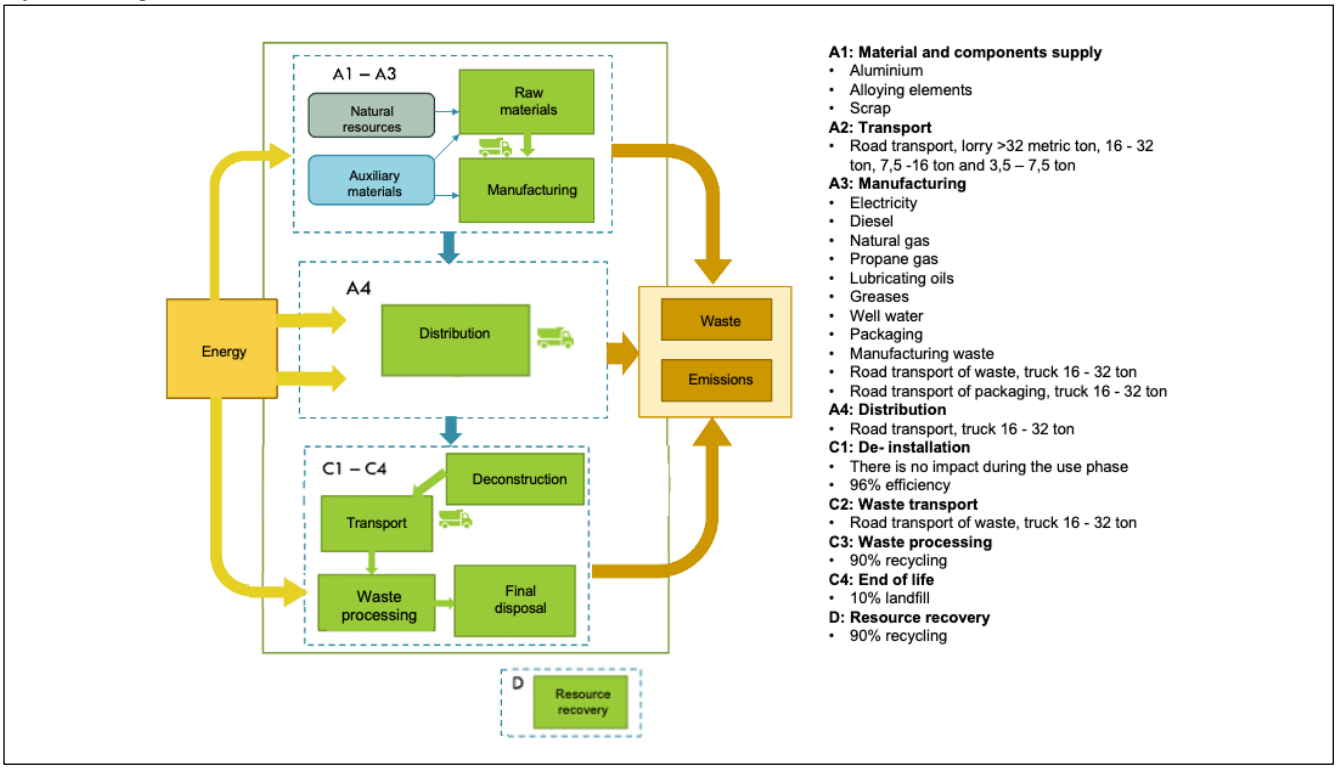
Module	Parameter	Unit (per declared unit)	Value
C1 Deconstruction/ Demolition	Material and energy consumed for dismantling	%	96
C2 Transport	Vehicle type and fuel consumption, type of vehicles used for transport	Kg*km	Truck 16 to 32 tons EURO 6. Diesel consumption $2{,}1 \cdot 10^{-2}$ kg/tkm.
	Average distance	km	50 km
	Capacity utilization (including empty return)	%	% Percentage assumed in Ecoinvent

	Weight of transported products	Kg	1
	Useful capacity factor	-	1
C3 Waste Treatment	Type of waste pretreatment before final disposal	Kg collected, sorted, and compressed	0,9 kg recycled
C4 Waste Disposal	Type of treatment of collected waste	Kg sent to landfill	0,1 kg landfill

MODULE D: REUSE, RECOVERY, AND RECYCLING POTENTIAL

In this module, the environmental burdens and benefits of recycling material streams recovered at the end of a product's life are declared. Environmental aspects have been assessed up to the point of functional equivalence, i.e., obtaining raw materials similar to the starting materials. Since the product is assumed to be 90% recycled, the potential environmental savings due to recycling have been calculated.

System diagram:



More information: https://www.alueuropa.com/

Additional information:

- Technical Support for the Implementation of the EPD: Alueuropa.
- The principle of modularity has been followed, as well as the principle that "the polluter pays."

- For the electricity mix, a 100% renewable electricity mix has been used.
- Cut-off Rules: At least 95% of the consumption of raw materials and energy per module and at least 99% for the total life cycle is included.
- Allocation Procedure: If necessary, an allocation based on physical criteria has been used.
- To calculate the impact of pre-consumer recycled aluminum, an economic allocation was applied based on the ratio of the market value of pre-consumer scrap to virgin aluminum of 18%.
- The recovered slag has been modeled as a co-product, with a portion of the input burdens allocated to it based on economic allocation. Specifically, 98.95% was allocated to the main product and the remaining 1.05% to the co-product, according to their respective market values.
- Based on the system boundaries defined in the reference standard: PCR Construction Products, the following processes have not been considered:
    - The manufacturing of capital goods with an expected service life of over three years, buildings, and other capital goods.
    - Maintenance activities of the production plant.
    - Transportation performed by workers on the home-to-factory-home journey.
    - Long-term emissions.
    - Paper and ink used in the packaging label.
    - Consumption of materials and energy produced during the demolition of the building.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared*	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	ES	ES	ES	GLO	ND	ND	ND	ND	ND	ND	ND	ND	GLO	GLO	GLO	GLO	GLO
Specific data used	74% GWP-GHG			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Aluminum Virgin	2,33E-01	0	0
Aluminum Post-consumer	3,56E-01	100	0
Alloying elements	8,20E-03	0	0
Aluminum Pre-consumer	4,04E-01	0	0
TOTAL	**1**	**36**	**0**

Packaging

Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
PET	1,24E-03	0,12	0
Wood pallet	2,97E-03	0,3	1,99E-03
TOTAL	**4,20E-03**	**0,42**	**1,99E-03**

The product does not contain any substances during its life cycle that are included in the "Candidate List of Substances of Very High Concern for Authorization (SVHC)" in a concentration exceeding 0,1% by weight of the product.

Results of the environmental performance indicators

According to EN 15804 reference package based on EF 3.1 version.
Usage of results from A1-A3 without considering the results of module C is not encouraged.

The following presents the results of the potential environmental impacts of the products under study.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Mandatory impact category indicators according to EN 15804

Results per declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,71E+00	5,67E-02	ND	ND	ND	ND	ND	ND	ND	ND	0	3,74E-03	2,38E-01	1,11E-03	-2,27E+00
GWP-biogenic	kg CO_2 eq.	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-luluc	kg CO_2 eq.	7,09E-02	1,11E-06	ND	ND	ND	ND	ND	ND	ND	ND	0	7,58E-08	1,80E-04	2,14E-06	-2,45E-02
GWP-total	kg CO_2 eq.	2,79E+00	5,67E-02	ND	ND	ND	ND	ND	ND	ND	ND	0	3,74E-03	2,38E-01	1,12E-03	-2,30E+00
ODP	kg CFC 11 eq.	1,11E-07	1,22E-09	ND	ND	ND	ND	ND	ND	ND	ND	0	8,45E-11	2,68E-09	4,02E-12	-1,58E-08
AP	mol H^+ eq.	4,19E-02	7,13E-05	ND	ND	ND	ND	ND	ND	ND	ND	0	2,65E-09	1,97E-11	-2,93E-08	2,65E-09
EP-freshwater	kg P eq.	3,50E-04	4,45E-08	ND	ND	ND	ND	ND	ND	ND	ND	0	7,14E-04	8,11E-06	-1,46E-02	7,14E-04
EP-marine	kg N eq.	5,75E-03	1,77E-05	ND	ND	ND	ND	ND	ND	ND	ND	0	3,54E-06	9,89E-09	-1,28E-04	3,54E-06

EP-terrestrial	mol N eq.	6,38E-02	1,72E-04	ND	ND	ND	ND	ND	ND	ND	ND	0	1,46E-04	3,32E-06	-1,99E-03	1,46E-04
POCP	kg NMVOC eq.	2,21E-02	1,34E-04	ND	ND	ND	ND	ND	ND	ND	ND	0	1,62E-03	3,69E-05	-2,20E-02	1,62E-03
ADP-minerals&metals*	kg Sb eq.	1,92E-06	1,95E-09	ND	ND	ND	ND	ND	ND	ND	ND	0	5,23E-04	1,11E-05	-7,34E-03	5,23E-04
ADP-fossil*	MJ	8,02E+01	7,54E-01	ND	ND	ND	ND	ND	ND	ND	ND	0	2,91E-06	4,63E-11	1,07E-05	2,91E-06
WDP*	m^3 depriv.	7,64E-01	6,90E-04	ND	ND	ND	ND	ND	ND	ND	ND	0	1,59E+00	1,74E-02	-2,59E+01	1,59E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*
*** The weight of biogenic carbon is 7,30E-03 kg CO2 eq., it is compensated in A1-A3 because module A5 is not considered.*

Additional mandatory and voluntary impact category indicators

Results per declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	2,79E+00	5,67E-02	ND	ND	ND	ND	ND	ND	ND	ND	0	3,74E-03	2,39E-01	1,12E-03	-2,29E+00

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Resource use indicators

Results per declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,26E+01	1,98E-03	ND	ND	ND	ND	ND	ND	ND	ND	0	1,35E-04	1,43E-01	3,87E-03	-6,86E+00
PERM	MJ	6,14E-02	0,00E+00	-6,14E-02	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,26E+01	1,98E-03	ND	ND	ND	ND	ND	ND	ND	ND	0	1,35E-04	1,43E-01	3,87E-03	-6,86E+00
PENRE	MJ	8,53E+01	8,01E-01	ND	ND	ND	ND	ND	ND	ND	ND	0	5,47E-02	1,70E+00	1,84E-02	-2,74E+01
PENRM	MJ	7,07E-03	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	8,53E+01	8,01E-01	ND	ND	ND	ND	ND	ND	ND	ND	0	5,47E-02	1,70E+00	1,84E-02	-2,74E+01
SM	kg	7,59E-01	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,07E-01	3,15E-05	ND	ND	ND	ND	ND	ND	ND	ND	0	2,15E-06	8,11E-04	7,81E-06	-3,35E-02
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water														

Waste indicators

Results per declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1,37E-04	4,98E-06	ND	ND	ND	ND	ND	ND	ND	ND	0	3,40E-07	5,88E-03	6,79E-08	-4,62E-02
Non-hazardous waste disposed	kg	1,29E+00	3,67E-05	ND	ND	ND	ND	ND	ND	ND	ND	0	2,51E-06	2,58E-02	1,01E-01	-6,79E+00
Radioactive waste disposed	kg	1,56E-04	6,46E-08	ND	ND	ND	ND	ND	ND	ND	ND	0	4,41E-09	3,69E-06	6,65E-08	-2,44E+01

Output flow indicators

Results per declared unit																
Indicator	**Unit**	**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	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	5,90E-02	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	9,60E-01	0,00E+00	9,00E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Exported energy, electricity	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Other environmental performance indicators

Results per declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Particulate Matter (PM) Emissions	disease inc.	4,63E-07	3,41E-09	ND	ND	ND	ND	ND	ND	ND	ND	0	2,95E-10	1,41E-08	1,72E-10	-7,58E-05
Ionizing Radiation, Human Health (IRP) *1	kBq U-235 eq	2,12E-01	1,20E-04	ND	ND	ND	ND	ND	ND	ND	ND	0	8,19E-06	4,76E-03	1,00E-04	-3,05E+00
Ecotoxicity (Freshwater) (ETP-fw) *2	CTUe	1,25E+01	3,68E-01	ND	ND	ND	ND	ND	ND	ND	ND	0	2,59E-02	1,03E+00	1,50E-01	8,86E-03
Human Toxicity, Carcinogenic Effects (HTP-c) *2	CTUh	1,24E-08	3,61E-12	ND	ND	ND	ND	ND	ND	ND	ND	0	2,56E-13	7,48E-11	2,06E-12	-3,35E-02
Human Toxicity, Non-Carcinogenic Effects (HTP-nc) *2	CTUh	1,38E-07	4,03E-10	ND	ND	ND	ND	ND	ND	ND	ND	0	3,39E-11	3,58E-09	1,66E-11	9,03E-04
Land Use/Soil Quality Impacts (SQP) *2	Pt	1,44E+01	1,43E-03	ND	ND	ND	ND	ND	ND	ND	ND	0	9,78E-05	2,52E-01	2,13E-02	-4,68E-05

*Disclaimer 1: This impact category primarily addresses the potential impact of low-dose ionizing radiation on human health from the nuclear fuel cycle. It does not consider effects from potential nuclear accidents, occupational exposure, or radioactive waste disposal at underground facilities. This indicator also does not measure potential ionizing radiation from soil, radon, or some building materials.
*Disclaimer 2: The results of these environmental impact categories should be used with caution because of the high uncertainty surrounding these results and limited experience with these indicators.

Information on biogenic carbon content

Results per declared unit		
Biogenic carbon content	**Unit**	**Quantity**
Biogenic carbon content in the product.	kg C	0,00E+00
Biogenic carbon content in the packaging.	kg C	1,99E-03

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO2.

Additional environmental information

None included.

Additional social and economic information

None included.

Information related to Sector EPD

None applicable.

Differences versus previous versions

None applicable.

References

- General Programme Instructions of the International EPD® System. Version 4.0
- PCR 2019:14. Construction Products. Version 1.3.4
- ISO 14020:2000, Environmental labels and declarations – General principles.
- ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 14040:2006, Environmental Management— Life Cycle Assessment — Principles and framework
- ISO 14044:2006-10, Environmental Management — Life Cycle Assessment — Requirements and Instructions (ISO 14044:2006); EN ISO 14044:2006
- UN CPC 415 Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys
- EN15804:2012+A2:2019/AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the construction products product category
- IDAE - Institute for Energy Diversification and Saving
- EN 590:2022 - Automotive Fuels
- Spanish Aluminum Association - Circularity Indicators for Aluminum, PVC, and Wood
- LME - London Metal Exchange
- Environdec EPD registration number: S-P-07455
- Alueuropa (2025). ANÁLISIS DE CICLO DE VIDA DEL PRODUCTO LINGOTES DE ALUMINIO (RE, RE-HYBRID, RE-LUX) Version 1

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