DAPcons®.100.186

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

According to the standards:
ISO 14025 and UNE-EN 15804:2012+A2:2020/AC:2021

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Barcelona

ECO PLATFORM
EPD
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According to the standards:

ISO 14025 and UNE-EN 15804:2012+A2:2020/AC:2021

GENERAL INFORMATION

Product

CORTIZO INFINITY 100 billet

Company

Product description

A CORTIZO INFINITY 100 aluminium billet is an aluminium round obtained after a casting process, the aluminium billets can be of different diameters, as they are used as an intermediate product. The aluminum billet is made from 100% post-consumer recycled aluminum.

Reference RCP

RCP 100 (version 3.2 - 21/12/2023) Construction products in general

Production plant

The product is manufactured in 2 different sites.

Padrón: Carretera Padrón a Noya, km 2, 15901 Padrón, (Galicia)

Mieres: P.I. Veiga, Polígono Baíña Industrial, 33682 Vega de San Pedro (Asturias)

Validity

From: 24/05/2024 Until: 24/05/2029

The validity of DAPcons®.100.186 is subject to the conditions of the regulation DAPcons®. The current edition of this DAPcons® is the one that appears in the registry maintained by Cateb; for informational purposes, it is included on the Program website www.csostenible.net

EXECUTIVE SUMMARY

CORTIZO INFINITY 100 billet

	DAPconstruction® Programme Operator Environmental Product Declarations in the Construction sector www.csostenible.net
	Programme Manager Colegio de la Arquitectura Técnica de Barcelona (Cateb) Bon Pastor, 5 · 08021 Barcelona www.apabcn.cat
	Owner of the declaration ALUMINIOS CORTIZO, S.A.U. Extramundi, s/n 15910 - LA CORUNYA (España) www.cortizo.com
	Author of the Life cycle assessment: Marcel Gómez Consultoria Ambiental Torrent de Vallmora 24-26 1º 2ª, 08320 - BARCELONA, España

Declared product

CORTIZO INFINITY 100 billet

Geographic representation

Europe

Variability between different products

Product-specific EPD produced in 2 different sites.

Variation between factories: -1.6% to 1.9% with respect to the average product presented in the GWP-total category for A1-
A3 modules.

Declaration number

DAPcons®.100.186

Issue date

22/04/2024

Validity

This verified declaration authorizes its holder to carry the logo of the operator of the ecolabelling program DAPconstruction®. The declaration is applicable exclusively to the mentioned product and for five years from the date of registration. The information contained in this statement was provided under the responsibility of: **ALUMINIOS CORTIZO, S.A.U.**

Programme Administrator Signature

Celestí Ventura Cisternas. President of Cateb

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Verifier Signature

Lorena Pereda Pereda. Fundación Centro Tecnológico de Miranda de Ebro. Verifier accredited by the administrator of the DAPcons® Programme

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ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND USE

An aluminum billet is an aluminum round obtained after a casting process, aluminum billets can be of different diameters.
Cortizo has different production lines, such as: casting, extrusion, lacquering, anodizing, chemical glossing or machining, although for the product that is the subject of this DAP the only production line used is the foundry line.

The smelting line consists of the melting or remelting of aluminium, Cortizo has 2 remelting plants, one in Asturias and one in Padrón, the company has a production capacity of 43,000 tonnes per year, and can produce custom-made alloys according to each customer requests. Specifically, for the product subject to the EPD, the smelting is carried out in the plants located in Padrón and Mieres.

The CORTIZO INFINITY 100 billet is made of 100% post-consumer recycled aluminium. The billet is produced with a length of 6 meters long and in different diameters (153, 178, 203, 254 and 305 mm), it can also be produced in different alloys depending on the needs of the customer, although the most common are 6063 and 6060.
For the different diameters that are taken into account, the composition and the production process are the same. The maximum weight of the billet per linear metre is 198 kg/m and the minimum is 52 kg/m.

This EPD refers to 1 kg of product, regardless of the weight and dimensions of the billet.
The product is classified with the UN CPC code: 41532 Bars, rods, angles and profiles, of aluminium alloys.

The traceability of CORTIZO aluminum billet is certified by Bureau Veritas under the ISO 14021:2016 standard (certificate number ES131669-2).

1.1 Content information

Product components

Post-consumer aluminium.

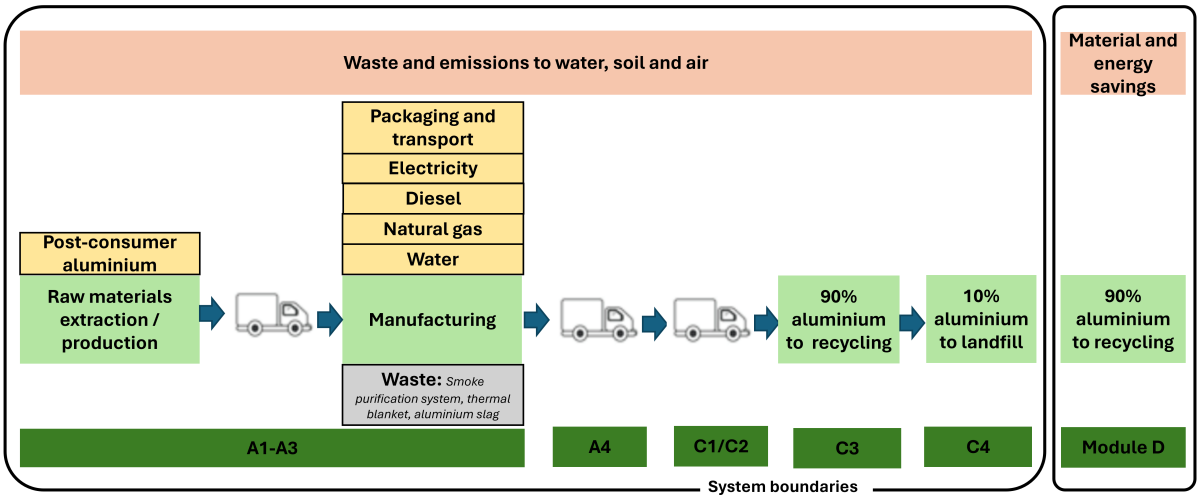
Packaging materials

Pallet.
Plastic strap.

PRODUCT COMPOSITION

Raw material	Percentage, %	Post-consumer material, weight-%	Renewable material, weight-%
Post-consumer aluminium	100%	100%	0%
TOTAL	100%	100%	0%
Packaging materials	**Weight, kg**	**Weight-% (versus product)**	**Post-consumer material, weight-%**
Pallet	7.50E-05	0.0075%	0%
Strap	1.00E-04	0.01%	0%
TOTAL	1.75E-04	0.0175%	0%

SYSTEM BOUNDARIES



2. DESCRIPTION OF THE STAGES OF THE LIFE CYCLE

2.1. Manufacturing (A1, A2 y A3)

Raw Materials and transport (A1 y A2)

Module A1 takes into account the extraction and processing of the raw materials that make up the product. In this module is also assigned the generation of the energy consumed upstream during the manufacture of the components, packaging waste has not been considered.

In module A2, the transport of raw materials has been calculated according to each of the factories and the specific distances between the origin of the suppliers and the factories. For road transport, a large truck with a capacity of more than 32 tonnes has been considered, and for ship transport, a container ship has been considered.

Manufacturing (A3)

This module includes the consumption of fuels (diesel and natural gas combustion), water, lubricating oils and packaging materials used during the manufacturing process of the CORTIZO INFINITY 100 billet. At the same time, the emissions originated from the combustion of fossil fuels are analysed, as well as the transport and management of waste originated in the plant and treated in an external centre, although in this case it is considered that they are recycled so their management does not generate any impact, on the other hand the direct emissions from furnaces other than the combustion of fossil fuels have not been considered. The distance between the factory and the waste managers has been calculated taking into account the exact location of the waste managers.

The primary data used in the study has been obtained from the company itself and is representative data for production in the year 2022.

The electricity mix considered is Iberdrola's residual electricity mix for 2022, with 3.7% renewable energy, 2.1% high-efficiency cogeneration, 43.5% cogeneration with natural gas, 4.9% coal, 1.9% fuel/gas, 35.1% nuclear and 8.8% other non-renewable sources.

2.2. Construction process stage (A4 y A5)

Transport to the building site (A4)

The A4 Transport module includes the transport of finished and packaged products from the factory gate to the company where they are to be used. For distribution, the transport to Spain, Portugal and France is considered.

For the calculation, the distance between each of the factories and the final destination of the aluminium has been considered, also taking into account the percentage of sales to each of the destinations, thus obtaining a weighted average distance per kg of product. Thus, the distance calculated for the case of Mieres is 555 km by road and for Padrón 62 km by truck and 20 km by boat, it must be taken into account that 87% of the aluminum production of Padrón is consumed in the same Padrón, so the distances calculated are small. The table below shows the kilometers considered, differentiating between Spain and Europe, weighting the distance between the factory and the destination company and the percentage of sales to each destination.

Table 1. Basic of a scenario with the parameters described in the following table

Destinations	Type of transport	Percentage	Average km
Spain	Large truck with a capacity of more than 32 tonnes	87.82	273
Europe	Large truck with a capacity of more than 32 tonnes	12.18	91
Rest of the world	Not applicable	0	0

Product installation process and construction (A5)

Undeclared

2.3. Product use (B1-B7)

Use (B1)

Undeclared

Maintenance (B2)

Undeclared

Repair (B3)

Undeclared

Replacement (B4)

Undeclared

Refurbishment (B5)

Undeclared

Operational energy use (B6)

Undeclared

Operational water use (B7)

Undeclared

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

It is considered to be done manually, therefore it has an impact of 0.

Transport to waste processing (C2)

The distance to the waste management plant has been estimated to be 50 km.

Waste processing for reuse, recovery and/or recycling (C3)

A pretreatment of waste before being recycled is considered for 90% of aluminium.

Disposal (C4)

It has been considered that 10% of waste is sent to landfill, while the remaining 90% is recycled, according to Annex C v.2.1 (May 2020) of the European Union's PEFCR Guidance.

2.5. Reuse/recovery/recycling potential (D)

In this module, the benefits obtained from the recycling of aluminium are declared, taking into account the substitution of virgin material that can be saved due to its recycling.
For the calculation of this module, the percentage of material that is recycled and the percentage of recycled material of the product has been taken into account. 90% of the aluminum will be recycled while the product has 100% recycled aluminum.
This means that the environmental effects of recycling have been taken into account up to the point of functional equivalence.

3. LIFE CYCLE ASSESSMENT

The life cycle assessment carried out in this study is based on the following standards: ISO 14040 and ISO 14044.
In the same way, the RCP 100 standard has been taken into account. Construction products in general. Version 3.2 - 21.12.2023.
This EPD is a "cradle-to-gate with options" type, declaring the stages of production, distribution, and end of life of the product.
Data of the year 2022 from the factories of the company CORTIZO located in Padrón (A Coruña) and Mieres (Asturias) have been used.

3.1. Declared Unit

1 kg of CORTIZO INFINITY 100 aluminium billet, with 100% post-consumer recycled aluminium.

Additional comments

100% of the aluminium is post-consumer recycled aluminium, therefore without loads as a material, although its treatment process is considered.

3.2. Scope and modules that are declared

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse, recovery, recycling potential
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

X = Declared module **MND** = Undeclared module

3.3. LCA results of potential environmental impact referred to the declared unit (ACV)

Table 3. Parameters of environmental impact

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Climate change - total (GWP-total)	kg CO2 eq	0.92	0.03	MND	MND	MND	MND	MND	MND	MND	MND	0.00	9.90E-03	0.02	2.78E-04	0.71
Climate change - fossil (GWP-fossil)	kg CO2 eq	0.92	0.03	MND	MND	MND	MND	MND	MND	MND	MND	0.00	9.90E-03	0.02	2.78E-04	0.69
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	0.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	3.10E-04	5.14E-07	MND	MND	MND	MND	MND	MND	MND	MND	0.00	1.89E-07	8.38E-06	1.36E-08	0.02
Ozone layer depletion (ODP)	kg CFC 11 eq	2.96E-08	5.65E-10	MND	MND	MND	MND	MND	MND	MND	MND	0.00	2.08E-10	2.47E-10	4.02E-12	1.97E-08
Acidification (AP)	mol H+ eq	2.45E-03	3.53E-05	MND	MND	MND	MND	MND	MND	MND	MND	0.00	1.20E-05	6.76E-05	2.51E-06	4.24E-03
Eutrophication of fresh water (EP-freshwater)	kg P eq	6.90E-06	2.06E-08	MND	MND	MND	MND	MND	MND	MND	MND	0.00	7.56E-09	4.14E-07	9.54E-10	3.62E-05
Eutrophication of sea water (EP-marine)	kg N eq.	5.95E-04	8.68E-06	MND	MND	MND	MND	MND	MND	MND	MND	0.00	2.93E-06	3.38E-05	1.14E-06	4.69E-04
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	6.57E-03	8.49E-05	MND	MND	MND	MND	MND	MND	MND	MND	0.00	2.86E-05	2.77E-04	1.24E-05	5.18E-03
Photochemical ozone formation (POCP)	kg NMVOC eq	2.50E-03	6.30E-05	MND	MND	MND	MND	MND	MND	MND	MND	0.00	2.25E-05	8.81E-05	3.71E-06	2.29E-03
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	3.53E-06	8.98E-10	MND	MND	MND	MND	MND	MND	MND	MND	0.00	3.31E-10	5.87E-10	1.07E-11	6.78E-08
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	11.30	0.35	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.13	0.19	3.47E-03	10.21
Water consumption (WDP)	m3 worldwide eq. private	0.08	3.20E-04	MND	MND	MND	MND	MND	MND	MND	MND	0.00	1.18E-04	0.00	4.82E-06	0.05
The Indicador includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicador is thus equal to the GWP Indicador originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																
Global Warming Potential (GHG)	kg CO2 eq	0.89	0.03	MND	MND	MND	MND	MND	MND	MND	MND	0.00	9.62E-03	0.02	2.69E-04	0.68

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 4. Parameters for the use of resources, waste and output material flows

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as feedstock	MJ, net calorific value	0.30	9.14E-04	MND	MND	MND	MND	MND	MND	MND	MND	0.00	3.36E-04	0.01	1.55E-05	4.30
Use of renewable primary energy used as raw material	MJ, net calorific value	1.35E-03	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Total use of renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	0.30	9.14E-04	MND	MND	MND	MND	MND	MND	MND	MND	0.00	3.36E-04	0.01	1.55E-05	4.30
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	11.30	0.35	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.13	0.19	3.47E-03	10.21
Use of non-renewable primary energy used as raw material	MJ, net calorific value	4.60E-03	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Total use of non-renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	11.30	0.35	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.13	0.19	3.47E-03	10.21
Use of secondary materials	kg	1.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.10
Use of renewable secondary fuels	MJ, net calorific value	0.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Use of non-renewable secondary fuels	MJ, net calorific value	0.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Net use of freshwater resources	m3	2.44E-03	1.45E-05	MND	MND	MND	MND	MND	MND	MND	MND	0.00	5.35E-06	7.16E-05	1.82E-07	0.03
Hazardous waste removed	kg	7.14E-03	2.29E-06	MND	MND	MND	MND	MND	MND	MND	MND	0.00	8.44E-07	8.78E-07	2.23E-08	2.27E-05
Non-hazardous waste eliminated	kg	0.03	1.70E-05	MND	MND	MND	MND	MND	MND	MND	MND	0.00	6.24E-06	0.01	0.10	0.18
Radioactive waste disposed of	kg	1.55E-05	2.98E-08	MND	MND	MND	MND	MND	MND	MND	MND	0.00	1.10E-08	5.60E-07	2.06E-10	4.95E-05
Components for reuse	kg	0.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Materials for recycling	kg	0.08	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.90	0.00	0.00
Materials for energy recovery (energy recovery)	kg	0.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00
Exported energy	MJ by energy vector	0.00	0.00	MND	MND	MND	MND	MND	MND	MND	MND	0.00	0.00	0.00	0.00	0.00

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 5. Kg of biogenic carbon

Carbon content (biogenic) - packaging	7.50E-04
Carbon content (biogenic) - product	0.00

3.4. Recommendations of this EPD

No recommendations are presented in this EPD.

3.5. Cut-off rules

95% of all mass and energy inputs and outputs, identified in the life cycle inventory of the report, and at least 99% for the total life cycle, have been included.

3.6. Additional environmental information

The following processes have been excluded:
o Manufacture of equipment used in production, buildings or any other capital goods
o Transport of personnel to the plant
o Transport of personnel within the plant
o Research and development activities
o Long-term emissions
o End of life treatment for packaging materials
The principle of modularity has been followed, as well as the polluter pays principle.

3.7. Other data

• Technical support for the implementation of the EPD: Marcel Gómez Environmental Consulting.
• The electricity mix used in the manufacturing plant is the Iberdrola mix provided by the National Commission on Markets and Competition for the year 2022.
• Allocation processes: Allocation has been avoided whenever possible, but for energy consumption, waste production and distribution, allocation has had to be made based on physical mass considerations.
• EPDs within the same product category, but from different programs may not be comparable.

4. ADDITIONAL TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport to the building site (A4)

Parameter	Parameter expressed per functional unit
Type and fuel consumption, type of vehicle used for transportation	>32t EURO6 Diesel truck, consumption 0.0192 kg/tkm Container ship. Diesel, consumption 0.00252 kg/tkm
Distance	273 km for distribution in Spain (87.82% product) 91 km for distribution in Europe (12.18% product)
Capacity utilization (including empty return)	Percentage assumed in the Ecoinvent database
Apparent density of transported product	2700 kg/m3
Useful capacity factor (1, <1 or >1 for products that are packed compressed or nested)	1

4.2. Installation processes (A5)

Undeclared

4.3. Reference life (B1)

Undeclared

4.4. Maintenance (B2), Repair (B3), Replacement (B4), or Refurbishment (B5)

Maintenance (B2)

Undeclared

Repair (B3)

Undeclared

Replacement (B4)

Undeclared

Refurbishment (B5)

Undeclared

4.6. Operational energy use (B6) and operational water use (B7)

Undeclared

4.7. End of life (C1-C4)

	Process				
	Collection processes (specified by types)	Recovery systems (specified by type)			Elimination
	kg collected with mixed construction waste	kg for reuse	kg for recycling	kg for energy recovery	kg for final disposal
	1	0	0.9	0	0.1
Assumptions for scenario development	Dismantling is manual, a distance of 50 km is considered between the point of dismantling and the place of treatment.				

5. ADDITIONAL INFORMATION

LCA software and database used: SimaPro 9.5.0.2 calculation software and Ecoinvent 3.9.1 database were used for the development of the study.

Certifications related to the product or management system implemented by Cortizo:
• ISO 9001: quality control system. Certificate Number: ES121043-1
• ISO 45001: PRL, safety ind. and health surveillance. Certificate Number: ES119146-1
• ISO 14001: Environmental Management Systems. Certificate Number: ES111867-1

The product does not include during its life cycle any hazardous substance included in the "Candidate List of Substance of Very High Concern (SVHC)" in a percentage greater than 0.1% of the weight of the product.

Estimated impact results are only relative statements that do not indicate the endpoints of impact categories, which exceed threshold values, safety margins, or risks.

EPDs for construction products may not be comparable if they do not comply with the European standard EN 15804:2012+A2:2020/AC:2021.

6. PCR AND VERIFICATION

This statement is based on Document

RCP 100 (version 3.2 - 21/12/2023) Construction products in general

Independent verification of the declaration and data, in accordance with ISO 14025 and IN RCP 100 (version 3.2 - 21/12/2023)

☑ External

Third party Verifier

Lorena Pereda Pereda
Accredited by the administrator of the DAPcons® Programme

Verification date:

24/05/2024

References

• ISO 14020:2000 Environmental labels and claims: general principles
• ISO 14025:2010 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 Environmental Management - Life Cycle Assessment - Requirements and Guidelines
• RCP 100. Construction products in general. Version 3.2 21.12.2023
• EN 15804:2012 + A2:2019 Sustainability of Construction Sites - Environmental Product Declarations - Basic Rules for the Product Category of Building Products
• Memory of the Life Cycle Analysis of the product billet cortizo infinity 100 and billet cortizo recycling
• PEF guidance: Annex_C_V2.1_May2020, European Commission
* GDO/DE/001/23: Summary of the results of the system of guarantee of origin and labelling of electricity relating to the energy produced in the year 2022. National Commission on Markets and Competition.

Programme Manager

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