Environmental Product Declaration

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

PVC Profile

EPD of multiple products, based on worst-case product. The complete list of references can be found in the Product description section.

from

EMAC

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company, based on worst-case product. EPD published by trader
EPD registration number:	EPD-IES-0027022:001
Version date:	2026-01-29
Validity date:	2031-01-29

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
Financiado por la Unión Europea

GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): ***CONSTRUCTION PRODUCTS, PCR 2019:14, VERSION 2.0.1***
PCR review was conducted by: ***The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Rob Rouwette (chair), Noa Meron (co-chair)***

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ **Individual EPD verification without a pre-verified LCA/EPD tool** Third-party verifier: CERTINALIA S.L.U. Anardi Area Aldea, 5, 20730 Azpeitia, Guipúzcoa (Spain) is an approved certification body accountable for the third-party verification Approved by: ENAC, accreditation number 125/C-PR283
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 published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: EMAC COMPLEMENTOS, S.L
Address: Av. de Madrid, 6, 46930 Quart de Poblet, Valencia-España
Contact: Alba Purriños (tecnico@emac.es)
Address and contact information of the LCA practitioner commissioned by the EPD owner: Marcel Gómez Consultoría Ambiental, C/Navarra 66 Edificio B Bajos 3ª, 08320 El Masnou (Barcelona)

Description of the organisation: A leading company in solutions for the joining of diverse materials that come into play in a construction project. Its wide range of technical and decorative profile solutions, technical entrance mats, structural and expansion joints, along with universal accessibility and safety solutions, cover floors, walls, façades and urban paving, all accompanied by immediate service, unique to its sector.

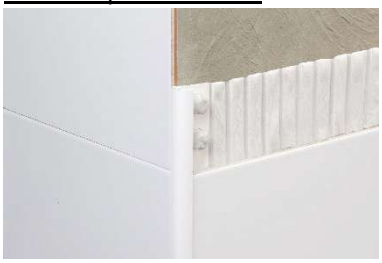
EMAC® Group is a key multinational group made up of various companies with a footing in both national and international markets. It is present in over 110 countries, with subsidiaries in the USA and Italy to provide EMAC® solutions to the world's most demanding markets.

The technical solutions it develops are backed by a team of professionals who provide technical consultation, technical files, building information modelling and augmented reality tools such as the EMAC® App, empowering architects, planners, technicians and foremen to develop their projects.

Product-related or management system-related certifications: EMAC is certified to ISO 9001:2015 recertification (certification number: ES135570-1)

PRODUCT INFORMATION

Product name: PVC profile
Visual representation:



UN CPC code: UN CPC 369-Other plastics products

Product description: PVC profiles are characterized by being extruded in PVC (polyvinyl chloride). PVC (polyvinyl chloride) is an amorphous polar thermoplastic polymer with great resistance to abrasion, corrosion and a wide range of chemicals. It possesses good impact resistance, low water absorption, low electrical conductivity, and is dimensionally stable.
The purpose of the profiles is construction, constituting a solution for the meeting of materials with different applications such as corner protection, separation of pavements, decorative listels, finishing of steps, expansion joints, etc.
Depending on the application, the profile is manufactured in one geometry or another, ranging from a cross-section width from 10mm to 150 mm to a length of between 1 and 2.5 metres. These applications and combinations of the PVC profile can be found on the website: https://emac.es/.

The references included in the study are: Blanco, Beige, Marfil, Gris, Manhattan, Café, Marrón, Pergamón, Bahamas, Azul pastel, Negro, Avellana, Café, Marmol blanco, Marmol beige, Marmol vison, Marmol gris, Nj blanco, Nj gris, Nj negro, Nj beige, Nj marron, G blanco, G beige, G cotto marron, G cuero, G antracita, G negro, G gris, S blanco, S gris, S antracita.
This EPD is based on worst-case results of multiple products, therefore, the worst-case product is included in these references.

The profiles studied are manufactured by extrusion. The extrusion process is carried out on a continuous production line. The raw material is fed into the feed hopper, from where it is transported and heated to the right temperature for melting. The molten material is then passed through a nozzle with the geometry corresponding to the desired profile. Once extruded, the profile is cooled by a controlled cooling system. Next, the necessary subsequent operations are carried out, which may include brushing one of its faces (if required), die-cutting the fixing wing, and cutting to the final length.

Name and location of production site: The name of the manufacturer is confidential. Production site: Valencia, Spain

Location of the final process in direct control of the trader: EMAC, Av. de Madrid, 6, 46930 Quart de Poblet, Valencia, Spain

CONTENT DECLARATION

Content declaration of 1 kg of PVC profile, worst-case product

Product content	Mass, kg (worst-case product)	Post-consumer recycled material, mass-% of product (product range and worst-case)	Biogenic material, kg C/product or declared unit[1](worst-case product)
PVC resin	0,741	0	0
Stabilizers	0,015	0	0
Lubricants	0,003	0	0
Process improvers	0,010	0	0
Calcium carbonate	0,211	0	0
Dyes	0,020	0	0
TOTAL	1	0	0

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit[1]
Wood pallet	0,01	1	0,0048
Polyethylene terephthalate strap	8,87E-05	0,00887	0
Cardboard box	0,07	7	0,0337
Cardboard tube	0,006	0,6	0,00318
Non-recycled polyethylene film	0,002	0,2	0
TOTAL	0,083	8,3	0,0418

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

Hazardous substances from the candidate list of SVHC

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals.

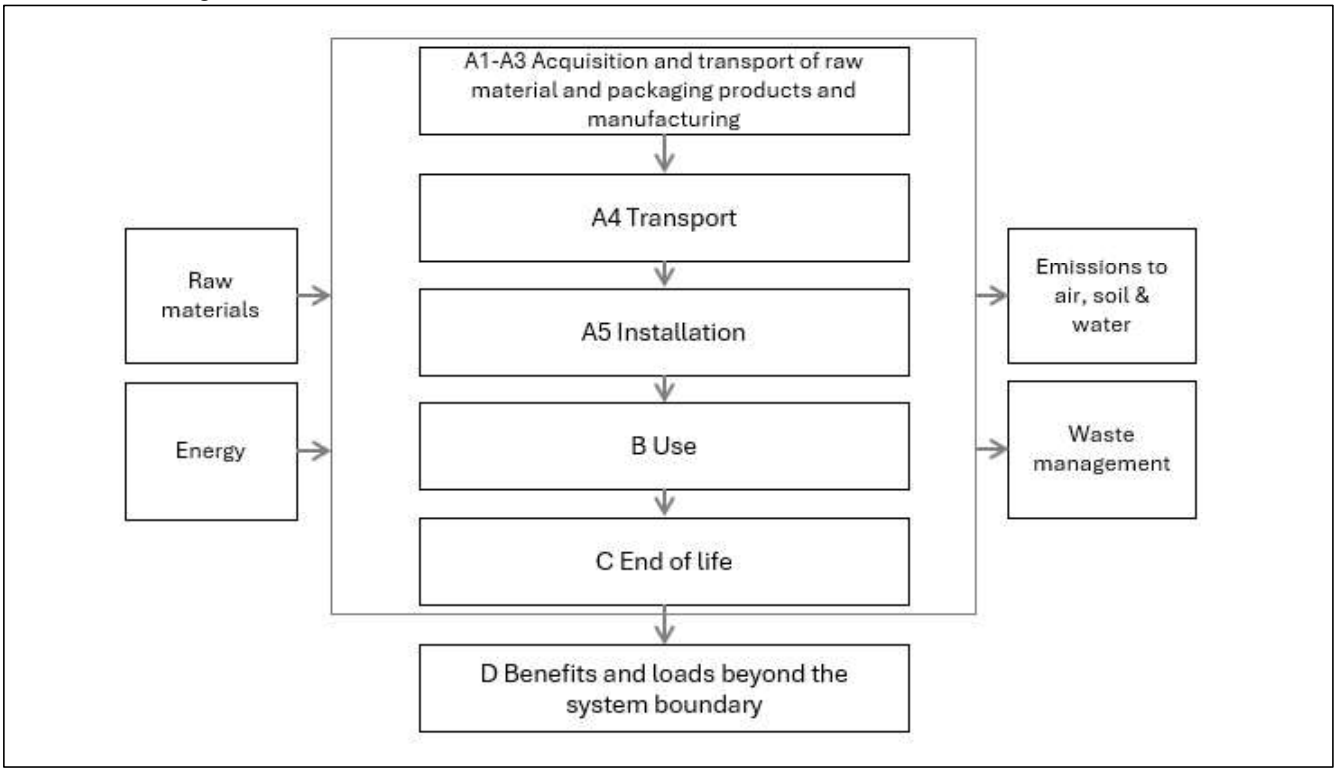
[1] Valued calculated as: kg of materials from organic and renewable sources of the model * 0,5 kg C/kg organic matter (default carbon fraction organic source according to https://www.ipcc-nggip.iges.or.jp/public/gl/guidelin/ch5wb1.pdf)

LCA INFORMATION

Declared unit: 1 kg of PVC profile
Time representativeness: year 2024
Geographical scope: Modules of product stage A1, A2, and A3 are in Europe, specifically in Spain (ES). Modules of construction process stage (A4, A5), use stage (B), end of life (C), and resource recovery (D), are located globally (GLO).
Database(s) and LCA software used: Ecoinvent 3.11. and SimaPro 10.2.0.2. The characterization factors used for obtaining the results are based in EF3.1 package.

Description of system boundaries:
c) Cradle to grave and module D (A + B + C + D).

Process flow diagram:



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	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	ES	ES	ES	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Share of primary data	10,5%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Process	**Source type**	**Source**	**Reference year**	**Data category**	**Share of primary data or secondary data, of GWP-GHG results for A1-A3**
Total share of primary data, of GWP-GHG results for A1-A3					**10,5%**
Generation of electricity used in manufacturing of product	Database	Ecoinvent v3.11	2024	Primary data	10,45%
Other processes	Database	Ecoinvent v3.11	2024	Primary data	0,05%
Total share of secondary data, of GWP-GHG results for A1-A3					**89,5%**
Raw materials (PVC, dyes)	Database	Ecoinvent v3.11	2024	Secondary data	79,1%
Transport in freight lorry	Database	Ecoinvent v3.11	2024	Secondary data	2,2%
Other processes	Database	Ecoinvent v3.11	2024	Secondary data	8,2%

Product life cycle

It should be noted that EMAC does not act as a manufacturer but as a retailer, and the data collected in this study regarding the product is based on specific information provided by the manufacturer. In cases where access to confidential data was not possible, the worst-case scenario was used.
The transport distances to the building site, included in module A4, are based on primary data from the product distributed by EMAC.

Product stage (A1-A3)

A1- Raw material supply

Extraction and processing of all the raw materials that make up the profile (PVC resin, stabilizers, lubricants, process improvers, calcium carbonate and dyes).

A2- Transport to the factory

Associated transport to the production plant have been considered. This information has been provided by the manufacturer and includes the road transport of each of the raw materials.

A3- Manufacturing

This module includes the manufacture of the profiles and the production of the packaging necessary for their transport. Additionally, in this specific case, the road transport from the manufacturer to the retailer is included in this module. Support activities directly associated with the production plant have been considered. The following processes have been considered in the study:

- Production consumption (electricity consumption, water and lubricating oils). The specific electricity mix of the supplier contracted by the manufacturer is considered. The mix consists of 7.5% renewable energy, 1.8% high-efficiency cogeneration, 31% natural gas CC, 9.2% coal, 2.3% fuel/gas, 38.4% nuclear and 9.8% other non-renewable sources, according to the CNMC (Comisión Nacional de los Mercados y la Competencia).The environmental impact of 1kWh of consumption for this electricity mix is 0,363 kg CO2eq/kWh according to the GWP GHG indicator.
- Production losses: Recovered and reintroduced material into the manufacturing process (recovered between 10-23% according to manufacturer)
- Production, transport and treatment of waste generated in the factory (waste oils, paper and cardboard, absorbents, plastic and oil filters)
- Extraction, processing and transport of packaging materials for the transportation of raw materials (pallets, straps and cardboard boxes).
- Consumption of EMAC's facilities derived from the packaging and preparation of the shipment (picking) of the product (electricity consumption associated with picking). The specific electricity mix of the supplier contracted by EMAC is considered. The mix consist of 4.7% renewable energy, 1.8% high-efficiency cogeneration, 32% natural gas, 9.5% coal, 2.3% fuel oil/gas, 39.6% nuclear and 10.1% other non-renewables according to the CNMC (Comisión Nacional de los Mercados y la Competencia) .The environmental impact of 1kWh of consumption for this electricity mix is 0,373 kg CO2eq/kWh according to the GWP GHG indicator.

- Production, transport and treatment of waste generated in the facilities of EMAC associated with picking (cardboard waste).
- Extraction, processing and transport of packaging materials for processes associated with picking (cardboard boxes, cardboard tubes and plastic film).

Construction process stage (A4-A5)

A4- Transport to the building site

The modelling for transport has been carried out in accordance with the EN 15804 standard and the reference PCR. To obtain the calculation of the final transport distance, a weighting has been carried out according to the percentage of sales of the product in the year of reference (2024) for each of the destinations where it is distributed and by specific means of transport (truck, ship or plane).
The above calculations are based on a scenario with the following parameters:

Scenario information	Unit/description
Vehicle type used for transport	Truck with an average load of 16t-32t and EURO6 Transoceanic cargo ship Intracontinental cargo plane
Distance	Truck: 411,38 km Cargo plane: 1.861,15 km Cargo ship: 16,07 km
Capacity utilisation (including empty returns)	100% of capacity by volume % of empty returns assumed in Ecoinvent v3.11
Bulk density of transported products	1450 kg/m^3

A5- Installation in the building

For the installation of the product, the processing of waste derived from packaging and packaging (transport to the waste manager) is taken into account. A transport distance of 80 km and disposal in landfill have been considered. There are no installation losses, according to the manufacturer.
There are not considered auxiliary installation materials, since the required materials, such as adhesive cement, belong to the installation process of the construction element onto which the PVC profile is applied. Examples of such elements include corners, pavements, or edge trims. Therefore, these materials are associated with the installation of the underlying construction element, not with the PVC profile itself.

The biogenic CO2 sequestered by packaging during stages A1-A3 is balanced through its emission in this stage.

Scenario information	Unit/description
Ancillary materials for installation	0 kg
Water use	0 m3
Other resource use	0 kg
Energy type and consumption during the installation process	0 kWh
Waste materials on the building site before waste processing, generated by the product's installation	0 kg
Output materials as result of waste processing at the building site	0,08 kg of packaging waste sent to landfill with a transport distance of 80 km
Direct emissions to ambient air, soil and water	0 kg

Use stage (B1-B7)

This stage includes emissions derived from:

B1- Use of the installed product
B2- Maintenance
B3- Repair
B4- Replacement
B5- Refurbishment
B6- Operational energy use
B7- Operational water use
It is assumed that the declared products will have a useful life equal to or greater than the useful life of the buildings. Once the installation is complete, no further operational actions are required during the use phase of the lifecycle. Therefore, products do not have an impact on this module.

End of life stage (C1-C4)[2]

C1- Deconstruction, dismantling, demolition
The deconstruction and/or dismantling of profiles is part of the entire demolition of a building. In this case, default values specified for module C1 in the PCR have been applied.

C2- Transport of the discarded product to the processing site
It is considered that the uninstalled profiles are transported by 16-32 tonne truck to a waste manager. A transport distance according to PCR has been considered (Transport for products not to be incinerated:80km ;Transport for products to be incinerated: 130km)

C3- Waste processing for reuse, recovery and/or recycling
According to *"Annex_C_V2.1_May2020"* available in EPLCA according to PCR used, for plastic materials such as PVC, the recyclability rate is 32,1% in Europe (according to PlasticsEurope.org) and of the rest of the non-recycled material, 86% is sent to landfill and the remaining 14% is incinerated (according to Eurostat).
The products sold in Europe are accounted for according to the percentage indicated in the *"Annex_C_V2.1_May2020"*, while those sold outside Europe are considered 100% landfill.

Profile is considered to undergo collection and separation processing.
It is considered the incineration part of the profiles in high-efficiency plants.

C4- Disposal
The landfill part of the profiles is considered.
The incineration part of the profiles in low-efficiency plants is considered.

Scenario information	Unit/description
Collection process	Profile is considered to undergo collection and separation processing, 1 kg

[2] The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

Recovery system	0,247 kg product waste sent to recycling 0,049 kg product waste incinerated with energy recovery
Disposal	0,679 kg landfilled 0,024 kg product waste incinerated without energy recovery
Assumptions for scenario development	1,1 kWh/tn of diesel consumed in demolition/deconstruction Transport distances of 80 km to recycling and disposal, and 130 km to incineration, using a 16-32 metric tone EURO 6 truck

D- Benefits and loads beyond the system boundary

Module D reflects the environmental benefits derived from the reuse, recovery or recycling of materials that make up the profile once their life cycle has ended, which will enter a new product system as secondary materials and energy. Environmental benefits come from obtaining recycled PVC and electricity and heat from its energy recovery. As it is a profile composed of numerous materials, quality adjustment factors for recycled material has been assumed according to *"Annex_C_V2.1_May2020"* available in EPLCA according to the PCR used.

Environmental burdens and benefits are considered according to the formula of the UNE-EN 15804:2014+A2:2019/AC:2021 standard. (Section D.3.4).

Finally, it should be noted that the environmental benefits derived from the module, such as the electricity and heat generated by the incineration of the waste and the PVC virgin material avoided by using recycled material, do not count towards the total impacts of the product life cycle, as this is considered separately.

Allocation rules:

The data obtained from the composition of profiles are specific to the manufacturer, and, whenever possible, allocations based on economic and physical criteria have been avoided; however, in cases where this has not been possible, such production consumption (consumption of electricity, water and lubricating oil and also in the generation of waste during the manufacture of the product), the assignment has been made in per kg of profile produced.

Regarding the modelling of recycled material, flows that ceased to be waste that leaves the product system from modules A1-A3, in this case, empty aerosols, plastic shavings and burrs, oil filters and cardboard, are materials that have the potential to be recycled; however, they leave the factory in a condition that do not qualify as end of waste. This is because they are neither classified nor prepared for recycling at the point of exit. Consequently, it is not directed to materials for recycling, nor are the associated recycling benefits taken into account or calculated.

With regard to the primary energy use indicators, "Annex 3" of the PCR used has been followed and therefore option C has been considered.

A load allocation has been made with physical criteria (allocation per kg produced) when necessary, i.e. in production consumption and in waste generation during the manufacture of the product.

The principle of modularity and the principle referred to in the "international EPD System" as "Polluter-pay (PP) allocation method" have been followed.

Cut-off rules:

The study covers at least 95% of the materials and energy per life-cycle stage and at least 99% of the total material and energy use of each unit process. The following processes have been excluded:

- Manufacture of equipment used in production, buildings or any other capital goods.
- Transportation of personnel to the plant.
- Transportation of personnel within the plant.
- Research and development activities.
- Long-term issuances.

Data quality:

Data quality has been assessed using the Product Environmental Footprint (PEF) method described in Table E.2 of EN 15804 standard. The assessment has covered the geographical (GeR), technical (TeR), and temporal (TiR) representativeness of the data (in line with requirements in Section 4.6, based on EN 15941).
The scale of values used is from 1 to 5, where 1 is the lowest score defined as ”very poor”, and 5 is the highest defined as ”very good”, resulting in a score of 4, ”good”, on this scale.

Data quality information:

Category	Description
Data collection period	1/1/2024–31/1/2024
Sites used	1 factory and 1 warehouse in Valencia, Spain, EU
Geography	Profiles produced in Spain, EU
Technology	Profiles are produced by continuous extrusion. The raw material is fed, heated, and melted, then pressed through a die shaped to the desired profile. The extruded profile is cooled and then undergoes finishing processes
Average	No average is assesed
LCI/LCIA database	Ecoinvent 3.11
EPD used	No EPD used
Data quality scheme	EN 15804:2012+A2:2019, Annex E, Table E.2
Use of fair data with more than 30% basic impact	Fair data have been used but not in the most impactful processes, such as in row materials with low impact: calcium chloride, paraffin and acrylic acid; means of transport: lorry 16-32mt and aircraft and; other processes: Injection moulding, treatment of waste polyvinylchloride, municipal incineration electricity and heat, from municipal waste incineration.
Use of poor relevant data	Poor data have been used but not in the most impactful processes, such as in module D: polyethylene terephthalate production, granulate, amorphous, recycled and Waste polyethylene terephthalate, for recycling, sorted or other processes: Diesel, burned in building machine and Transport, freight, sea, container ship.
Use of very poor relevant data	No very poor data used

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

These results shown below are those obtained in the study of the 1 kg of PVC profile, based on worst-case product, according to the PCR 2019:14. Version 2.0.1.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3)

Disclaimer: 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.	2,06E+00	3,70E+00	1,02E-03	0	0	0	0	0	0	0	3,75E-04	1,27E-02	2,10E-01	5,33E-02	-2,94E-01
GWP-biogenic	kg CO_2 eq.	-1,49E-01	1,12E-04	1,53E-01	0	0	0	0	0	0	0	1,70E-08	4,00E-07	6,78E-02	8,35E-05	8,25E-03
GWP-luluc	kg CO_2 eq.	2,43E-03	5,94E-05	1,62E-08	0	0	0	0	0	0	0	1,54E-08	2,01E-07	1,20E-04	5,68E-06	-1,41E-04
GWP-total	kg CO_2 eq.	1,92E+00	3,70E+00	1,54E-01	0	0	0	0	0	0	0	3,75E-04	1,27E-02	2,78E-01	5,34E-02	-2,86E-01
ODP	kg CFC 11 eq.	1,05E-06	8,27E-08	2,33E-11	0	0	0	0	0	0	0	5,70E-12	2,89E-10	1,47E-09	2,60E-10	-2,47E-07
AP	mol H^+ eq.	8,36E-03	1,40E-02	1,27E-06	0	0	0	0	0	0	0	3,46E-06	1,58E-05	5,32E-04	5,18E-05	-7,84E-04
EP-freshwater	kg P eq.	7,55E-05	2,25E-06	6,32E-10	0	0	0	0	0	0	0	3,53E-10	7,85E-09	4,01E-06	1,67E-07	-8,59E-06
EP-marine	kg N eq.	1,40E-03	5,51E-03	2,86E-07	0	0	0	0	0	0	0	1,63E-06	3,55E-06	2,15E-04	1,64E-05	-1,30E-04
EP-terrestrial	mol N eq.	1,62E-02	6,01E-02	3,12E-06	0	0	0	0	0	0	0	1,79E-05	3,87E-05	1,96E-03	1,80E-04	-2,14E-03
POCP	kg NMVOC eq.	7,34E-03	2,11E-02	2,49E-06	0	0	0	0	0	0	0	5,34E-06	3,09E-05	6,66E-04	5,63E-05	-1,12E-03
ADP-minerals&metals*	kg Sb eq.	2,37E-07	9,47E-08	2,67E-11	0	0	0	0	0	0	0	1,31E-11	3,31E-10	1,54E-07	1,04E-08	-2,85E-08
ADP-fossil*	MJ	1,15E+01	3,25E-01	9,03E-05	0	0	0	0	0	0	0	4,72E-05	1,12E-03	3,46E-01	2,44E-02	-8,89E-01
WDP*	m^3	1,61E+00	1,38E-02	4,45E-06	0	0	0	0	0	0	0	3,66E-06	5,52E-05	9,52E-02	4,17E-02	-2,95E-01
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 should be used with caution, as the uncertainties of these results are high or because experience with the Indicator is limited*

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[3]	kg CO_2 eq.	2,07E+00	3,70E+00	1,02E-03	0	0	0	0	0	0	0	3,75E-04	1,27E-02	2,85E-01	5,34E-02	-2,85E-01
Particulate matter*	disease inc.	4,58E-08	4,34E-08	6,14E-11	0	0	0	0	0	0	0	9,97E-11	7,61E-10	2,04E-08	7,42E-10	-4,49E-09
Ionising radiation**	kBq U-235 eq	1,44E-01	4,63E-03	1,31E-06	0	0	0	0	0	0	0	4,07E-07	1,62E-05	1,06E-03	1,11E-04	-8,34E-03
Human toxicity, cancer*	CTUh	3,14E-09	1,05E-09	6,33E-14	0	0	0	0	0	0	0	2,00E-14	7,85E-13	3,18E-10	1,53E-11	-6,62E-10
Ecotoxicity, freshwater*	CTUe	6,61E+01	2,06E+00	1,23E-03	0	0	0	0	0	0	0	2,45E-04	1,53E-02	7,08E+00	2,77E+00	-2,50E+00
Human toxicity, non-cancer*	CTUh	2,64E-08	3,76E-09	6,83E-12	0	0	0	0	0	0	0	3,68E-13	8,48E-11	2,87E-09	2,26E-10	-5,97E-10
Land use*	Pt	9,44E+00	6,20E-02	1,73E-05	0	0	0	0	0	0	0	8,32E-06	2,15E-04	1,53E-01	5,01E-02	-1,61E-01

** Disclaimer: The results of this Environmental Impact Indicator should be used with caution, as the uncertainties of these results are high or because experience with the Indicator is limited*
*** Disclaimer: This impact category primarily refers to the eventual impact of low-dose ionizing radiation on human health from the nuclear fuel cycle. It does not consider the effects due to possible nuclear accidents, occupational exposure or the disposal of radioactive waste in underground facilities. Potential ionizing radiation from soil, radon, and some building materials is also not measured with this calculator.*

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	3,77E+00	1,20E-01	3,40E-05	0	0	0	0	0	0	0	1,07E-05	4,21E-04	6,08E-02	6,80E-03	-2,11E-01
PERM*	MJ	1,18E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT*	MJ	4,95E+00	1,20E-01	3,40E-05	0	0	0	0	0	0	0	1,07E-05	4,21E-04	6,08E-02	6,80E-03	-2,11E-01
PENRE*	MJ	1,18E+01	3,36E-01	9,33E-05	0	0	0	0	0	0	0	4,93E-05	1,16E-03	3,63E-01	2,56E-02	-9,24E-01
PENRM*	MJ	3,20E+01	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT*	MJ	4,38E+01	3,36E-01	9,33E-05	0	0	0	0	0	0	0	4,93E-05	1,16E-03	3,63E-01	2,56E-02	-9,24E-01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

[3] 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.

RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	4,00E-02	7,12E-04	2,64E-07	0	0	0	0	0	0	0	1,48E-07	3,27E-06	3,37E-03	1,49E-03	-7,28E-03
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															

*Option B used according to ANNEX3 of PCR used

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	1,14E-03	3,20E-04	9,05E-08	0	0	0	0	0	0	0	3,36E-08	1,12E-06	1,03E-05	1,82E-06	-2,54E-04
Non-hazardous waste disposed	kg	8,27E-02	1,42E-03	4,50E-07	0	0	0	0	0	0	0	1,72E-07	5,59E-06	1,53E-02	6,85E-01	9,71E-03
Radioactive waste disposed	kg	1,06E-04	2,95E-06	8,21E-10	0	0	0	0	0	0	0	2,29E-10	1,02E-08	7,06E-07	7,48E-08	-7,10E-06

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	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	2,47E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	4,88E-02	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	2,11E-01	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	7,50E-01	0,00E+00	0,00E+00

Additional environmental information

Environmental indicators EN 15804+A2, 100% end-of-life scenarios, per kg.

		100% incineration					100% landfill					100% recycling				
Indicator	Unit	C1	C2	C3	C4	D	C1	C2	C3	C4	D	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	3,75E-04	1,95E-02	1,40E+00	7,02E-01	-2,47E-01	3,75E-04	1,20E-02	0,00E+00	2,73E-03	0,00E+00	3,75E-04	1,20E-02	1,07E-01	0,00E+00	-1,12E+00
GWP-biogenic	kg CO_2 eq.	1,70E-08	6,13E-07	2,27E-03	1,14E-03	0,00E+00	1,70E-08	3,77E-07	0,00E+00	2,29E-07	0,00E+00	1,70E-08	3,77E-07	6,77E-02	0,00E+00	3,35E-02
GWP-luluc	kg CO_2 eq.	1,54E-08	3,08E-07	1,52E-04	7,62E-05	-7,46E-04	1,54E-08	1,90E-07	0,00E+00	1,38E-07	0,00E+00	1,54E-08	1,90E-07	1,09E-04	0,00E+00	-3,50E-04
GWP-total	kg CO_2 eq.	3,75E-04	1,95E-02	1,41E+00	7,03E-01	-2,48E-01	3,75E-04	1,20E-02	0,00E+00	2,73E-03	0,00E+00	3,75E-04	1,20E-02	1,75E-01	0,00E+00	-1,08E+00
ODP	kg CFC 11 eq.	5,70E-12	4,43E-10	6,35E-09	3,18E-09	-3,74E-09	5,70E-12	2,72E-10	0,00E+00	3,92E-11	0,00E+00	5,70E-12	2,72E-10	1,00E-09	0,00E+00	-9,97E-07
AP	mol H^+ eq.	3,46E-06	2,42E-05	9,59E-04	4,80E-04	-1,21E-03	3,46E-06	1,49E-05	0,00E+00	2,46E-05	0,00E+00	3,46E-06	1,49E-05	4,62E-04	0,00E+00	-2,81E-03
EP-freshwater	kg P eq.	3,53E-10	1,20E-08	4,39E-06	2,19E-06	-2,44E-05	3,53E-10	7,41E-09	0,00E+00	8,97E-09	0,00E+00	3,53E-10	7,41E-09	3,69E-06	0,00E+00	-2,75E-05
EP-marine	kg N eq.	1,63E-06	5,44E-06	2,40E-04	1,20E-04	-1,67E-04	1,63E-06	3,35E-06	0,00E+00	1,12E-05	0,00E+00	1,63E-06	3,35E-06	1,98E-04	0,00E+00	-4,75E-04
EP-terrestrial	mol N eq.	1,79E-05	5,93E-05	2,63E-03	1,31E-03	-1,86E-03	1,79E-05	3,65E-05	0,00E+00	1,23E-04	0,00E+00	1,79E-05	3,65E-05	1,77E-03	0,00E+00	-8,09E-03
POCP	kg NMVOC eq.	5,34E-06	4,75E-05	8,46E-04	4,23E-04	-5,91E-04	5,34E-06	2,92E-05	0,00E+00	3,72E-05	0,00E+00	5,34E-06	2,92E-05	6,04E-04	0,00E+00	-4,35E-03
ADP-minerals &metals	kg Sb eq.	1,31E-11	5,08E-10	2,83E-07	1,42E-07	-1,75E-08	1,31E-11	3,13E-10	0,00E+00	9,08E-11	0,00E+00	1,31E-11	3,13E-10	1,33E-07	0,00E+00	-1,10E-07
ADP-fossil	MJ	4,72E-05	1,72E-03	6,37E-01	3,18E-01	-4,34E+00	4,72E-05	1,06E-03	0,00E+00	1,52E-03	0,00E+00	4,72E-05	1,06E-03	2,99E-01	0,00E+00	-2,31E+00
WDP	m^3	3,66E-06	8,47E-05	1,14E+00	5,68E-01	-5,37E-02	3,66E-06	5,21E-05	0,00E+00	3,05E-05	0,00E+00	3,66E-06	5,21E-05	1,19E-02	0,00E+00	-1,18E+00
GWP-GHG	kg CO_2 eq.	3,75E-04	1,95E-02	1,41E+00	7,03E-01	-2,48E-01	3,75E-04	1,20E-02	0,00E+00	2,73E-03	0,00E+00	3,75E-04	1,20E-02	1,82E-01	0,00E+00	-1,08E+00
Particulate matter	disease inc.	9,97E-11	1,17E-09	7,34E-09	3,67E-09	-2,92E-09	9,97E-11	7,19E-10	0,00E+00	6,96E-10	0,00E+00	9,97E-11	7,19E-10	1,99E-08	0,00E+00	-1,73E-08
Ionising radiation	kBq U-235 eq	4,07E-07	2,49E-05	2,96E-03	1,48E-03	-5,33E-02	4,07E-07	1,53E-05	0,00E+00	3,46E-06	0,00E+00	4,07E-07	1,53E-05	8,43E-04	0,00E+00	-1,79E-02
Human toxicity, cancer	CTUh	2,00E-14	1,20E-12	4,14E-10	2,07E-10	-3,42E-11	2,00E-14	7,41E-13	0,00E+00	1,88E-13	0,00E+00	2,00E-14	7,41E-13	2,88E-10	0,00E+00	-2,67E-09
Ecotoxicity, freshwater	CTUe	2,45E-04	2,34E-02	7,56E+01	3,78E+01	-3,10E+00	2,45E-04	1,44E-02	0,00E+00	1,96E-03	0,00E+00	2,45E-04	1,44E-02	1,54E+00	0,00E+00	-9,19E+00
Human toxicity, non-cancer	CTUh	3,68E-13	1,30E-10	6,10E-09	3,05E-09	-1,53E-09	3,68E-13	8,00E-11	0,00E+00	3,60E-12	0,00E+00	3,68E-13	8,00E-11	2,43E-09	0,00E+00	-1,96E-09
Land use	Pt	8,32E-06	3,29E-04	6,04E-01	3,02E-01	-6,67E-01	8,32E-06	2,03E-04	0,00E+00	4,12E-02	0,00E+00	8,32E-06	2,03E-04	1,09E-01	0,00E+00	-4,55E-01
PERE	MJ	1,07E-05	6,46E-04	1,82E-01	9,12E-02	-1,60E+00	1,07E-05	3,98E-04	0,00E+00	1,64E-04	0,00E+00	1,07E-05	3,98E-04	4,74E-02	0,00E+00	-3,78E-01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,07E-05	6,46E-04	1,82E-01	9,12E-02	-1,60E+00	1,07E-05	3,98E-04	0,00E+00	1,64E-04	0,00E+00	1,07E-05	3,98E-04	4,74E-02	0,00E+00	-3,78E-01
PENRE	MJ	4,93E-05	1,78E-03	6,67E-01	3,34E-01	-4,47E+00	4,93E-05	1,09E-03	0,00E+00	1,59E-03	0,00E+00	4,93E-05	1,09E-03	3,14E-01	0,00E+00	-2,41E+00

PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	**MJ**	4,93E-05	1,78E-03	6,67E-01	3,34E-01	-4,47E+00	4,93E-05	1,09E-03	0,00E+00	1,59E-03	0,00E+00	4,93E-05	1,09E-03	3,14E-01	0,00E+00	-2,41E+00
SM	**kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	**m^3**	1,48E-07	5,02E-06	4,07E-02	2,04E-02	-3,64E-03	1,48E-07	3,09E-06	0,00E+00	1,18E-06	0,00E+00	1,48E-07	3,09E-06	3,83E-04	0,00E+00	-1,59E-05
Hazardous waste disposed	**kg**	3,36E-08	1,72E-06	4,52E-05	2,26E-05	-1,11E-05	3,36E-08	1,06E-06	0,00E+00	2,31E-07	0,00E+00	3,36E-08	1,06E-06	6,97E-06	0,00E+00	4,08E-02
Non-hazardous waste disposed	**kg**	1,72E-07	8,57E-06	1,71E-02	8,54E-03	-9,20E-03	1,72E-07	5,27E-06	0,00E+00	5,95E-08	0,00E+00	1,72E-07	5,27E-06	2,37E-03	0,00E+00	0,00E+00
Radioactive waste disposed	**kg**	2,29E-10	1,56E-08	2,00E-06	1,00E-06	-4,33E-05	2,29E-10	9,62E-09	0,00E+00	1,98E-09	0,00E+00	2,29E-10	9,62E-09	5,60E-07	0,00E+00	0,00E+00
Components for re-use	**kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	**kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	**kg**	0,00E+00	0,00E+00	6,67E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	2,89E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	**MJ**	0,00E+00	0,00E+00	1,02E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
Other Relevant Terms	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2 eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2 eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

VERSION HISTORY

Original Version of the EPD, 2026-01-29

REFERENCES

- 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.
- UNE-EN 15804:2014+A2:2019/AC:2021 Sustainability of construction works-Environmental Product Declarations-Core rules for the product category of construction products.
- General Programme Instructions of the International EPD® System. Version 5.0.1
- PCR 2019:14. *CONSTRUCTION PRODUCTS, VERSION 2.0.1*
- Report reference: Report LCA EMAC_V4 January 2026

VERIFICATION STATEMENT CERTIFICATE

CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

Certificate No. / Certificado nº: EPD15003

CERTINALIA, S.L.U., confirms that independent third-party verification has been conducted of the Environmental Product Declaration (EPD) on behalf of:
CERTINALIA, S.L.U., confirma que se ha realizado verificación de tercera parte independiente de la Declaración Ambiental de Producto (DAP) en nombre de:

EMAC COMPLEMENTOS, S.L
Avda. Madrid 6
46930 Quart de Poblet (Valencia) - SPAIN

for the following products:
para los siguientes productos:

PVC Profile
Perfil PVC

with registration number **EPD-IES-0027022** in the International EPD® System *(www.environdec.com)*
*con número de registro **EPD-IES-0027022** en el Sistema International EPD® (www.environdec.com)*

it´s in conformity with:
es conforme con:

- **ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations.**
- **General Programme Instructions for the International EPD® System v5.**
- **PCR 2019:14 Construction products (EN 15804:A2) version 2.0.**
- **UN CPC 369 Other plastics products.**

Issued date / *Fecha de emisión:*	27/01/2026
Update date / *Fecha de actualización:*	27/01/2026
Serial Nº / *Nº Serie:*	EPD1500300-E

Carlos Nazabal Alsua
Manager

ENAC
CERTIFICACIÓN
ISO 17065
Nº125 / C-PR283

The validity of this certificate is subject to the validity of its related EPD.
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