ALUMINCO®
ALUMINIUM BUILDING SYSTEMS

EPD®
THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD EN 15804 VERIFIED

ENVIRONMENTAL PRODUCT DECLARATION

ALUMINIUM PROFILES in accordance with ISO 14025 & EN 15804:2012+A2:2019

Programme	The International EPD System www.environdec.com
Programme operator	EPD International AB
EPD registration number	S-P-05550
Publication Date	2022-02-10
Valid until	2027-02-09
PCR	PCR 2019:14 “Construction products”
Geographical scope	Worldwide
CPC Code	41532 Bars, rods and profiles, of aluminium

COMPANY INFORMATION

ALUMINCO S.A. started in 1982 as a pioneer with a vision and a strong business culture. From the very first day of its activity, it set as its goal, to become a premium, worldwide Aluminium supplier of superior systems that meet evolution, through on-going research and industrial processes technology optimization.

Today, with 40 years of experience and continuous innovation and investment in production lines and personnel, it has evolved into a state-of-the-art, vertical aluminium industry with a global footprint.

Mission
Targeting the international community of architects, designers, engineers, construction perfectionists and fabricators, we aim to differentiate ourselves from our competitors by offering a complete range of architectural aluminium solutions that are innovative, energy efficient and sustainable, embodying top quality, high functionality, and contemporary design standards.

Customer satisfaction and quality assurance are paramount
We constantly strive to improve each aspect of the production process and the supply chain to ensure premium quality to our business partners.

In ALUMINCO we implement Quality, Environmental and Occupational Health, Safety, and Energy Management Systems, certified according to international standards ISO 9001, ISO 14001, ISO 45001, and ISO 50001 respectively, as well as Factory Production Control System certified according to EN 15088, EN 1090 and Qualicoat Seaside Class.

Research & Development are essential within our business
Our evolution and progress are an achievement coming from the inspiration of a group of people, the “heartbeat” of ALUMINCO, on whose inspiration and concept, we base our next steps and development. As part of the development process, all product series are certified by notable, internationally recognized certification institutes for their outstanding characteristics and performance.

Global reach / International Footprint
ALUMINCO’ s network covers a significant number of European countries as well as Africa, Middle East, Australia and the U.S.A, and stretches its boundaries in more than 60 countries worldwide.

A strong portfolio of products
By constantly investing in new technologies and placing great emphasis on research and development, ALUMINCO has developed and consolidated hundreds of aluminium products, many of which are unique in their kind, with many innovations and patents.

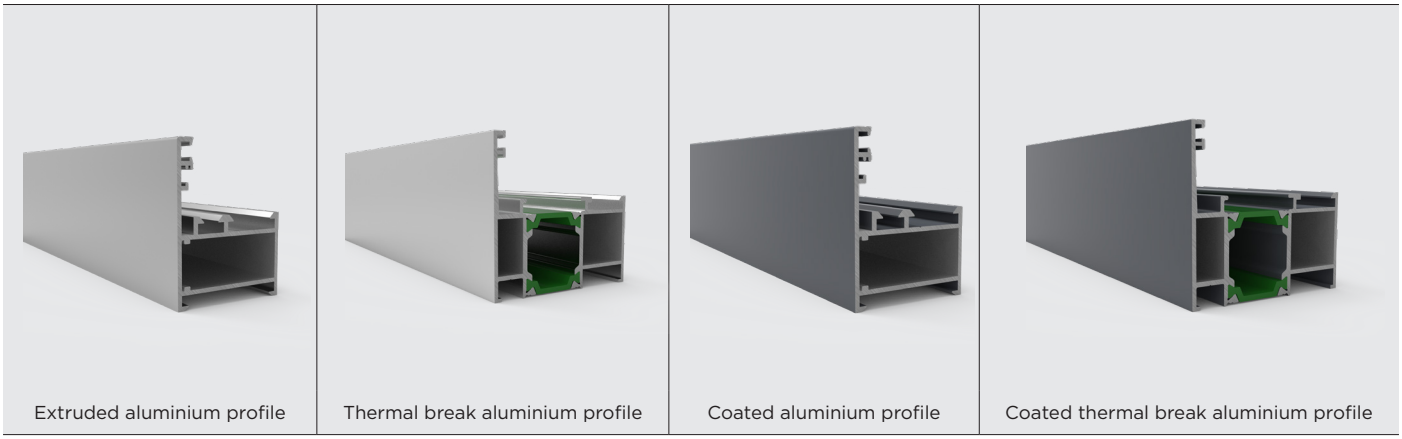
- Hinged window & door systems
- Sliding window & door systems
- Bi-folding door systems
- Entrance doors
- Curtain wall & façade systems
- Shading systems
- Railing systems
- Outdoor living systems

ALUMINCO’ s premises comprise production facilities, logistics center and administration offices and are located, in privately owned premises of 60.000 sq. m. in the Industrial Zone of Inofyta Viotia.


Commited to sustainability

PRODUCT INFORMATION

This is a specific EPD and covers 4 products produced in the Manufacturing plant of Oinofyta.



Extruded aluminium profile | Thermal break aluminium profile | Coated aluminium profile | Coated thermal break aluminium profile

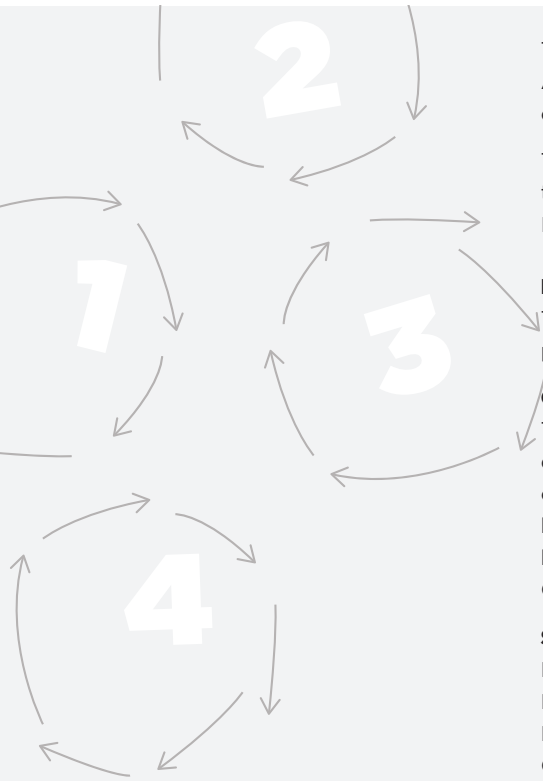
Technical Specifications of Aluminium profiles of Aluminco		
Density (g/cm^3)	2.50 - 2.70	Scientific and Technical Sources
Melting Range (°C)	585 - 650	Scientific and Technical Sources
Thermal Conductivity (W/mK)	200 - 220	Scientific and Technical Sources
Thermal Expansion (10-6/K)	23.20 - 23.40	Scientific and Technical Sources
Tensile Strength (MPa)	Min 190	EN 755-2
Elongation A50 mm	Min 5%	EN 755 -2

	Extruded Profile	Thermal Break Profile	Coated Profile	Thermal Break Coated Profile
Aluminium	100%	>90%	>95	>85
Al	93-96%			
Mg	0,35-0,9%			
Si	0,2-1,1%			
Others	<1 %			
Polyamide	-	<10%	-	<10
Powder	-	-	<5	<5

Applications: Aluminium profiles covered by this EPD are used in office buildings and public works.

No substance in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" exceeds 0.1% wt in the final products.

LCA INFORMATION



The environmental performance of Aluminco has been assessed using the LCA (Life Cycle Assessment) analysis method, starting from the extraction of the raw materials up to the completion of the finished product, excluded the construction and use phase.

The study was carried out in conformity with the ISO 14040 standards, following the Product Category Rules (PCR), approved by the technical committee of the International EPD System: PCR 2019:14 "Construction products".

DECLARED UNIT
The declared unit is 1 kg of aluminium profile.

GOAL AND SCOPE
This EPD evaluates the average environmental impacts of the production of 1 kg of aluminium profiles that produce by ALUMINCO S.A. at Inofita, with system boundaries Cradle-to-gate with modules C+D.

SOFTWARE AND DATABASE
Microsoft Excel is used to perform the LCA. Background data is sourced from Ecoinvent 3.7.1 Cut-off lci via software OpenLCA 1.10.3.

TIME REPRESENTIVENESS
All primary data used in this study is for the full year 2020.

GEOGRAPHICAL SCOPE
Worldwide

ALLOCATIONS
Wherever possible allocation was avoided. Allocation based on physical properties (mass) was applied to the electricity, water and wastes. Mass allocation applied to all inputs and outputs of coating stage to the 2 products of this stage. Also, the electricity for other utilities except the production, such as lighting was allocated to the products by their mass.

DATA QUALITY
ISO 14044 was applied in terms of data collection and quality requirements. The impact of the production of raw materials recovered from Ecoinvent database v.3.7.1. The data concerning the modules A2 (Transportation) and A3 (Product manufacturing) were provided by Aluminco and concerns the full year 2020. These data were the quantities of all input and output materials extracted from the company's ERP system, the consumed utilities (energy, water) and the distances and means of transport for each input stream. Regarding electricity mix, the latest (2020) national residual electricity mix as published in DAPEEP SA was utilized. The emission factor for natural gas is provided from National Inventory Report of 2020 for Greece. The end-of-life are based on the most representative scenarios for this product. Background data for this stage are retrieved from Ecoinvent v.3.7.1.

CUT-OFF RULES
The cut-off criteria adopted is as stated in "EN 15804:2012+A2:2019". Where there is insufficient data for a unit process, the cut-off criteria are 1% of the total mass of input of that process. The total of neglected input flows per module is a maximum of 5% of energy usage and mass. The cut-off rules were applied for some waste flows and for packaging materials since they contribute less than 1% by mass.

ASSUMPTIONS
Module A2: a EURO4 lorry 16-32 metric ton was utilized for road transportation and a bulk carrier for dry goods for sea transportation

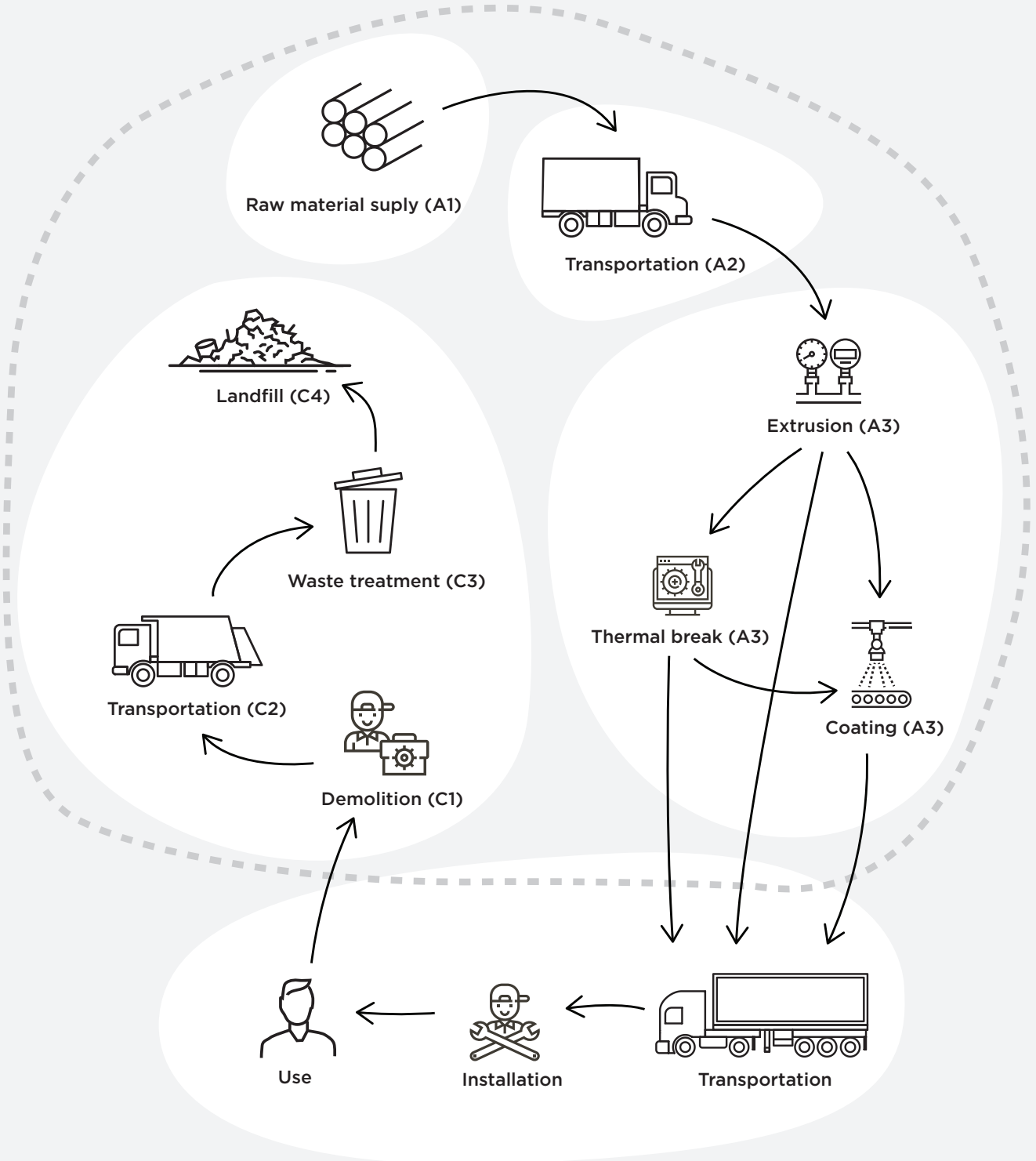
Module C1: the specific diesel consumption for a building demolition is considered as 0,239 MJ/kg product of material according to JRC TECHNICAL REPORT "Model for Life Cycle Assessment (LCA) of buildings".

Module C2: a conservative assumption of 100 km by lorry 16-32 metric ton was used.

Module C3 and C4: The scenarios included are currently in use and are representative for one of the most probable alternatives. According to the European Aluminium Association above 90% of the aluminium for building applications is being recycled. For the study it was assumed that 90% of the aluminium is being recycled at the end-of-life of the products while the rest 10% are being disposed/landfilled. The recycled aluminium is transformed to secondary aluminium ingots.

COMPARABILITY
EPDs of construction products may not be comparable if they do not comply with EN 15804. EPDs within the same product category but from different programmes may not be comparable.

LCA


Raw material suply (A1)
Transportation (A2)
Extrusion (A3)
Thermal break (A3)
Coating (A3)
Transportation
Installation
Use
Demolition (C1)
Transportation (C2)
Waste treatment (C3)
Landfill (C4)

SYSTEM BOUNDARY

X= Included, MND= Module Not Declared

Product stage			Construction Stage		Use stage							End-of-life stage				Resource recovery stage
Raw Materials Supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction and demolition	Transport	Waste processing for reuse, recovery and/or recycling	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	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

A1: RAW MATERIAL SUPPLY
The production starts with the material supply. This stage includes the mining and processing of raw materials, the generation of electricity and fuels required for the manufacturing and the recycling process of secondary materials. Aluminium ingot, primary and secondary, is the main raw material charged in the extrusion line. For the thermal breaking stage, the main raw material used is polyamide along with the extruded profiles from the previous stage, Furthermore, for the coating of profiles, the usage of powder and chemicals is required.

A2: TRANSPORTATION OF RAW MATERIALS TO MANUFACTURER
Transport is relevant for delivery of raw materials from the supplier to the gate of manufacturing plant.

A3: MANUFACTURING
The manufacturing process starts with the extrusion, in which aluminum ingots are forced to flow through a shaped opening in the die in order to be moulded into aluminum profiles. Extruded material emerges as an elongated piece with the same profile as the die opening. Then, some of the profiles become thermally broken, with the addition of polyamide. Finally, extruded and thermal break aluminium profiles undergo a coating process.

C1: DECONSTRUCTION/DEMOLITION
This stage concerns the impact arising from the diesel consumption of the heavy vehicles during demolition process.

C2: TRANSPORT
Transportation of the discarded product either to the recycling site or to landfills for final disposal.

C3: WASTE PROCESSING
Involves the impact arising from the waste processing of the product at the end-of-life stage intended for reuse, recycling and recovery. 90% of the aluminium of the product is recycled, by remelting process, to produce secondary aluminium billets.

C4: DISPOSAL
10% of the aluminium of the products and in case of the thermal break profile, all the amount of polyamide, will be landfilled..

D: REUSE-RECOVERY-RECYCLING POTENTIAL
Module D consists of avoided burdens related to the potential reuse and/or recycling of the product after its end-of-life stage.

ENVIROMENTAL PERFORMANCE INDICATORS

ENVIRONMENTAL IMPACTS FOR 1 KG OF EXTRUDED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	1,04E+01	2,16E-02	1,65E-02	7,07E-01	3,94E-03	-6,00E+00
GWP-fossil	kg CO2 eq	1,02E+01	2,16E-02	1,65E-02	6,99E-01	3,92E-03	-5,85E+00
GWP-biogenic	kg CO2 eq	4,25E-02	3,55E-06	5,55E-06	6,92E-03	1,31E-05	-2,13E-02
GWP-luluc	kg CO2 eq	1,89E-01	1,72E-06	5,58E-06	5,69E-04	3,71E-06	-1,30E-01
GWP-GHG	kg CO2 eq	9,77E+00	7,08E-04	1,63E-02	6,93E-01	3,81E-03	-5,71E+00
ODP	kg CFC-11 eq	7,79E-07	4,66E-09	3,77E-09	5,39E-08	4,33E-10	-4,21E-07
AP	mol H+ eq	7,71E-02	2,25E-04	8,25E-05	4,31E-03	2,59E-05	-4,71E-02
EP-freshwater	kg PO4-3 eq	1,27E-02	2,00E-06	3,42E-06	2,26E-03	3,65E-06	-5,23E-03
EP-freshwater	kg P eq	4,13E-03	6,52E-07	1,11E-06	7,37E-04	1,19E-06	-1,71E-03
EP-marine	kg N eq	1,02E-02	9,99E-05	2,88E-05	8,09E-04	6,45E-06	-5,92E-03
EP-terrestrial	mol N eq	1,05E-01	1,09E-03	3,14E-04	9,74E-03	6,94E-05	-5,97E-02
POCP	kg NMVOC eq	3,43E-02	3,00E-04	8,95E-05	2,50E-03	2,05E-05	-2,04E-02
ADPe	kg Sb eq	6,06E-05	8,72E-09	5,98E-08	1,88E-04	8,75E-09	1,35E-04
ADPf	MJ	1,03E+02	2,97E-01	2,51E-01	8,05E+00	5,56E-02	-5,46E+01
WDP	m3 eq	7,82E+00	2,13E-02	1,17E-03	6,53E-01	1,83E-03	-4,41E+00

RESOURCE USE FOR 1 KG OF EXTRUDED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6,78E+01	1,54E-03	3,38E-03	1,21E+00	3,57E-03	-4,51E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,78E+01	1,54E-03	3,38E-03	1,21E+00	3,57E-03	-4,51E+01
PENRE	MJ	1,03E+02	2,97E-01	2,51E-01	8,05E+00	5,56E-02	-5,46E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,03E+02	2,97E-01	2,51E-01	8,05E+00	5,56E-02	-5,46E+01
SM	kg	1,93E-01	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,82E-01	1,65E-05	2,71E-05	1,52E-02	4,26E-05	-1,03E-01

OUTPUT FLOWS AND WASTE CATEGORIES FOR 1 KG OF EXTRUDED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,75E-03	8,00E-07	6,54E-07	7,90E-03	5,34E-08	6,18E-03
NHWD	kg	3,63E+00	3,65E-04	1,20E-02	2,17E-01	1,05E-01	-2,25E+00
RWD	kg	4,79E-04	2,07E-06	1,72E-06	2,60E-05	2,21E-07	-2,61E-04
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIROMENTAL PERFORMANCE INDICATORS

ENVIRONMENTAL IMPACTS FOR 1 KG OF THERMAL BREAK ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	1,08E+01	2,16E-02	1,65E-02	7,07E-01	1,58E-02	-6,16E+00
GWP-fossil	kg CO2 eq	1,06E+01	2,16E-02	1,65E-02	6,99E-01	1,58E-02	-6,01E+00
GWP-biogenic	kg CO2 eq	4,09E-02	3,55E-06	5,55E-06	6,92E-03	2,36E-06	-2,19E-02
GWP-luluc	kg CO2 eq	1,71E-01	1,72E-06	5,58E-06	5,69E-04	9,26E-07	-1,34E-01
GWP-GHG	kg CO2 eq	1,01E+01	7,08E-04	1,63E-02	6,93E-01	1,37E-02	-5,86E+00
ODP	kg CFC-11 eq	7,60E-07	4,66E-09	3,77E-09	5,39E-08	3,55E-10	-4,33E-07
AP	mol H+ eq	7,56E-02	2,25E-04	8,25E-05	4,31E-03	2,13E-05	-4,84E-02
EP-freshwater	kg PO4-3 eq	1,30E-02	2,00E-06	3,42E-06	2,26E-03	8,77E-07	-5,37E-03
EP-freshwater	kg P eq	4,25E-03	6,52E-07	1,11E-06	7,37E-04	2,86E-07	-1,75E-03
EP-marine	kg N eq	1,11E-02	9,99E-05	2,88E-05	8,09E-04	1,94E-04	-6,08E-03
EP-terrestrial	mol N eq	1,05E-01	1,09E-03	3,14E-04	9,74E-03	8,96E-05	-6,13E-02
POCP	kg NMVOC eq	3,41E-02	3,00E-04	8,95E-05	2,50E-03	3,09E-05	-2,10E-02
ADPe	kg Sb eq	5,57E-05	8,72E-09	5,98E-08	1,88E-04	4,55E-09	1,38E-04
ADPf	MJ	1,15E+02	2,97E-01	2,51E-01	8,05E+00	2,96E-02	-5,61E+01
WDP	m3 eq	8,31E+00	2,13E-02	1,17E-03	6,53E-01	1,25E-03	-4,53E+00

RESOURCE USE FOR 1 KG OF THERMAL BREAK ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6,22E+01	1,54E-03	3,38E-03	1,21E+00	8,28E-04	-4,63E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,22E+01	1,54E-03	3,38E-03	1,21E+00	8,28E-04	-4,63E+01
PENRE	MJ	1,15E+02	2,97E-01	2,51E-01	8,05E+00	2,96E-02	-5,61E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,15E+02	2,97E-01	2,51E-01	8,05E+00	2,96E-02	-5,61E+01
SM	kg	1,74E-01	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,93E-01	1,65E-05	2,71E-05	1,52E-02	2,91E-05	-1,05E-01

OUTPUT FLOWS AND WASTE CATEGORIES FOR 1 KG OF THERMAL BREAK ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,58E-03	8,00E-07	6,54E-07	7,90E-03	4,32E-08	6,34E-03
NHWD	kg	3,33E+00	3,65E-04	1,20E-02	2,17E-01	9,62E-02	-2,31E+00
RWD	kg	4,73E-04	2,07E-06	1,72E-06	2,60E-05	1,65E-07	-2,68E-04
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIROMENTAL PERFORMANCE INDICATORS

ENVIRONMENTAL IMPACTS FOR 1 KG OF COATED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	1,12E+01	2,16E-02	1,65E-02	7,07E-01	3,94E-03	-6,00E+00
GWP-fossil	kg CO2 eq	1,10E+01	2,16E-02	1,65E-02	6,99E-01	3,92E-03	-5,85E+00
GWP-biogenic	kg CO2 eq	4,53E-02	3,55E-06	5,55E-06	6,92E-03	1,31E-05	-2,13E-02
GWP-luluc	kg CO2 eq	1,90E-01	1,72E-06	5,58E-06	5,69E-04	3,71E-06	-1,30E-01
GWP-GHG	kg CO2 eq	1,06E+01	7,08E-04	1,63E-02	6,93E-01	3,81E-03	-5,71E+00
ODP	kg CFC-11 eq	9,06E-07	4,66E-09	3,77E-09	5,39E-08	4,33E-10	-4,21E-07
AP	mol H+ eq	8,38E-02	2,25E-04	8,25E-05	4,31E-03	2,59E-05	-4,71E-02
EP-freshwater	kg PO4-3 eq	1,44E-02	2,00E-06	3,42E-06	2,26E-03	3,65E-06	-5,23E-03
EP-freshwater	kg P eq	4,70E-03	6,52E-07	1,11E-06	7,37E-04	1,19E-06	-1,71E-03
EP-marine	kg N eq	1,10E-02	9,99E-05	2,88E-05	8,09E-04	6,45E-06	-5,92E-03
EP-terrestrial	mol N eq	1,11E-01	1,09E-03	3,14E-04	9,74E-03	6,94E-05	-5,97E-02
POCP	kg NMVOC eq	3,68E-02	3,00E-04	8,95E-05	2,50E-03	2,05E-05	-2,04E-02
ADPe	kg Sb eq	6,78E-05	8,72E-09	5,98E-08	1,88E-04	8,75E-09	1,35E-04
ADPf	MJ	1,19E+02	2,97E-01	2,51E-01	8,05E+00	5,56E-02	-5,46E+01
WDP	m3 eq	8,52E+00	2,13E-02	1,17E-03	6,53E-01	1,83E-03	-4,41E+00

RESOURCE USE FOR 1 KG OF COATED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6,92E+01	1,54E-03	3,38E-03	1,21E+00	3,57E-03	-4,51E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,92E+01	1,54E-03	3,38E-03	1,21E+00	3,57E-03	-4,51E+01
PENRE	MJ	1,19E+02	2,97E-01	2,51E-01	8,05E+00	5,56E-02	-5,46E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,19E+02	2,97E-01	2,51E-01	8,05E+00	5,56E-02	-5,46E+01
SM	kg	1,93E-01	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,98E-01	1,65E-05	2,71E-05	1,52E-02	4,26E-05	-1,03E-01

OUTPUT FLOWS AND WASTE CATEGORIES FOR 1 KG OF COATED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,77E-03	8,00E-07	6,54E-07	7,90E-03	5,34E-08	6,18E-03
NHWD	kg	3,79E+00	3,65E-04	1,20E-02	2,17E-01	1,05E-01	-2,25E+00
RWD	kg	5,33E-04	2,07E-06	1,72E-06	2,60E-05	2,21E-07	-2,61E-04
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIROMENTAL PERFORMANCE INDICATORS

ENVIRONMENTAL IMPACTS FOR 1 KG OF THERMAL BREAK COATED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	1,16E+01	2,16E-02	1,65E-02	7,07E-01	1,58E-02	-6,16E+00
GWP-fossil	kg CO2 eq	1,14E+01	2,16E-02	1,65E-02	6,99E-01	1,58E-02	-6,01E+00
GWP-biogenic	kg CO2 eq	4,37E-02	3,55E-06	5,55E-06	6,92E-03	2,36E-06	-2,19E-02
GWP-luluc	kg CO2 eq	1,72E-01	1,72E-06	5,58E-06	5,69E-04	9,26E-07	-1,34E-01
GWP-GHG	kg CO2 eq	1,09E+01	7,08E-04	1,63E-02	6,93E-01	1,37E-02	-5,86E+00
ODP	kg CFC-11 eq	8,87E-07	4,66E-09	3,77E-09	5,39E-08	3,55E-10	-4,33E-07
AP	mol H+ eq	8,22E-02	2,25E-04	8,25E-05	4,31E-03	2,13E-05	-4,84E-02
EP-freshwater	kg PO4-3 eq	1,48E-02	2,00E-06	3,42E-06	2,26E-03	8,77E-07	-5,37E-03
EP-freshwater	kg P eq	4,83E-03	6,52E-07	1,11E-06	7,37E-04	2,86E-07	-1,75E-03
EP-marine	kg N eq	1,18E-02	9,99E-05	2,88E-05	8,09E-04	1,94E-04	-6,08E-03
EP-terrestrial	mol N eq	1,12E-01	1,09E-03	3,14E-04	9,74E-03	8,96E-05	-6,13E-02
POCP	kg NMVOC eq	3,65E-02	3,00E-04	8,95E-05	2,50E-03	3,09E-05	-2,10E-02
ADPe	kg Sb eq	6,29E-05	8,72E-09	5,98E-08	1,88E-04	4,55E-09	1,38E-04
ADPf	MJ	1,31E+02	2,97E-01	2,51E-01	8,05E+00	2,96E-02	-5,61E+01
WDP	m3 eq	9,00E+00	2,13E-02	1,17E-03	6,53E-01	1,25E-03	-4,53E+00

RESOURCE USE FOR 1 KG OF THERMAL BREAK COATED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6,36E+01	1,54E-03	3,38E-03	1,21E+00	8,28E-04	-4,63E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,36E+01	1,54E-03	3,38E-03	1,21E+00	8,28E-04	-4,63E+01
PENRE	MJ	1,31E+02	2,97E-01	2,51E-01	8,05E+00	2,96E-02	-5,61E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,31E+02	2,97E-01	2,51E-01	8,05E+00	2,96E-02	-5,61E+01
SM	kg	1,74E-01	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	2,10E-01	1,65E-05	2,71E-05	1,52E-02	2,91E-05	-1,05E-01

OUTPUT FLOWS AND WASTE CATEGORIES FOR 1 KG OF THERMAL BREAK COATED ALUMINIUM PROFILE

PARAMETER	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,60E-03	8,00E-07	6,54E-07	7,90E-03	4,32E-08	6,34E-03
NHWD	kg	3,48E+00	3,65E-04	1,20E-02	2,17E-01	9,62E-02	-2,31E+00
RWD	kg	5,26E-04	2,07E-06	1,72E-06	2,60E-05	1,65E-07	-2,68E-04
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

REFERENCES

ADDITIONAL INFORMATION

The EPD does not give information on release of dangerous substances to soil, water and indoor air because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonized test methods according to the provisions of the respective technical committees for European product standards are not available.

REFERENCES

- GPI v.3.01:2019-09-18 General Programme Instructions of the International EPD® System
- PCR 2019:14 v.1.11 Product Category rules | Construction products | The International EPD® System
- EN 15804:2012+A2:2019 Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products
- 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 Environmental management - Life Cycle Assessment - Requirements and guidelines
- Ecoinvent Ecoinvent Centre | www.Eco-invent.org
- Residual Energy Mix 2020 from Renewable Energy Sources Operator & Guarantees of Origin (DAPEEP SA)
- TACKLING RECYCLING ASPECTS IN EN15804 - Christian Leroy, Jean-Sebastien Thomas, Nick Avery, Jan Bollen, Ladji Tikana
- ENVIRONMENTALPROFILE REPORT-Life-Cycle inventory data for aluminium production and transformation processes in Europe, European Aluminium Association, February 2018
- ‘CIRCULAR ALUMINIUM ACTION PLAN, A strategy for achieving aluminium’s full potential for circular economy by 2030, European Aluminium Association, April 2020’

ABBREVIATIONS

LIST OF ABBREVIATIONS

GWP-total	Global Warming Potential total
GWP-fossil	Global Warming Potential fossil
GWP-biogenic	Global Warming Potential biogenic
GWP-luluc	Global Warming Potential land use and land use change
ODP	Ozone Depletion Potential
AP	Acidification Potential
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 photochemical oxidants
ADPe	Abiotic depletion potential for non-fossil resources
ADPf	Abiotic depletion potential for fossil resources
WDP	Water use
PERE	Use of renewable primary energy excluding 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 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 resources
SM	Use of secondary material
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Use of net fresh water
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EE	Exported Energy

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