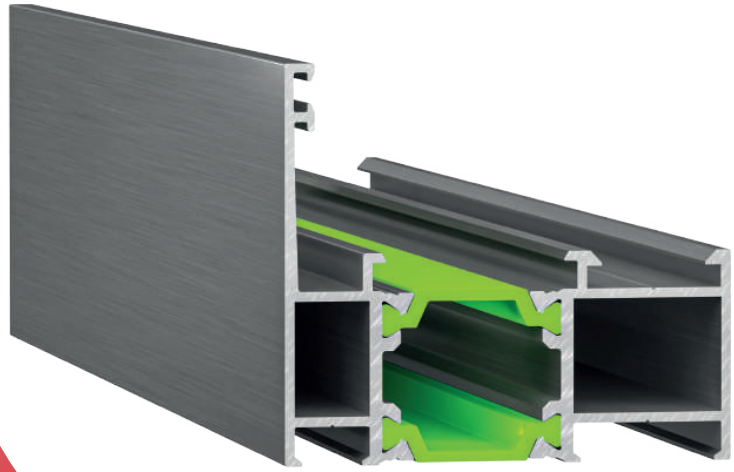


ALUMINIUM SYSTEMS

Environmental Product Declaration Of Thermal Break Anodized Aluminium Profiles

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

EPD Programme:	The International EPD® System www.environdec.com
Programme Operator:	EPD International AB
CPC Code:	41532,Bars,rods and profiles, of aluminium
EPD Registration Number:	EPD - IES - 0020997
Publication Date:	2025-05-27
Valid Until:	2030-05-26
Geographical Scope:	Global

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

ECO PLATFORM EPD VERIFIED

EPD®
THE INTERNATIONAL EPD® SYSTEM

Programme:	The International EPD® System
Address:	EPD International AB, Box 210 60, SE-100 31, Stockholm Sweden
Website:	www.environdec.com
Email:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification:	CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR):	PCR 2019:14 Construction products, version 1.3.4
PCR review was conducted by:	The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile.

Life Cycle Assessment (LCA):

LCA accountability:	ENVIROMETRICS Business Consultants & Engineers	ENVIROMETRICS S.A. Kodrou 3 str., 152 32, Chalandri, Greece info@envirometrics.gr www.envirometrics.gr

Third-party Verification:

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
EPD verification by certification body

Third-party verification:	BUSINESS QUALITY VERIFICATION BQV	Business Quality Verification P.C, Accredited by E.S.Y.D, Accreditation No. 1218, 5 Konitsis street, Marousi, GR 15125, Greece info@bqv.gr www.bqv.gr Business Quality Verification P.C. is an approved certification body accountable for the third-party verification

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 of the EPD.

EPDs within the same product category but registered in different EPD programmes 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 characterization factors); have equivalent content declarations; and be valid at the time of comparison.

EUROPA PROFIL ALUMINIUM S.A., is one of the leading aluminium extrusion industries in Greece. It was founded in 1974 by Lymparet T. Tzirakian† and Krikor L. Tzirakian and has been developing with continuous strategic investments in mechanical equipment and technology, alongside with the appropriate skilled workforce.
More than 50 years since its founding, the Company has grown into one of the most prominent and recognized aluminium manufacturers, both in the domestic and international markets. With a workforce of over 400 employees and exports to more than 25 countries worldwide, it continues to set industry standards. Its subsidiary, PROFIL ACCESSORIES S.A., specializes in the production and distribution of **Europa** roller shutters and insect screens, as well as components for **Europa** architectural systems, offering a wide range of mechanisms sourced from both domestic and international suppliers.



Products and applications

Driven by a commitment to reliability and customer trust, **Europa** operates on two key levels. First, it designs and manufactures innovative, high-performance aluminium products, offering an extensive range of profiles with diverse designs and advanced production capabilities to meet every need. Second, the Company provides comprehensive professional support services, ensuring seamless and efficient customer service at every stage of collaboration.

In particular, Europa specializes in the production of:

- Aluminium Architectural Systems: Opening, Folding, Sliding, Curtain Wall, Roller Shutter Systems, Screen Systems, Special Construction Solutions etc.
- Outdoor Systems: Shading Systems, Aluminium Pergola Systems, Security Doors, Aluminium Panels, Glass Railing Systems etc.
- Industrial Applications: Custom made profiles and Standard Profiles.
- Photovoltaic Mounting Systems: Ground Mounted Systems, Industrial Roof Systems, Concrete Flat Roof Systems, Tile Roof Systems, Carport.

Europa values

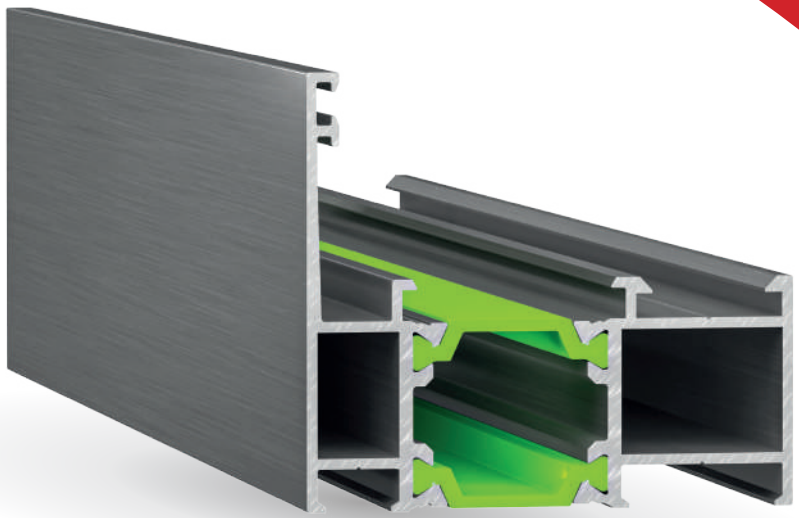
With an emphasis on "Superior Quality Products & Services, Certified Production Processes & Products, Anthropocentric Philosophy", **Europa** produces innovative aluminium systems of top quality, technology and aesthetics.

Integrity, Reliability, Flexibility, Team Spirit and Sense of Responsibility are the core values that run through the operation and the whole range of **Europa** activities.

Starting from these values and equipped with the know-how of over half a century of operations, **Europa** works methodically with the aim of fulfilling its commitments to its employees, customers and partners, society as a whole and the environment.

Product Description: Thermal Break Anodized Aluminium Profiles

This is a specific EPD and covers aluminium extrusion product manufactured by **Europa** in the form of rod, bar and tube with standard and custom-made profiles.



Applications

Aluminium profiles are used in multiple sectors:

• Building and construction (windows, doors, curtain walls, roller shutters, insect screens, partition walls, façade systems, atriums and skylight windows, louvres shading systems, pergolas, security doors, railing systems, aluminium panels).
Tailored and finished products are applied in projects of residential, commercial, hotel, healthcare and educational sector as well as public works.

• Industrial applications (flatbars, symmetrical and asymmetrical angles, T-profiles, U-profiles, Z-profiles, rectangular tubes, tubes, square and round bars, rectangular and square tubes with radios)
Tailored and finished products are applied in transportation, robotics and various applications.

• Mounting systems for photovoltaic panels (Ground Mounted systems, Industrial Roof systems, Concrete Flat Roof systems, Tile Roof systems, Carports).

Aluminium profiles manufactured by Europa share the following technical specifications and are presented below:

Technical Specifications

Property	Value	
Density (g/cm^3)	2,50 - 2,70	Scientific and Technical Sources
Melting Range (°C)	585 - 650	Scientific and Technical Sources
Thermal Conductivity (W/m*K)	200 - 220	Scientific and Technical Sources
Thermal Expansion (10^{-6}/K)	23,2 - 23,4	Scientific and Technical Sources
Tensile Strength (MPa)	Min 190	EN 755-2
Elongation A50 (mm)	Min 6 %	EN 755-2

Composition

According to the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation, the product does not contain any substance included in the Candidate List of Substances of Very High Concern (SVHCs) for authorization with concentrations higher than 0.1% weight by weight (w/w).

Composition

Component		**Composition** (in kg per declared unit)	**Post consumer recycled material** (% per declared unit)*	**Biogenic material, kg C per declared unit****
Aluminium ingots, of which		> 0,89	23,89	-
↳ Aluminium (Al)		95-99 %	-	-
↳ Magnesium (Mg)		0,35-0,9 %	-	-
↳ Silicon (Si)		0,2-0,6 %	-	-
↳ Others		< 1 %	-	-
Polyamide		< 0,1	-	-
Anodizing		< 0,01	-	-
Packaging Materials	Paperboard	2,14E-02	-	1,07E-02
	Plastic films	2,14E-02	-	-

*It should be noted that Europa, loyal to its sustainable practices, is making efforts to increase year by year the percentage of the recycled aluminium material used in the feed.

**Biogenic carbon content of wood and wood-based materials is assumed as 50% of the mass of the material, adopted from EN 16449.

X = Included, ND = 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**
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module Declared	X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	GR	-	GR								EU	EU	EU	EU	EU
GWP share of Specific data used	17,44%			-									-	-	-	-	-
Variation - Products	0%			-									-	-	-	-	-
Variation - Sites	0%			-									-	-	-	-	-

Product stage (A1-A3)

Product stage (modules A1-A3) includes raw material supply, transportation, and manufacturing.

A1: Raw Material Supply

The production starts with the material supply. This module includes the mining and pretreatment processes before production (processing of raw materials, generation of electricity and fuels required for the manufacturing, recycling process of secondary materials). Aluminium ingot, primary and secondary, is the main raw material charged in the extrusion line, 76,11% and 23,89% respectively. Concerning the thermal break stage, the main raw material used is polyamide along with the mill finished profiles.

A2: Transportation of raw materials to manufacturer

Transportation is relevant to delivery of raw materials from the supplier to the gate of manufacturing plant. Aluminium billets, polyamides and other raw materials are transported both from Greece and other countries via truck and vessel.

A3: Manufacturing

The manufacturing process starts with the extrusion, in which the heated billet is placed into an extrusion press and forced through a die with the desired cross-sectional shape. The resulting extruded profile emerges as a continuous length of aluminium with the specific shape of the die. Then, the extruded aluminium profile is cooled immediately to stabilize its shape and cut to the desired lengths. The last step in extrusion is the harding of the profiles.

After extrusion process, profiles undergo a thermal break stage. It involves separating the inner and outer sections of an aluminium profile with a non-metallic insulating material, in this case polyamide. This helps reduce heat transfer between the inside and outside environments. A rolling or crimping machine is used to mechanically lock the thermal break strips into the grooves of the two aluminium sections. The process ensures a firm bond between the aluminium and the insulating material while keeping the two aluminium sections thermally separated.

Finally, anodization is an electrolytic process that forms a thick and durable oxide layer on the aluminium surface. The cleaned aluminium profiles are submerged in an electrolytic bath (commonly containing sulfuric acid as the electrolyte). A direct current (DC) is applied, with the aluminium serving as the anode and a cathode completing the circuit. Oxygen ions from the electrolyte react with the aluminium surface, forming a controlled oxide layer.

Final products are packaged with paper boards and plastic materials such as films and strips.

Installation stage (A5)

This module includes impacts related to the installation of aluminium profiles into end user's place. Electricity and water required during the installation process is negligible. So, in this module, only impacts from the treatment of waste packaging materials and the compensation of biogenic emissions from paper packaging are taken into account. For all packaging materials, data from European Statistical Authority (Eurostat) have been acquired. Based on the most recent data of 2022 **(Packaging materials waste end-of-life)**, 43,4% of packaging materials are recycled, 43,4% and the rest 56,6% are landfilled.

Scenario Information (module A5)	Unit
Ancillary materials for installation (specified by material)	None
Water use	None
Quantitative description of energy type kWh or MJ (regional mix) and consumption during the installation process	None
Waste materials on the building site before waste processing, generated by the product's installation (specified by type)	Packaging waste: **Plastic films:** 2,14E-02 kg per kg of profile **Paper:** 2,14E-02 kg per kg of profile

End of life stage (C1-C4)

The end-of-life stages begin with the deconstruction and demolition from the installation site and then the waste is transferred for recycling and disposal of the product.

C1: De-construction and demolition

This module refers to the impact arising from the diesel consumption of the heavy vehicles during demolition process. The end-of-life stages begin with the deconstruction and demolition from the installation site and then they transferred for recycling and disposal. Usually, this phase results in little impact because the product is generally part of a larger system (e.g., machine or building) and for that reason, impacts from dismantling should be allocated to all components of that system. For this reason, the impact of the dismantling phase was considered negligible.

C2: Transportation to waste processing

This module includes the transportation of the discarded product either to the recycling site or to landfills for final disposal. An average distance of 50 km via EURO5 lorry 16-32 tonnes from construction/demolition sites to scrap dealers and disposal sites has been chosen as a conservative assumption.

C3: Waste processing for reuse, recovery and/or recycling

This module incorporates all impacts related to the recycling of the final product. Aluminium waste collected from the deconstruction site is separated from the other waste in order to be recycled and used in a new product system. According to the European Aluminium Association, recycling rates in the automotive and building sectors are over 90%.

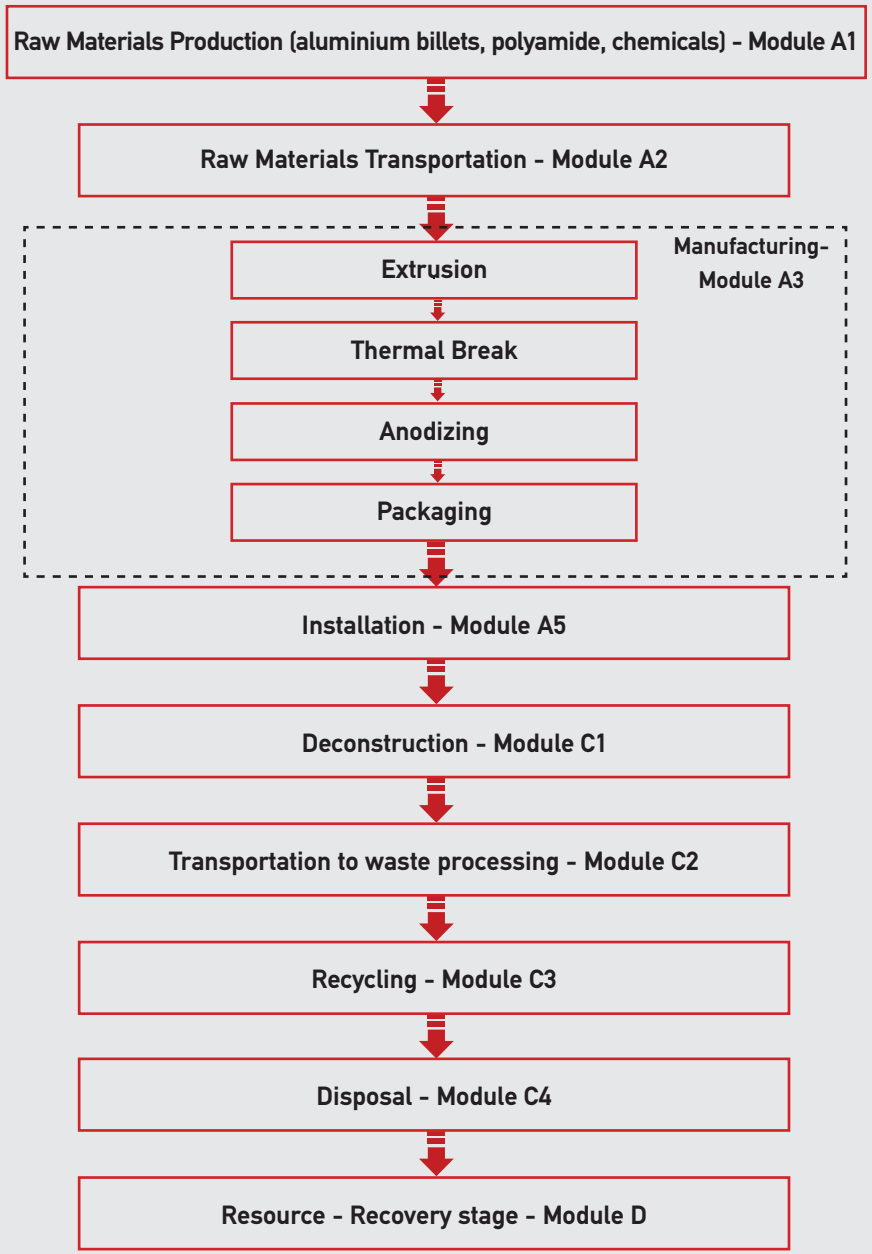
C4: Disposal

This module encompasses all impacts related to the disposal of the final product. As stated above, the disposal rate of aluminium used in building sector is 10%. Furthermore, all the amount of polyamide incorporated into the profile, will be landfilled.

Resource and recovery stage (D)

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. The calculations have been conducted based on the fact that the recycled content of aluminium that enters the product system in A1 is 23,89% and the end-of-life recycling rate of aluminium is 90%.



Declared unit

The declared unit of the study is 1 kg of thermal break anodized aluminium profiles manufactured in **Europa** Plant located at Inofita, Greece.

Goal and Scope

This EPD evaluates the environmental impacts of the production of 1 kg of thermal break anodized aluminium profiles, from cradle to gate (modules A1-A3), along with construction/installation stage (module A5), end-of-life modules (C1-C4) end module D.

Allocations

Allocation rules have been performed in accordance with the requirements of ISO 14044:2006. Wherever possible, allocation was avoided by dividing the unit process to be allocated into two or more sub-processes and collecting the input and output data related to these sub-processes. Where allocation cannot be avoided, the inputs and outputs of the system were partitioned between its different products or functions in a way that reflects the underlying physical relationships between them. In this case, allocation based on production masses is applied to some inputs of thermal break stage (electricity, natural gas, polyamide, water and wastes) and anodizing stage (electricity, natural gas, chemicals, water, wastes), since in each stage there are two products manufactured:

- Thermal break stage: mill finished (extruded) thermal break profile and coated thermal break profile.
- Anodizing stage: mill finished (extruded) anodized profile and thermal break anodized profile.

The allocation of waste shall follow the polluter-pays principle that is made operational according to the following rules. Processes of waste processing shall be assigned to the product system that generates the waste until the end-of-waste state is reached. The end-of-waste state is reached when all the following criteria are fulfilled:

- the recovered material or product (including, e.g., energyware such as fuel, electricity and heat) is commonly used for specific purposes
- a market or demand, identified for example by a positive economic value, exists for such a recovered material or product
- the recovered material or product fulfils the technical requirements for the specific purposes for which it is used and meets the existing legislation and standards applicable to its use
- the use of the recovered material or product will not lead to overall adverse environmental or human health impacts, which shall be understood as content of hazardous substances below limit values in applicable legislation

The following rules indicate that for all waste that require disposal in modules A5, C4, impacts from the whole disposal activity will be assigned in this product system. For waste (or parts thereof) that require recycling in module A5, only the sorting and transportation of waste will be assigned to this product system.

Cut-off Rules

The cut-off criteria adopted is as stated in "PCR 2019:14, v.1.3.4" and "EN 15804:2012+A2:2019/AC:2021". Where there are insufficient data or data gaps 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. In this case, the cut-off rule was applied in some wastes generated from manufacturing process (cleaning chemicals & other municipal solid wastes in extrusion and sludge & NaOH sediment in anodizing). The total mass of the excluded substances is approximately 4,5%.

Other exclusions

Personnel-related processes, such as transportation of employees to and from work, are excluded from the study according to PCR 2019:14 v.1.3.4.
Furthermore, production of infrastructure and capital goods are excluded from the study.

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.3.10.1+EN 15804 add-on. The data concerning the modules A2 (Transportation) and A3 (Product manufacturing) were provided by Europa and concerns the full year 2023. These data were the quantities of all input and output materials extracted from the Company's MRP system and predetermined recipes, the consumed utilities (energy, natural gas) from bills and invoices. The consumptions were acquired individually per stage (extrusion, thermal break, anodizing) via thorough energy monitoring. The only exemption is the consumption of chemicals used in anodizing stage, where generic data from Ecoinvent were used. Regarding electricity mix, the latest (2023) national residual electricity mix as published in DAPEEP S.A. was utilized. The climate impact (GWP-GHG) of this electricity, as calculated from a manually created dataset in openLCA is 0,7068 kg CO_2 eq./kWh. The CO_2 emissions from diesel and Natural gas combustion data were calculated from the National Inventory Report (NIR) of Greece (**NIR 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.3.10.1+EN 15804 add-on.

Time Representativeness

Data obtained refer to the year 2023

Software Used

OpenLCA v.2.3

Characterization factors (JRC)

Based on Reference package EF 3.1

Geographical Scope

Worldwide

Environmental Impacts

Environmental Impacts	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP - Total	kg CO2 eq	1.08E+01	5.71E-02	0.00E+00	9.69E-03	3.56E-02	1.11E-02	-4.57E+00
GWP - Fossil	kg CO2 eq	1.07E+01	5.13E-03	0.00E+00	9.68E-03	2.21E-02	1.11E-02	-4.43E+00
GWP - Biogenic	kg CO2 eq	-8.35E-03	5.19E-02	0.00E+00	6.63E-06	1.34E-02	2.24E-05	-1.94E-02
GWP - Luluc	kg CO2 eq	1.09E-01	2.60E-06	0.00E+00	3.16E-06	1.80E-05	3.40E-06	-1.12E-01
GWP - GHG[1]	kg CO2 eq	1.09E+01	2.28E-02	0.00E+00	9.68E-03	2.82E-02	1.11E-02	-4.56E+00
ODP	kg CFC-11 eq	2.09E-07	5.93E-11	0.00E+00	1.92E-10	2.88E-10	6.41E-11	-7.49E-08
AP	mol H+ eq	5.85E-02	1.66E-05	0.00E+00	3.03E-05	1.18E-04	1.95E-05	-2.39E-02
EP - Freshwater	kg P eq	5.01E-03	6.57E-07	0.00E+00	6.46E-07	6.95E-06	4.61E-07	-2.14E-03
EP - Marine	kg N eq	9.45E-03	2.44E-05	0.00E+00	1.02E-05	4.26E-05	2.51E-05	-3.68E-03
EP - Terrestrial	mol N eq	8.65E-02	5.37E-05	0.00E+00	1.11E-04	3.70E-04	7.52E-05	-3.20E-02
POCP	kg NMVOC eq	3.45E-02	2.64E-05	0.00E+00	4.74E-05	1.17E-04	2.65E-05	-1.49E-02
ADPe[2]	kg Sb eq	4.03E-05	1.86E-08	0.00E+00	3.17E-08	3.61E-07	8.16E-09	5.85E-05
ADPf[2]	MJ	1.51E+02	5.19E-02	0.00E+00	1.36E-01	2.57E-01	5.81E-02	-6.96E+01
WDP[2]	m^3 eq	1.00E+01	8.14E-04	0.00E+00	6.57E-04	4.38E-03	1.04E-03	-9.19E+00

In the following tables, results for 1 kg of thermal break anodized aluminium profiles, are presented. 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. The use of the results of modules A1-A3 is discouraged without considering the results of module C. For Primary Energy Use indicators, option A of PCR 2019:14 v.1.3.4 has been followed.

[1] GWP-GHG indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product, with characterization factors (CFs) based on IPCC (2013).

[2] The results of this environmental impact indicators of ADPf, ADPe and WDP shall be used with care as the uncertainties of these results are high or as there is limited experienced with the indicator.

Resource Use

Resource Use	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	2.95E+01	2.02E-03	0.00E+00	2.03E-03	2.04E-02	1.26E-03	-2.88E+01
PERM	MJ	1.08E+00	-6.73E-01	0.00E+00	0.00E+00	-3.67E-01	-4.07E-02	-9.06E-02
PERT	MJ	3.06E+01	-6.71E-01	0.00E+00	2.03E-03	-3.46E-01	-3.95E-02	-2.88E+01
PENRE	MJ	1.45E+02	4.79E-02	0.00E+00	1.23E-01	2.40E-01	5.33E-02	-6.68E+01
PENRM	MJ	6.06E+00	-1.97E-02	0.00E+00	0.00E+00	-5.49E+00	-6.09E-01	-2.82E+00
PENRT	MJ	1.51E+02	2.82E-02	0.00E+00	1.23E-01	-5.25E+00	-5.56E-01	-6.96E+01
SM	KG	4.87E-01	1.98E-02	0.00E+00	1.53E-04	8.53E-01	6.20E-05	6.39E-01
RSF	MJ	3.81E-02	4.69E-05	0.00E+00	4.29E-05	6.47E-04	1.37E-05	-1.96E-02
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.28E-01	-7.40E-05	0.00E+00	1.80E-05	9.81E-05	-6.24E-04	-1.94E-01

Output Flows and Waste Categories

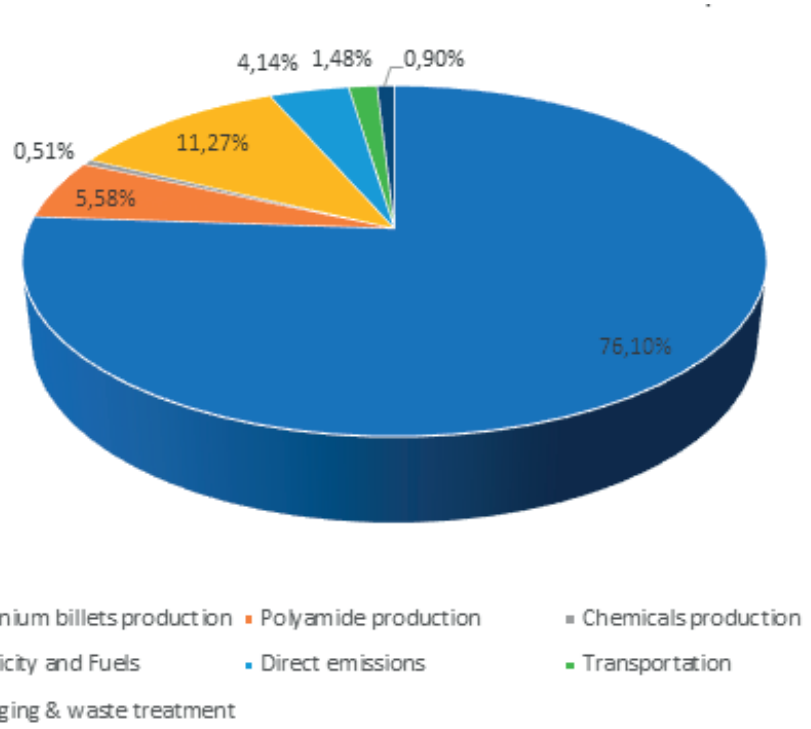
Output Flows and Waste Categories	Unit	A1-A3	A5	C1	C2	C3	C4	D
HWD	KG	1.62E+00	2.20E-04	0.00E+00	1.33E-04	1.18E-03	2.60E-04	-1.13E+00
NHWD	KG	1.69E+00	1.29E-01	0.00E+00	1.47E-03	4.67E-02	1.66E-01	-6.57E-01
RWD	KG	3.34E-04	4.43E-08	0.00E+00	4.33E-08	5.59E-07	2.60E-08	-3.31E-04
CRU	KG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	KG	8.74E-02	1.86E-02	0.00E+00	0.00E+00	8.34E-01	0.00E+00	-4.08E-02
MER	KG	1.72E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE,e	MJ	1.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE,t	MJ	1.38E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional Impacts

Additional Impacts	Unit	A1-A3	A5	C1	C2	C3	C4	D
PM	Disease incidence	5.72E-07	3.05E-10	0.00E+00	7.60E-10	2.02E-09	3.82E-10	-3.38E-07
IRP[3]	kBq U235 eq	1.26E+00	1.75E-04	0.00E+00	1.74E-04	2.19E-03	1.06E-04	-1.25E+00
ETP-FW	CTUe	3.41E+01	5.47E-01	0.00E+00	3.65E-02	2.19E-01	1.64E+01	-7.73E+00
HTP-c	CTUh	3.99E-08	1.75E-04	0.00E+00	1.74E-04	2.19E-03	1.06E-04	-1.25E+00
HTP-nc	CTUh	1.16E-07	1.24E-10	0.00E+00	8.74E-11	5.11E-10	4.59E-10	-6.21E-09
SQP	dimensionless	1.79E+01	4.50E-02	0.00E+00	8.09E-02	8.09E-01	1.04E-01	-8.16E-01

[3]Ionizing radiation potential (IRP) impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

GWP-GHG Thermal break Anodized Aluminium profiles



As it is presented, aluminium billet production contributes the most for the production of thermal break anodized profiles, accounting for 76,10%. Impacts related to the production of energy carriers (natural gas and electricity), along with their direct impacts due to combustion are the second most important contributor, with 15,41% of total GWP-GHG. Polyamide production adds up 5,58% of total GHG emissions. Other factors such as transportation, packaging & waste management and anodizing chemicals are of minor significance, with 1,48%, 0,90% and 0,51% accordingly.

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.

List of abbreviations

EPD	Environmental Product Declaration
PCR	Product category rules
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
PM	Particulate matter emissions
IRP	Ionizing radiation, human health
ETP-FW	Ecotoxicity, freshwater
HTP-c	Human toxicity, cancer
HTP-nc	Human toxicity, non-cancer
SQP	Land use related impacts/Soil quality

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Ecoinvent / Ecoinvent Centre, **www.ecoinvent.org**

TACKLING RECYCLING ASPECTS IN EN15804 - *Christian Leroy, Jean-Sebastien Thomas, Nick Avery, Jan Bollen, Ladji Tikana*

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