ENVIRONMENTAL PRODUCT DECLARATION (EPD) FOR

ALUMINIUM PROFILES

IMPLEMENTED WITH THE AVERAGE LOW CARBON BILLET

PRODUCED BY HYDRO EXTRUSION NENZING GMBH

Hydro

We are aluminium

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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

SUMMARY

1 PROGRAMME RELATED INFORMATION

This EPD is developed under the programme The International EPD ® System, in compliance with the General Programme Instructions of the International EPD System, version 4.0 for the EPD development and the Product Category Rules PCR "Construction products" 2019:14 version 1.3.3.

More information about the International EPD ® System is available on the website:
https://www.environdec.com/

2 PRODUCT RELATED INFORMATION

2.1 THE COMPANY

Hydro is a leading industrial company committed to a sustainable future. Its purpose is to create more viable societies by developing natural resources into products and solutions in innovative and efficient ways. The company serves customers in all industries, from automotive and transportation to building and construction, electronics, offshore and maritime. Hydro's experts help design and manufacture customized extrusions to fully fabricated components.

Hydro Nenzing has been developing more sustainable aluminium solutions in cooperation with their customers for over 50 years.

Hydro Nenzing develops and produces more than 44,000 tons of aluminium profiles annually with four extrusion lines (P16, P18, P22, P40). With the new P40 line the plant has a total capacity up to 60.000 tons yearly. In addition, Hydro Nenzing has multiple fabrication possibilities in its in-house fabrication centre.

The company employs 450 people and is certified according to several ISO standard, among all ISO 9001, 14001, 50001, 45001, as well as EN 15088 certified.

2.2 THE PRODUCT

Aluminium profiles produced by Hydro Extrusion Nenzing GmbH are manufactured in Nenzing starting from the average low carbon billet. The average low carbon billet is a mix of certified primary billets with a Global Warming Potential (GWP) lower than 4,5 kg CO2 eq.

The extrusion process is the main manufacturing step, common to all aluminium profiles. The extruded profiles can be completed with a fabrication process, based on the customers' requirements. Moreover, thermal break and surface treatments, namely anodising and painting, can be applied on mill finished profiles or fabricated profiles. The fabrication is performed internally or externally, the thermal break and surface treatments are performed externally. For the purpose of this EPD a mill finished profile is considered, without further processing and surface treatments.

The production processes of the mill finished aluminium profiles implemented with the average low carbon billet, as the product covered by the present EPD, is schematized in Figure 1.

The reference CPC code is 415 "Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys".

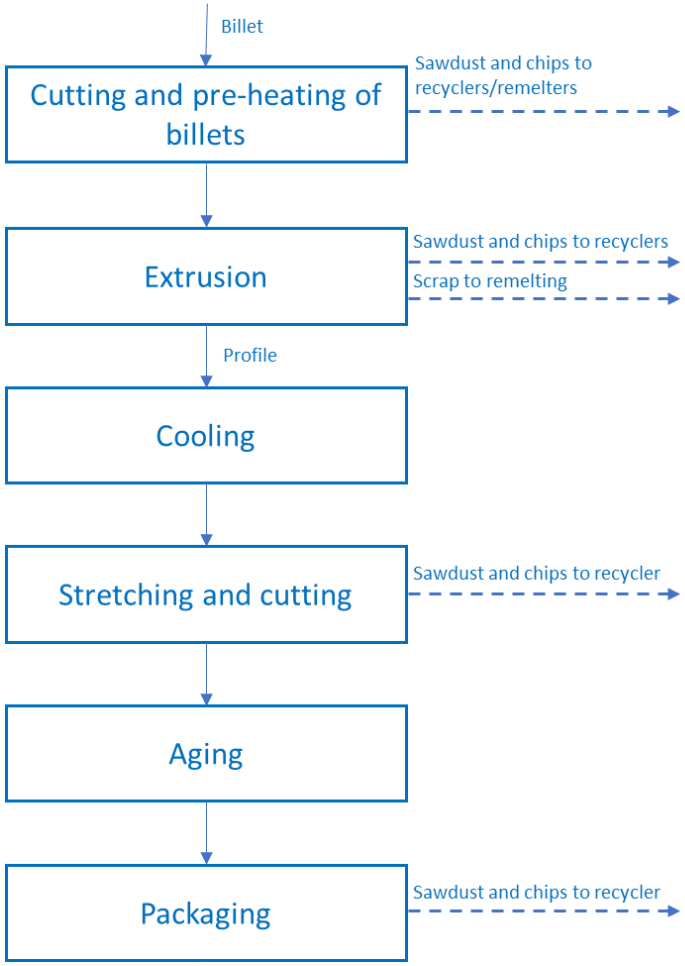


Figure 1: Scheme of the manufacturing process occurring at Hydro Extrusion Nenzing GmbH extrusion site.

2.2.1 TECHNICAL CHARACTERISTICS OF THE PRODUCTS

The studied aluminium profiles are products used in several markets, among all building and construction, automotive, transport, industrial and general engineering. Profiles are manufactured starting from billets which are then extruded in presses. The produced profiles eventually can undergo further processing such as fabrication or finishing treatments (painting or anodising).

2.2.2 PRODUCT COMPOSITION

Profiles are made 100% of aluminium billets (input metal).

The composition of input metal and the material used for the packaging for the product covered by the present EPD is reported in Table 1.

The content of SVHC in the products does not exceed 0,1 % of the total weight.

Table 1: Composition of the input metal and packaging.

Composition of the input metal (% in weight)	
Average low carbon billet	100%
Recycled content of the input metal (% in weight)	
Post-consumer recycled material	0%

** The reported amounts are those ones applied in the extrusion department of each site and averaged on the production volume.*

Table 2: Content declaration of product and packaging.

Content declaration of product and packaging				
Product components	**Weight, kg**	**Post-consumer recycled material, weight-% of product**	**Biogenic material, weight-% of product**	**Biogenic material, kg C/kg of profile**
Aluminium, Average low carbon billet	**1**	**0%**	**0%**	**0,00E+00**
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Biogenic material, kg C/kg of profile**	**Biogenic material, kg CO2 eq./kg of profile***
Plastic	1,35E-03	0,14%	0,00E+00	0,00E+00
Self-adhesive labels	1,05E-04	0,01%	0,00E+00	0,00E+00
Wood	2,21E-02	2,21%	9,06E-03	3,32E-02
Cardboard	4,92E-03	0,49%	2,38E-03	8,73E-03
Paper	7,82E-04	0,08%	3,78E-04	1,39E-03
Steel staples/nails	6,59E-05	0,01%	0,00E+00	0,00E+00
Sum	**2,93E-02**	**2,93%**	**1,18E-02**	**4,33E-02**

** 1 kg C = 44/12 kg CO2 eq.*

2.2.3 PRODUCT REFERENCE SERVICE LIFE

The Product Reference Service Life depends on the specific application.

2.2.4 MARKET

Profiles produced by Hydro Extrusion Nenzing GmbH are used in several market sectors. Application sector includes Building and Construction sector, Automotive and Transport sector, Industrial and General Engineering and other applications.

3 ENVIRONMENTAL PRODUCT DECLARATION

3.1 METHODOLOGY

The study behind the present EPD has been performed according to the state of art of the LCA methodology, with specific reference to the construction sector, in accordance with the following standard and guidelines:

- EN ISO 14040: 2006 Environmental management -- Life cycle assessment -- Principles and framework
- EN ISO 14044:2006 Environmental management -- Life cycle assessment -- Requirements and guidelines
- EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
- General Programme Instructions (GPI) for the International EPD® VERSION 4.0
- The International EPD® System Product Category Rules (PCRs) for construction products, 2019:14 version 1.3.3.

The EPD is mainly addressed to the business-to-business communication. The data elaboration has been performed with the LCA for Experts software, version 2023.2. The database used are the most updated ones implemented in LCA for Experts software. More in detail, main database used is Sphera, European Aluminium and IAI. The LCIA method used is the method EN 15804:2012+A2:2019. The LCIA method used is EF 3.1.

3.2 DECLARED UNIT

The declared unit is 1 kg of aluminium profile, plus its packaging.

3.3 SYSTEM BOUNDARY

The EPD is a “Cradle to Gate with modules C1-C4 and D and optional modules” (as represented in Table 2 and in showed in Figure 2). Modules A5 and B1 to B7 are excluded as they are strongly dependent on the specific application within the reference market.

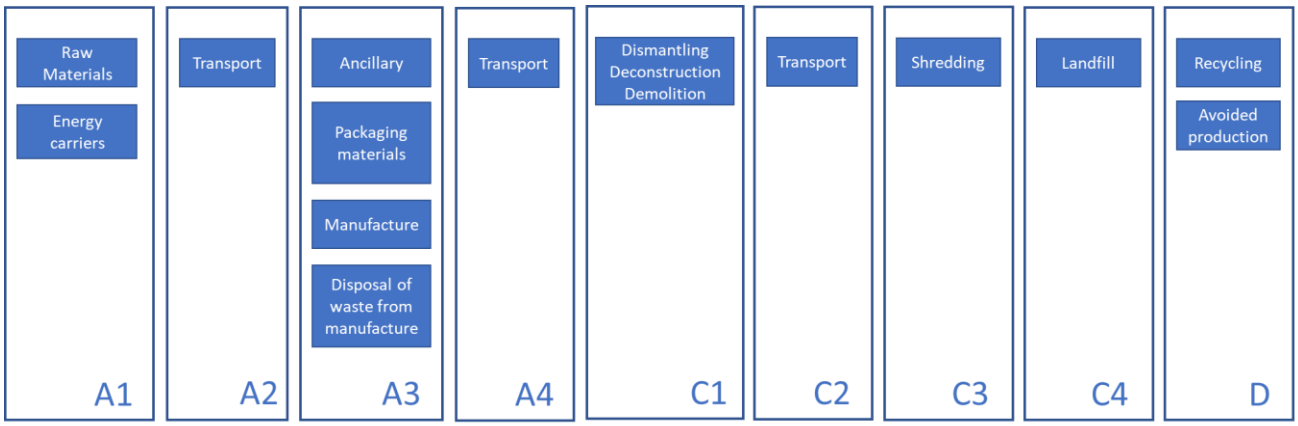
Table 3: Life cycle stages included in the study for the aluminium profiles by Hydro Extrusion Nenzing GmbH.

	PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE	END-OF-LIFE STAGE				BENEFITS and LOADS BEYOND SYSTEM BOUNDARY
	A1	A2	A3	A4	A5	B1 to B7	C1	C2	C3	C4	D
	Raw Material Supply	**Transport**	**Manufacturing**	**Transport**	**Construction/Installation**	**Use, Maintenance, Repair, Replacement, Refurbishment, Operational energy use, Operational water use**	**Dismantling/De-construction/Demolition**	**Transport**	**Waste processing**	**Disposal**	**Reuse, Recycling potential**
	X	X	X	X	ND	ND	X	X	X	X	X
Geography	EU, extra-EU, GLO	EU, extra-EU, GLO	EU, AT	GLO, EU	-	-	EU	GLO, EU	EU	EU	EU, GLO
Specific data*: Mill finished profile	78,1%			-	-	-	-	-	-	-	-
Variation sites:	0%										

*Share of GWP-GHG indicator in A1-A3 coming from product-specific LCI data. To this regard:

- The specific GWP-GHG is not an EPD quality indicator and does not concern the representativeness and reliability of declared results.
- The specific GWP-GHG intends to quantify the share of final impacts linked to LCI information (datasets) collected at the sites of company’ suppliers.
- The specific GWP-GHG coming from EPD of suppliers, if not declared in the EPD themselves, is based on expert judgment.
- The definition of specific and proxy in the PCR differs from the definition of specific and proxy in the GPI.
- The term “specific” (according to the definition of PCR) does not concern the representativeness of datasets.

Figure 2: System boundaries for the study of the aluminium profiles.



The following stages are included in the study:

Raw Materials supply (A1). Production of raw materials used in the products, i.e. of the billets, and the production of energy carriers used in the production process.

Transport of raw materials to the factory (A2)

Manufacturing of Hydro aluminium profiles (A3). It includes only the extrusion process.

In module A3, the production of primary packaging, of the ancillary materials and the treatment of waste generated from the manufacturing processes are accounted for. Since module A5 is excluded, the CO_2 stocked in the packaging has been balanced with an equal emission of CO_2.

Transport to the user (A4)

Dismantling, De-construction or demolition processes (C1)

Transport from Dismantling/De-construction/Demolition sites to waste processing and disposal site (C2)

Waste processing (C3): shredding and sorting.

Disposal (C4): landfill of material fractions not entering the recycling treatment.

Module D: transport to recycling treatment site (remelter), remelting process and benefit due to the avoided production of primary aluminium.

The reference year of the study is 2022.

3.4 MAIN ASSUMPTIONS, CUT-OFFS, BACKGROUND DATA INFORMATION AND SCENARIOS

3.4.1 DATA QUALITY

Specific data are used for all of Hydro's processes based on the reference production period. All background data used in the study are from LCI database, from EPD and are not older than 5 years. Background data, for instance, transport and energy production, are from Sphera database. In addition, with specific reference to the electricity used in the manufacturing process that is 100% from hydro power according to a Guarantee of Origin, with GWP-GHG impact of 0,00635 kg CO2 eq./kWh.

3.4.2 ALLOCATION

The allocation is made in accordance with the provisions of EN 15804. Energy, resources (water and ancillary) and packaging in input and waste and emissions in output are allocated to the profile production based on the mass. The production of aluminium included in pre-consumer scrap is allocated as a co-product to the main product in which the material is used. Thus, the scrap entering a product system come with an environmental burden based on co-product allocation.

3.4.3 CUT-OFFS CRITERIA

All the raw and packaging materials have been included in the model as well as the energy for manufacturing. In the same way, all auxiliaries and manufacturing waste (including hazardous waste) are accounted for.

Some chemicals used in extrusion process were not included in the model being marginal in terms of mass (0,153% of total auxiliaries used in input to extrusion processes) and since there is no representative dataset of the substance in LCA for Experts database.

The construction/production of the capital goods and infrastructure is not included.

3.4.4 BACKGROUND DATA INFORMATION

For the input billet the EPD of the average low carbon billet is used. For the remaining materials as well as for the packaging of the finished products a European production is considered. In case the European production is missing or is outdated the German datasets are used.

Raw materials road transport is assumed on a truck Euro 4 (24,7 t) with a utilisation ratio of 61%.

3.4.5 SCENARIOS FOR OPTIONAL MODULES

Transport (Module A4): For the transport towards clients an average distance, based on Hydro's client's location, is considered (Table 4).

Table 4: Distance and transport mean considered for module A4.

Transport information for module A4		
Transport mean	**Utilisation ratio - %**	**Distance travelled – km**
Diesel truck, Euro IV, > 32 t	61	672
Container ship, 5,000 to 200,000 dwt payload capacity, ocean going	70	29

End of life: For the aim of the present study a European-based EoL scenario related to an average application has been used. No impacts of dismantling or demolition processes are allocated to the profiles (module C1).

After collection, aluminium is shredded, sorted, and sent to remelting (module C3). Material lost at the collection and waste treatment sites is sent to landfill (module C4). Collection and waste processing efficiency are reported in Table 5, whereas Table 6 reports transport information.

Table 5: Applied collection and waste processing efficiency for the End-of-life.

End-of-life – collection and processing efficiency	
Collection efficiency - %	
Aluminium collected	96
Aluminium lost at the collection site	4
Processing efficiency (shredding) - %	
Aluminium sent to recycling after shredding	95
Aluminium lost in the shredding	5

Table 6: Distance and transport means applied for the End-of-life.

End-of-life – transport information for modules C and D		
Transport mean	**Utilisation ratio - %**	**Distance travelled - km**
Materials not collected and sent to landfill (module C2)		
Diesel truck, Euro IV, > 32 t	61	50
Material collected and sent to waste processing (module C2)		
Diesel truck, Euro IV, > 32 t	61	200*
Materials from waste processing to remelter (module D)		
Diesel truck, Euro IV, > 32 t	61	200

*no additional transport is assumed for material which is landfilled after waste processing.

Module D address burden and benefit from net output flows leaving the product system, i.e., from flows leaving the product system, lowered of the recycled content (%) initially included in the product. The primary aluminium ingot consumed in Europe is considered for the accounting of benefits from remelted aluminium.

3.5 PARAMETERS DESCRIBING THE ENVIRONMENTAL IMPACT ACCORDING EN15804+A2

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks. A1-A3 results includes the "balancing-out reporting" of the biogenic CO2 of packaging.

Table 7: Impacts of mill finished profile implemented with the average low carbon billet per declared unit (1 kg) according to EN 15804:2012+A2:2019 plus additional GWP-GHG indicator required by PCRs.

Impacts of Mill finished profile implemented with average low carbon billet. Method EN15804+A2, main approach to the modelling of pre-consumer scrap							
Core impact indicators	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
01 EN15804+A2 Climate Change – total - GWPtot [kg CO2 eq.]	4,27E+00	4,63E-02	0,00E+00	1,29E-02	1,82E-02	5,83E-04	-7,49E+00
02 EN15804+A2 Climate Change, fossil - GWPf [kg CO2 eq.]	4,23E+00	4,57E-02	0,00E+00	1,27E-02	1,80E-02	6,01E-04	-7,47E+00
03 EN15804+A2 Climate Change, biogenic - GWPb [kg CO2 eq.]****	3,59E-02	0,00E+00	0,00E+00	0,00E+00	1,58E-04	0,00E+00	-1,55E-02
04 EN15804+A2 Climate Change, land use and land use change - GWPluc [kg CO2 eq.]	8,33E-03	4,17E-04	0,00E+00	1,17E-04	9,82E-06	1,87E-06	-1,27E-03
05 EN15804+A2 Ozone depletion - ODP [kg CFC-11 eq.]	4,85E-07	3,96E-15	0,00E+00	1,11E-15	3,07E-13	1,53E-15	-5,61E-11
06 EN15804+A2 Acidification – AP [Mole of H+ eq.]	2,52E-02	2,85E-04	0,00E+00	7,68E-05	4,41E-05	4,26E-06	-4,35E-02
07 EN15804+A2 Eutrophication, freshwater – Epfr [kg P eq.]	8,65E-05	1,64E-07	0,00E+00	4,60E-08	6,56E-08	1,21E-09	-3,31E-06
08 EN15804+A2 Eutrophication, marine - EPmar [kg N eq.]	3,75E-03	1,37E-04	0,00E+00	3,77E-05	1,16E-05	1,10E-06	-6,25E-03
09 EN15804+A2 Eutrophication, terrestrial – Epter [Mole of N eq.]	4,08E-02	1,52E-03	0,00E+00	4,17E-04	1,23E-04	1,21E-05	-6,83E-02
10 EN15804+A2 Photochemical ozone formation, human health – POCP [kg NMVOC eq.]	1,22E-02	2,66E-04	0,00E+00	7,24E-05	3,00E-05	3,32E-06	-1,89E-02
11 EN15804+A2 Abiotic depletion potential for mineral and metals – ADPe [kg Sb eq.]*	6,00E-06	2,91E-09	0,00E+00	8,14E-10	2,63E-09	2,77E-11	-1,68E-06
11 EN15804+A2 Abiotic depletion potential for fossil resources – ADPf [MJ]*	4,22E+01	6,16E-01	0,00E+00	1,72E-01	3,65E-01	8,00E-03	-9,17E+01
13 EN15804+A2 Water deprivation potential - WDP [m³ world equiv.]*	2,31E+00	5,20E-04	0,00E+00	1,45E-04	3,72E-03	6,60E-05	-1,11E+00
Additional indicator required by PCRs	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Climate change - GWP-GHG [kg CO2 eq.]**	4,24E+00	4,61E-02	0,00E+00	1,29E-02	1,81E-02	6,03E-04	-7,47E+00
Optional indicators	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
01 EN15804+A2 Particulate matter – PM [Disease incidences]	3,57E-07	1,15E-09	0,00E+00	2,67E-10	3,72E-10	5,24E-11	-6,08E-07
02 EN15804+A2 Ionising radiation, human health - IRhh [kBq U235 eq.]***	1,60E-01	1,15E-04	0,00E+00	3,21E-05	9,16E-03	1,06E-05	-1,05E+00
03 EN15804+A2 Ecotoxicity, freshwater - EPTfr [CTUe]*	1,25E+02	4,30E-01	0,00E+00	1,20E-01	3,30E-01	1,42E-01	-3,03E+01
04 EN15804+A2 Human toxicity, cancer – HTPc [CTUh]*	2,23E-08	8,75E-12	0,00E+00	2,44E-12	6,03E-12	6,72E-13	-1,88E-09
05 EN15804+A2 Human toxicity, non-cancer – HTPnc [CTUh]*	1,36E-06	4,92E-10	0,00E+00	1,37E-10	2,21E-10	7,39E-11	-5,43E-08
06 EN15804+A2 Land Use – LU [Pt]*	2,02E+01	2,56E-01	0,00E+00	7,16E-02	1,42E-01	1,94E-03	-2,68E+00

* The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
** The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product.
*** This impact category deals mainly wit 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.
****Negative values for A4 and C2 are due to transport (biodiesel content in the used diesel) and for C4 to the used landfill process. For accuracy, the uptake flows in A4, C2 and C4 are balanced and GWP biogenic in the EPD is reported at value zero

3.6 INDICATORS OF RESOURCES USE, WASTE AND OUTPUT FLOWS, BIOGENIC CONTENT

The LCI indicators are calculated using the methodology implemented in the LCA for Experts software.

A1-A3 results includes the “balancing-out reporting” of the biogenic CO2 of packaging.

Table 8:Indicators of resource use, waste and output flows, biogenic content of the average mill finished profile implemented with the average low carbon billet.

Impacts of Mill finished profile implemented with Average low carbon billet Method EN15804+A2							
Resources use indicators	**A1-A3******	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Use of renewable primary energy (PERE) [MJ]	6,15E+01	4,34E-02	0,00E+00	1,21E-02	2,10E-01	1,31E-03	-4,16E+01
Primary energy resources used as raw materials (PERM) [MJ]*	2,70E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (PERT) [MJ]	6,15E+01	4,34E-02	0,00E+00	1,21E-02	2,10E-01	1,31E-03	-4,16E+01
Use of non-renewable primary energy (PENRE) [MJ]	4,23E+01	6,18E-01	0,00E+00	1,72E-01	3,65E-01	8,01E-03	-9,17E+01
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]**	5,81E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (PENRT) [MJ]	4,24E+01	6,18E-01	0,00E+00	1,72E-01	3,65E-01	8,01E-03	-9,17E+01
Input of secondary material (SM) [kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels (RSF) [MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non renewable secondary fuels (NRSF) [MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water (FW) [m3]	5,24E-01	4,78E-05	0,00E+00	1,34E-05	1,70E-04	2,02E-06	-1,05E-01
Output flows and waste categories	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed (HWD) [kg]	2,95E-02	2,28E-12	0,00E+00	6,37E-13	0,00E+00	1,74E-13	-6,46E-08
Non-hazardous waste disposed (NHWD) [kg]	3,10E+00	8,88E-05	0,00E+00	2,48E-05	4,83E-02	4,00E-02	-2,24E+00
Radioactive waste disposed (RWD) [kg]	2,65E-04	7,98E-07	0,00E+00	2,22E-07	5,51E-05	9,16E-08	-5,47E-03
Components for re-use (CRU) [kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for Recycling (MFR) [kg]	2,12E-01	0,00E+00	0,00E+00	9,60E-01	9,12E-01	0,00E+00	0,00E+00
Material for Energy Recovery (MER) [kg]	2,16E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported electrical energy (EEE) [MJ]	2,30E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported thermal energy (EET) [MJ]	4,31E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Biogenic carbon content	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Biogenic carbon content in packaging [kg]***	1,18E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

* Due to the presence of the wood bars, the calorific value of the wood chips was considered as 12,2 MJ/kg. (AIEL 2009)
** The calorific value of plastic was considered at 43 MJ MJ/kg. This is the value attributed to Polypropylene granulate (PP) mix by LCA FE dataset.
*** 1 kg biogenic carbon is equivalent to 44/12 kg CO2.
**** The usage of the results of modules A1-A3 without considering the results of modules C is discouraged.

4 REFERENCES

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5 ADDITIONAL INFORMATION

5.1 ADDITIONAL INFORMATION CONCERNING THE PROGRAMME AND THE EPD

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.
This EPD and the PCR 2019:14 "Construction products", version 1.3.3 are available on the website of The International EPD® System (www.environdec.com).
CEN standard EN 15804 serve as the core Product Category Rules (PCR).
The EPD owner has the sole ownership, liability, and responsibility of the EPD.
The verifier and the Programme Operator do not make any claim nor have any responsibility for the legality of the products included in the present EPD. The LCA study and the present EPD have been issued with the technical scientific support of Ecoinnovazione S.r.l., spin-off ENEA (http://ecoinnovazione.it/?lang=en).

5.2 ADDITIONAL INFORMATION ON THE PRODUCT AND ON THE COMPANY

Aluminium profiles covered by the present EPD are produced in Hydro Extrusion Nenzing GmbH.

For further information on product characteristics, typical applications, technical datasheet and case histories, please visit our website www.hydro.com or contact us by e-mail: sales.dach@hydro.com.

All indicators reported in chapters 3.5 and 3.6 are quantified according to allocation rules as clarified in 3.4.2. An additional assessment approach has been performed for all products covered by the present EPD. In this additional approach, the pre-consumer scrap is considered zero burden, i.e., the pre-consumer scrap enters the studied system without any material burden. The estimated impact results according to this additional approach are available at the company upon request.

6 VERIFICATION AND REGISTRATION

Accountabilities for PCR, LCA and independent, third-party verification	
Product Category Rules (PCR)	
EPD Programme:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: info@environdec.com
PCR:	PCR 2019:14 Construction products version 1.3.3, 2024-03-01
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. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Life cycle assessment (LCA)	
LCA accountability:	Liudmila Lavrik Ecoinnovazione S.r.l. – spin-off ENEA Via della Liberazione 6, 40128 Bologna www.ecoinnovazione.it
EPD Registration n°:	S-P-11442
EPD validity:	5 years
EPD valid within the following geographical area:	Global
EPD owner	Hydro Extrusion Nenzing GmbH
Third-party verification	

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:	EPD verification by individual verifier
Third party verification:	David Althoff Palm, Dalemarken AB is an approved individual verifier accountable for the third-party verification
The certification body is accredited by:	The International EPD system
Procedure for follow-up of data during EPD validity involves third-party verifier.	