ENVIRONMENTAL PRODUCT DECLARATION (EPD) FOR

ALUMINIUM PROFILES

IMPLEMENTED WITH LOW CARBON BILLET

PRODUCED BY HYDRO EXTRUSION OFFENBURG GMBH AND HYDRO EXTRUSION DEUTSCHLAND GMBH (OFFENBURG, RACKWITZ AND UPHUSEN PLANTS)

We are aluminium

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PCR: 2019:14 Construction products, version 1.3.3, 2024-03-01
Geographical scope: Europe
EPD registration number: S-P-13157
Publication date: 2024-04-24
Validity date: 2029-04-23

EPD in accordance with ISO 14025 and EN 15804:2012+A2:2019/AC:2021
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 program 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 Extrusion Offenburg was found in 1964 and currently includes two extrusion lines and extensive possibilities for mechanical fabrication and surface treatment, such as a fully automatized anodizing line.

Hydro Extrusion Deutschland, that includes both Rackwitz and Uphusen sites, was founded in 1925 and currently includes two aluminium extrusion lines and surface treatment, such as a fully automatized anodising line. The production site in Rackwitz has 250 employees and over 650 customers. Hydro Extrusion Uphusen currently includes two aluminium extrusion lines and surface treatment, such as a fully automatized anodising line. The production site in Uphusen has 250 employees and over 750 customers.

Offenburg, Rackwitz and Uphusen sites are certified according to several ISO standard, among all ISO 9001, 14001, 45001, 50001 and EN 15088.

2.2 THE PRODUCT

The product covered by this EPD is a mill finished aluminium profile extruded at the Offenburg, Rackwitz, and Uphusen sites, implemented with the low carbon billet purchased and averaged on the production volumes of each site. For the purpose of this EPD, a mill finished profile is considered, without further processing and surface treatments.

The low carbon billet utilized in the study represents a weighted average (based on purchased volumes) of all primary billets entering the sites, with a Global Warming Potential (GWP) lower than 4,5 kgCOeq/kg. Among the billets purchased by Offenburg, Rackwitz and Uphusen, only Reduxa and Alcan meet this criterion.

The production processes of 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".

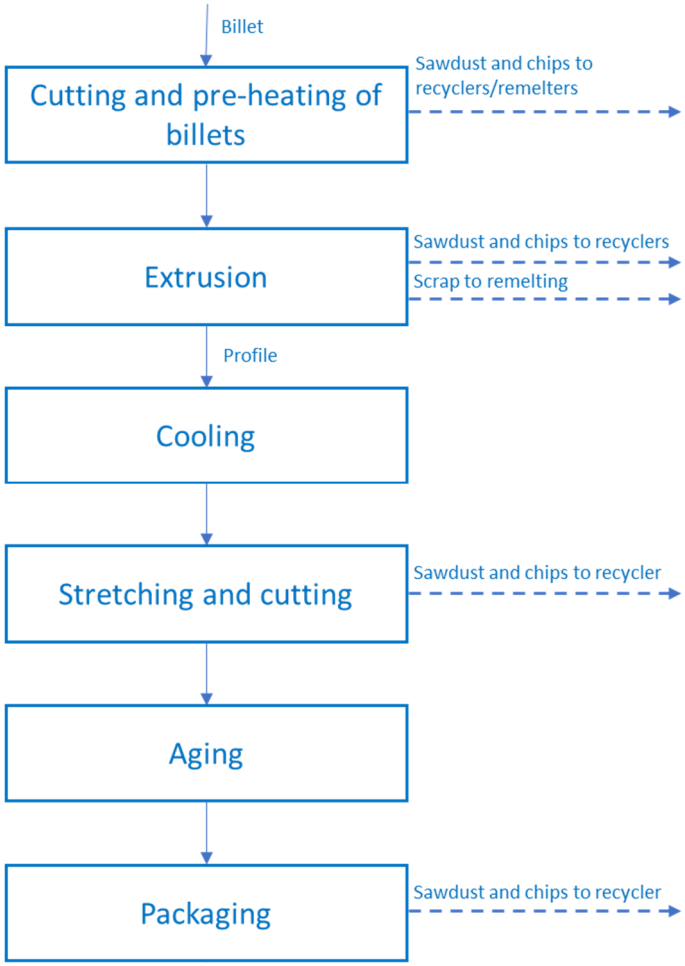


Figure 1: Scheme of the manufacturing process occurring at a Hydro Extrusion Offenburg, Rackwitz and Uphusen sites.

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, anodising or thermal treatment), that are not included in the current EPD.

2.2.2 PRODUCT COMPOSITION

Profiles are made 100% of aluminium billets (input metal) and do not contain recycled material.

The material used for the packaging for the product covered by the present EPD is reported in Table 1.

Composition of input metal and packaging are averaged on the production volumes of each site.

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

Table 1: Composition of the input metal and material used for the packaging.

Composition of the input metal (% in weight)		
Primary billet		100%
Content of the input metal (% in weight)*		
Post-consumer recycled material	0%	0 $kgCO_2$ eq./kg
Pre-consumer scrap	0%	0 $kgCO_2$ eq./kg
Packaging of profile (kg per kg of profile)**		
Plastic foil/film		1,19E-03
Wood		1,51E-02
Paper		7,25E-03
Cardboard		8,31E-03
Biogenic carbon content (kgC/kg of profile)		
Biogenic carbon content in packaging***		1,33E-02

**The recycled content reported has been calculated averaging the recycled content of each billet used by each site in the right proportion.*
***The reported amounts are those ones applied in the extrusion department of each site and averaged on the production volume.*
**** 1 kg biogenic carbon is equivalent to 44/12 kg CO2.*

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 in Offenburg, Rackwitz and Uphusen 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 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
- EN 15804:2012+A1:2013 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 2022.1 for Offenburg site and LCA for Experts software, version 2022.2 for Rackwitz and Uphusen sites. 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 3.0.

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 2: Life cycle stages included in the study for the aluminium profiles by Hydro Extrusion Offenburg and Deutschland (Rackwitz and Uphusen).

	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, DE	GLO, EU	-	-	EU	GLO, EU	EU	EU	EU, GLO
Specific data*				-	-	-	-	-	-	-	-
Mill finished profile	51%			-	-	-	-	-	-	-	-
Variation sites - GWP-GHG**	Offenburg: -1,9% Rackwitz: 2,3% Uphusen: -1,5%			-	-	-	-	-	-	-	-

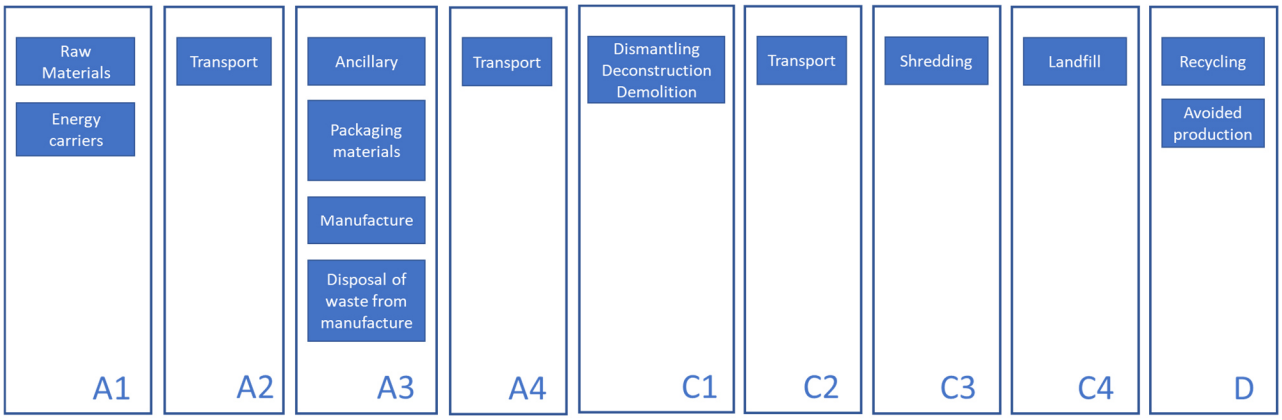
*Share of GWP-GHG indicator in A1-A3 coming from product-specific LCI data. To this regard:

- 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.

** The variation of GWP-GHG indicator used in calculation includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product.

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

The produced profiles are analysed as a product "averaged" on production volume from Offenburg, Rackwitz and Uphusen sites, i.e., 27% of profiles extruded at Offenburg site, 42% at Rackwitz site and 31% at Uphusen site.

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 EPDs 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 processes, the residual electricity mix is averaged between the three plants with GWP-GHG impact of 0,353 CO2eq./kWh.

3.4.2 ALLOCATION

The allocation is made in accordance with the provisions of EN 15804. Energy consumption, resources used for production (water and ancillary), packaging together with waste and emissions of the production process are allocated to the profile production based on the mass.

3.4.3 3 CUT-OFFS CRITERIA

Raw and packaging materials are basically fully included as well as the energy for manufacturing. In the same way, all auxiliaries and manufacturing waste (including hazardous waste) are accounted for.

The construction of the manufacturing site (capital goods) is not included.

3.4.4 BACKGROUND DATA INFORMATION

For the input metal, producer data (EPD) has been used, if present. For the remaining materials as well as for the packaging of the finished products a German production is considered. In case the German production is missing or is outdated the European datasets are used.

Raw materials road transport is assumed on a truck Euro 4 (24,7 t) with a utilisation ratio of 61%, for the transport by sea, a container ship of 5.000 to 200.000 dwt payload capacity is used, with a utilisation ratio of 70%.

3.4.5 SCENARIOS FOR OPTIONAL MODULES

Transport (Module A4): In order to represent the transport of the profiles to the client in Europe, a weighted average distance is used. The transport to the client is by road, on Euro 6 truck. Trucks are charged at the maximum capacity, thus 0,9 is used as utilisation ratio. The weighted averaged (per plants) distance considered is 307 km by truck.

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

After collection, aluminium is shredded, sorted, and sent to remelting. Material lost at the collection and waste treatment sites is sent to landfill. Collection and waste processing efficiency are reported in Table 3, whereas Table 4 reports transport information.

Table 3: 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 4: 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.

Table 5: Impacts of mill finished profile implemented with the 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 average mill finished profile implemented with low carbon billet Method EN15804+A2							
Environmental Impact Indicators	**A1-A3*****	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Climate Change - total (GWPtot) [kg CO2 eq.]	4,72E+00	3,04E-02	0,00E+00	1,30E-02	2,03E-02	5,80E-04	-7,36E+00
Climate Change, fossil (GWPf) [kg CO2 eq.]	4,67E+00	3,00E-02	0,00E+00	1,28E-02	2,01E-02	5,97E-04	-7,34E+00
Climate Change, biogenic (GWPb) [kg CO2 eq.]	1,51E-02	1,85E-04	0,00E+00	1,16E-04	1,55E-04	-1,77E-05	-1,52E-02
Climate Change, land use and land use change (GWPluc) [kg CO2 eq.]	3,14E-02	1,68E-04	0,00E+00	7,24E-05	8,20E-06	1,10E-06	-1,30E-03
Ozone depletion (ODP) [kg CFC-11 eq.]	5,10E-07	1,82E-15	0,00E+00	7,78E-16	2,78E-13	1,40E-15	-5,51E-11
Acidification (AP) [Mole of H+ eq.]	4,13E-02	1,90E-04	0,00E+00	7,65E-05	4,94E-05	4,23E-06	-4,27E-02
Eutrophication, freshwater (Epfr) [kg P eq.]	8,62E-04	8,98E-08	0,00E+00	3,88E-08	5,81E-08	1,01E-09	-3,27E-06
Eutrophication, marine (Epmar) [kg N eq.]	3,99E-03	9,03E-05	0,00E+00	3,75E-05	1,21E-05	1,08E-06	-6,15E-03
Eutrophication, terrestrial (Epter) [Mole of N eq.]	4,31E-02	9,98E-04	0,00E+00	4,15E-04	1,28E-04	1,19E-05	-6,72E-02
Photochemical ozone formation, human health (POCP) [kg NMVOC eq.]	1,35E-02	1,77E-04	0,00E+00	7,22E-05	3,19E-05	3,29E-06	-1,86E-02
Resource use, mineral and metalsr (ADPe) [kg Sb eq.]*	3,72E-06	2,53E-09	0,00E+00	1,09E-09	5,27E-09	6,12E-11	-1,65E-06
Resource use, fossils (ADPf) [MJ]*	4,68E+01	4,06E-01	0,00E+00	1,74E-01	3,58E-01	7,82E-03	-9,01E+01
Water use (WDP) [m³ world equiv.]*	2,71E+00	2,70E-04	0,00E+00	1,17E-04	4,33E-03	6,55E-05	-1,09E+00
Additional indicator required by PCRs	**A1-A3*****	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Climate change - GWP-GHG [kg CO2 eq]**	4,70E+00	3,02E-02	0,00E+00	1,29E-02	2,01E-02	5,98E-04	-7,35E+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.

*** The usage of the results of modules A1-A3 without considering the results of modules C is discouraged.

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.

Table 6: Indicators of resource use, waste and output flows of the average mill finished profile implemented with the low carbon billet according to EN 15804+A2.

Impacts of average mill finished profile implemented with low carbon billet Method EN15804+A2							
Resource use indicators	**A1-A3******	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Use of renewable primary energy (PERE) [MJ]	4,40E+01	2,45E-02	0,00E+00	1,08E-02	1,39E-01	9,92E-04	-3,04E+01
Primary energy resources used as raw materials (PERM) [MJ]*	1,41E+00	6,89E-03	0,00E+00	3,92E-03	6,22E-03	1,84E-04	-2,30E+00
Total use of renewable primary energy resources (PERT) [MJ]	4,26E+01	1,76E-02	0,00E+00	6,89E-03	1,33E-01	8,08E-04	-2,81E+01
Use of non-renewable primary energy (PENRE) [MJ]	3,47E+01	3,13E-01	0,00E+00	1,21E-01	2,47E-01	5,42E-03	-6,19E+01
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]**	1,58E-07	4,21E-16	0,00E+00	2,39E-16	8,56E-14	4,32E-16	-1,72E-11
Total use of non-renewable primary energy resources (PENRT) [MJ]	3,47E+01	3,13E-01	0,00E+00	1,21E-01	2,47E-01	5,43E-03	-6,19E+01
Input of secondary material (SM) [kg]	2,90E-04	2,10E-08	0,00E+00	1,19E-08	1,80E-08	3,11E-10	-1,02E-06
Use of renewable secondary fuels (RSF) [MJ]	1,15E-03	2,03E-05	0,00E+00	1,15E-05	3,82E-06	3,33E-07	-1,92E-03
Use of non renewable secondary fuels (NRSF) [MJ]	1,24E-02	2,25E-04	0,00E+00	1,28E-04	4,07E-05	3,65E-06	-2,10E-02
Use of net fresh water (FW) [m3]	3,60E-01	5,89E-05	0,00E+00	2,99E-05	1,37E-04	2,39E-06	-7,69E-02
Output flows and waste categories	**A1-A3******	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed (HWD) [kg]	1,18E-02	1,95E-12	0,00E+00	8,33E-13	3,01E-11	4,02E-13	-6,35E-08
Non-hazardous waste disposed (NHWD) [kg]	1,96E+00	5,81E-05	0,00E+00	2,49E-05	4,83E-02	4,00E-02	-2,20E+00
Radioactive waste disposed (RWD) [kg]	4,45E-04	5,01E-07	0,00E+00	2,14E-07	5,46E-05	8,74E-08	-5,37E-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]	3,52E-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]	1,81E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported electrical energy (EEE) [MJ]	1,44E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported thermal energy (EET) [MJ]	2,94E-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]***	1,33E-02	1,33E-02	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

3.7 PARAMETERS DESCRIBING THE ENVIRONMENTAL IMPACT ACCORDING EN15804+A1

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.

Table 7: Impacts of mill finished profile implemented with the low carbon billet per declared unit (1 kg) according to EN 15804+A1.

Impacts of average mill finished profile implemented with low carbon billet Method EN15804+A1, main approach to the modelling of pre-consumer scrap							
Environmental Impact Indicators	**A1-A3****	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Global warming potential (GWP) [kg CO2 eq.]	4,62E+00	2,97E-02	0,00E+00	1,27E-02	1,99E-02	5,66E-04	-7,29E+00
Ozone Depletion Potential (ODP) [kg R11 eq.]	4,22E-07	2,14E-15	0,00E+00	9,17E-16	3,28E-13	1,65E-15	-1,01E-10
Acidification potential (AP) [kg SO2 eq.]	3,59E-02	1,31E-04	0,00E+00	5,21E-05	3,96E-05	3,37E-06	-3,63E-02
Eutrophication potential (EP) [kg Phosphate eq.]	4,52E-03	3,15E-05	0,00E+00	1,31E-05	5,18E-06	3,76E-07	-2,14E-03
Photochemical Ozone Creation Potential (POCP) [kg Ethene eq.]*	1,54E-03	-4,59E-05	0,00E+00	-2,01E-05	2,24E-06	2,65E-07	-1,99E-03
Abiotic depletion potential for non fossil resources (ADPE) [kg Sb eq.]	2,75E-06	2,53E-09	0,00E+00	1,09E-09	5,62E-09	6,18E-11	-1,68E-06
Abiotic depletion potential for fossil resources (ADPF) [MJ]	4,35E+01	4,03E-01	0,00E+00	1,72E-01	2,18E-01	7,56E-03	-7,60E+01
*Negative impact for Photochemical Ozone Creation Potential (POCP) in modules A4 and C2 is due to the NO emissions from truck. **The usage of the results of modules A1-A3 without considering the results of modules C is discouraged.							

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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 characterization 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 Offenburg, Rackwitz and Uphusen by Hydro Extrusion Offenburg and Hydro Extrusion Deutschland GmbH.

For further information on product characteristics, typical applications, technical datasheet and case histories, please visit our website www.hydro.com or contact us to torsten.wenzlaff@hydro.com.

All indicators reported in chapters 3.5, 3.6 and 3.7 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:	Martina Cimatti Liudmila Lavrik

	Francesca Reale Via della Liberazione 6, 40128 Bologna ecoinnovazione spin off ENEA www.ecoinnovazione.it
EPD Registration n°:	S-P-13157
EPD validity:	5 years
EPD valid within the following geographical area:	Global
EPD owner:	Hydro Extrusion Offenburg GmbH and Hydro Extrusion Deutschland GmbH
Third-party verification	
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:	EPD verification by accredited certification body
Third party verification:	Vladimír Kočí, VŠCHT is an approved certification body 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.	