



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025

**Product name: Aluminum casting alloys**

**Producer: Frontal Aluminium Sp. z o.o. Sp. komandytowa**

**Address:**

Ul. Marantowska 5  
62-510 – Konin  
Poland



Issued on 26 November 2024

Valid until 26 November 2029

EPD number: EPD-P 01.11.2024

# GENERAL INFORMATION

## EPD OWNER

<b>Manufacturer / EPD Holder</b>	Frontal Aluminium Sp. z o.o. Sp. komandytowa
<b>Address</b>	Ul. Marantowska 5 62-510 – Konin Poland
<b>Contact details</b>	<a href="mailto:sekretariat@frontal.pl">sekretariat@frontal.pl</a>
<b>Website</b>	<a href="http://www.frontal.pl">www.frontal.pl</a>

## PRODUCT IDENTIFICATION

<b>Product name</b>	Aluminum casting alloys
<b>Product number / reference</b>	1. Aluminum alloy EN-AB 46000 - made using 100% recycled aluminum 2. Aluminum alloy EN-AB 42100 - made using 100% virgin aluminum
<b>Place(s) of production</b>	Konin, Poland

## EPD INFORMATION

<b>EPD Poland program operator</b>	Multicert Sp. z o.o. Ul. Mydlarska 47, 04-690 Warszawa, Poland <a href="http://www.epd.org.pl">www.epd.org.pl</a> , <a href="mailto:epd@epd.org.pl">epd@epd.org.pl</a>
<b>EPD standards</b>	This EPD is in accordance with ISO 14025 standard <sup>1</sup>
<b>Product category rules</b>	PCR 2022:08 version 1.0 Basic Aluminium products and special alloys, EPD International.
<b>EPD verification</b>	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
<b>EPD verifier</b>	Izabela Sztamberek-Sochan, Ph.D.
<b>EPD number</b>	EPD-P 01.11.2024
<b>Registration:</b>	EPD Polska <a href="http://www.epd.org.pl">www.epd.org.pl</a>
<b>Publishing date</b>	26 November 2024
<b>EPD valid until</b>	26 November 2029
<b>Reasons for performing LCA</b>	B2B
<b>Accountability</b>	The EPD Holder is responsible for the information provided and evidence. Multicert Sp. z o.o. does not hold responsibility for the manufacturer information, life cycle assessment data nor supporting evidence.

<sup>1</sup> For Type III environmental declarations to be considered comparable, they must meet the following conditions: they must be based on the same or fully compatible Product Category Rules (PCR), including the same version; refer to products with identical functions, technical parameters, and applications (e.g., the same declared or functional unit); have equivalent system boundaries and data descriptions; apply equivalent requirements for data quality, data collection methods, and allocation; use 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. Type III environmental declarations for the same product category but from different programs may not be comparable if they do not meet these conditions.

# COMPANY INFORMATION

## HOLDER OF THE EPD

Frontal Aluminium Sp. z o.o. Sp. komandytowa  
Ul. Marantowska 5  
62-510 – Konin  
Poland

## COMPANY PROFILE

Frontal Aluminium has specialized in the production of deoxidizers and aluminum casting alloys for over 35 years. The company is headquartered in Konin, in eastern Greater Poland. Our mission is to provide the highest quality aluminum alloys while prioritizing sustainable development, innovation, and safety.

With years of experience and a highly skilled team, we meet diverse customer requirements, such as supplying materials for casting structural components, manufacturing automotive parts, and producing elements for the construction industry. We deliver aluminum alloys in the form of ingots and deoxidizers in granulated form. Continuous investment in modern technologies enables us to refine production processes and enhance product quality.

We place great importance on environmental protection and workplace safety. We comply with standards such as PN EN 1676 and DIN 1725, with the flexibility to tailor alloys to specific customer requirements. By utilizing both aluminum scrap and primary aluminum, we strive for sustainable production and minimizing environmental impact. In line with our commitment to sustainability, we have decided to prepare this EPD declaration for our key products.

Aware of the environmental impact of our production processes, we operate in compliance with applicable laws and regulations on environmental protection. We undertake numerous initiatives to raise awareness about environmental protection and workplace safety, ensuring safe and healthy working conditions at every workstation. We place strong emphasis on identifying hazards, assessing occupational risks, and actively preventing accidents, safeguarding the health and lives of our employees and collaborators within our facilities.

## ADDITIONAL INFORMATION

Further information can be found at:

[www.frontal.pl](http://www.frontal.pl)

# PRODUCT INFORMATION

## PRODUCT DESCRIPTION

Aluminum casting alloys in ingot form:

1. Alloy EN-AB 46000 made using 100% recycled aluminum
2. Alloy EN-AB 42100 made using 100% virgin aluminum

## PRODUCT APPLICATION

Cast aluminum alloys are widely used across various industries due to their versatile properties. Aluminum plays a crucial role in modern construction, with its primary applications including window and door frames, curtain walls, roofing, cladding, as well as structural components and staircases.

Other common uses include the automotive sector, where they are used for engine components and structural parts; the aerospace industry, where aluminum alloys are employed for lightweight aircraft structures; and electronics, where they are used for heat sinks and enclosures.

## PRODUCT STANDARDS

The product complies with PN-EN 1706 "Aluminium and aluminium alloys - Castings - Chemical composition and mechanical properties" and PN\_EN 1676 „Aluminium and aluminium alloys – Alloyed ingots for remelting – Specifications".

## PHYSICAL PROPERTIES OF THE PRODUCT

Dimensions: 100 mm x 600 mm x 80 mm

Ingot weight – c.a. 8 kg

## PRODUCT RAW MATERIAL COMPOSITION

Material	Alloy EN-AB 46000		Alloy EN-AB 42100	
	kg	%	kg	%
Recycled aluminum	0,802-0,861	80,2-86,1	N/A	
Primary aluminum	N/A		0,9122-0,9232	91,52-92,67
Silicon (Si)	0,08-0,11	8,00 – 11,00	0,065- 0,075	0,08-0,11
Iron (Fe)	0,06-0,011	0,6-1,1	0,0015	0,06-0,011
Copper (Cu)	0,02-0,04	2,00 – 4,00	0,0003	0,02-0,04
Manganese (Mn)	0,0055	0,55	0,001	0,0055
Magnesium (Mg)	0,0015-0,0055	0,15 – 0,55	0,003-0,0045	0,0015-0,0055
Zinc (Zn)	0,012	1,20	0,0007	0,012
Chromium (Cr)	0,0015	0,15	0,00	0,0015
Nikckel (Ni)	0,0055	0,55	0,00	0,0055
Lead (Pb)	0,0035	0,35	0,00	0,0035
Tin (Sn)	0,0015	0,15	0,00	0,0015
Titanium (Ti)	0,002	0,2	0,0018	0,002

### SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0.1% (1000 ppm).

### PACKAGING

The product is sold in 500-550 Kg ingot stack packs with PET tapes of 0.5 kg per stack.

### ADDITIONAL TECHNICAL INFORMATION

Further information can be found at [www.frontal.pl](http://www.frontal.pl)

# PRODUCT LIFE-CYCLE

## LIFECYCLE OVERVIEW

The lifecycle assessment of the products includes three main phases: the Upstream Process, the Core Process, and the transport of finished products to the customer part of the Downstream Process. Below is a detailed description of these processes:

## UPSTREAM PROCESS

This refers to the "cradle-to-gate" set of processes, including:

- Transportation of scrap from suppliers to Frontal's plant in Konin
- Sorting and pre-treatment of aluminum scraps (e.g., grinding, compacting)
- Recycling of other secondary materials from aluminum scrap pre-treatment process
- Production of primary aluminum from raw materials (e.g., bauxite and coal mining, production of anodes & cathodes)
- Production of alloying elements from raw materials (e.g. silicon, copper, magnesium, manganese, master alloys.)
- Production of raw materials used (e.g. chemical products and auxiliaries, including packaging materials).

Excluded processes are the following processes:

- processes from other previous lifecycles that generate aluminum scrap
- production and maintenance of capital goods (buildings and machineries)

## CORE PROCESS

This involves the processes within the production plant, from "gate-to-gate," which includes:

- Transportation of primary aluminum and other raw materials from suppliers to Frontal's plant in Konin
- Consumption of electricity, fuels (e.g., natural gas, oxygen, gasoline), and water within the plant for the manufacturing process
- Direct air emissions from the manufacturing process
- Treatment of water used during production
- End-of-life treatment of waste and packaging materials used in the plant.

The manufacturing process is broken down into the following sub-phases:

- Loading: Aluminum scrap and primary aluminum are prepared and loaded into the furnace as the charge.
- Melting: The loaded materials are melted in the furnace to form liquid aluminum.
- Alloying: The molten aluminum undergoes degassing and surface cleaning. Alloying elements, both from scrap and pure materials, are added according to specific formulations.
- Casting and Ingot Shaping: The molten aluminum is poured into molds and shaped into ingots.
- Packing: The finished ingots are stacked into packs and secured with plastic straps, ready for transport and delivery.

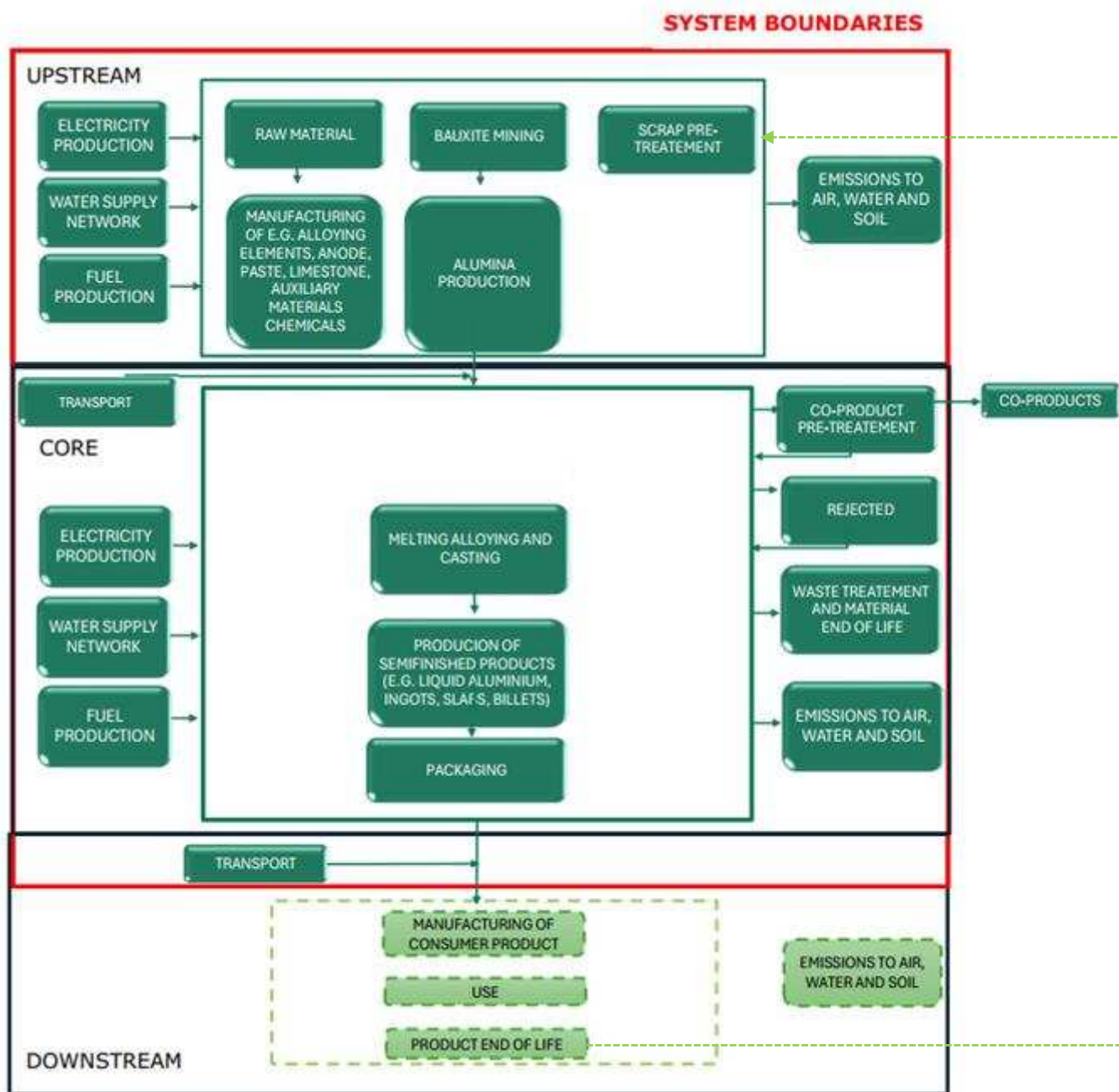
Excluded processes are the following processes:

- manufacturing and maintenance of equipment, building and other capital goods
- travel of personnel (business and to and from work)
- R&D activities.

## DOWNSTREAM PROCESS

The only part of the Downstream Process considered in this EPD is the transportation of the final products to the customer with the impacts covering direct exhaust emissions of fuel.

Diagram 1 - Life cycle stages:



# LIFE-CYCLE ASSESSMENT

## LIFE-CYCLE ASSESSMENT INFORMATION

Period for data 1 January 2024 - 31 July 2024

## DECLARED AND FUNCTIONAL UNIT

Declared unit	kilograms
Mass per declared unit	1 kg

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	-

## SYSTEM BOUNDARY

The system boundary for this EPD is "cradle-to-gate". As Frontal's products are semi-finished/intermediate products that require further processing to obtain the final consumer product, they can be physically integrated with other products in subsequent life-cycle processes and their final use/end-of-life is unknown. Therefore, according to the relevant Product Category Rules (PCR), the system boundaries are limited to a cradle-to-gate approach.

The life cycle of Frontal's products analyzed in this declaration is divided into the following stages:

- Upstream processes (from cradle-to-gate)
- Core processes (from gate-to-gate)
- Downstream processes (only transportation of the final products to the customer).

Transport to the customer (assumed distance of 261 km and 449 km for the alloys EN-AB 46000 and EN-AB 42100, respectively, by a freight lorry with a load capacity of 16-32 metric tons, meeting the EURO5 standard requirements).

## CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the PCR. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes which data are available for are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total neglected input and output flows do also not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution, and end-of-life stages.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy, and water use related to company management and sales activities are excluded.



## ALLOCATION

The allocation is made in accordance with the provisions of EN 15804. Energy (electricity and heating), water, and waste production in-house are allocated equally among all products through mass allocation. The recycling process and transportation of the material are allocated to this analysis.

## ESTIMATES AND ASSUMPTIONS

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below:

- Upstream Phase: 100% Mass Balance is considered, and no additional waste is generated, data was kept fairly simple as per the numbers provided by the supplier.
- Core Phase: The transportation of the raw material and its alloy additives were allocated as per the data provided. The energy and auxiliaries' inputs for the manufacturing of the product were provided by the supplier for the time period of 7 months, which were later allocated.
- PET Tape is taken as a packaging material which is 0.5 kg per one stack, one stack is 500-550 kg. Wastewater generated at the plant is managed in disposal. The recorded numbers for 7 months were provided by the supplier and then allocated to the declared unit

## Data Quality

For foreground data, the LCA study relies on high-quality primary data gathered by Frontal Aluminium Sp. Z o.o. including all necessary details about purchases and sales for the time period of 01.01.2024-31.07.2024. All relevant background data sets have been sourced from the OpenLCA software's database: ecoinvent 3.9.1, which includes consistent and well-documented data sets accessible in the ecoinvent online database or through the ecoinvent database documentation.

## Geographic Representativeness

The specified land or region where the product system is manufactured, utilized, or managed at the end of its lifespan is Poland, Europe.

# ENVIRONMENTAL IMPACT DATA

## 1. Primary Aluminium

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	Upstream	Core	Transportation To Customer	Total
Acidification	mol H+e	7.02E-02	7.29E-02	2.76E-04	1.43E-01
Climate change – total	kg CO2e	1.01E+01	1.30E+01	8.47E-02	2.32E+01
Climate change – fossil	kg CO2e	7.25E-02	-1.51E-03	7.39E-05	7.10E-02
Climate change – biogenic	kg CO2e	9.82E+00	1.30E+01	8.45E-02	2.29E+01
Climate change – LULUC	kg CO2e	1.59E-01	1.89E-02	4.10E-05	1.78E-01
Abiotic depletion of fossil resources	MJ	1.25E+02	1.95E+02	1.21E+00	3.21E+02
Eutrophication, aquatic freshwater	kg PO4e	4.28E-03	4.15E-03	5.92E-06	8.44E-03
Eutrophication, aquatic marine	kg Ne	9.96E-03	1.21E-02	9.48E-05	2.22E-02
Eutrophication, terrestrial	mol Ne	9.93E-02	1.30E-01	1.00E-03	2.31E-01
Abiotic depletion, minerals & metals	kg Sbe	1.65E-05	1.46E-04	2.05E-07	1.63E-04
Ozone depletion	kg CFC11e	2.13E-07	1.47E-07	1.84E-09	3.62E-07
Photochemical ozone formation	kg NMVOCe	3.75E-02	6.00E-02	4.12E-04	9.79E-02
Water use	m3e depr.	1.05E+01	5.94E+00	5.92E-03	1.64E+01

EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Eco-toxicity (freshwater)	CTUe	3.30E+01	5.80E+01	5.88E-01	9.16E+01
Human toxicity, cancer effects	CTUh	2.50E-08	1.13E-08	3.84E-11	3.63E-08
Human toxicity, non-cancer effects	CTUh	2.47E-07	2.71E-07	8.47E-10	5.19E-07
Ionizing radiation, human health	kBq U235e	1.17E+00	6.21E-01	1.60E-03	1.79E+00
Particulate matter	Incidence	8.12E-07	7.86E-07	6.73E-09	1.60E-06

EN 15804+A2 disclaimer for Ionizing radiation, human health. This 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.

## USE OF NATURAL RESOURCES

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Total use of non-renewable PER	MJ	1.25E+02	1.95E+02	1.21E+00	3.21E+02
Total use of renewable PER	MJ	4.24E+01	1.31E+01	1.86E-02	5.55E+01
Use of net fresh water	m <sup>3</sup>	2.71E-01	1.75E-01	1.96E-04	4.46E-01
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of secondary materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*PER abbreviation stands for primary energy resources*

## END OF LIFE – WASTE

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Hazardous waste	kg	7.19E-07	1.65E-06	1.38E-08	2.38E-06
High Level Radioactive waste	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Intermediate and Low-Level Radioactive waste	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste	kg	2.01E-03	4.77E-03	3.36E-05	6.81E-03

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## 2. Scrap Aluminium

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	Upstream	Core	Transportation To Customer	Total
Acidification	mol H+e	1.73E-02	7.29E-02	1.60E-04	9.03E-02
Climate change - total	kg CO2e	1.28E+00	1.31E+01	4.92E-02	1.44E+01
Climate change - fossil	kg CO2e	4.85E-02	-1.51E-03	4.30E-05	4.70E-02
Climate change - biogenic	kg CO2e	1.23E+00	1.30E+01	4.91E-02	1.43E+01
Climate change - LULUC	kg CO2e	1.62E-03	1.89E-02	2.39E-05	2.05E-02
Abiotic depletion of fossil resources	MJ	1.45E+01	1.95E+02	7.02E-01	2.11E+02
Eutrophication, aquatic freshwater	kg PO4e	1.28E-03	4.15E-03	3.44E-06	5.43E-03
Eutrophication, aquatic marine	kg Ne	1.79E-03	1.21E-02	5.51E-05	1.40E-02
Eutrophication, terrestrial	mol Ne	2.05E-02	1.30E-01	5.82E-04	1.52E-01
Abiotic depletion, minerals & metals	kg Sbe	1.57E-04	1.46E-04	1.19E-07	3.03E-04
Ozone depletion	kg CFC11e	1.71E-08	1.47E-07	1.07E-09	1.65E-07
Photochemical ozone formation	kg NMVOCe	6.97E-03	6.00E-02	2.39E-04	6.72E-02
Water use	m3e depr.	5.84E-01	5.94E+00	3.44E-03	6.52E+00

EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Eco-toxicity (freshwater)	CTUe	2.21E+01	5.80E+01	3.42E-01	8.05E+01
Human toxicity, cancer effects	CTUh	6.89E-09	1.13E-08	2.23E-11	1.82E-08
Human toxicity, non-cancer effects	CTUh	1.77E-07	2.71E-07	4.92E-10	4.49E-07
Ionizing radiation, human health	kBq U235e	1.05E-01	6.21E-01	9.32E-04	7.27E-01
Particulate matter	Incidence	1.06E-07	7.86E-07	3.91E-09	8.96E-07

EN 15804+A2 disclaimer for Ionizing radiation, human health. This 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.

## USE OF NATURAL RESOURCES

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Total use of non-renewable PER	MJ	1.47E+01	1.95E+02	7.02E-01	2.11E+02
Total use of renewable PER	MJ	3.77E+00	1.31E+01	1.08E-02	1.69E+01
Use of net fresh water	m <sup>3</sup>	1.84E-02	1.75E-01	1.14E-04	1.94E-01
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of secondary materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*PER abbreviation stands for primary energy resources*

## END OF LIFE – WASTE

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Hazardous waste	kg	1.93E-06	8.03E-09	2.74E-07	1.93E-06
High Level Radioactive waste	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Intermediate and Low-Level Radioactive waste	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste	kg	5.56E-03	4.77E-03	1.95E-05	5.56E-03

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	Upstream	Core	Transportation to Customer	Total
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## SCENARIO DOCUMENTATION

### Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, production mix (Reference product: electricity, medium voltage), Poland
Electricity CO <sub>2</sub> e / kWh	0,314 kg CO <sub>2</sub> e / kWh

### Transport scenario documentation

Scenario parameter	Value
A4 specific transport CO <sub>2</sub> e emissions, kg CO <sub>2</sub> e / tkm	0,132
A4 average transport distance, km	449 (primary), 261 (scrap)
Transport capacity utilization, %	100%
Bulk density of transported products, kg/stack	500-550
Volume capacity utilisation factor for nested packaged products	1

### End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	1
Collection process – kg collected with mixed waste	-
Recovery process – kg for re-use	-
Recovery process – kg for recycling	1 (100% recycling)
Recovery process – kg for energy recovery	-
Disposal (total wastewater in 7 months) – m <sup>3</sup> for final deposition	27
Scenario assumptions for transportation	N/A All data provided by the supplier.



## BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations. Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

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Glazoff, M. V., Zolotarevsky, V. S., & Belov, N. A. (2010). *Casting Aluminum Alloys*. Elsevier.

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GRANGER, D. A. (1989). Ingot Casting in the Aluminum Industry. *Treatise on Materials Science and Technology*, 109–135.

EPD-Norge Aluminium Recycled Foundry Alloy (RFA), Alumetal by Hydro

## EPD VERIFICATION:

The verification procedure for this Environmental Product Declaration (EPD) has been carried out in accordance with the requirements of ISO 14025 standards. Once the verification process is complete, the EPD remains valid for a period of 5 years. There is no need to recalculate the parameters contained in the EPD after this period, provided that the data underlying the declaration have not changed substantially.

## EPD CONTRIBUTORS

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**Manufacturer representative**      Piotr Domagała

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**EPD verifier**                              Izabela Sztamberek-Sochan, Ph.D.

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**Note:** The sole ownership, responsibility, and liability of this declaration are with the holder. Construction product declarations may not be comparable if they do not comply with EN 15804. For detailed information on comparability, please refer to EN 15804 and ISO 14025.

## EPD Poland Certificate



Reg. No. EPD-P 01.11.2024

# CERTIFICATE

## EPD TYPE III DECLARATION

(ENVIRONMENTAL PRODUCT DECLARATION)

**This document confirms that the company developed**  
Frontal Aluminium Sp. z o.o. Limited partnership  
**Environmental Product Declaration for**  
Aluminium Casting Alloys manufactured  
under PN- EN 1706 and PN-EN 1676  
**meets the requirements of the standard**  
ISO 14025  
**and that the data contained therein have been prepared**  
**correctly.**



Verification carried out by:

  
Dr. Izabela Sztamberek Sochan



Program Manager

  
Grzegorz Suwara

This document is valid until November 26, 2029, or until EPD is deregistered and its publication on the website [www.epd.org.pl](http://www.epd.org.pl) is discontinued.

EPD Polska Registration Office,  
Warsaw, November 26, 2024

[www.epd.com.pl](http://www.epd.com.pl)