Environmental Product Declaration

In accordance with ISO 14025:2006 for:

ECOAL Aluminium billet

(worst case scenario)

from

DERAL S.p.A.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0013504:001 (S-P-13504)
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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

Programme information

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

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: PCR 2022:08 Basic aluminium products and special alloys version 1.0.1
PCR review was conducted by: Chair of the PCR review: Hüdai Kara PCR review panel: The Technical Committee of the International EPD® System. A full list of members is available at www.environdec.com. The review panel may be contacted via info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: ambiente s.p.a.
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: *TUV Italia s.r.l.* is an approved certification body accountable for the third-party verification The certification body is accredited by: *ACCREDIA*
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 for 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 characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see ISO 14025.

Company information

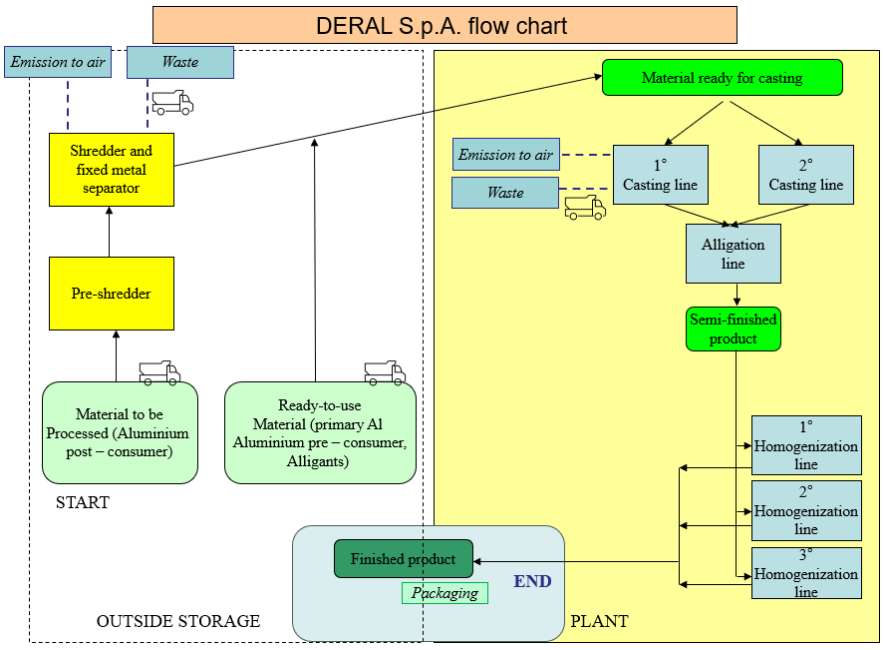
Owner of the EPD: DERAL S.p.A.
Contact: *deral@deral.it*
Description of the organisation: DERAL bases its business mainly on the production and marketing of recycled aluminium billets from remelting processes. DERAL is specialized in the production of aluminium billets intended for extrusion, mainly producing alloys of the 6000 family.
Product-related or management system-related certifications:
ISO 9001
ISO 14001
ISO 50001
Name and location of production site: DERAL S.p.A., *Via Moretto, n.80 – Manerbio (BS)*

Product information

Product name: ECOAL Billet
Product identification: Aluminium billet in the family 606x (includes 6060/ECO, 6060/ECO1T and 6063/ECO).
Product description: The studied ECOAL billet is an intermediate product intended for the extrusion of aluminium profiles.
Aluminium scrap (minimum 85%) and primary ingots are melted, with the eventual addition of alloying elements, and billets produced through a casting process.
UN CPC code:
415 “Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys”
Geographical scope: Europe

LCA information

Declared unit: 1 kg of finished billet.
Reference service life: N.A.
Time representativeness: LCA study was conducted in 2025, taking into consideration production data for the calendar year 2024.
Database(s) and LCA software used: software OpenLCA 2.4.1, database: Ecoinvent 3.9.1
System diagram:



Description of system boundaries: cradle-to-gate
Excluded lifecycle stages:
In accord with the exclusions granted by PCR 2022:08 the following processes were not included in the upstream process:
• the production of aluminum "scrap", i.e. processes coming from other previous life cycles that generate waste (pre or post-consumer);
• the packaging of the raw materials used for aluminum processing, as it is considered irrelevant.
Furthermore, the transport of oxygen from the production site to the DERAL production site is included in the cut-off.
Proxies were used to model the Al-Bo-Ti alloying agent and iron straps used for packaging.
The downstream process was not included in the present LCA study, in line with the system boundaries required by PCR 2022:08.
More information:
Website: www.deral.it
In this study, pre-consumer aluminium scrap was burden free.
Name and contact information of LCA practitioner: ambiente S.p.A.

Content declaration

Product

Product components	[kg]	%	Environmental / hazardous properties
Aluminium Scrap – post consumer	0.513	51.3	
Aluminium Scrap – pre consumer	0.387	37.8	
Primary Aluminium	0.107	10.7	
Alloys	0.002	0.2	
TOTAL	1.000	100	

Billets produced by DERAL S.p.A. comply with the REACH regulation, in that:

- they do not contain substances or mixtures for which there are restrictions on manufacture, placing on the market and use, or there are no substances or mixtures in concentrations above the limit value specified in the conditions of restriction (Annex XVII);
- do not contain any of the substances listed in the Candidate List SVHC in concentrations greater than 0.1 percent by weight;
- do not contain any of the substances included in Annex XIV.

Packaging

Distribution packaging: The product is sold in billets pacs with iron straps and wooden board: iron straps is 0.42 g per declared unit; wooden board 1.25 g per declared unit.

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product: pre-consumer and post-consumer aluminium comes respectively from companies that use aluminium billets and profiles as input material to their production system and from companies that collect end-of-life material. The pre-consumer and post-consumer aluminium is sourced entirely in Europe, with the majority coming from Italian suppliers.

Results of the environmental performance indicators

Impact category indicators

PARAMETER		UNIT	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	1,11E+00	3,79E-01	1,48E+00
	Biogenic	kg CO_2 eq.	5,99E-03	1,31E-04	6,12E-03
	Land use and land transformation	kg CO_2 eq.	2,63E-06	3,85E-07	3,02E-06
	TOTAL	kg CO_2 eq.	1,11E+00	3,79E-01	1,49E+00
Ozone layer depletion (ODP)		kg CFC 11 eq.	4,19E-08	4,24E-09	4,61E-08
Acidification potential (AP)		mol H^+ eq.	1,01E-02	9,16E-04	1,10E-02
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	1,24E-03	3,37E-05	1,28E-03
	Aquatic marine	kg N eq.	1,35E-03	2,37E-04	1,58E-03
	Aquatic terrestrial	mol N eq.	1,38E-02	2,55E-03	1,64E-02
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	4,70E-03	1,02E-03	5,72E-03
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	4,72E-06	3,26E-07	5,04E-06
	Fossil resources	MJ, net calorific value	1,87E+01	2,43E+00	2,11E+01
Water deprivation potential (WDP)*		m^3 world eq. deprived	1,63E+00	1,03E-01	1,74E+00

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Resource use indicators

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	3,87E+00	2,76E-01	4,15E+00
	Used as raw materials	MJ, net calorific value	0,00E+00	2,09E-02	2,09E-02
	TOTAL	MJ, net calorific value	3,87E+00	2,97E-01	4,17E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,44E+01	2,43E+00	1,68E+01
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,44E+01	2,43E+00	1,68E+01
Secondary material (optional)		kg	0,00E+00	9,43E-01	9,43E-01
Renewable secondary fuels (optional)		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels (optional)		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water (optional)		m^3	7,96E-03	1,71E-03	9,68E-03

Waste indicators

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	4,08E-01	9,47E-03	4,18E-01
Non-hazardous waste disposed	kg	5,58E-01	4,66E-02	6,04E-01
Radioactive waste disposed	kg	1,64E-05	1,70E-06	1,81E-05

Output flow indicators

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ per energy carrier	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ per energy carrier	0,00E+00	0,00E+00	0,00E+00

Additional indicators

PARAMETER	UNIT	Upstream	Core	TOTAL
GWP-GHG	kg CO2 eq	1,11E+00	3,79E-01	1,49E+00

Difference versus previous versions

Compared to the values previously published in the EPD, improvements in environmental performance have been recorded, mainly due to:

- The use of primary data made available by some suppliers for the modeling of raw materials;

- Deral's purchase of a significant share of Guarantees of Origin (about 31% of total consumption) and the installation of a photovoltaic self-production plant (0.42% of consumption).

References

[1] 14040:2006 «Principles and framework»

[2] ISO 14044:2006 «Requirements and guidelines»

[3] ISO 14040:2006/AMD 1:2020

[4] ISO 14044:2006/AMD 1:2017

[5] ISO 14044:2006/AMD 2:2020

[6] UNI EN ISO 14025:2010, Environmental labels and declarations — Type III environmental declarations — Principles and procedures (ISO 14025:2006)

[7] General Programme Instructions for the International EPD® System – Version 4.0

[8] PCR 2022:08 *Basic aluminium products and special alloys version 1.0.1*

[9] ambiente s.p.a. - *Studio di Life Cycle Assessment (LCA) relativo alle billette di alluminio prodotte da DERAL S.p.A. – Aggiornamento 2024*