ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 for:

SPECIAL STEEL BILLETS

from Acciaierie di Calvisano S.p.A.

ACCIAIERIE DI CALVISANO

EPD®
THE INTERNATIONAL EPD® SYSTEM

Programme:
The International EPD® System, www.environdec.com

Programme operator:
EPD International AB

Valid until:
2029-04-16

Publication date:
2024-04-16

EPD registration number:
EPD-IES-0012801

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

GENERAL INFORMATION

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: 2015:03, versione 2.1.1, 'International EPD® System
"Basic iron or steel products & special steels, except construction steel products"

PCR review was conducted by: Gorka Benito Alonso, IK INGENIERIA, g.benito@ik-ingenieria.com

LIFE CYCLE ASSESSMENT (LCA)

LCA accountability: Acciaierie di Calvisano 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: ICMQ Spa 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, 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.

COMPANY INFORMATION

Owner of the EPD:
Acciaierie di Calvisano SpA

Contact:
Eric Filippini, 030 99961,
eric.filippini@it.feralpigroup.com

Description of the organisation:
Feralpi Group is one of Europe's leading steel producer in Europe and it is specialized for both construction and special steel production. From the head company Feralpi Siderurgica, founded in 1968 in Lonato del garda (Brescia), a strong path of growth has given rise to an international Group, diversified, verticalized upstream and downstream in the production and marketing chain.
In 1972 Feralpi shareholders and local partners took part in the construction of a new steel mill in Calvisano (BS), with a 50-tonne furnace for producing billets for use in rolling processes. Now days Acciaierie di Clavisano produces billets mainly for the other companies of the Group.

Product-related or management system-related certifications:

ACCIAIERIE DI CALVISANO SPA

- Quality Assurance System in accordance with the Pressure Equipment Directive 2014/68/EU, Annex I, Section 4.3, AD 2000-Merkblatt W 0 as well as EN 764-5, Para. 4.2
- Content of recycled/recovered/by-product materials - Particular rules for recycled/recovered/by-product content of building products certification – CP DOC 262 rev. 2
- UNI EN ISO 14001:2015
- UNI EN ISO 9001:2015
- UNI EN ISO 14064-1:2019
- UNI EN ISO 50001:2018
- ISO 14067:2018 - ANNEX C

Name and location of production site:
Acciaierie di Calvisano SpA - Via Kennedy, 101/A 25012 Viadana di Calvisano BS

PRODUCT INFORMATION

Product name:
Acciaierie di Calvisano SpA
Special steel billets

Product identification:
Special steel billets (example applicable standars: EN ISO 16120/1-4, EN ISO 683/1-4, EN 10025/2, EN ISO 14341, EN ISO 16834, UNI EN 10263/1-4, DIN 17115)

Product description:
Steel coming from post and pre consumer steel scraps produced in electric arc furnace route (EAF) end refined in LF.

Example of special steel produced include:
Medium and High Carbon steels, Structural steels, Free-cutting steels, Steels for welding, springs, Cold Heading, Chains, Queched and Tempered steels and Case-hardening steels.

Billet section from 140 to 160 mm.
Length from 3000 to 13000 mm.

UN CPC code:
412

Geographical scope:
Global

LCA INFORMATION

Functional unit / declared unit: 1 ton of steel
Reference service life: Not applicable
Time representativeness: 2022
Database(s) and LCA software used: Ecoinvent 3.8 and SimaPro Developer 9.3.0.2, EF 3.1
Description of system boundaries: cradle to gate with module C1-C4 and D

System diagram:

LIFE-CYCLE STAGE	INFORMATION MODULES
Upstream	Purchase of raw material
	Purchase of packaging
	Purchase of auxiliary materials
Core	Transport of products to Calvisano plants
	Plant consumption for raw material processing
	Production of plant waste

Description of system boundaries:
cradle to gate

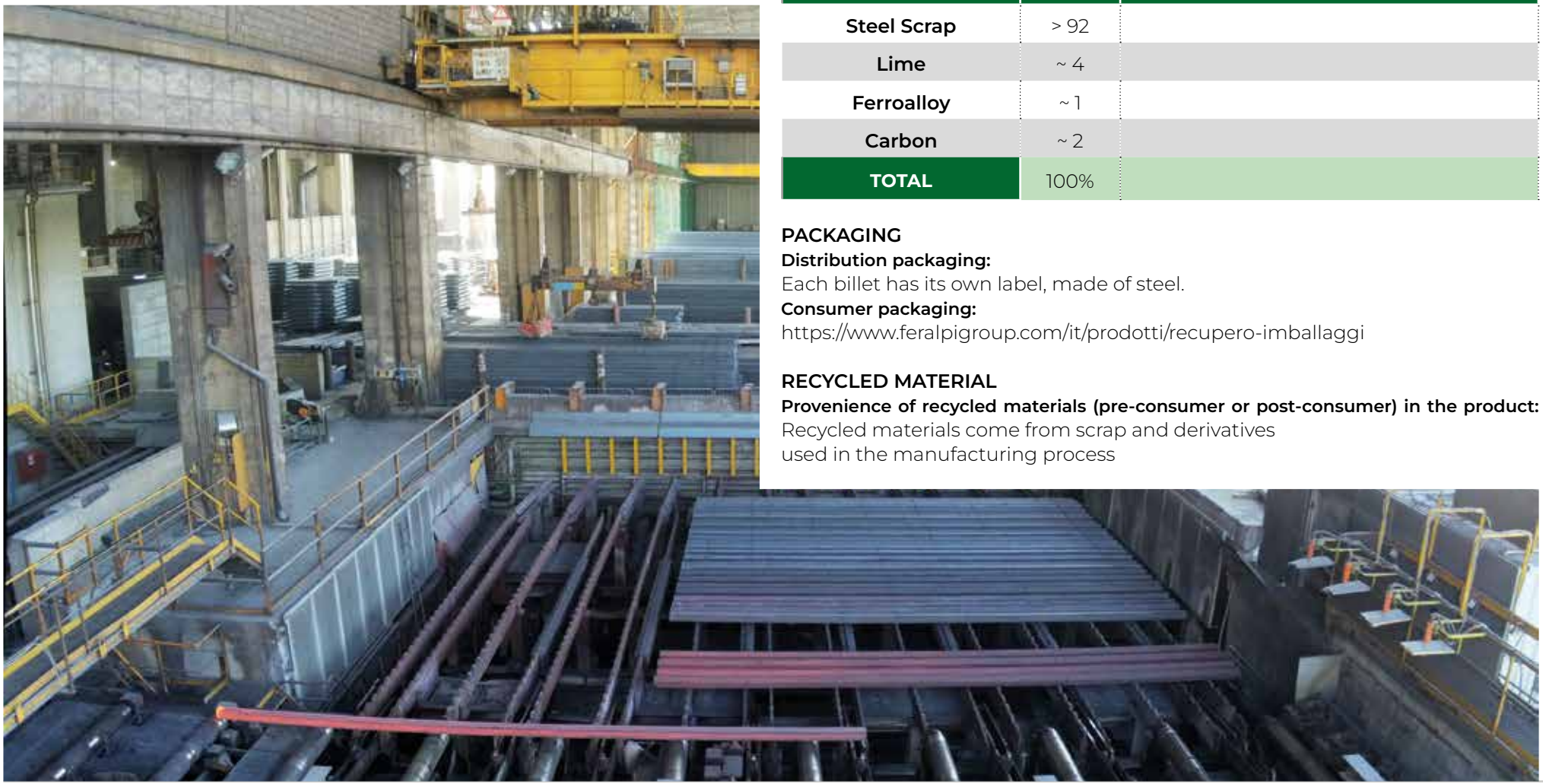
Excluded lifecycle stages:
Cut-off thresholds have been applied for:
- The processing of production equipment, construction, and other capital goods;
- Personnel travel to the workplace by company vehicle and research and development activities;
- The production of production machinery, buildings, and other company infrastructure.

Data proxy: The threshold permitted by PCR to use in the study up to a maximum 10% of general data (not selected) is respected for all impact categories.

More information: https://www.feralpigroup.com

Name and contact information of LCA practitioner: Aequilibria Srl – SB, info@aequilibria.com - www.aequilibria.com

CONTENT DECLARATION



PRODUCT

PRODUCT COMPONENTS	%	ENVIRONMENTAL / HAZARDOUS PROPERTIES
Steel Scrap	> 92	
Lime	~ 4	
Ferroalloy	~ 1	
Carbon	~ 2	
TOTAL	100%	

PACKAGING

Distribution packaging:
Each billet has its own label, made of steel.
Consumer packaging:
https://www.feralpigroup.com/it/prodotti/recupero-imballaggi

RECYCLED MATERIAL

Provenience of recycled materials (pre-consumer or post-consumer) in the product:
Recycled materials come from scrap and derivatives
used in the manufacturing process

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

The energy sources behind the electricity grid used in manufacturing is the italian residual mix 0,55 kg CO_2 eq./kWh (AIB report May 2023) with Life Cycle Engineering post-elaborations.

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	2,11E+02	3,92E+02	**6,03E+02**
	Biogenic	kg CO_2 eq.	2,40E+00	-7,33E-02	**2,33E+00**
	Land use and land transformation	kg CO_2 eq.	2,42E-01	5,10E-02	**2,93E-01**
	TOTAL	kg CO_2 eq.	2,14E+02	3,92E+02	**6,06E+02**
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,57E-05	6,45E-05	**8,02E-05**
Acidification potential (AP)		mol H^+ eq.	1,23E+00	1,45E+00	**2,68E+00**
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	1,01E-01	5,18E-02	**1,53E-01**
	Aquatic marine	kg N eq.	2,50E-01	2,58E-01	**5,08E-01**
	Aquatic terrestrial	mol N eq.	2,66E+00	2,78E+00	**5,44E+00**
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	7,96E-01	8,69E-01	**1,67E+00**
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	6,77E-03	3,73E-04	**7,14E-03**
	Fossil resources	MJ, net calorific value	2,62E+03	5,64E+03	**8,26E+03**
Water deprivation potential (WDP)*		m^3 world eq. deprived	5,97E+01	4,19E+01	**1,02E+02**

* 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	4,41E+02	3,04E+02	**7,46E+02**
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	**0,00E+00**
	TOTAL	MJ, net calorific value	4,41E+02	3,04E+02	**7,46E+02**
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	2,77E+03	6,13E+03	**8,90E+03**
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	**0,00E+00**
	TOTAL	MJ, net calorific value	2,77E+03	6,13E+03	**8,90E+03**
Secondary material (optional)		kg	0,00E+00	0,00E+00	**0,00E+00**
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	2,23E+00	1,14E+00	**3,38E+00**

WASTE INDICATORS (OPTIONAL)

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	-2,52E-01	3,76E+00	**3,51E+00**
Non-hazardous waste disposed	kg	4,97E+01	6,68E+01	**1,16E+02**
Radioactive waste disposed	kg	1,08E-02	1,13E-02	**2,21E-02**

OUTPUT FLOW INDICATORS (OPTIONAL)

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Components for reuse	kg	0,00E+00	0,00E+00	**0,00E+00**
Material for recycling	kg	1,12E+02	0,00E+00	**1,12E+02**
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 ENVIRONMENTAL INFORMATION

Acciaierie di Calvisano is committed to the Feralpi Group's ESG targets regarding increasingly decarbonised, sustainable steel, as part of a solid contribution to transitioning towards development models that are more inclusive, efficient and better for the environment.

Recycled content of products = 94,4% (Certificato n° P512 emesso da ICMQ in conformità allo schema CP DOC 262, data di emissione corrente: 29/03/2023; data di scadenza: 29/03/2026; reference year 2022).

The methodology adopted refers to the procedures of the ICMQ CP DOC 262 rev. 2 of 12/10/2022.

PRODUCT TYPE	PRODUCT NAME	RECYCLED MATERIAL			RECOVERED MATERIAL (%)	BY-PRODUCT MATERIAL (%)	TOTAL CONTENT OF RECYCLED, RECOVERED BY-PRODUCT MATERIAL (%)
		TOTAL (%)	PRE-CONSUMER (%)	POST-CONSUMER (%)			
Production of steel billets for reinforcing and special	Billets	94,4	n.p.d.	94,4	n.p.d.	n.p.d.	94,4

REFERENCES

- General Programme Instructions of the International EPD® System. Version 3.0.1
- PCR: “Basic iron or steel products & special steels, except construction steel products”, 2015:03, version 2.1.1
- Report Generale CFP SA_EPD_FER-22-M30_LONATO-CALVISANO-CALEOTTO
- Report specifico billetta speciale - CALVISANO
- ISO 14040:2007 – Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2007 – Environmental management - Life cycle assessment - Requirements and guidelines

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

UPSTREAM

- Scrap pretreatment
- Shredding
- Sorting
- Raw material and Energy production

CORE

- Supplying transport
- Hot rolling processes
- Packaging
- Internal handling
- Ancillary materials and activities
- Air emission
- Water emission
- Waste management

DOWNSTREAM

- Transport
- De-construction demolition
- Transport
- Waste processing
- Disposal
- Reuse - Recovery Recycling potential

Broad scheme of cold rolled steel production, in which the main activities included in the system boundaries are listed and divided in the three subsystems: UPSTREAM Process, CORE Module and DOWNSTREAM Process

UPSTREAM PROCESS

UPSTREAM | **CORE** | **DOWNSTREAM**

Steel scrap collection (shredded both in external and internal plants) and other raw materials production

Specific secondary materials pre-treatments, where appropriate

Production of alloy elements

Scheme of the considered system boundaries (Upstream processes)

Generation of electricity and other fuels from primary and from secondary energy resources (excluding waste treatments)

CORE PROCESS

UPSTREAM | **CORE** | **DOWNSTREAM**

Raw materials transportation from production or collection facilities to the production plant

Scheme of the considered system boundaries (core processes)

Steel mill production, including utilities

Hot and cold rolling

Packaging materials
Internal transportation

Treatment of waste generated from the manufacturing processes

DOWNSTREAM PROCESS

Transport

Transport to the customers (general market average).

De-construction demolition

Dismantling and demolition operations required to remove the product from the building. Initial onsite sorting of the materials is included as well.

Transport

Transportation of the discarded product as part of the waste processing (to recycling site or to a final disposal site).

Waste processing

Waste processing, including collection of waste fraction from deconstruction and waste processing of material flows intended for reuse, recycling and energy recovery.

Disposal

Waste disposal including physical pre-treatment and management of the disposal site.

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