ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006
and EN 15804:2012+A2:2019/AC:2021 for:

NON-ALLOY STEEL BILLETS

EPD OF MULTIPLE PRODUCTS, BASED ON
THE AVERAGE RESULTS OF THE PRODUCT GROUP

from Acciaierie di Calvisano S.p.A.

ACCIAIERIE DI CALVISANO

EPD® THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

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

Programme operator:
EPD International AB

Valid until:
2030-01-28

Publication date:
2025-01-29

EPD registration number:
EPD-IES- 0018708

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)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): "Construction products", 2019:14, version 1.3.4, UN CPC code 41

PCR review was conducted by: Martin Erlandsson, IVL Swedish Environmental Research Institute, martin.erlandsson@ivl.se

LIFE CYCLE ASSESSMENT (LCA)

LCA accountability: Aequilibria S.r.l. - SB

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

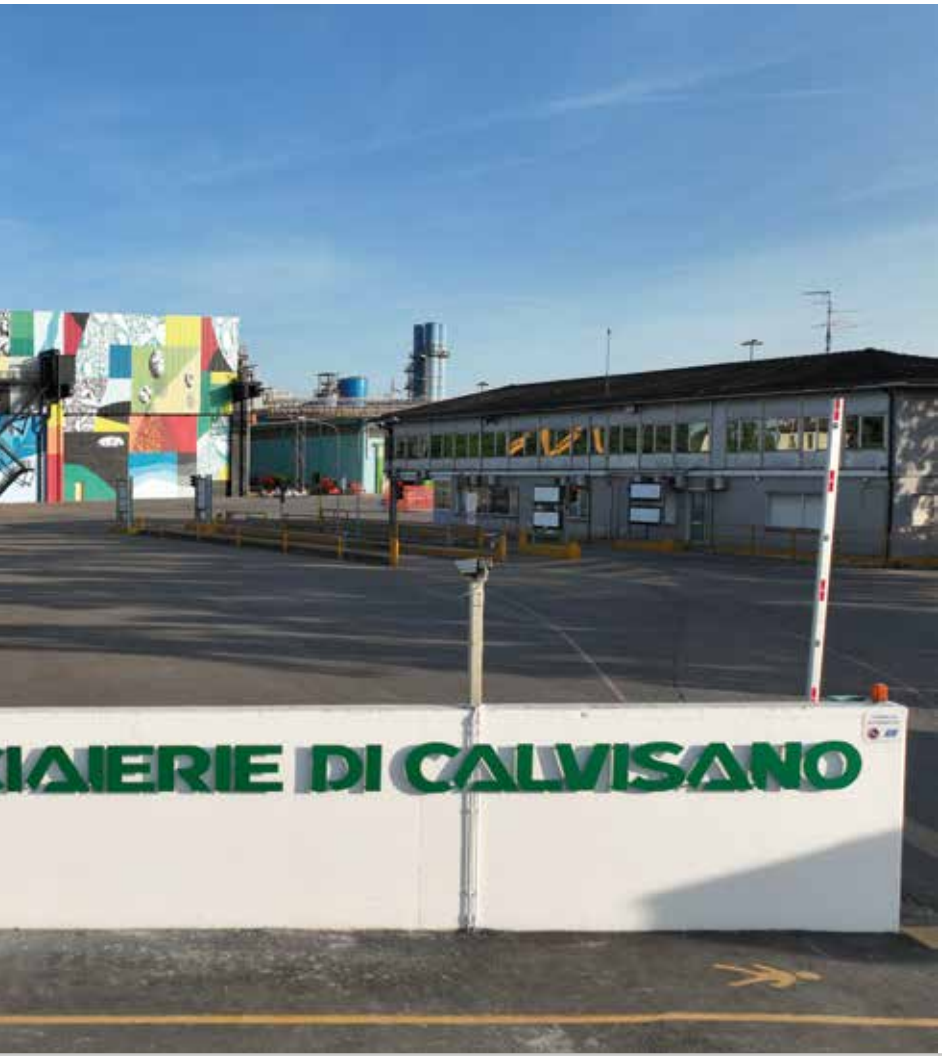
Procedure for follow-up of data during EPD validity involves third party verifier:

[ ] 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:

ACCIAIERIE DI CALVISANO SPA

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 Calvisano 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(s):
Acciaierie di Calvisano SpA - Via Kennedy, 101/A 25012 Viadana di Calvisano BS

PRODUCT INFORMATION

Product name:
Acciaierie di Calvisano SpA
Non-alloy steel billets

Product identification:
Weldable reinforcing steel for concrete in billets (example applicable standard EN 10080)

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

End use of the billet:
wire rod rolling of weldable reinforcing steel for concrete.
Billet section from 120 to 160 mm. Length from 3000 to 13000 mm.

UN CPC code: 41

Geographical scope:
Global

LCA INFORMATION

Functional unit / declared unit: 1 ton of steel
Reference service life: Not applicable
Time representativeness: 2023
Database(s) and LCA software used: Ecoinvent 3.10 and SimaPro Developer 9.6.0.1, EF 3.1
Description of system boundaries: cradle to gate with options, modules C1-C4, module D and with optional module A4

System diagram:

LIFE-CYCLE STAGE	INFORMATION MODULES
A1	Purchase of raw material
	Purchase of packaging
	Purchase of auxiliary materials
A2	Transport of products to Calvisano plants
A3	Plant consumption for raw material processing
	Production of plant waste
A4	Transport of finished product to customer
C1-C4	End of life

Excluded lifecycle stages:
The excluded lifecycle stages are: A5 and B.
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

MODULES DECLARED

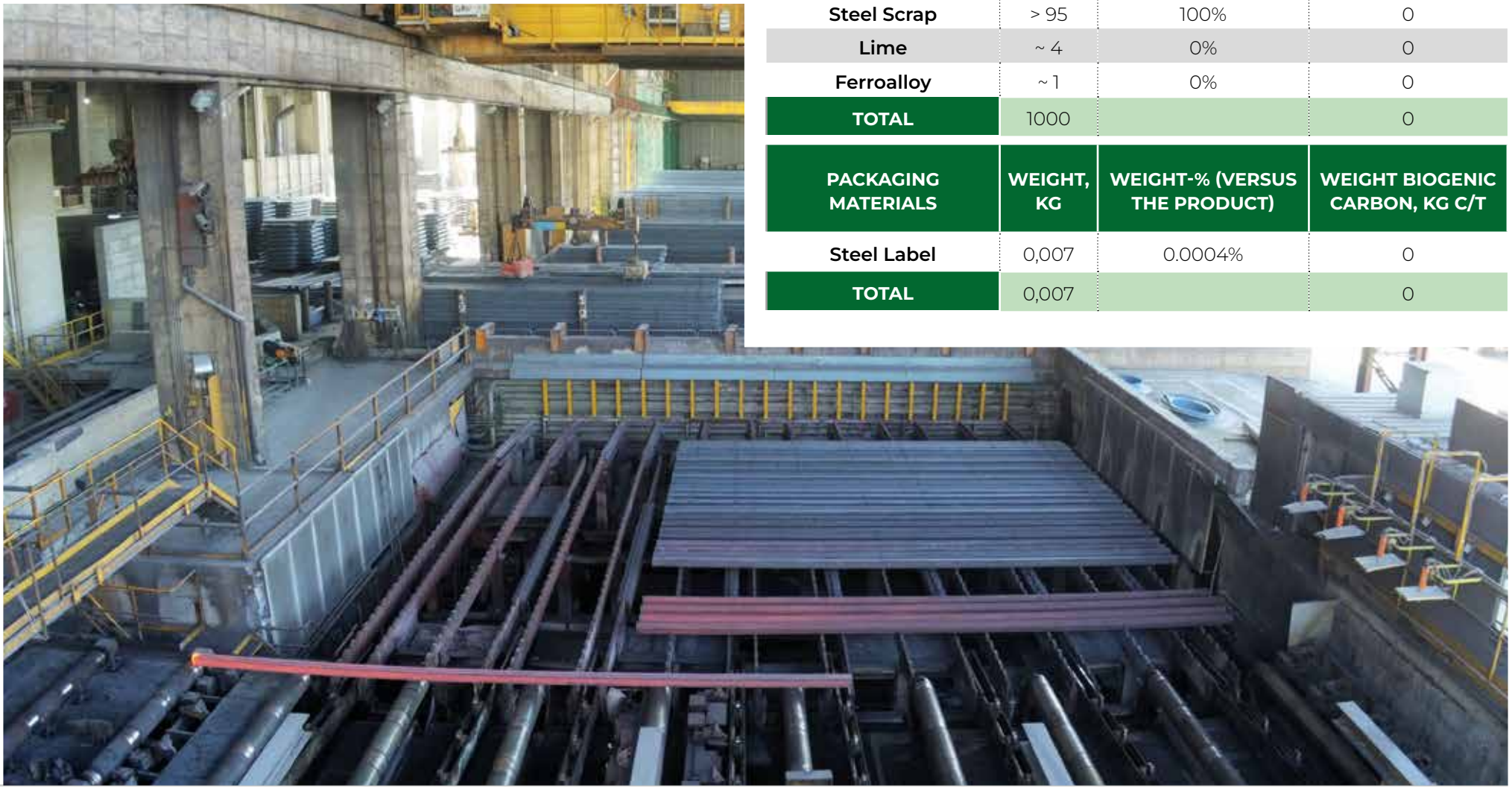
geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				RESOURCE RECOVERY STAGE
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery Recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	-	-	-	-	-	-	-	-	x	x	x	x	X
Geography	IT	IT	IT	WLD	-	-	-	-	-	-	-	-	WLD	WLD	WLD	WLD	WLD
Specific data used	> 90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation products	NOT RELEVANT			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation sites	NOT RELEVANT			-	-	-	-	-	-	-	-	-	-	-	-	-	-

CONTENT INFORMATION

PRODUCT COMPONENTS	WEIGHT, KG	POST-CONSUMER MATERIAL, WEIGHT-%	BIOGENIC MATERIAL, WEIGHT-% AND KG C/T
Steel Scrap	> 95	100%	0
Lime	~ 4	0%	0
Ferroalloy	~ 1	0%	0
TOTAL	1000		0

PACKAGING MATERIALS	WEIGHT, KG	WEIGHT-% (VERSUS THE PRODUCT)	WEIGHT BIOGENIC CARBON, KG C/T
Steel Label	0,007	0.0004%	0
TOTAL	0,007		0



RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

The energy sources behind the electricity grid used in manufacturing is the italian residual mix 0,62 kg CO_2 eq./kWh (AIB report May 2024)

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS PER FUNCTIONAL OR DECLARED UNIT								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	5,44E+02	8,99E+00	5,90E+01	3,83E+01	5,28E-01	1,61E+00	6,95E+01
GWP-biogenic	kg CO_2 eq.	3,25E+00	4,73E-03	9,36E-03	2,32E-02	6,86E-03	3,22E-03	-1,44E-01
GWP- luluc	kg CO_2 eq.	2,58E-01	3,13E-03	8,26E-03	1,30E-02	4,29E-05	5,05E-04	4,26E-02
GWP- total	kg CO_2 eq.	5,47E+02	9,00E+00	5,90E+01	3,83E+01	5,35E-01	1,62E+00	6,94E+01
ODP	kg CFC 11 eq.	7,03E-06	1,84E-07	8,82E-07	7,69E-07	1,13E-08	3,73E-08	2,64E-07
AP	mol H^+ eq.	2,35E+00	2,52E-02	5,23E-01	1,72E-01	1,39E-03	1,01E-02	2,80E-01
EP-freshwater	kg P eq.	1,77E-01	6,22E-04	2,78E-03	2,63E-03	6,86E-05	8,12E-04	3,56E-02
EP-marine	kg N eq.	5,19E-01	7,76E-03	2,39E-01	6,75E-02	2,74E-04	3,28E-03	6,84E-02
EP-terrestrial	mol N eq.	5,19E+00	8,42E-02	2,61E+00	7,36E-01	2,90E-03	3,55E-02	7,27E-01
POCP	kg NMVOC eq.	1,92E+00	4,22E-02	7,80E-01	2,64E-01	1,32E-03	1,28E-02	2,42E-01
ADP-minerals&metals*	kg Sb eq.	2,99E-03	2,47E-05	3,44E-05	1,19E-04	5,51E-07	4,49E-06	9,60E-05
ADP-fossil*	MJ	6,80E+03	1,33E+02	7,72E+02	5,47E+02	7,78E+00	2,70E+01	7,91E+02
WDP*	m^3	9,26E+01	6,32E-01	2,01E+00	2,39E+00	1,32E-01	-5,61E+00	9,73E+00

Acronyms

GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

* 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.

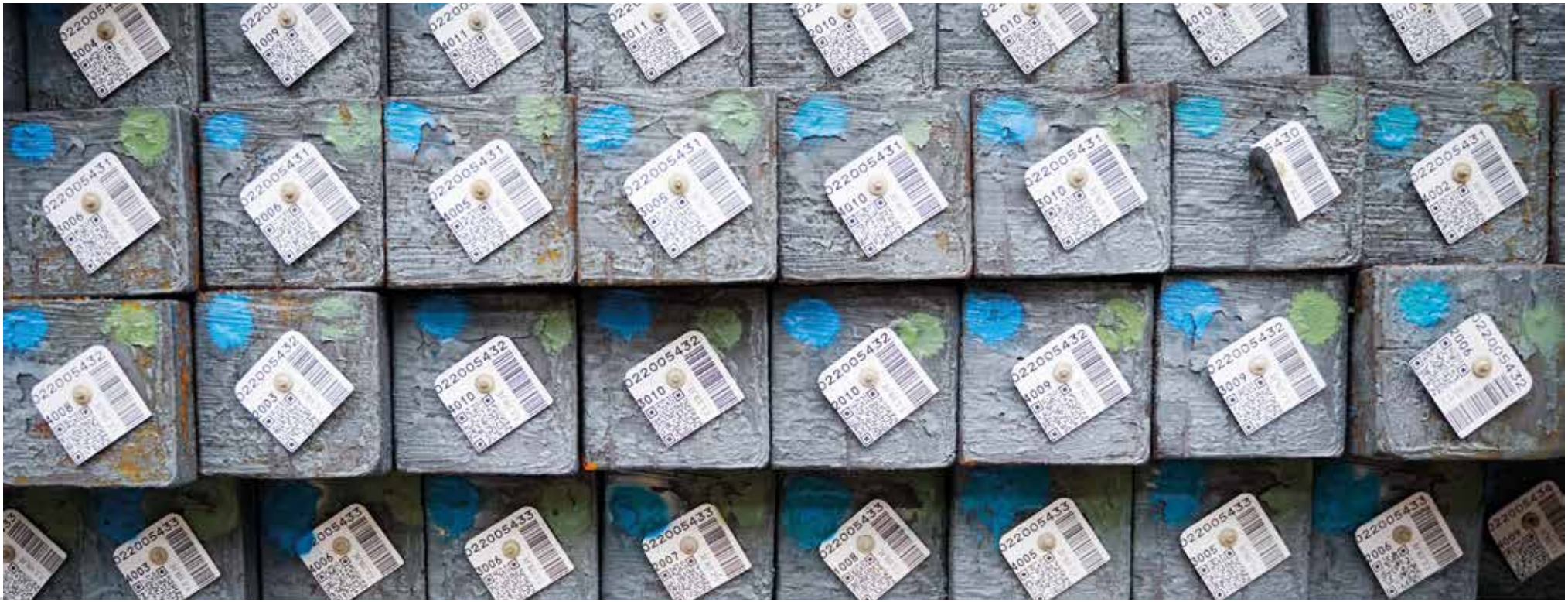
ADDITIONAL MANDATORY AND VOLUNTARY IMPACT CATEGORY INDICATORS

RESULTS PER FUNCTIONAL OR DECLARED UNIT								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	5,47E+02	9,00E+00	5,90E+01	3,83E+01	5,35E-01	1,62E+00	6,94E+01

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

Disclaimer discouraging the use of the results of modules A1-A3 without considering the results of module C.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.



RESOURCE USE INDICATORS

RESULTS PER FUNCTIONAL OR DECLARED UNIT								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	1,11E+03	2,05E+00	4,86E-01	1,25E+02	3,66E+01	1,23E-01	-4,85E-01
PERM	MJ	7,87E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,19E+03	2,05E+00	4,86E-01	1,25E+02	3,66E+01	1,23E-01	-4,85E-01
PENRE	MJ	2,99E+03	1,33E+02	2,70E+01	1,40E+03	2,19E+03	7,78E+00	-4,23E+01
PENRM	MJ	7,87E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,07E+03	1,33E+02	2,70E+01	1,40E+03	2,19E+03	7,78E+00	-4,23E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,22E+03	1,99E-02	-1,20E-01	7,40E-01	3,16E-01	3,92E-03	-3,78E-03

Acronyms

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

WASTE INDICATORS

RESULTS PER FUNCTIONAL OR DECLARED UNIT								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,63E+01	8,71E-04	5,18E-03	3,65E-03	3,05E-05	1,80E-04	7,66E-03
Non-hazardous waste disposed	kg	5,89E+01	1,13E+01	5,36E-01	3,37E+01	1,04E-02	4,46E+01	3,83E+00
Radioactive waste disposed	kg	9,99E-03	3,99E-05	1,64E-04	1,80E-04	4,99E-06	8,86E-06	1,56E-03

OUTPUT FLOW INDICATORS

RESULTS PER FUNCTIONAL OR DECLARED UNIT								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	1,43E+02	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

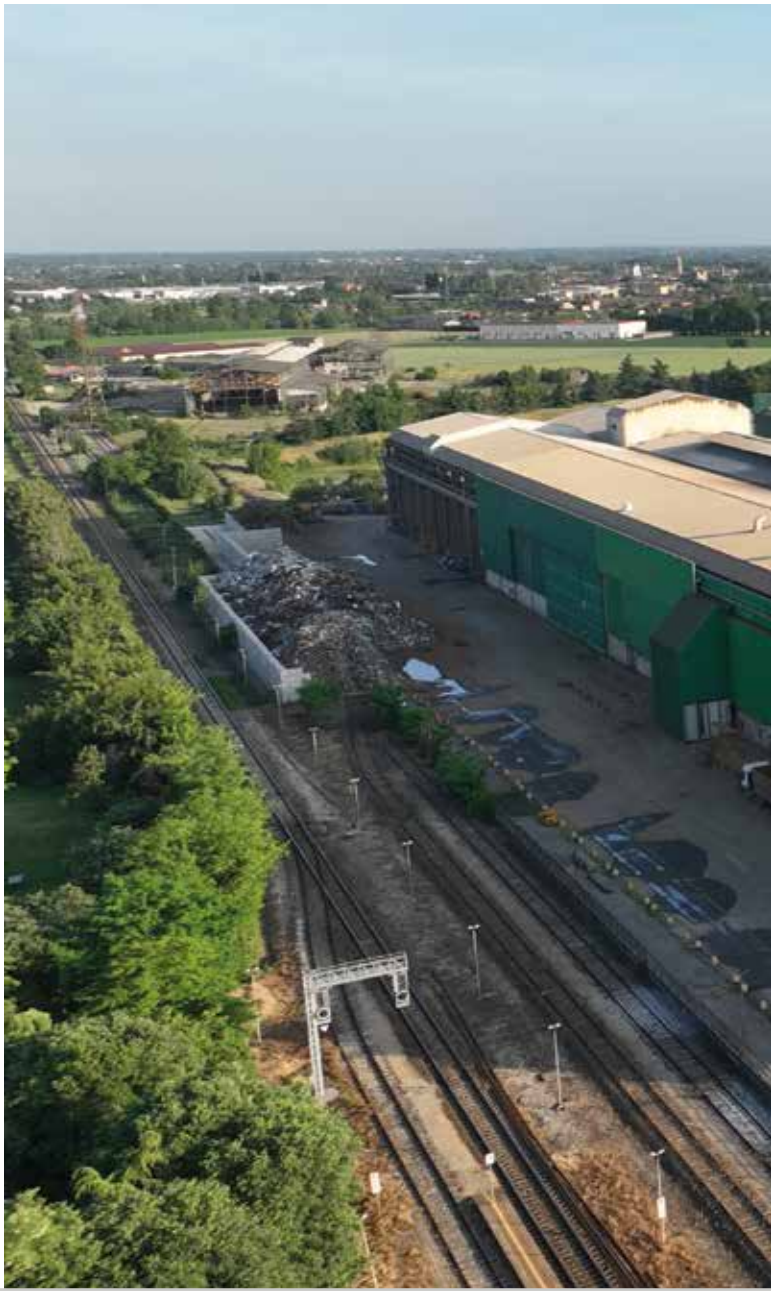
ADDITIONAL ENVIRONMENTAL INFORMATION

Recycled content of products = 98,9% (calculating from ICMQ verified procedure n°P512 28/02/2024, reference year 2022).
The methodology adopted refers to the procedures of the ICMQ CP DOC 262 rev. 2 of 08/03/2022.

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	98,9	n.p.d.	n.p.d.	0	n.p.d.	98,9

REFERENCES

- General Programme Instructions of the International EPD® System. Version 4.0.
- PCR 2019:14 – Construction products – v-1.3.4
- CFP SA_EPD Report generale Feralpi dati anno 2023
- Report specifico billetta costruzione - 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

A1
- Scrap pretreatment
- Shredding
- Sorting
- Raw material and Energy production

A2+A3
- Supplying transport
- Hot rolling processes
- Packaging
- Internal handling
- Ancillary materials and activities
- Air emission
- Water emission
- Waste management

A4 Transport

C1 De-construction demolition

C2 Transport

C3 Waste processing

C4 Disposal

D 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

A1 - RAW MATERIALS SUPPLY

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

A2 - TRANSPORT

A3 - MANUFACTURING

Hot and cold rolling

Packaging materials
Internal transportation

Treatment of waste generated from the manufacturing processes

DOWNSTREAM PROCESS

A4 Transport

Transport to the customers (general market average).

C1 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.

C2 Transport

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

C3 Waste processing

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

C4 Disposal

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

D Reuse - Recovery - Recycling potential

Environmental impacts associated to waste use after the investigated system (including recycling).

In this module impacts arising from steel recycling are accounted, including avoided impacts associated to primary steel production. The result is expressed as net value between direct impact (i.e. recycling steel in EAF furnace) and avoided impact (i.e. producing steel from iron ore in BOF furnace).

ACCIAIERIE
DI CALVISANO

WWW.FERALPIGROUP.COM