



ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 for:

SPECIAL STEEL WIRE ROD

from Caleotto S.p.A.



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-0013164

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: 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

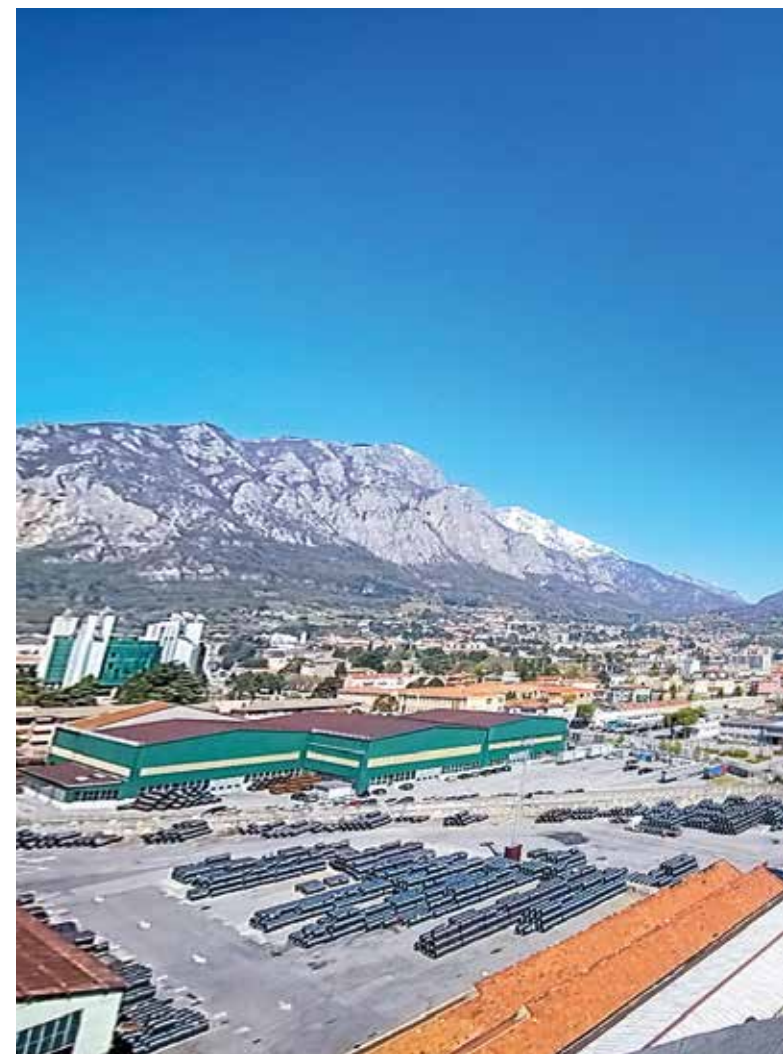
The certification body is accredited by: Accredia

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:

Caleotto 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.

Caleotto S.p.A is a 100% subsidiary of Feralpi Group, it focuses its activity on the commercialization of high quality wire rod, with a particular aptitude for providing a high quality customer service. Arlenico SpA is a 100% subsidiary of Caleotto S.p.A, it is responsible for managing the Lecco plant and performing the transformation production role through the hot rolling process of steel billets.

Product-related or management system-related certifications:

CALEOTTO SPA

- ◆ UNI EN ISO 9001:2015
- ◆ UNI EN ISO 14064-1:2019
- ◆ IATF 16949:2016

Name and location of production site:

Caleotto SpA

- ◆ Stabilimento Arlenico Spa - Via Arlenico, 22 23900 Lecco LC - IT



PRODUCT INFORMATION

Product name:

Caleotto SpA
Special steel wire rod

Product identification:

Special steel in wire rod (example applicable standards: 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) and hot rolling process. 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.

Wire rod: Diameter: from 4,5 to 26,0 mm
and Weight: from 1400 kg up to 1850 kg.

UN CPC code:

412

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: 3.10 and SimaPro Developer 9.6.0.1, EF 3.1

Description of system boundaries: cradle to gate

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 wire rod has its own label, either steel or plastic. To safeguard the integrity of the products, plastic or paper sheets can be used between the different coils. A steel wire is used to package each coils.

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 0,62 kg CO₂ eq./kWh (AIB report May 2024). Below are tables with results for each identified group in order from lowest to highest total GWP.

GROUP 1

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	4,88E+02	1,17E+02	6,05E+02
	Biogenic	kg CO ₂ eq.	1,86E+00	2,42E-02	1,88E+00
	Land use and land transformation	kg CO ₂ eq.	1,89E-01	1,73E-02	2,07E-01
	TOTAL	kg CO ₂ eq.	4,90E+02	1,17E+02	6,07E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	8,92E-06	8,68E-07	9,78E-06
Acidification potential (AP)		mol H ⁺ eq.	2,02E+00	1,31E-01	2,15E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	1,63E-01	7,26E-03	1,71E-01
	Aquatic marine	kg N eq.	4,27E-01	4,08E-02	4,68E-01
	Aquatic terrestrial	mol N eq.	4,21E+00	4,42E-01	4,65E+00
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	1,69E+00	2,10E-01	1,90E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	2,76E-03	1,20E-04	2,88E-03
	Fossil resources	MJ, net calorific value	7,57E+03	6,34E+02	8,21E+03
Water deprivation potential (WDP)*		m ³ world eq. deprived	8,75E+01	3,22E+00	9,07E+01

* 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	1,45E+03	6,15E+00	1,46E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,45E+03	6,15E+00	1,46E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	7,57E+03	3,61E+02	7,93E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	7,57E+03	3,61E+02	7,93E+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	2,64E+00	5,70E-02	2,69E+00

WASTE INDICATORS (OPTIONAL)

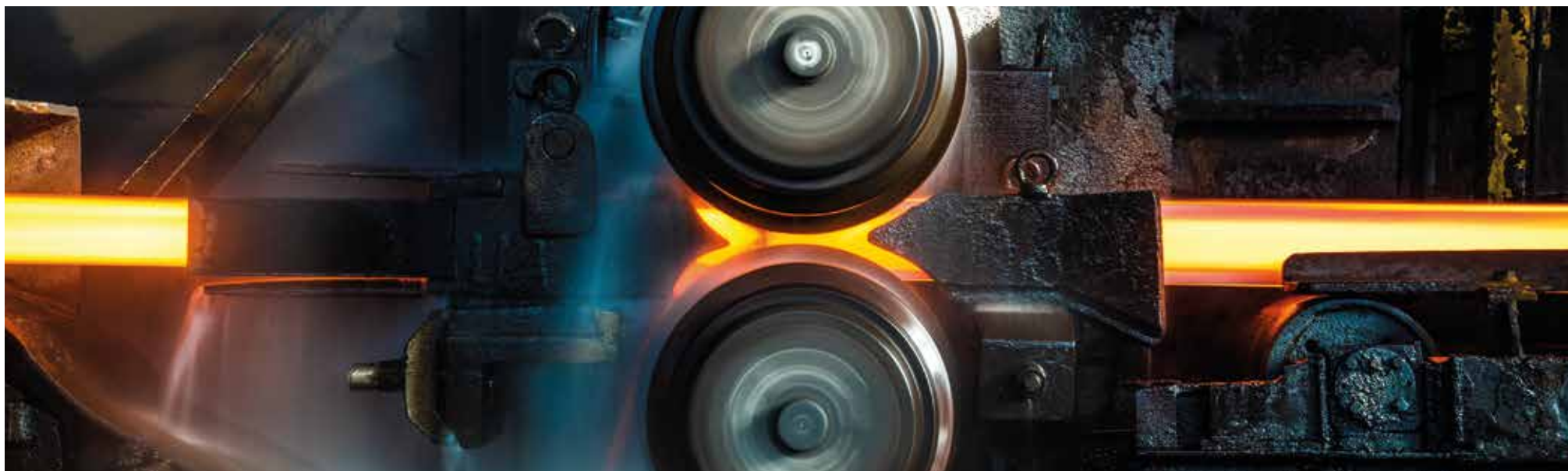
PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed		kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed		kg	1,10E-01	3,02E+01	3,03E+01
Radioactive waste disposed		kg	9,02E-03	1,11E-04	9,13E-03

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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERG LISCIA MM.7,5*CALF10R-1 Peso P.1400
- VERGELLA MM.12*CAL082K Peso P.1550



GROUP 2

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	5,97E+02	1,17E+02	7,14E+02
	Biogenic	kg CO ₂ eq.	3,21E+00	2,35E-02	3,24E+00
	Land use and land transformation	kg CO ₂ eq.	2,88E-01	1,71E-02	3,05E-01
	TOTAL	kg CO ₂ eq.	6,01E+02	1,17E+02	7,17E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	9,94E-06	8,60E-07	1,08E-05
Acidification potential (AP)		mol H ⁺ eq.	2,61E+00	1,29E-01	2,74E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	2,03E-01	7,22E-03	2,10E-01
	Aquatic marine	kg N eq.	5,44E-01	4,03E-02	5,85E-01
	Aquatic terrestrial	mol N eq.	5,45E+00	4,37E-01	5,88E+00
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	2,09E+00	2,08E-01	2,30E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	3,57E-03	1,19E-04	3,69E-03
	Fossil resources	MJ, net calorific value	8,77E+03	6,28E+02	9,40E+03
Water deprivation potential (WDP)*		m ³ world eq. deprived	1,00E+02	3,19E+00	1,04E+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	1,67E+03	6,14E+00	1,68E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,67E+03	6,14E+00	1,68E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	8,77E+03	3,60E+02	9,13E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	8,77E+03	3,60E+02	9,13E+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	3,35E+00	5,68E-02	3,41E+00

WASTE INDICATORS (OPTIONAL)

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed	kg	1,36E-01	3,00E+01	3,02E+01
Radioactive waste disposed	kg	1,08E-02	1,11E-04	1,09E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.10*CAL075 Peso P.1850
- VERGELLA MM.10*CAL082K Peso P.1850
- VERGELLA MM.10*CAL30MB Peso P.1660
- VERGELLA MM.11*CAL082K Peso P.1850
- VERGELLA MM.12*CAL080K Peso P.1550
- VERGELLA MM.12*CAL080K Peso P.1550
- VERGELLA MM.12*CAL082K Peso P.1400
- VERGELLA MM.13*CAL06 Peso P.1600
- VERGELLA MM.15*CAL082K-1 Peso P.1400
- VERGELLA MM.15*CAL082Y-1 Peso P.1850
- VERGELLA MM.4,5*CAL072 Peso P.1400
- VERGELLA MM.4,5*CAL082 Peso P.1400
- VERGELLA MM.5,5*CAL07B Peso P.1850
- VERGELLA MM.5,5*CAL032 Peso P.1850
- VERGELLA MM.5,5*CAL072-1 Peso P.1850
- VERGELLA MM.5,5*CAL086 Peso P.1850
- VERGELLA MM.5,5*CAL38B Peso P.1850
- VERGELLA MM.6*CAL072 Peso P.1850
- VERGELLA MM.6*CAL082 Peso P.1850
- VERGELLA MM.7*CAL23B Peso P.1400-
- VERGELLA MM.8*CAL078 Peso P.1850
- VERGELLA MM.8*CAL082 Peso P.1850
- VERGELLA MM.8*CAL42KD Peso P.1850
- VERGELLA MM.8,5*CAL080 Peso P.1850
- VERGELLA MM.9*CAL082Y Peso P.1850
- VERGELLA MM.16*CAL508 Peso P.1850
- VERGELLA MM.13*CAL45S Peso P.1850
- VERGELLA MM.13*CAL60E Peso P.1850
- VERGELLA MM.9*CAL45E Peso P.1850
- VER2S-B
- VERG.MM.17*CAL28B-1 P.1400-
- VERGELLA MM.10*CAL28B-1 Peso P.1850
- VERGELLA MM.10*CAL30B Peso P.1550
- VERGELLA MM.10*CAL30MB Peso P.1550
- VERGELLA MM.10,5*ZCAL22B Peso P.1400+
- VERGELLA MM.12*CAL10F-1 Peso P.1850
- VERGELLA MM.12*CAL35B Peso P.1850
- VERGELLA MM.12*CAL35B-1 Peso P.1400-
- VERGELLA MM.13*CAL20FC Peso P.1850
- VERGELLA MM.13*CAL21B-1 Peso P.1550
- VERGELLA MM.13*CAL23B-1 Peso P.1850
- VERGELLA MM.13,5*CAL23B-1 Peso P.1550
- VERGELLA MM.15*CAL21B Peso P.1550
- VERGELLA MM.16*CAL28B-1 Peso P.1400-
- VERGELLA MM.16,5*ZCAL10F Peso P.1850
- VERGELLA MM.17*CAL30MB Peso P.1400-
- VERGELLA MM.5,5*CAL026 Peso P.1850
- VERGELLA MM.5,5*CAL040 Peso P.1850
- VERGELLA MM.5,5*CAL15B Peso P.1550
- VERGELLA MM.5,5*CAL15B Peso P.1850
- VERGELLA MM.5,5*CAL15X Peso P.1850
- VERGELLA MM.5,5*CAL18B Peso P.1550
- VERGELLA MM.5,5*CAL20X Peso P.1850
- VERGELLA MM.5,5*ZCAL22B Peso P.1400+
- VERGELLA MM.6*CAL04F Peso P.1550
- VERGELLA MM.6*CAL10F Peso P.1850
- VERGELLA MM.6*CAL18B Peso P.1850
- VERGELLA MM.6*CAL26B Peso P.1550
- VERGELLA MM.6,5*ZCAL21B Peso P.1850
- VERGELLA MM.6,5*ZCAL21B Peso P.1850

- VERGELLA MM.6,5*ZCAL21B Peso P.1850
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- VERGELLA MM.6,5*ZCAL21B Peso P.1850
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- VERGELLA MM.6,5*ZCAL21B Peso P.1850
- VERGELLA MM.7*CAL18B-1 Peso P.1850
- VERGELLA MM.8*CAL23B Peso P.1550
- VERGELLA MM.8*CAL30KB Peso P.1550
- VERGELLA MM.8*CAL34K Peso P.1550
- VERGELLA MM.9*CAL30X Peso P.1850
- VERGELLA MM.10,5*CALG23K Peso P.1850
- VERGELLA MM.10,5*CALGN04B Peso P.1850
- VERGELLA MM.14*CALG21B Peso P.1850

- VERGELLA MM.9*CALGN06 Peso P.1550
- VERGELLA MM.5,5*CALS10 Peso P.1850
- VERGELLA MM.6*CAL04F Peso P.1850
- BILLETТА CAL056_CAL 160X160X9500
- VERGELLA MM.11*CAL052 Peso P.1850
- VERGELLA MM.11*CAL062 Peso P.1850
- VERGELLA MM.13CAL037 Peso P.1850
- VERGELLA MM.5,5*CAL026 Peso P.1850
- VERGELLA MM.5,5*CAL042 Peso P.1850
- VERGELLA MM.5,5*CAL044 Peso P.1850
- VERGELLA MM.5,5*CAL048 Peso P.1850
- VERGELLA MM.5,5*CAL056 Peso P.1850
- VERGELLA MM.5,5*CAL068-D Peso P.1850

- VERGELLA MM.8*CAL065 Peso P.1850
- VERGELLA MM.9*CAL060 Peso P.1850
- VERGELLA MM.13*CALM82Y-1-T Peso P.1400
- VERGELLA MM.5,5*CALM88 Peso P.1850
- VERGELLA MM.6,5*CALM82Y Peso P.1850
- VERGELLA MM.11*CAL51D Peso P.1850
- VERGELLA MM.6*CAL36D Peso P.1850
- VERGELLA MM.5,5 *CAL07B Peso P.1850
- VERGELLA MM.6*CAL05B Peso P.1850 VE
- VERGELLA MM.7*CAL05B-L Peso P.1850
- VERGELLA MM.7*CALW10KP Peso P.1850
- VERGELLA MM.14*CAL082K-1 Peso P.1400
- VERGELLA MM.8,5*CAL10F Peso P.1850

GROUP 3

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	6,42E+02	1,16E+02	7,59E+02
	Biogenic	kg CO ₂ eq.	2,02E+00	2,34E-02	2,04E+00
	Land use and land transformation	kg CO ₂ eq.	3,26E-01	1,70E-02	3,43E-01
	TOTAL	kg CO ₂ eq.	6,44E+02	1,17E+02	7,61E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	9,90E-06	8,60E-07	1,08E-05
Acidification potential (AP)		mol H ⁺ eq.	3,11E+00	1,29E-01	3,24E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	4,38E-01	7,21E-03	4,45E-01
	Aquatic marine	kg N eq.	6,84E-01	4,02E-02	7,24E-01
	Aquatic terrestrial	mol N eq.	7,49E+00	4,36E-01	7,92E+00
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	2,49E+00	2,07E-01	2,70E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	6,91E-02	1,19E-04	6,92E-02
	Fossil resources	MJ, net calorific value	9,36E+03	6,28E+02	9,98E+03
Water deprivation potential (WDP)*		m ³ world eq. deprived	1,40E+02	3,18E+00	1,43E+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	1,66E+03	6,12E+00	1,66E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,66E+03	6,12E+00	1,66E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	9,36E+03	3,55E+02	9,71E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	9,36E+03	3,55E+02	9,71E+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	4,10E+00	5,63E-02	4,16E+00

WASTE INDICATORS (OPTIONAL)

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed	kg	1,49E-01	2,96E+01	2,98E+01
Radioactive waste disposed	kg	1,17E-02	1,11E-04	1,18E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.12*CAL34KD Peso P.1550
- VERGELLA MM.17*CAL34KD Peso P.1400-

GROUP 4

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	7,07E+02	1,16E+02	8,23E+02
	Biogenic	kg CO ₂ eq.	3,21E+00	2,33E-02	3,23E+00
	Land use and land transformation	kg CO ₂ eq.	5,20E-01	1,70E-02	5,37E-01
	TOTAL	kg CO ₂ eq.	7,11E+02	1,16E+02	8,27E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,07E-05	8,56E-07	1,16E-05
Acidification potential (AP)		mol H ⁺ eq.	9,98E+00	1,29E-01	1,01E+01
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	4,96E-01	7,20E-03	5,03E-01
	Aquatic marine	kg N eq.	8,35E-01	4,01E-02	8,75E-01
	Aquatic terrestrial	mol N eq.	9,16E+00	4,34E-01	9,60E+00
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	3,41E+00	2,06E-01	3,62E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	7,55E-02	1,19E-04	7,56E-02
	Fossil resources	MJ, net calorific value	1,02E+04	6,25E+02	1,08E+04
Water deprivation potential (WDP)*		m ³ world eq. deprived	3,74E+02	3,17E+00	3,77E+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	2,51E+03	6,05E+00	2,51E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	2,51E+03	6,05E+00	2,51E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	1,02E+04	3,55E+02	1,05E+04
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,02E+04	3,55E+02	1,05E+04
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	9,90E+00	5,60E-02	9,96E+00

WASTE INDICATORS (OPTIONAL)

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed		kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed		kg	1,75E-01	2,97E+01	2,98E+01
Radioactive waste disposed		kg	1,59E-02	1,09E-04	1,60E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.11*CALG05T Peso P.1400-

GROUP 5

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	7,05E+02	1,16E+02	8,21E+02
	Biogenic	kg CO ₂ eq.	7,40E+00	2,29E-02	7,42E+00
	Land use and land transformation	kg CO ₂ eq.	3,52E-01	1,68E-02	3,69E-01
	TOTAL	kg CO ₂ eq.	7,13E+02	1,16E+02	8,29E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,03E-05	8,45E-07	1,11E-05
Acidification potential (AP)		mol H ⁺ eq.	3,16E+00	1,28E-01	3,29E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	2,34E-01	7,16E-03	2,41E-01
	Aquatic marine	kg N eq.	6,51E-01	3,98E-02	6,90E-01
	Aquatic terrestrial	mol N eq.	6,55E+00	4,32E-01	6,98E+00
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	2,42E+00	2,05E-01	2,63E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	3,65E-03	1,17E-04	3,77E-03
	Fossil resources	MJ, net calorific value	9,98E+03	6,17E+02	1,06E+04
Water deprivation potential (WDP)*		m ³ world eq. deprived	1,14E+02	3,13E+00	1,17E+02

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RESOURCE USE INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	2,10E+03	6,64E+00	2,10E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	2,10E+03	6,64E+00	2,10E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	9,98E+03	3,92E+02	1,04E+04
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	9,98E+03	3,92E+02	1,04E+04
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	4,72E+00	6,16E-02	4,78E+00

WASTE INDICATORS (OPTIONAL)

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	1,69E+01	4,74E-01	1,74E+01
Non-hazardous waste disposed	kg	1,60E-01	3,28E+01	3,29E+01
Radioactive waste disposed	kg	1,31E-02	1,21E-04	1,32E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.4,5*CALSG2 Peso P.1850
- VERGELLA MM.13*CALMS15-T Peso P.1650

GROUP 6

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	7,58E+02	1,16E+02	8,74E+02
	Biogenic	kg CO ₂ eq.	5,19E+00	2,30E-02	5,22E+00
	Land use and land transformation	kg CO ₂ eq.	4,08E-01	1,68E-02	4,24E-01
	TOTAL	kg CO ₂ eq.	7,64E+02	1,16E+02	8,80E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,06E-05	8,47E-07	1,15E-05
Acidification potential (AP)		mol H ⁺ eq.	4,31E+00	1,27E-01	4,43E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	6,70E-01	7,16E-03	6,77E-01
	Aquatic marine	kg N eq.	9,64E-01	3,97E-02	1,00E+00
	Aquatic terrestrial	mol N eq.	1,10E+01	4,30E-01	1,14E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	3,34E+00	2,04E-01	3,55E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	1,18E-01	1,17E-04	1,18E-01
	Fossil resources	MJ, net calorific value	1,05E+04	6,19E+02	1,11E+04
Water deprivation potential (WDP)*		m ³ world eq. deprived	1,81E+02	3,14E+00	1,84E+02

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RESOURCE USE INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	2,12E+03	6,02E+00	2,13E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	2,12E+03	6,02E+00	2,13E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	1,05E+04	3,51E+02	1,09E+04
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,05E+04	3,51E+02	1,09E+04
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	5,88E+00	5,56E-02	5,93E+00

WASTE INDICATORS (OPTIONAL)

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed		kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed		kg	1,83E-01	2,93E+01	2,95E+01
Radioactive waste disposed		kg	1,43E-02	1,09E-04	1,44E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.5,5*CALSG8D Peso P.1850
- VERGELLA MM.5,5*CALSG8D Peso P.1850

GROUP 7

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	8,48E+02	1,16E+02	9,65E+02
	Biogenic	kg CO ₂ eq.	5,67E+00	2,33E-02	5,70E+00
	Land use and land transformation	kg CO ₂ eq.	9,19E-01	1,70E-02	9,36E-01
	TOTAL	kg CO ₂ eq.	8,55E+02	1,16E+02	9,71E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,29E-05	8,56E-07	1,37E-05
Acidification potential (AP)		mol H ⁺ eq.	2,78E+01	1,28E-01	2,79E+01
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	7,20E-01	7,20E-03	7,27E-01
	Aquatic marine	kg N eq.	1,14E+00	4,00E-02	1,18E+00
	Aquatic terrestrial	mol N eq.	1,27E+01	4,34E-01	1,31E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	5,55E+00	2,06E-01	5,75E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	1,19E-01	1,19E-04	1,19E-01
	Fossil resources	MJ, net calorific value	1,25E+04	6,25E+02	1,32E+04
Water deprivation potential (WDP)*		m ³ world eq. deprived	1,01E+03	3,17E+00	1,01E+03

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RESOURCE USE INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	4,61E+03	6,05E+00	4,62E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	4,61E+03	6,05E+00	4,62E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	1,25E+04	3,53E+02	1,29E+04
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,25E+04	3,53E+02	1,29E+04
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	2,53E+01	5,58E-02	2,53E+01

WASTE INDICATORS (OPTIONAL)

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed	kg	2,31E-01	2,94E+01	2,97E+01
Radioactive waste disposed	kg	2,62E-02	1,10E-04	2,63E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.5,5*CAL58TV-1 Peso P.1850

GROUP 8

IMPACT CATEGORY INDICATORS

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	9,94E+02	1,15E+02	1,11E+03
	Biogenic	kg CO ₂ eq.	6,95E+00	2,27E-02	6,97E+00
	Land use and land transformation	kg CO ₂ eq.	9,48E-01	1,67E-02	9,65E-01
	TOTAL	kg CO ₂ eq.	1,00E+03	1,15E+02	1,12E+03
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,36E-05	8,39E-07	1,44E-05
Acidification potential (AP)		mol H ⁺ eq.	2,04E+01	1,26E-01	2,05E+01
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	6,82E-01	7,13E-03	6,89E-01
	Aquatic marine	kg N eq.	1,22E+00	3,93E-02	1,26E+00
	Aquatic terrestrial	mol N eq.	1,35E+01	4,26E-01	1,39E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	5,28E+00	2,02E-01	5,49E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	9,85E-02	1,16E-04	9,86E-02
	Fossil resources	MJ, net calorific value	1,39E+04	6,12E+02	1,45E+04
Water deprivation potential (WDP)*		m ³ world eq. deprived	7,10E+02	3,11E+00	7,13E+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	4,43E+03	5,97E+00	4,44E+03
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	4,43E+03	5,97E+00	4,44E+03
Primary energy resources Non-renewable	Use as energy carrier	MJ, net calorific value	1,39E+04	3,50E+02	1,42E+04
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,39E+04	3,50E+02	1,42E+04
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	1,94E+01	5,53E-02	1,94E+01

WASTE INDICATORS (OPTIONAL)

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed		kg	1,69E+01	4,73E-01	1,74E+01
Non-hazardous waste disposed		kg	2,70E-01	2,93E+01	2,95E+01
Radioactive waste disposed		kg	2,60E-02	1,08E-04	2,61E-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	2,03E+01	0,00E+00	2,03E+01
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

WIRE ROD INCLUDED IN THIS GROUP ARE:

- VERGELLA MM.5,5*CAL58TV Peso P.1850

ADDITIONAL ENVIRONMENTAL INFORMATION

Recycled content of products = 98,6%.

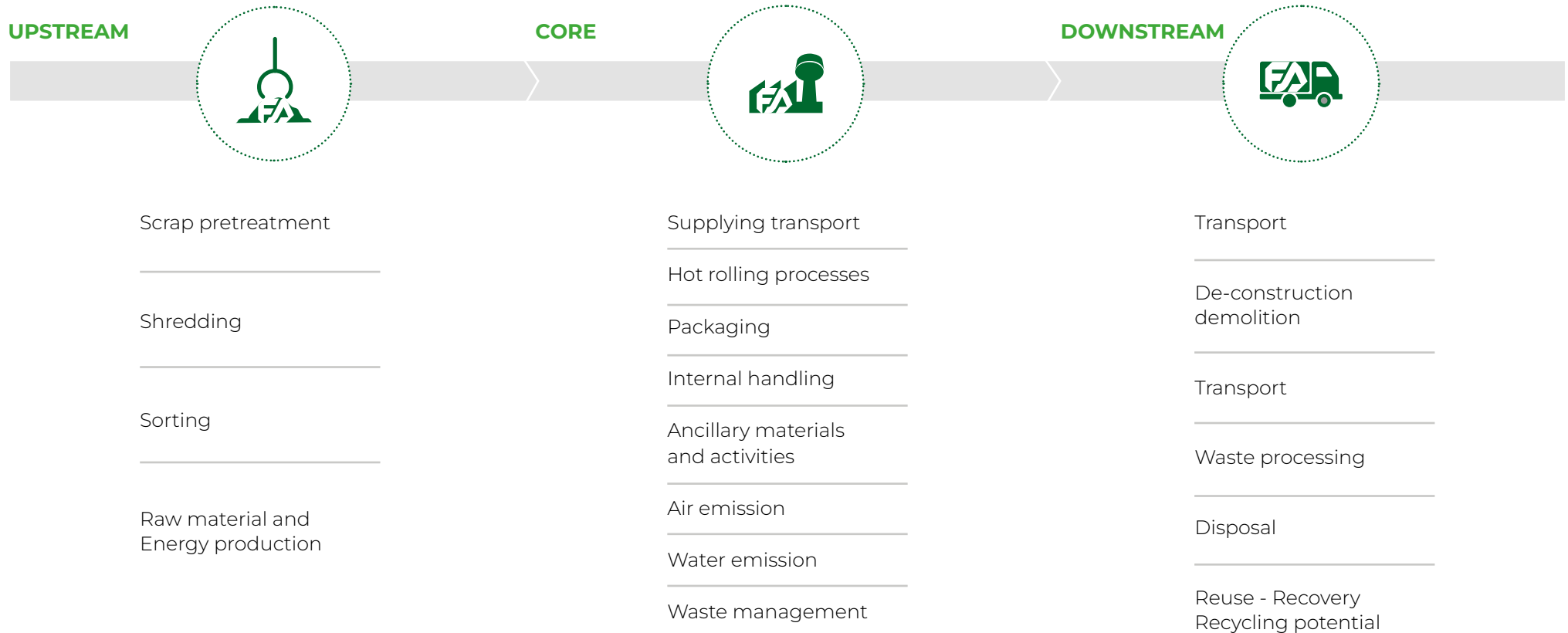
The methodology adopted refers to the procedures of the ICMQ CP DOC 262 rev. 2 of 08/03/2022.

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	88,2	n.p.d.	0	0	10,4	98,6

REFERENCES

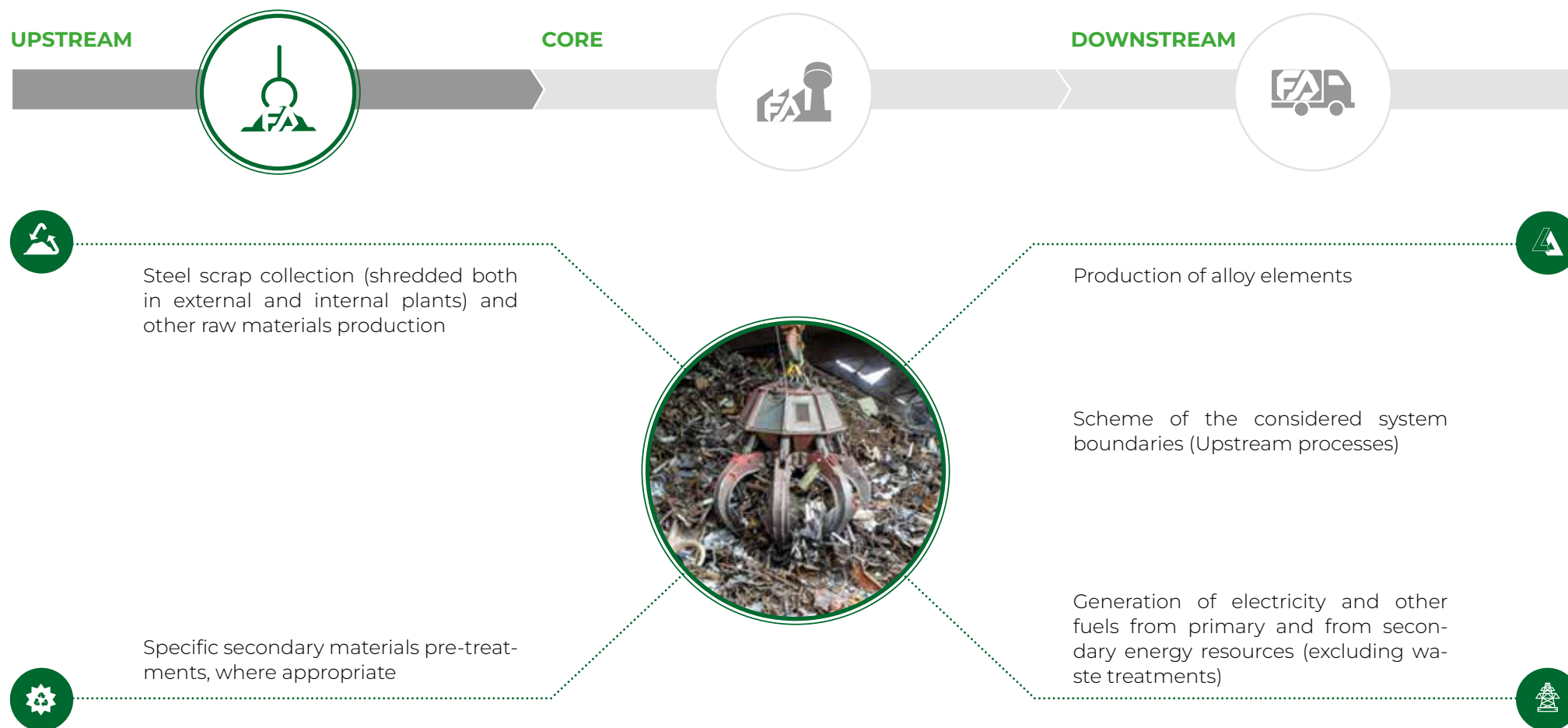
- ◆ General Programme Instructions of the International EPD® System. Version 3.0.1
- ◆ PCR: 2015:03, versione 2.1.1, 'International EPD® System "Basic iron or steel products & special steels, except construction steel products"'
- ◆ CFP SA_EPD Report generale Feralpi dati anno 2023
- ◆ Report specifico vergella speciale - CALEOTTO
- ◆ 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

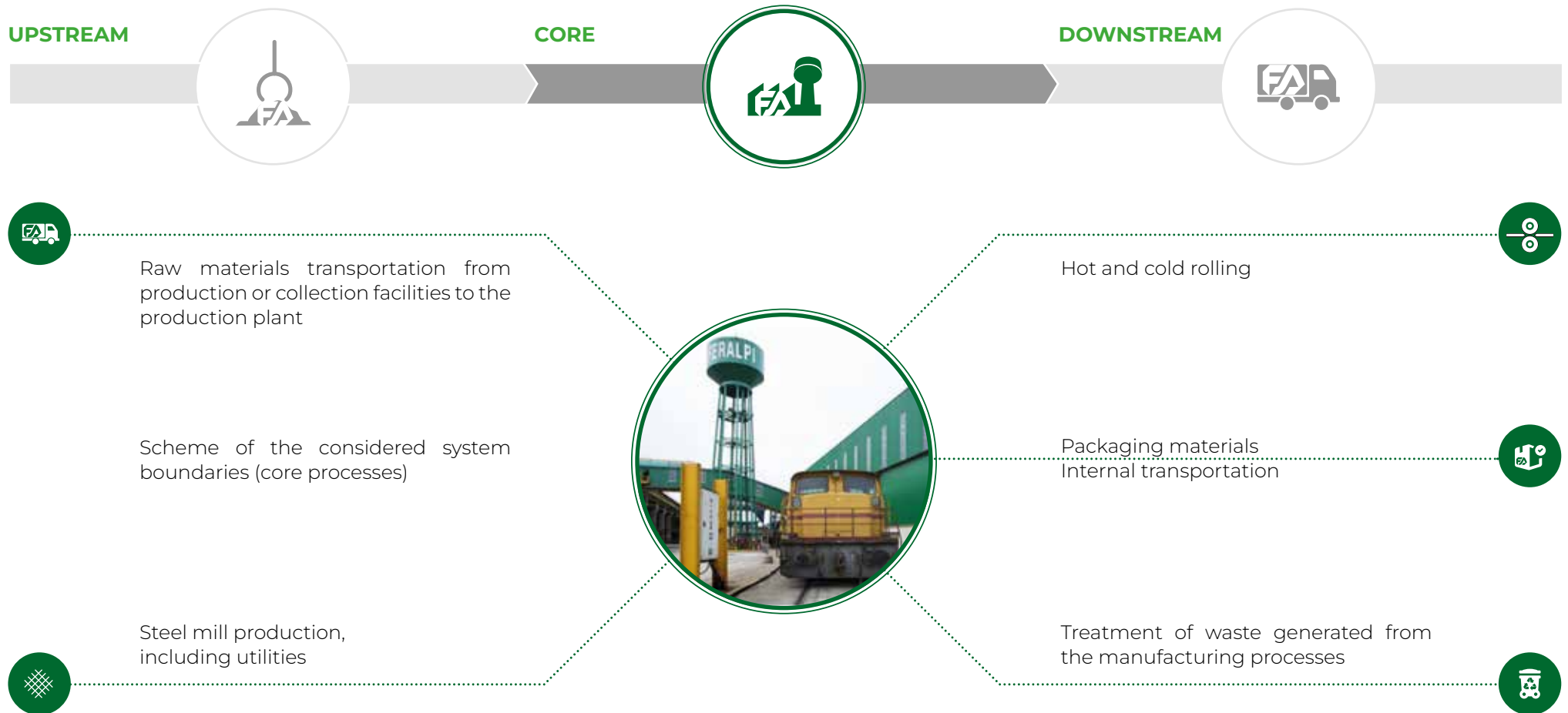


Broad scheme of cold rolled steel production, in which the main activities included in the system boundaries are listed and divided in the three subsystems: UPSTREAM Process, CORE Module and DOWNSTREAM Process

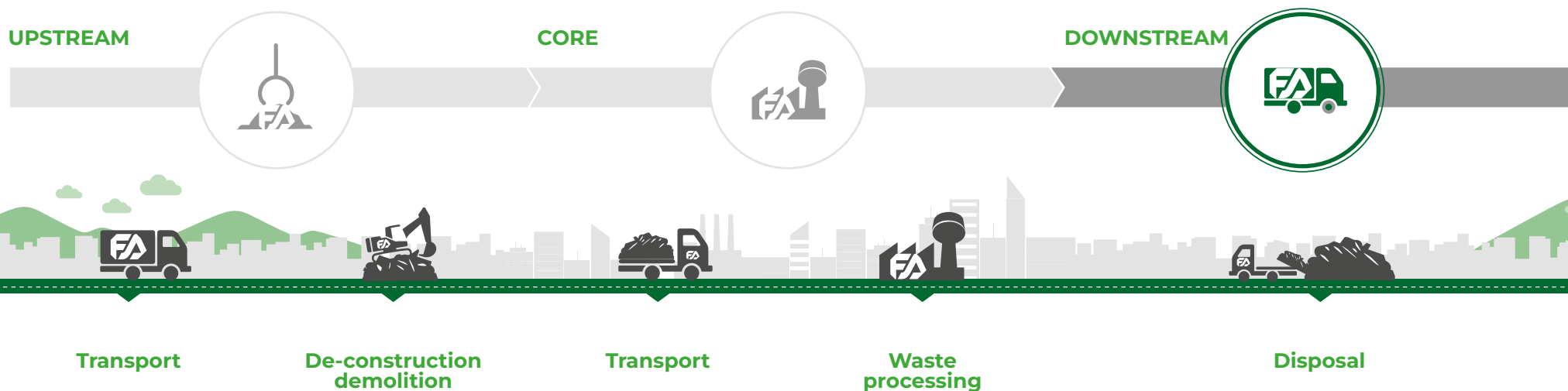
UPSTREAM PROCESS



CORE PROCESS



DOWNSTREAM PROCESS



Transport to the customers (general market average).

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

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

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

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





