

Environmental Product Declaration

In accordance with ISO 14025:2006 for:

Hot rolled steel long products

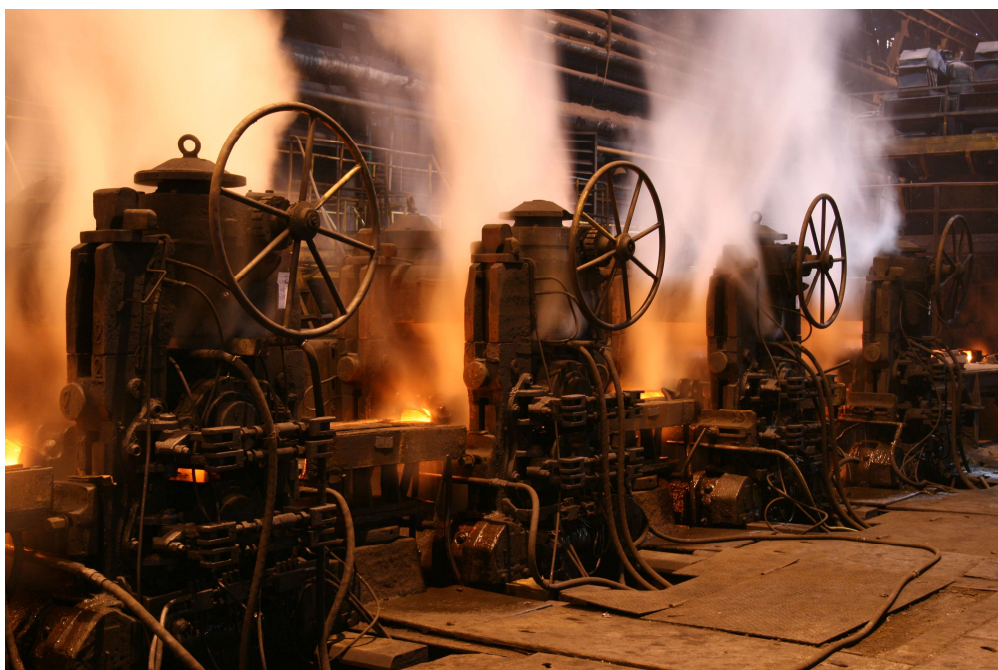
from

Cognor S.A. Branch of Ferrostal Łabędy in Cracow



Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Company:	Cognor S.A. Branch of Ferrostal Łabędy in Cracow
Type of EPD:	EPD of a single product from a manufacturer
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An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see 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:	support@environdec.com

Product Category Rules (PCR)
Product Category Rules (PCR): Basic iron or steel products & special steels, except construction steel products PCR 2015:03 version 3.0.0 UN CPC 412 – Product of iron steel PCR review was conducted by: The Technical Committee of the International EPD® System. Chair of the PCR review is Claudia A. Peña. The review panel may be contacted via support@environdec.com . Life Cycle Assessment by: EXERGY Radosław Andruliewicz, ul. Powstańców Śląskich 32B/4, 45-092 Opole, Poland Authors of the LCA calculations: Radosław Andruliewicz, Izabela Tekieli

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006 and EN 15804:2012+A2:2019/AC:20, via: ☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: Agnieszka Pikus, Greenwise Approved by: International EPD System 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 published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

For further information about comparability, see ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: **Cognor S.A. Branch of Ferrostal Łąbędy in Cracow**

Address: ul. Ujastek 1, 31-752 Cracow

Contact: biuro.krakow@ferrostal.com.pl

Website: www.ferrostal.com.pl

Description of the organisation:

Cognor S.A. Branch of Ferrostal in Cracow, commenced business operations on 2 April 1997 as a result of the restructuring of Huta im. Tadeusza Sendzimira S.A. (today ArcelorMittal Poland S.A., Cracow Branch). As an independent commercial-law entity with 100% private capital, it continues the several-decade tradition of the HTS Small Rolling Mill.

Following the consolidation completed in December 2016, the company was integrated into the Cognor S.A. Group.

Cognor S.A., Ferrostal Łąbędy Branch in Cracow, is fully adapted to operating within the European Union environment. Numerous investments made in recent years, including the modernization of the pusher furnace, full rebuild of the main production line, and commissioning of a new ribbed wire rod production line based on Spooler technology - have not only improved production efficiency but have also enabled the rolling mill to successfully compete for a leading position in the domestic market in terms of the quality and aesthetics of its products.



Product-related or management system-related certifications:

- **ISO 14001 – Environmental Management System**

Scope: production of steel hot rolled long products

- **Certificate of Conformity of Factory Production Control (FPC)**

Scope: hot-rolled products – round bars, flat bars, square bars, equal and unequal angles, T-sections, and channel sections made of non-alloy structural steels

- **National Certificate of Constancy of Performance**

Scope: ribbed bars and ribbed wire rod

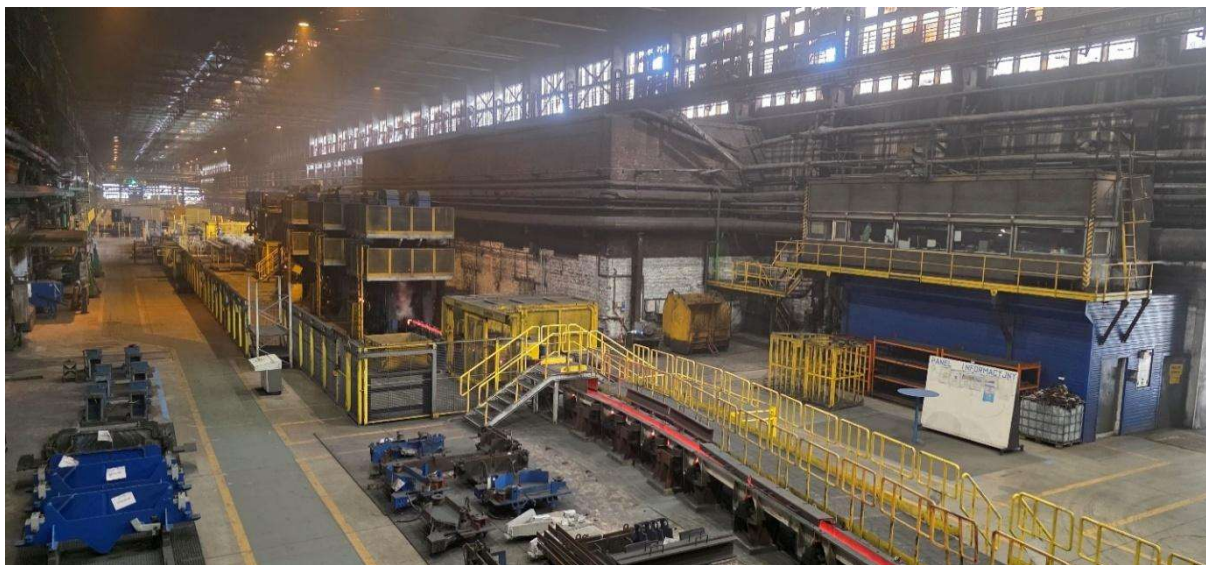
All certifications confirm that Cognor S.A., Ferrostal Łąbędy Branch in Cracow maintains production under continuous internal and external surveillance, following recognized European and Polish technical

norms for steel products. These certifications ensure consistent quality, product safety, and sustainable manufacturing of all Cognor S.A., Ferrostal Łabędy Branch in Cracow products.

Implemented and applied management systems:

- **ISO 9001 – Quality Management System**
Scope: production of steel hot rolled long products
- **ISO 45001 – Occupational Health & Safety**
Scope: production of steel hot rolled long products

PRODUCT INFORMATION



Product name: Hot rolled steel long products

Product identification:

Hot-rolled low-carbon steel long products: bars and sections made of non-alloy structural steels, as well as ribbed bars and ribbed wire rod for concrete reinforcement, are manufactured in accordance with national and international standards, as well as national technical assessments, depending on the intended end use and customer requirements.

They are products directly coming from the hot rolling process of the billets produced in the Cognor S.A. Branch of Ferrostal Łąbędy in Gliwice.

UN CPC code: UN CPC 412 – Product of iron steel

Product description:

Cognor S.A. Ferrostal Łąbędy Branch in Cracow is one of the manufacturers of hot-rolled long steel products, including:

Hot rolled steel long products, made of low-carbon steel for concrete reinforcement:

- Ribbed bars
- Ribbed wire rod

Hot rolled steel long products, profiles, made of low-carbon structural steel:

- T-sections
- Equal angles
- Unequal angles
- Flat bars
- Square bars
- Round bars
- U-channels / U-sections

Application:

Reinforcing steel products for concrete reinforcement, used in reinforced concrete elements and structures subjected to dynamic and cyclic loads.

Composite steel–concrete structures and structural steel used in metal structures or steel–concrete composite structures

Technical parameters

The technical properties, including chemical composition, geometry, shape, dimensional and mass tolerances, as well as mechanical properties, depend on the specific product type and its intended application. They are defined based on mechanical characteristics and specified in reference documents, such as standards, technical specifications, and national technical assessments.

Compliance with product parameters is verified at every stage of production, as well as during periodic control audits, both internal and external, conducted by accredited external bodies.

Functional behaviour

The declared product is intended for use in load-bearing and reinforcing applications in the construction sector. Depending on the specific product type and cross-sectional shape, the hot-rolled long steel products provide structural strength, load transfer and mechanical performance required for further fabrication and integration into construction elements.

The functional performance of the product is achieved through controlled hot rolling and cooling processes and does not require additional treatments during the use phase.

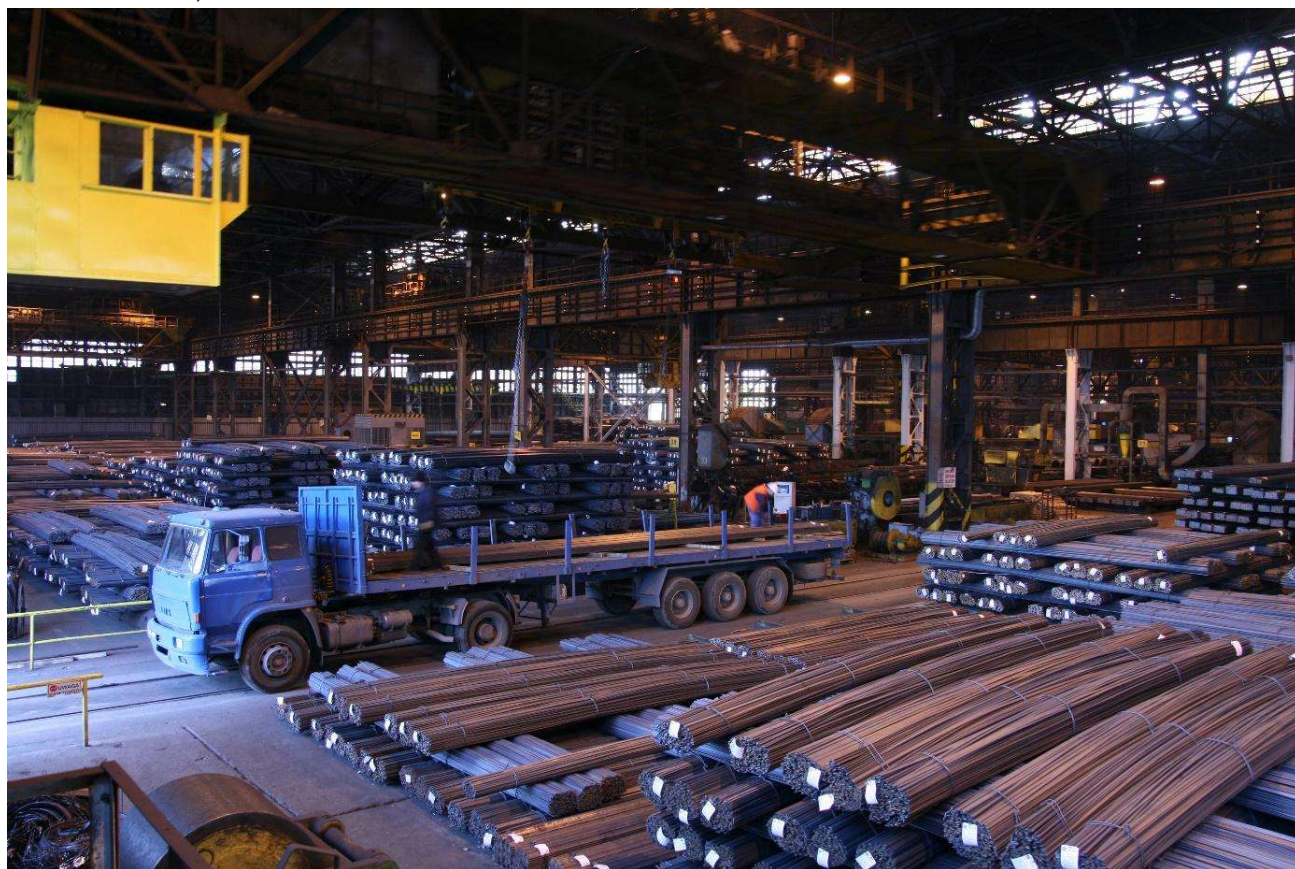
Name and location of production site(s):

Cognor S.A.

Branch of Ferrostal Łąbędy in Cracow

Ujastek 1,

31-752 Cracow , Poland



CONTENT DECLARATION

- The mass (weight) of one unit of a product, as purchased or per declared unit:
- **Hot rolled steel long products – 1 t (1 000 kg)**
- Content of the product in the form of a list of materials and substances, and their mass, per 1 tonne (1 000 kg)

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Pre-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Steel (Fe, Al, scrap)	9,60E+02	2,70	95,82	0	0
Alloys (Cr, Si, Mn, C nad other)	4,00E+01	0	0	0	0
TOTAL	1,00E+03	-	-	0	0

Information on the environmental and hazardous/toxic properties of a substances contained in the product:

The product does not contain any hazardous or toxic substances.

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Steel strap	7,30E-01	0,07	0
Wooden pallet	6,37E-01	0,06	3,19E-01
TOTAL	1,37E+00	0,13	3,19E-01

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

The list of processes contributing with more than 10% to the GWP-GHG results of modules A1-A3:

Process	Contribution [%]	Type of source	Source	Data category	Reference year
Electricity	64,81	Database	Ecoinvent database, v.3.10.1	Secondary	As documented in Ecoinvent v3.10.1 (< 5 years old)

LCA INFORMATION

Declared unit: 1 tonnes (1 000 kg)

Reference service life and its relationship with the technical/actual lifespan: Not applicable

Time representativeness: 2025

Geographical scope:

Modules A1–A3 (raw material supply, transport, and manufacturing):

Modelled based on Cognor S.A. production facility in Cracow, Poland; upstream raw materials, sourced primarily from European suppliers.

Database(s) and LCA software used: Ecoinvent v3.10.1, regionalized for EU

EPD/LCA Tool used: openLCA + EN15804 EPD plugin

Description of system boundaries:

- Cradle to gate (A1-A3 only)
- The Environmental Product Declaration (EPD) for Hot rolled steel products covers the cradle-to-gate system boundary (modules A1-A3), in accordance with PCR 2015:03 version 3.0.0 „Basic iron or steel products & special steels, except construction steel products”.
- Hot rolled steel long products are the semi-finished products for further processing.
- No defined service life, installation scenario, use phase or end-of-life treatment can be attributed to the compound manufacturer. Therefore, only the product stage (A1–A3) is declared.
- Included life cycle stages:
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- **A1–A3 (Product stage – cradle to gate)**
- **This system boundary covers:**
- **• A1 – Raw material supply:**
- Extraction and processing of raw materials related to the production of steel billets constituting an input to the production of hot-rolled steel products, including: steel scrap, pig iron, cast iron, ferroalloys, dolomite, limestone, magnesite, quicklime, and fluxing materials.
- Main material used in production is iron scrap (95,82% pre-consumer and 2,70% post-consumer scrap).

Production of purchased raw materials Background processes are modelled using **ecoinvent v3.10.1** datasets consistent with PCR requirements.

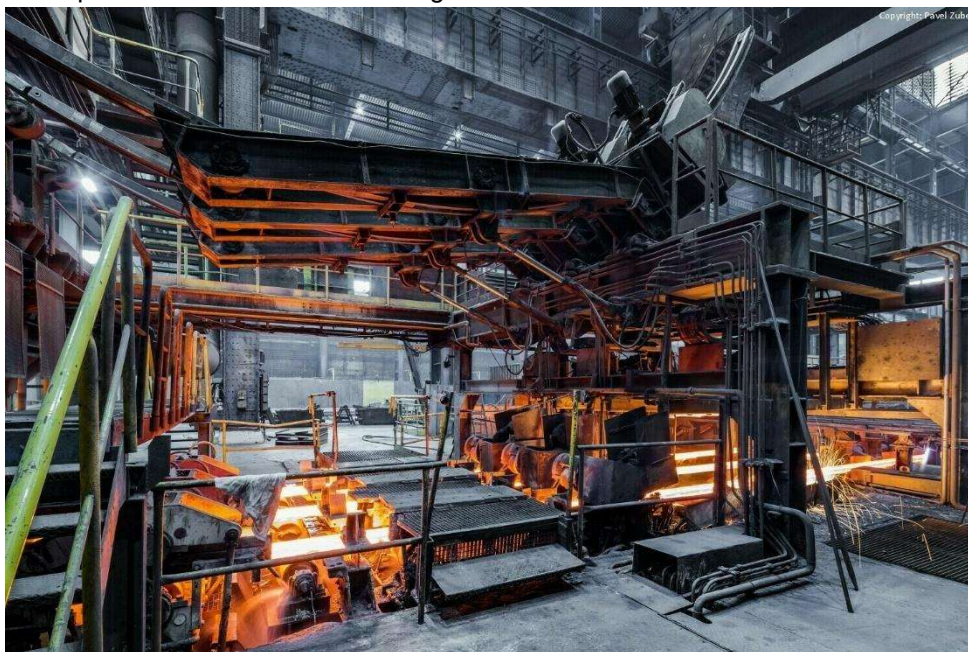
- **• A2 – Transport:**

Road and sea transport of purchased materials to the Cognor S.A. production site. Average inbound transport distance is modelled based on supplier data and internal logistics assumptions (average road transport 450 km for raw materials and average sea transport 15 130 km).

- • **A3 – Manufacturing:**

Steel mill:

- Delivery of scrap and other raw materials and auxiliaries to the storage yard or to charging baskets
- Preparation of the charge for the EAF (Electric Arc Furnace) in dedicated baskets in the charging bay
- Steel melting process in the EAF (Electric Arc Furnace)
- Transport of filled slag ladles to the Slag Processing Department
- Screening of impurities generated during railcar cleaning and separation of metals
- Transport of the ladle to the Ladle Furnace (LHF) station
- Steel treatment process in the Ladle Furnace (LHF)
- Transport of the ladle to the revolving tower of the Continuous Casting Machine (CCM)
- Continuous casting process on the CCM reheating of billets in a pusher-type furnace
- Transport of steel billets to the rolling mill



Rolling mill:

- Supply of steel billets
- Reheating of billets in a pusher-type furnace
- Rough rolling in a roughing mill consisting of nine rolling stands
- Finishing operations in finishing stands,
- Passage of the product through quenching baths to achieve the required mechanical properties
- Flying shear for cutting products into multiples of commercial lengths
- Transfer of products to the walking beam cooling bed
- After reaching the required temperature on the walking beam cooling bed (with water spraying system activated if necessary), the products are conveyed via equalising roller tables to finishing equipment, including:
 - o a multi-roll straightening machine, used for the production of shaped sections,
 - o saws and cold shears equipped with length stops, where all products are cut to the required commercial lengths (6–16 m),

- a line for the removal of non-conforming products,
- roller tables and chain conveyors,
- a stacking machine with a magnetic bundle-forming system,
- two automatic strapping machines with rod storage magazines,
- chain conveyors transferring finished bundles to three dispatch stations equipped with weighing systems and collection bins



Production of ribbed wire rod

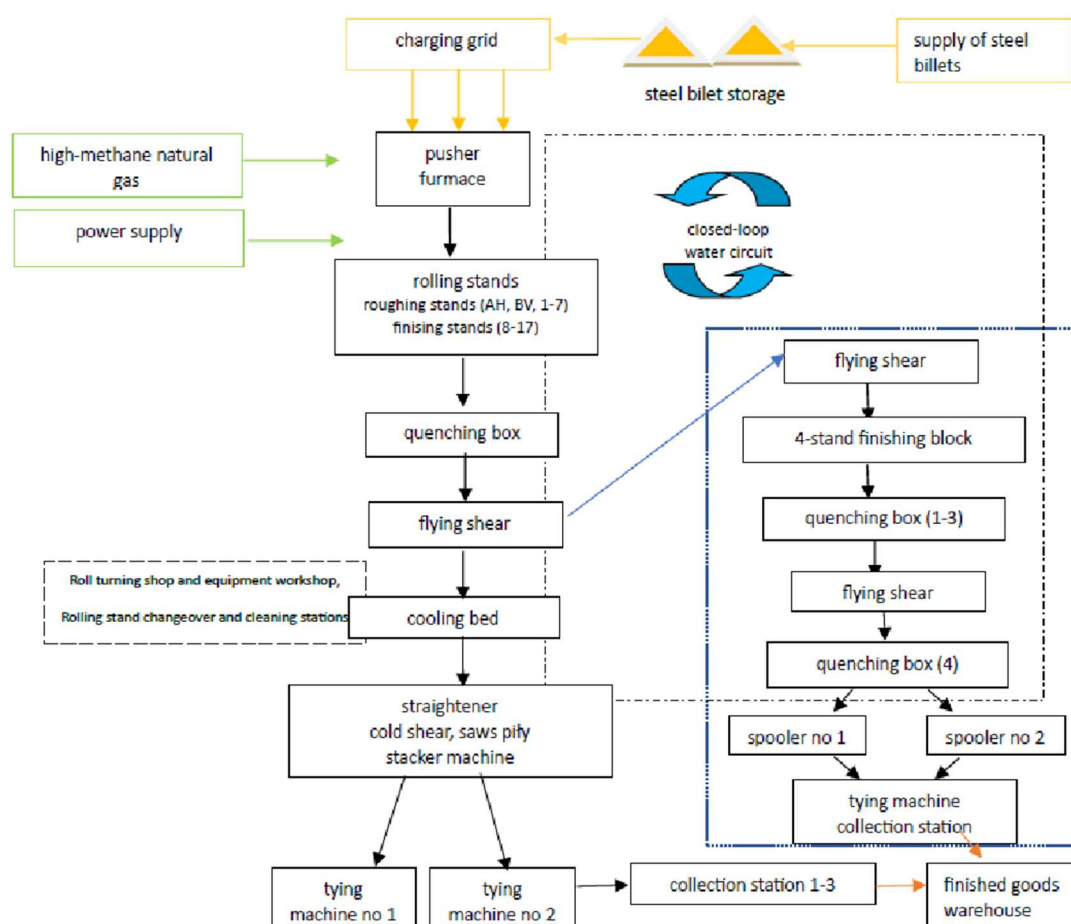
The ribbed bar coiling line (ribbed wire rod), referred to as the "Spooler," is located adjacent to the rolling mill line. The Spooler line is integrated with the main rolling line's auxiliary systems, including cooling circuits, power supply, and associated utilities.

- Downstream of the final flying shear, a switching device (diverter) is installed, enabling the routing of the rolled strand either to the straight bar line or to the Spooler line.
- Rolling process carried out in a 4-stand finishing block
- Product passage through three quenching boxes to achieve the required mechanical properties (thermomechanical treatment)
- Flying shear for cutting ends of the strand
- Fourth quenching box imparting final physical and mechanical properties
- Routing of the product to two alternating coiling stations (twin coilers)
- Transfer to a laying/collection station equipped with an integrated weighing system, followed by handling via overhead cranes to the finished goods storage area



Due to the fact that the reheating furnace, as well as the roughing and finishing stands of the rolling mill, constitute common equipment for both the straight product line and the spooler line, these lines can operate only in an alternating mode.

Block diagram of the line:



Energy demand is modelled using the **Polish electricity grid mix** and **natural gas mix**, based on verified ecoinvent datasets and Cognor S.A. plant data.

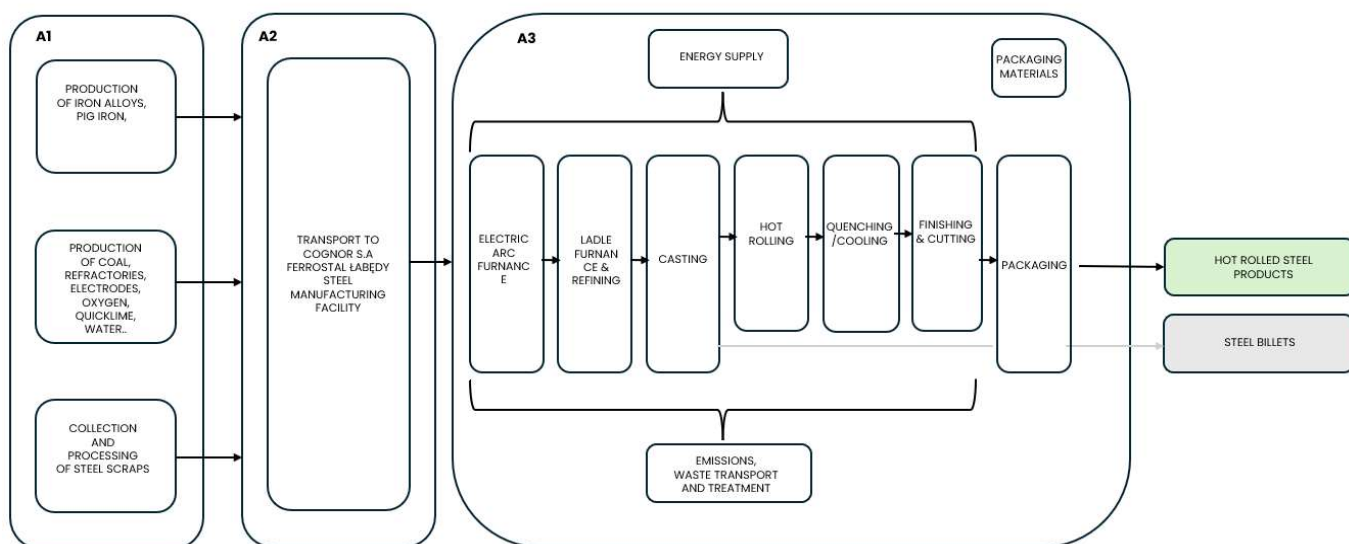
Waste streams generated in A3 are modelled **until they leave the system boundary**, in accordance with PCR 2015:03.

- **Excluded life cycle stages:**
 - • B modules (B1–B7 – use stage)
 - Excluded, because:
 - hot rolled steel long products does not have a defined service life,
 - it is a finished product, intended for further processing/application.
 - the hot rolled steel long products manufacturer has no control over product use conditions.
 - This exclusion is explicitly permitted by PCR 2015:03 version 3.0.0 „Basic iron or steel products & special steels, except construction steel products”.
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- • **A4–A5, C1–C4 and module D**
 - Excluded in accordance with PCR 2015:03 version 3.0.0 „Basic iron or steel products & special steels, except construction steel products, because:
 - no standardized downstream transport, installation, use, or disposal scenario can be defined for hot rolled steel products,
 - hot rolled steel long products can be used as a component of various construction solutions before entering the building lifecycle.

Therefore, no end-of-life, recycling credits or substitution effects (Module D) are declared for this EPD.

- **Infrastructure and capital goods**
- Excluded according to PCR rules, since:
 - machinery, ingot manufacturing and hot rolling equipment, buildings,
 - have contributions below applicable cut-off thresholds and
 - are processed within background ecoinvent data.

Process flow diagram:



More information:

- **Allocation procedure:**

The production of hot-rolled steel products involves the use of steel scrap, pig iron, cast iron, ferroalloys, dolomite, limestone, magnesite, quicklime, and fluxing materials.

Allocation follows the hierarchy defined in EN 15804+A2 and PCR 2015:03:

- allocation is avoided where possible by modelling dedicated unit processes,
- allocation of material input, energy, gas consumption, weight by product weight
- no credits are assigned for internally recycled scrap reintroduced into the process,
- no credits for recovered energy or secondary materials are declared, as Module D is outside the declared system boundary.

- **Cut off rules:**

According to the used PCR, more than 99 % of flows were included.

- **Data quality and sources:**

Primary data were collected at the Cognor S.A. Branch of Ferrostal Łabędy in Gliwice and Cracow for the year 2025, covering: material inputs (steel scrap, alloys, production additives such as carburizers, limestone, fluxes, packaging), energy use (electricity and natural gas) and packaging processes.

Primary data contribute to 100 % to the A1–A3 GWP-GHG results.

Secondary data: ecoinvent v3.10.1. +

The quality and representativeness of all data used for the EPD have been evaluated in terms of time, geography, and technology according to the principles outlined in EN 15804:2012+A2:2019, Annex E, and the data quality requirements specified in EN 15941:2010 for life cycle data. All relevant datasets were reviewed for completeness, consistency, and reliability, and the assessment confirmed that no data were classified as “poor” or “very poor” in quality.

- **Modelling of infrastructure/capital goods:**

In line with PCR §4.3., impacts of capital goods are excluded. Their contribution is negligible (<1%).

- **Electricity in A3 and GWP-GHG intensity:**

Electricity used in module A3 is supplied from the Polish national grid (2025 mix: hard coal 71,40%, natural gas 13,58%, renewable sources: wind 5,58 %, renewable sources: solar 6,51 %, renewable sources: biomass 2,00 %, renewable sources: hydro 0,5%, nuclear: 0,43%; overall emission factor~1,11 kg CO₂e/kWh). Consumption covers melting in EAF, steel treatment in Ladle furnace, casting process, reheating, rough rolling, finishing rolling and shaping, quenching, cooling, straightening and cutting, bundling, weighing and storage.

Characterization methods and versions:

Environmental impact indicators follow EN 15804+A2:2019 and the European Commission's Environmental Footprint (EF) 3.1 characterization method. Calculations performed using openLCA with the EN 15804 EPD plugin, in compliance with PCR 2015:03 version 3.0.0 Basic iron or steel products & special steels, except construction steel products.

- Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results)

	Product stage			Construction process stage		Use stage							End of life 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-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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	EuR	EUR	EUR/PL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Share of primary data	100 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	ND			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	ND			-	-	-	-	-	-	-	-	-	-	-	-	-	-

- The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804

INDICATOR		UNIT	A1	A2	A3	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	1,36E+02	2,45E+01	8,00E+02	9,61E+02
	Biogenic	kg CO ₂ eq.	-2,44E-01	1,70E-02	3,64E-01	1,36E-01
	Land use and land transformation	kg CO ₂ eq.	1,37E-01	8,15E-03	1,46E-01	2,91E-01
	TOTAL	kg CO ₂ eq.	1,36E+02	2,46E+01	8,01E+02	9,61E+02
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,13E-06	4,88E-07	6,64E-06	8,26E-06
Acidification potential (AP)		mol H ⁺ eq.	8,32E-01	5,18E-02	5,10E+00	5,98E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	8,65E-02	1,66E-03	3,64E-01	4,52E-01
	Aquatic marine	kg N eq.	1,95E-01	1,24E-02	7,71E-01	9,79E-01
	Aquatic terrestrial	mol N eq.	2,07E+00	1,34E-01	7,97E+00	1,02E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	6,42E-01	8,54E-02	2,48E+00	3,21E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	2,12E-03	8,17E-05	4,36E-04	2,64E-03
	Fossil resources	MJ, net calorific value	1,93E+03	3,45E+02	9,76E+03	1,20E+04
Water deprivation potential (WDP)*		m ³ world eq. deprived	2,32E+01	1,69E+00	6,67E+01	9,15E+01

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.

To avoid negative GWP-biogenic results because of the incomplete biogenic carbon balance arising due to the exclusion of the end-of-life stage, the characterisation factors of biogenic CO₂ uptake and emissions are set to zero (the "0/0 approach")

Resource use indicators

INDICATOR		UNIT	A1	A2	A3	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1,92E+02	5,21E+00	2,85E+02	4,82E+02
	Used as raw materials	MJ, net calorific value	4,27E+01	7,16E-01	6,36E+01	1,07E+02
	TOTAL	MJ, net calorific value	2,34E+02	5,92E+00	3,48E+02	5,89E+02
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,87E+03	3,13E+02	9,53E+03	1,17E+04
	Used as raw materials	MJ, net calorific value	6,84E+01	3,21E+01	2,26E+02	3,27E+02
	TOTAL	MJ, net calorific value	1,93E+03	3,45E+02	9,76E+03	1,20E+04
Secondary material (optional)		kg	1,13E+03	3,94E-01	2,11E+01	1,15E+03
Renewable secondary fuels (optional)		MJ, net calorific value	2,63E+00	1,10E-01	9,19E+00	1,19E+01
Non-renewable secondary fuels (optional)		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water (optional)		m ³	6,81E-01	4,63E-02	2,73E+01	2,80E+01

Waste indicators (optional)

INDICATOR	UNIT	A1	A2	A3	TOTAL
Hazardous waste disposed	kg	3,87E+01	3,42E-01	3,08E+02	3,47E+02
Non-hazardous waste disposed	kg	8,61E+01	3,79E+00	7,24E+01	1,62E+02
Radioactive waste disposed	kg	2,93E-03	1,11E-04	4,58E-03	7,62E-03

Output flow indicators (optional)

INDICATOR	UNIT	A1	A2	A3	TOTAL
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	5,69E+00	3,58E-01	1,71E+01	2,32E+01
Materials for energy recovery	kg	1,18E-03	4,95E-05	4,13E-03	5,36E-03
Exported energy, electricity	MJ per energy carrier	1,48E+00	5,86E-02	2,08E+00	3,62E+00
Exported energy, thermal	MJ per energy carrier	1,88E+00	8,29E-02	7,35E+00	9,31E+00

Disclaimer 1

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.

Disclaimer 2

The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

ABBREVIATIONS

Abbreviation	Description
GWP-total	Global Warming Potential -total
GWP-GHG	Global Warming Potential - greenhouse gases (excluding biogenic CO ₂ and land use change)
GWP-fossil	Global Warming Potential - fossil emissions
GWP-biogenic	Global Warming Potential - biogenic carbon
GWP-Uta	Global Warming Potential - land use and land use change
OOP	Ozone Depletion Potential
AP	Acidification Potential
EP-freshwater	Eutrophication Potential - freshwater
EP-marine	Eutrophication Potential - marine
EP-terrestrial	Eutrophication Potential - terrestrial
POCP	Photochemical Ozone Creation Potential
	Abiotic Depletion Potential - minerals and metals
ADP-fossil	Abiotic Depletion Potential - fossil fuels
WDP	Water Deprivation Potential
PERE	Use of renewable primary energy resources used as energy carrier

PERM	Use of renewable primary energy resources used as raw material
Abbreviation	Description
PENRE	Use of non-renewable primary energy resources used as energy carrier
PENRM	Use of non-renewable primary energy resources used as raw material
PENRT	Total use of non-renewable primary energy resources
SM	Use of secondary materials
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Use of net fresh water
Hazardous waste disposed	Hazardous waste sent to final disposal
Non-hazardous waste disposed	Non-hazardous waste sent to final disposal
Radioactive waste disposed	Radioactive waste sent to final disposal
Components for re-use	Product components prepared for re-use
Material for recycling	Product components sent for material recycling
Materials for energy recovery	Product components used for energy recovery
Exported energy, electricity	Electricity exported to external systems

REFERENCES

- a) EPD International AB (2021). General Programme Instructions for The International EPD® System, Version 5.0.0. Available at: <https://www.environdec.com/resources/programme-documents>
- b) EN 15804+A2:2019 – Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
- c) Basic iron or steel products & special steels, except construction steel products, PCR 2015:03 version 3.0.0, Product category classification: UN CPC 412
- d) ISO 14040:2006 – Environmental management – Life cycle assessment – Principles and framework.
- e) ISO 14044:2006 – Environmental management – Life cycle assessment – Requirements and guidelines.
- f) ISO 21930:2017 – Sustainability in buildings and civil engineering works – Environmental product declarations – Core rules for construction products and services.
- g) Ecoinvent v3.10.1 (2024). Swiss Centre for Life Cycle Inventories. Background LCI database. www.ecoinvent.org
- h) openLCA 2.4.1 – Life cycle modelling software used for inventory compilation, impact assessment and allocation modelling.
- i) Cognor S.A. (2025). Internal production data for hot rolled steel products, including:
 - material and energy balances,
 - gas and electricity consumption data,
 - waste generation and treatment assumptions.
- j) European Commission – Joint Research Centre (JRC) (2022–2024). Environmental Footprint (EF) 3.1 characterisation factors used for LCIA modelling.
- k) EN ISO 9001:2015 – Quality management systems – Requirements (data integrity and traceability for primary datasets).
- l) IPCC (2013). Climate Change 2013: The Physical Science Basis – 100-year Global Warming Potential factors.

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VERSION HISTORY

The original version of the EPD.

