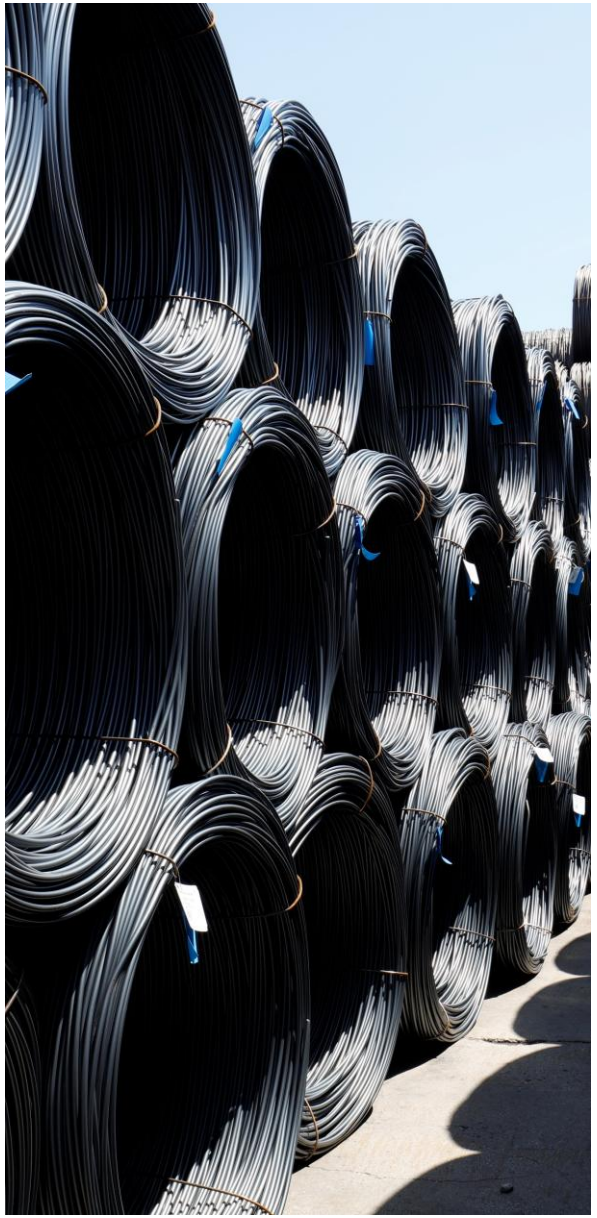
PITTINI

Environmental Product Declaration

In compliance with ISO 14025 e EN15804+A2:2019

HOT-ROLLED STEEL



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Verona (VR), Lungadige Galtarossa, 21C

The EPD has been independently verified according to ISO 14025 by an accredited third-party verifier. The verification complies with the requirements of EN 15804+A2:2019.

General information

EPD owner:
ACCIAIERIE DI VERONA S.p.A.
Registered office: Zona Industriale Rivoli - Osoppo (UD)
Operating site: Lungadige Galtarossa, 21C -
Verona (VR).

Program operator:
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Independent evaluation by:
ICMQ S.p.A. Via Gaetano de Castillia 10 - Milano (MI), Italia. Accredited by Accredia

Plant location:
ACCIAIERIE DI VERONA S.p.A.
Lungadige Galtarossa, 21C - Verona (VR), Italia.

Environmental declarations published within the same product category, but belonging to different programs, might not be comparable. Specifically, EPDs regarding products for the building sector may not be comparable if not compliant with the EN 15804 standard. The EPD Owner releases EPDItaly from any non-compliance with environmental legislation. The holder of the declaration shall be responsible for the information and the supporting evidence. EPDItaly disclaims any responsibility regarding the information, data, and results provided by the EPD Owner for the life cycle assessment.

Reference documents: This declaration was drafted following EPDItaly's General Programme Instrucion, available on www.epditaly.it. **Regulation EPDItaly rev.7.1 (05/09/2025)**

PCR ICMQ-001/15 rev 4 (issued on 10/11/2025)

CPC CODE: 4124

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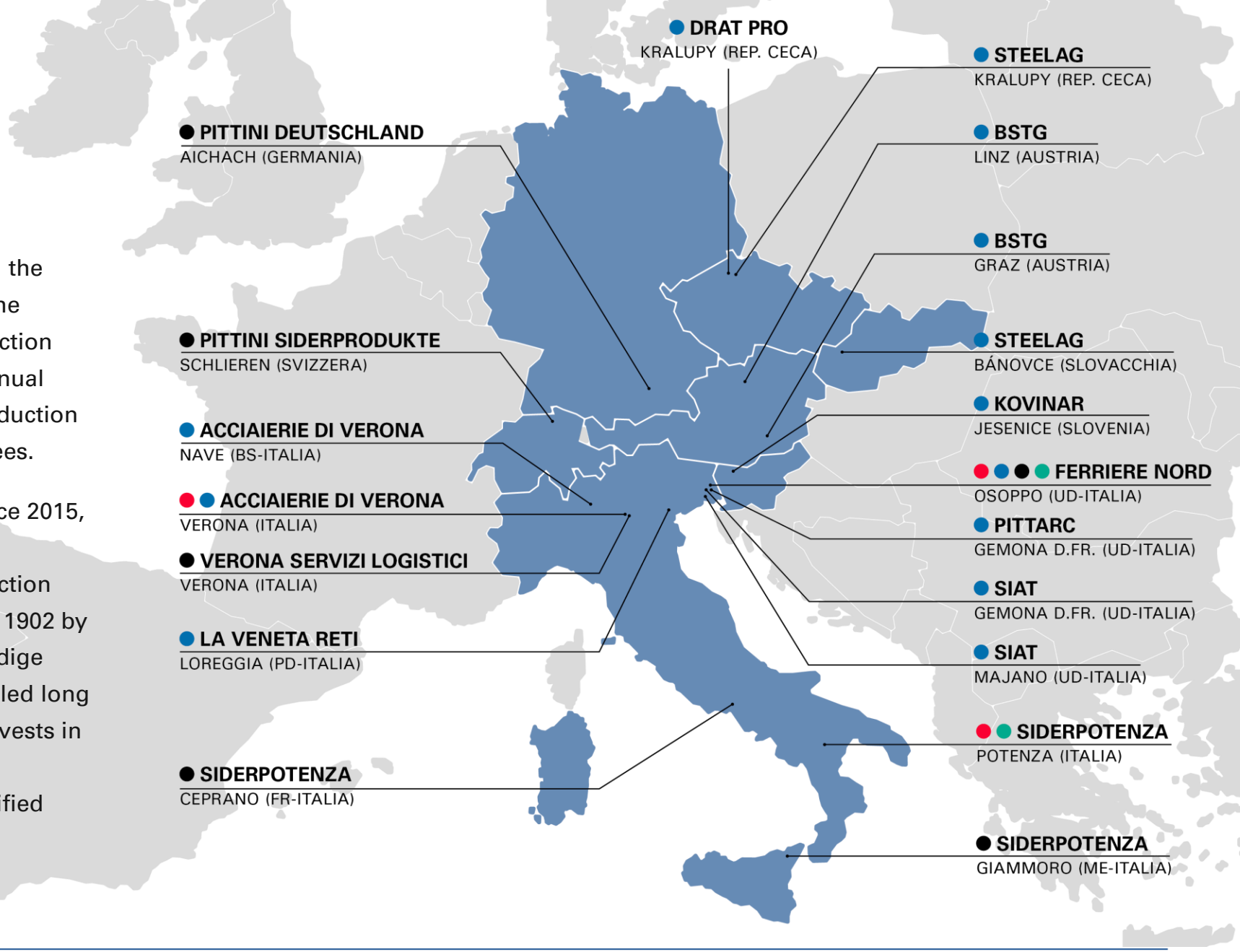
INDEPENDENT VERIFICATION OF DECLARATION AND DATA CARRIED OUT ACCORDING TO ISO 14025	
☐ EPD Process certification (Internal)	☒ EPD Verification (External)

Company profile

Pittini Group, with over **60 years of experience** in the steel industry, is an international benchmark in the production of **long steel** products for the construction and mechanical engineering markets, with an annual output of approximately 3 million tonnes, 30 production and logistics service facilities, and 2,000 employees.

Acciaierie di Verona, part of the Pittini Group since 2015, is a historic Italian steel company engaged in the production of long steel products for the construction and mechanical engineering sectors. Founded in 1902 by Antonio Galtarossa, it has operated at the Lungadige Galtarossa plant since 1910 and produces hot-rolled long steel products in various grades.The company invests in plant modernization, energy efficiency, and environmental sustainability, ensuring high, certified quality standards.



The product: wire rod

DECLARED UNIT: 1000 kg of wire rod

Pittini Group's wire rod meets high-quality standards, regarding both **smooth wire rod** (diameters ranging from 5.5 to 21.5 mm) and **ribbed wire rod** (diameters ranging from 6 to 16 mm).
The structure of Pittini's wire rod allows **high reductions**, making it possible to reach final diameters measuring **even less than one millimeter**, always ensuring a constant quality and an optimal surface, suitable for a subsequent galvanic treatment or coating.
Wire rod for concrete reinforcement is designed in such a way that the final products – cold-rolled wire, electrowelded meshes and lattice girders – comply with the Italian and international product specifications, according to the current norms. Fe36 wire rod – **for certified use in mechanical sector and steel structures** for building sector – complies with EN 10025-2 S235JR Standard, according to the European Regulation 305/2011 nr. Fe36-CPR-2013-07.
High-carbon wire rod is intended for the production of pre-stressed wire and strand, steel cord or mechanical springs. **Medium-carbon wire rod** is also available, intended for the production of nails, staples and more, in the mechanical sector.

The product **does not contain** substances included in the "***Candidate list of substances of very high concern (SVHC)***".

Scope and type of EPD

Modules: The system modules include the compulsory modules A1, A2, A3, C1, C2, C3, C4 and D as per EN 15804 standard, following a "from cradle to gate with modules C1-C4 and D" approach.

EPD type: Specific for the hot-rolled steel produced in Verona (VR).

Geographical location: Performances were calculated considering the plant of Verona with reference to the global market.

Database: Ecoinvent 3.11 cut-off by classification

Software: SimaPro 10.2.2

Reference year: 2025

Electricity from grid (GWP 100): 0,151 kg CO2e/kWh

PRODUCTION STAGE			CONSTRUCTION PROCESS		USE							END OF LIFE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
Raw material supply	Transport	Manufacturing	Transport	Construction / installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-commissioning / Demolition	Transport	Waste processing	Disposal	Reuse / Recovery / Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
✓	✓	✓	MND	MND	MND	MND	MND	MND	MND	MND	MND	✓	✓	✓	✓	✓

Environmental performance: hot-rolled steel

Data referring to 1000 kg of hot-rolled steel

ENVIRONMENTAL IMPACT PARAMETERS	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
GWP - Total	kg CO2 eq	4,30E+2	MND	7,05E+0	1,87E+1	1,36E+0	1,25E+0	-1,72E+2
GWP- Fossil	kg CO2 eq	4,19E+2	MND	7,05E+0	1,87E+1	1,32E+0	1,25E+0	-1,73E+2
GWP - Biogenic	kg CO2 eq	6,72E+0	MND	1,43E-3	1,30E-2	4,00E-2	8,02E-4	5,17E-1
GWP – LU&T	kg CO2 eq	4,30E+0	MND	7,21E-4	6,28E-3	3,66E-3	4,92E-4	-2,68E-2
Ozone Depletion	kg CFC11 eq	2,12E-6	MND	2,14E-9	9,29E-9	3,28E-9	6,07E-10	-2,99E-7
Acidification	mol H+ eq	1,78E+0	MND	6,30E-2	4,01E-2	7,82E-3	4,20E-3	-6,99E-1
EP - Freshwater	kg P eq	1,54E-2	MND	2,46E-5	1,39E-4	1,23E-4	1,00E-5	-9,43E-3
EP - Marine	kg N eq	4,56E-1	MND	2,93E-2	9,42E-3	1,21E-3	1,31E-3	-1,49E-1
EP - Terrestrial	mol N eq	4,76E+0	MND	3,21E-1	1,04E-1	1,37E-2	1,44E-2	-1,74E+0
Photochemical Ozone Formation	kg NMVOC eq	1,68E+0	MND	9,60E-2	6,36E-2	4,30E-3	6,49E-3	-5,87E-1
ADP - Mineral And Metals [2]	kg Sb eq	1,63E-3	MND	2,51E-6	6,41E-5	1,65E-5	3,66E-6	-1,55E-3
ADP – Fossil [2]	MJ	2,89E+3	MND	3,57E+0	2,12E+1	2,08E+1	1,52E+0	-1,30E+3
WDP [2]	m3 depriv.	2,32E+2	MND	1,96E-1	1,04E+0	3,01E-1	3,86E-1	-1,90E+1

MND=Module Not Declared

2 The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: hot-rolled steel

Data referring to 1000 kg of hot-rolled steel

ENVIRONMENTAL IMPACT PARAMETERS	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
PM	disease inc.	3,58E-5	MND	1,80E-6	1,39E-6	4,22E-8	1,20E-7	-1,52E-5
IRP[1]	kBq U-235 eq	1,55E+1	MND	1,53E-2	1,16E-1	2,47E-1	7,58E-3	1,58E+0
ETP-fw[2]	CTUe	1,05E+3	MND	4,97E+0	3,56E+1	4,11E+0	2,33E+0	-1,12E+3
HTP-c[2]	CTUh	5,16E-7	MND	7,16E-10	3,12E-9	3,52E-10	2,12E-10	-2,59E-7
HTP-nc[2]	CTUh	1,96E-6	MND	1,13E-8	1,67E-7	1,93E-8	9,60E-9	-1,31E-6
SQP[2]	Pt	2,37E+3	MND	6,09E+0	1,59E+2	5,59E+0	2,30E+1	-5,55E+2

MND=Module Not Declared

[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*
[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.*
The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: hot-rolled steel

Data referring to 1000 kg of hot-rolled steel

RENEWABLE RESOURCES	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ	2,14E+3	MND	4,74E-1	3,43E+0	6,72E+0	2,25E-1	-9,11E+1
Use of renewable primary energy resources used as raw materials (PERM)	MJ	6,98E+1	MND	1,04E-1	9,44E-1	7,89E-1	6,53E-2	-2,65E+1
Total use of renewable primary energy resources (PERT)	MJ	2,21E+3	MND	5,77E-1	4,38E+0	7,51E+0	2,91E-1	-1,18E+2

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: hot-rolled steel

Data referring to 1000 kg of hot-rolled steel

NON RENEWABLE RESOURCES	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials (PENRE)	MJ	2,05E+3	MND	3,57E+0	2,12E+1	2,08E+1	1,52E+0	-1,30E+3
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	0,00E+0	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Total use of non renewable primary energy resources (PENRT)	MJ	2,05E+3	MND	3,57E+0	2,12E+1	2,08E+1	1,52E+0	-1,30E+3

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: hot-rolled steel

Data referring to 1000 kg of hot-rolled steel

USE OF SECONDARY RAW MATERIALS	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Use of secondary materials (SM)	kg	9,49E+2	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Use of renewable secondary fuels (RSF)	MJ	0,00E+0	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Use of non renewable secondary fuels (NRSF)	MJ	0,00E+0	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
USE OF FRESH WATER								
Net use of fresh water (FW)	m3	1,13E+1	MND	5,73E-3	3,12E-2	1,80E-2	9,45E-3	-8,78E-1

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: hot-rolled steel

Indicators calculated for output flows and waste, with reference to 1,000 kg of hot-rolled steel

WASTE DISPOSAL	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	9,10E-2	MND	6,39E-4	1,81E-3	8,52E-5	1,39E-4	-1,82E-2
Non-hazardous waste disposed (NHWD)	kg	5,23E+1	MND	6,21E-2	1,29E+1	1,10E-1	5,06E+1	-1,12E+1
Radioactive waste disposed (RWD)	kg	8,05E-3	MND	9,60E-6	7,90E-5	2,02E-4	5,07E-6	1,55E-3
Components for re-use (CRU)	kg	0,00E+0	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Materials for Recycling (MFR)	kg	0,00E+0	MND	0,00E+0	0,00E+0	9,50E+2	0,00E+0	0,00E+0
Materials for Energy Recovery (MER)	kg	0,00E+0	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Exported Energy (EE)	MJ	0,00E+0	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0

MND=Module Not Declared

No biogenic carbon content is included in the product or in the packaging

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Scope and type of EPD

DESCRIPTION OF THE INCLUDED PROCESSES:

Transport of material from **production sites** to production units has been included.
All **transports of scrap and raw material from suppliers** to the plant are included as primary information.
Inventory quantity, expressed in kgkm, is defined as the product between the mass of the material and the distance covered.
Transport of waste from the plant to the processing plants is included in the model relying on primary data.
Processing of materials entering the plant, **melting and manufacturing processes** to obtain hot rolled steel are included.

A1 **SUPPLY**

A2 **TRANSPORT**

A3 **MAUNFACTURING (**Waste processing, ancillary materials, emissions)

Following the review of the EN 15804 standard, groups C1, C2, C3, C4 and D have been included.
The groups C1-C4 include the impacts associated with the removal of the material from the building in which it is installed, the transport of the waste to the treatment center and the related activities (recycling, treatment ecc.), including the disposal in landfill.
The group D includes the benefits coming from the outputs of recycling (intended as avoided products) and energy recovery operations.

C1 **DE-COMMISSIONING / DEMOLITION**

C2 **TRANSPORT**

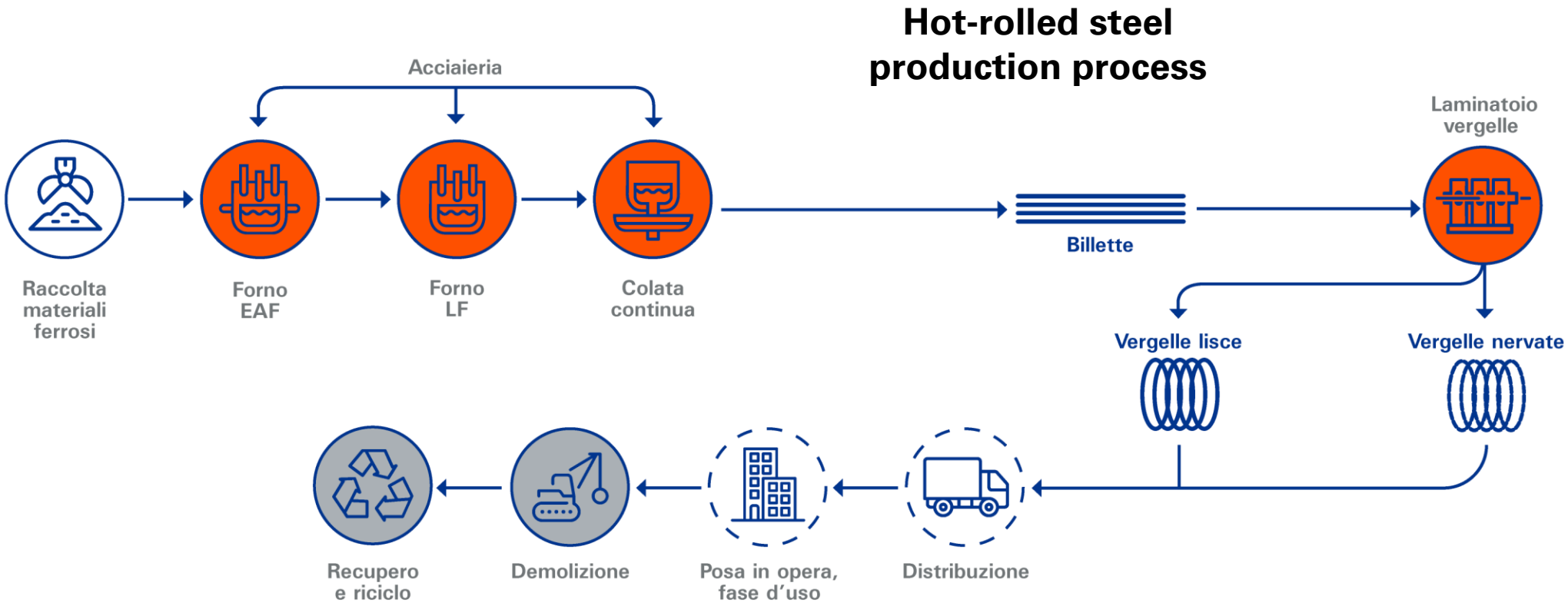
C3 **WASTE PROCESSING**

C4 **DISPOSAL**

D **REUSE / RECOVERY / RECYCLING POTENTIAL**

SCOPE	PROCESSES
Scrap preparation processes for furnace melting and raw materials extraction	**Ferrous scrap, pig iron and HBI processing:** mechanical treatment of scrap, weighing, storage, basket preparation, handling with overhead cranes and sending to furnace;
	Coal and lime processing: weighing, pneumatic injection into the furnace;
	Processing of electrodes and refractories: weighing and transport to the furnace;
In-house transport and operating machinery	**Inbound transport** of materials by train and truck
	In-house transport with loader and truck
	Handling of final product with forklift
	Waste trasport to destination facilities
Melting and casting processes	**Melting process:** oxygen production, cooling water recirculation, electric arc furnace melting
	Secondary metallurgy: refining and addition of alloys, ferro-alloys processing (weighing and injection into the secondary furnace), ladle preparation and maintenance
	Casting process: steel casting and billet production, preparatoin and maintenance of tundishes
Hot rolling processes	**Re-heating of billets into furnace**
	Removal of surface layers of scale
	Hot rolling
	Preparation of the final product
End of life management	**Demolition of the structure,** including the use of heavy machinery
	Transport to recovery facilities and separation process
	Recovery, recycle, disposal

Scope and type of EPD



Calculation rules

DECLARED UNIT: 1000 kg of hot-rolled steel

Assumpions: System boundaries include the compulsory modules A1, A2, A3, C1, C2, C3, C4 and D as required by EN 15804 standard, according to a "*from cradle to gate with modules C1-C4 and D*" approach. Modules B1–B7 have not been declared (MND) since the product, once installed, does not require energy or water consumption, neither maintenance or substitution during the life time of the infrastructure. Impacts of use phase are considered negligible. It should be noted that **building, maintenance and decommissioning of the infrastructures - intended as buildings - and use of industrial ground, were not taken into consideration**, because their contribution to environmental impact relating to the declared unit is deemed negligible. **Consumption of oils, detergents and other technical materials for machine maintenance, energy consumption for plant lighting, energy consumption for office activities related to the management of the steel mill are included.** Moreover, it should be noted **that product distribution, use and disposal phases are not included in this study.**

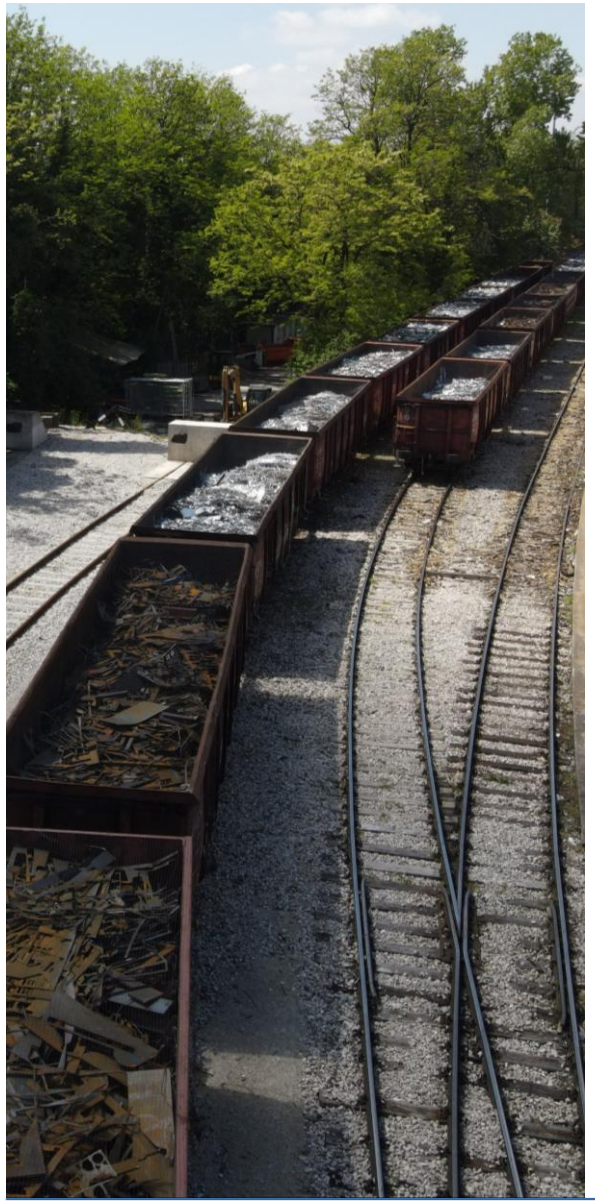
Cut-off rules: The criterion chosen for the initial inclusion of the inbound and outbound elements, takes into account a 1% cut-off level, both in terms of mass, energy and environmental relevance. This means that a process was neglected if responsible of less than 1% of the total amount of mass, primary energy and total impact. However, all processes for which data are available were taken into account, even though with a contribution less than 1%. As a consequence, this threshold value was used in order to avoid collecting unknown data, not with the purpose of neglecting available data

Data quality: Data quality has been calculated for the most relevant processes of the life cycle, according to what requested by EN15804 standard (table 2 annex E). In particular, every significant process has been assigned with a number from 1 to 5 (where 1 means highest representativity) for the following quality parameters: technological representativity, geographical representativity, time representativity, and precision. For the products subject of the EPD, the final DQR obtained combining weights and points resulted lower than 2; this corresponds to a quality level of «optimum».

Allocations: **allocation was avoided, whenever possible, by dividing the system into sub-systems.** Where it was not possible, allocation has been done physically. As for waste modelling, the "*Polluter pays principle*" was applied.

Calculation rules – Inventory analisys

MODULE	DESCRIPTION
A1	For the characterization of raw materials entering the plant, reference was made to the Ecoinvent 3.11 cut-off by classification datasets, using the dataset considered most representative. The company also provided information on the electricity and natural gas consumption of the entire facility, appropriately allocated to the individual product.
A2	The origin of raw materials and the related transport process were specifically modeled for all components. Distances were calculated using web-based tools such as Google Maps and EcoTransIT.
A3	The plant's production process was characterized by considering water consumption, auxiliaries, maintenance oils, and waste management. In addition, the company provided detailed information regarding the packaging used for the finished products
C1	The impacts associated with demolition were modeled by considering the demolition of a reinforced concrete (RC) structure. In accordance with (European Commission, 2018), the use of machinery corresponding to an energy consumption of 70 MJ per tonne of material was assumed..
C2	At the end of its life, the product is sent to sorting facilities; therefore, a transport distance of 75 km is assumed. The means of transport is represented by the following dataset: Transport, freight lorry, 16–32 t, EURO 6. This scenario is consistent with assumptions made in other EPDs by steel producers.
C3	The product is then subjected to a sorting process, excluding the demolition contributions already accounted for in the previous modules and applying an average European energy mix..
C4	In accordance with the recycling rates proposed in (European Commission, 2018) for rebar, it is assumed that 5% of the steel is sent to landfill after the sorting process. This flow is modeled using the following dataset: Inert waste, for final disposal {Europe without Switzerland} | treatment of inert waste, inert material landfill | Cut-off, U
D	Module D is calculated by considering the potential impacts and benefits associated with the recycling activity of the product, using the Circular Footprint Formula.



References

- **ISO 14040:2006/Amd 1:2020** Environmental management — Life cycle assessment — Principles and framework
- **ISO 14044:2006/Amd 2:2020** Environmental management — Life cycle assessment — Requirements and guidelines — Amendment 1
- **ISO 14020:2000** Environmental labels and declarations — General principles
- **EN 15804:2012+A2:2019** Sustainability of construction works – Environmental product declarations — Core rules for the product category of construction works
- **PD CEN/TR 16970:2016** Sustainability of construction works — Guidance for the implementation of EN 15804
- **PD CEN/TR 15941:2010** Sustainability of construction works — Environmental Product Declarations — Methodology for selection and use of generic data
- **PCR ICMQ-001/15** rev 4 (10/11/2025)
- **EPDItaly regulation** rev.7.1 (05/09/2025)
- **Study of Life Cycle Assessment of hot-rolled steel, streched wire and electrowelded mesh -** Revision 1.1 of 09/04/2026