

# ENVIRONMENTAL PRODUCT DECLARATION

# STEEL BILLETS

## BASED ON

PCR 2015:03 v2.1.1

## PROGRAMME

The International EPD System  
[www.environdec.com](http://www.environdec.com)

In accordance with  
ISO 14025

## REGISTRATION NUMBER

EPD-IES-0015253

## REGISTRATION DATE

(first issue)  
09/09/2024

## REVIEW DATE

20/05/2026

## VALID UNTIL

09/09/2029

## CPC CODE

411

## MANUFACTURING SITE

TRAVI E PROFILATI DI  
PALLANZENO SPA  
Via Sempione, 7 28884  
San Zeno (BS) - ITALY

# GENERAL INFORMATION

## EPD REFERENCES

**EPD OWNER:** Duferco Travi e Profilati SpA Via Armando Diaz, 248 25010 San Zeno Naviglio (BS) ITALY

**PROGRAM OPERATOR:** EPD international ab, box 21060, Se-100 31 Stockholm, Sweden; info@environdec.com

## INDEPENDENT VERIFICATION

The declaration has been developed referring to the International EPD® System, following the General Programme Instructions v3.0. Further information and the document itself are available at: [www.environdec.com](http://www.environdec.com).

EPD document valid within the following geographical area: Europe according to sales market conditions

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

Product Category Rules (PCR): PCR 2015:03 Basic iron v2.1.1 - CPC Code 411: PCR review conducted by: The Technical Committee of the International EPD® System - [www.environdec.com/TC](http://www.environdec.com/TC).

Review chair: Gorka Benito Alonso, IK INGENIERIA, [g.benito@ik-ingenieria.com](mailto:g.benito@ik-ingenieria.com). The review panel may be contacted via the Secretariat at [www.environdec.com/contact](http://www.environdec.com/contact).

Product-related or management system-related certifications:

[e.g. ISO 14024 Type I environmental labels, ISO 9001- and 14001-certificates, EMAS-registrations, SA 8000, supply chain management and social responsibility]

Name and location of production sites: San Zeno Naviglio (BS)

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

Individual EPD verification without a pre-verified LCA/EPD tool

**THIRD PARTY VERIFIER:** Guido Croce

Approved by: The Technical Committee of the International EPD® System

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

YES  NO

## CONTACTS

Ing. Giuseppe Guerrini – E-mail: [g.guerrini@dufercotp.com](mailto:g.guerrini@dufercotp.com)



Technical support to Duferco was provided by Life Cycle Engineering, Italy ([info@studiolce.it](mailto:info@studiolce.it), [www.lceengineering.eu](http://www.lceengineering.eu)).



INDICATORS		Total variance with previous study
GWP total	kg CO <sub>2</sub> eq	-0,4%
GWP fossil	kg CO <sub>2</sub> eq	-0,6%
GWP biogenic	kg CO <sub>2</sub> eq	69,8%
GWP luluc	kg CO <sub>2</sub> eq	81,6%
ODP	kg CFC11 eq	-6,5%
AP	mol H+ eq	-5,4%
EP-freshwater	kg P eq	31,7%
EP-marine	kg N eq	-14,7%
EP-terrestrial	mol N eq	-16,0%
POCP	kg NMVOCeq	-15,1%
ADPE	kg Sb eq	-81,7%
ADPF	MJ	-11,0%
WDP	m <sup>3</sup>	-3,0%

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](http://www.environdec.com).

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, 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 ISO 14025.

This EPD has not been developed in accordance with ISO 21930 and should not be interpreted as conforming to its requirements.

# THE COMPANY

## Description of the organisation

Duferco Travi e Profilati S.p.A. (DTP) is a leading steel group that specializes in the production of beams, special quality steels, special profiles and long products.

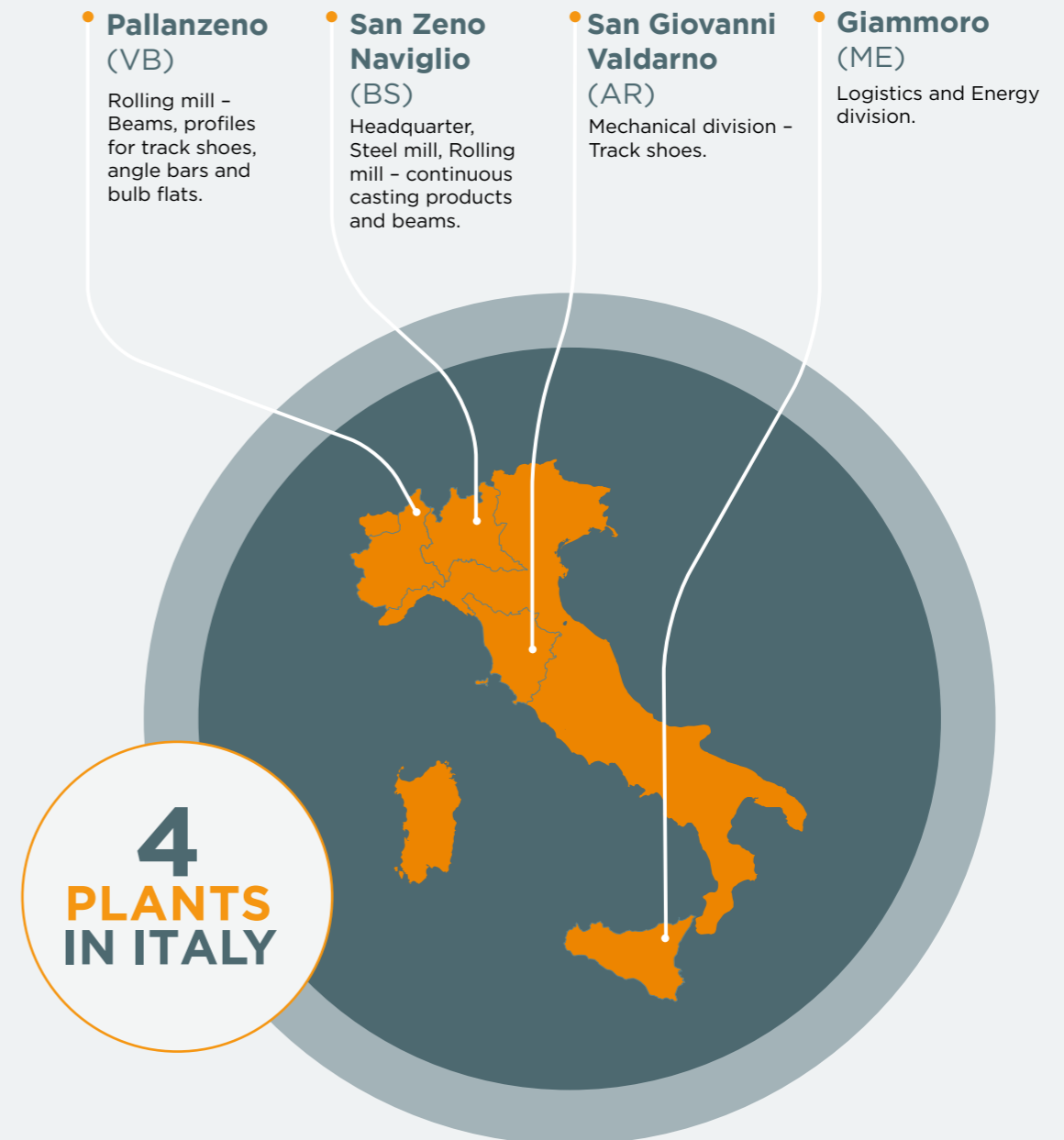
## The Company's history

In 1996 Duferco acquired Ferdofin siderurgica giving birth to Duferdofin. In 2008, a strategic alliance with Nucor set a benchmark in Italy, Europe, and North Africa becoming Duferdofin - Nucor. The JV with Nucor ended in December 2020, making the company fully owned by Duferco and renamed Duferco Travi e Profilati. With advanced technology, industry expertise and a skilled workforce, DTP has built an integrated production system that ensures competitive costs and minimal environmental impact. The group owns four plants in Italy, serving 800 customers in 60 countries.

**San Zeno Naviglio**, near Brescia, is home to the steel mill and one of the rolling mills. Here, ferrous scrap is melted to produce semi-finished products, which are then processed in the rolling mills of San Zeno, **Pallanzeno** (Verbania, Northern Italy), and **Giammoro** (Messina, Southern Italy). **San Giovanni Valdarno** (Tuscany) is the Group's mechanical division, where profiles from the rolling mill become track shoes for earth moving machines.

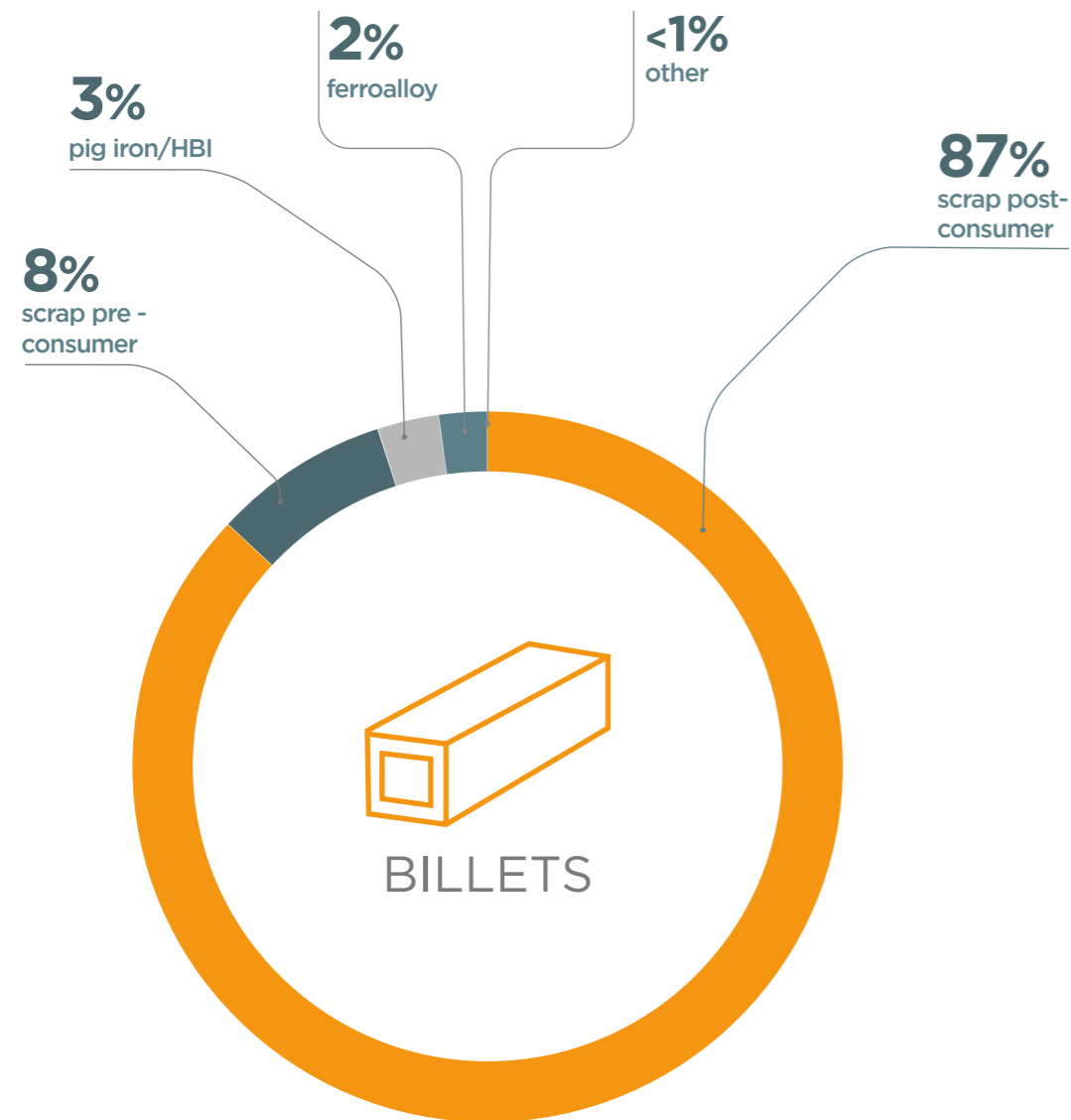


## Numbers



# PRODUCT INFORMATION

**UN CPC CODE:** 411 Basic iron and steel  
**GEOGRAPHICAL SCOPE:** Europe



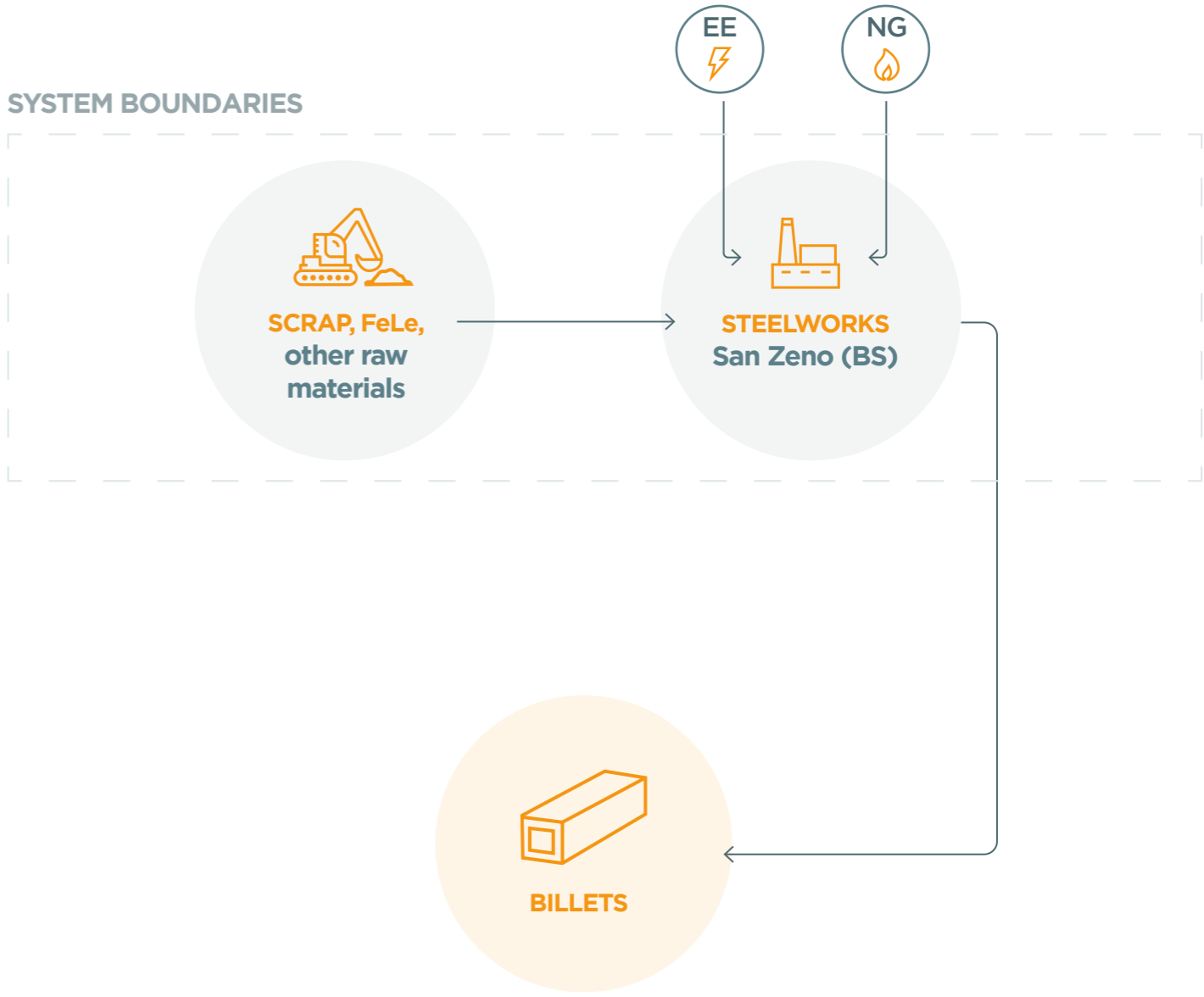
The product does not contain substances dangerous to the senses of REACH\*.

\*Regulation (EC) n.1907/2006 of the European Parliament and of Council of 18 December 2006 on registration, evaluation, Authorization and restriction of chemicals.

INFORMATION	DESCRIPTION
<b>PRODUCT IDENTIFICATION</b>	Steel billets, blooms and rounds
<b>PRODUCT FEATURES</b>	Structural steel, Carbon steel, Alloy steels for quenching and tempering, Low Alloy steel, Case-hardening steel, Boron steel, steel for pressure purposes, Special steel.
<b>PRODUCT PROPERTIES</b>	Semi-finished products are produced in San Zeno Naviglio steel plant through a continuous casting process.
	<p>Size of products (mm):</p> <p>Square section: 160x160, 200x200, 230x230, 260x260, 280x280.</p> <p>Rectangular section: 300x400</p> <p>Dog bone: 520x400</p> <p>Round section: Ø 220, 280, 350, 405, 500.</p>
<b>PLANT FEATURES</b>	The steel plant in San Zeno Naviglio is the main plant of the Group, with an extension of roughly 475.000 m2 and a production capacity of about 950.000 tons of steel per year. The plant includes an electric furnace, two refining furnaces, a vacuum degasser, two continuous casting machines and related auxiliary services.



# PRODUCTION PROCESS



# ENVIRONMENTAL RESULTS

The detailed environmental performance (in terms of use of resources, waste generation, potential environmental impacts) is presented for the two phases required by reference PCR:

## UPSTREAM Process, CORE Process

According to PCR 2015:03 the values in the Total column are the sum of columns related to Upstream and Core modules

## Declared unit (D.U.)

1 ton of steel billets

ENVIRONMENTAL IMPACTS			STEEL BILLETS		
Global Warming Potential (GWP)	Fossil	kg CO <sub>2</sub> eq	3,74E+02	1,08E+02	<b>4,81E+02</b>
	Biogenic	kg CO <sub>2</sub> eq.	8,94E-01	1,71E-02	<b>9,11E-01</b>
	Land use and land transformation	kg CO <sub>2</sub> eq.	5,59E-01	2,71E-03	<b>5,62E-01</b>
	<b>TOTAL</b>	<b>kg CO<sub>2</sub> eq.</b>	<b>3,75E+02</b>	<b>1,08E+02</b>	<b>4,83E+02</b>
Ozone Depletion Potential (ODP)	kg CFC11 eq	3,25E-06	1,64E-06	<b>4,90E-06</b>	
Acidification Potential (AP)	mol H+ eq	1,65E+00	1,34E-01	<b>1,78E+00</b>	
Eutrophication Potential freshwater (EP,f)	kg P eq	1,70E-02	1,19E-03	<b>1,82E-02</b>	
Eutrophication Potential marine (EP,m)	kg N eq	3,60E-01	5,05E-02	<b>4,11E-01</b>	
Eutrophication Potential terrestrial (EP,t)	mol N eq	3,97E+00	5,49E-01	<b>4,51E+00</b>	
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	1,32E+00	1,80E-01	<b>1,50E+00</b>	
Abiotic Depletion Potential - Elements (ADPe)	kg Sb eq.	2,91E-03	5,64E-07	<b>2,91E-03</b>	
Abiotic Depletion Potential - Fossil Fuels (ADPF)	MJ	4,41E+03	7,25E+02	<b>5,13E+03</b>	
Water Scarcity Potential (WDP)	m <sup>3</sup>	1,53E+02	2,99E+01	<b>1,82E+02</b>	

# ENVIRONMENTAL RESULTS

USE OF RESOURCES			STEEL BILLETS		
PARAMETER	UNIT	UPSTREAM	CORE	TOTAL	
Primary Energy Resources (PERE) <b>Renewable</b>	Use as energy carrier	MJ, net calorific value	5,95E+02	2,13E+03	<b>2,73E+03</b>
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	<b>0,00E+00</b>
	<b>TOTAL</b>	<b>MJ, net calorific value</b>	<b>5,95E+02</b>	<b>2,13E+03</b>	<b>2,73E+03</b>
Primary energy resources (PENRE) <b>Not Renewable</b>	Use as energy carrier	MJ, net calorific value	4,59E+03	7,25E+02	<b>5,32E+03</b>
	Used as raw materials	MJ, net calorific value	3,46E+00	0,00E+00	<b>3,46E+00</b>
	<b>TOTAL</b>	<b>MJ, net calorific value</b>	<b>4,59E+03</b>	<b>7,25E+02</b>	<b>5,32E+03</b>
Secondary Material (SM)	kg	1,03E+03	0,00E+00	<b>1,03E+03</b>	
Renewable Secondary Fuels (RSF)	MJ, net calorific value	0,00E+00	0,00E+00	<b>0,00E+00</b>	
Non - Renewable Secondary Fuels (NRSF)	MJ, net calorific value	0,00E+00	0,00E+00	<b>0,00E+00</b>	
Net Use of Fresh Water (NUFW)	m <sup>3</sup> eq	4,38E+00	6,91E-01	<b>5,07E+00</b>	

\*The trapped carbon in the steel is in such minimal quantity that is not relevant

# ENVIRONMENTAL RESULTS

WASTE PRODUCTION AND OUTPUT FLOWS		STEEL BILLETS		
IMPACT CATEGORY	UNIT	UPSTREAM	CORE	TOTAL
Hazardous Waste Disposed (HWD)	kg	6,76E+01	3,42E+00	<b>7,10E+01</b>
Non-Hazardous Waste Disposed (NHWD)	kg	1,48E+02	2,15E+02	<b>3,63E+02</b>
Radioactive Waste Disposed (RWD)	kg	1,68E-02	3,18E-04	<b>1,71E-02</b>
Components for Re-Use (CRU)	kg	7,76E+00	0,00E+00	<b>7,76E+00</b>
Material for Recycling (MFR)	kg	0,00E+00	5,22E+01	<b>5,22E+01</b>
Materials for Energy Recovery (MER)	kg	0,00E+00	0,00E+00	<b>0,00E+00</b>
Exported Energy Electricity (EEE)	MJ	0,00E+00	0,00E+00	<b>0,00E+00</b>
Exported Energy Thermal (EET)	MJ	0,00E+00	0,00E+00	<b>0,00E+00</b>

# SYSTEM BOUNDARIES

**DECLARED UNIT:** 1 ton of steel billets

**TIME REPRESENTATIVENESS:** 2025

**DATABASE AND LCA SOFTWARE USED:** SimaPro 10.3.0.1, Ecoinvent 3.11, method compliant EF3.1

**DESCRIPTION OF SYSTEM BOUNDARIES:** Cradle-to-gate

THE LCA STUDY INCLUDES ALL THE PROCESSES ACCORDING TO PCR 2015:03



## LCA METHODOLOGY

The site-specific data of the billet and profile production phase were provided by **SAN ZENO DEL NAVIGLIO (BS), DUFERCO TRAVI E PROFILATI DI PALLANZENO SpA**.

The **upstream and downstream processes** were modeled based on data from the Ecoinvent 3.11 database. The contribution of proxy data on the final results is less than 10% for each impact category. Packaging of raw materials and auxiliaries, infrastructure and business travels are excluded.

The electricity mix used in this study is partially covered by Guarantees of Origin and partially comes from Italy residual mix from Ecoinvent 3.11, the final GWP-GHG is 0,024 kgCO<sub>2</sub>e/kWh.

# CALCULATION RULES

## UPSTREAM PROCESS



## CORE PROCESS



STEEL SCRAP COLLECTION



PRE TREATMENT OF SCRAP INTERNALLY PRODUCED



RAW MATERIAL TRANSPORTATION TO MANUFACTURING SITE



TREATMENT OF WASTE GENERATED BY UPSTREAM PROCESSES

# CALCULATION RULES

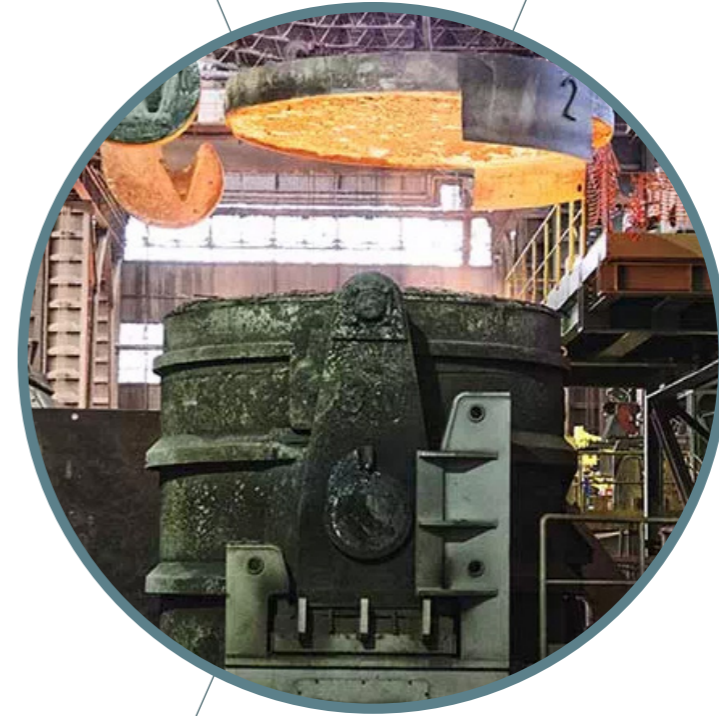
## UPSTREAM PROCESS



## CORE PROCESS



SCRAP MELTING IN THE EAF



STEEL PRODUCTION AND BILLETS CHEMISTRY REFINING



PROCESS ENERGY, INCLUDING HIGH VOLTAGE GRID ELECTRICITY AND NATURAL GAS

# SUPPLEMENTARY INFORMATIONS

---

Duferco Travi & Profilati production site is covered by >95%, renewable electricity with Guarantee of Origins.

## VERSION HISTORY

Original version of the EPD: 10/07/2025

**Revision 1, XX/XX/XX**

## DIFFERENCES VERSUS PREVIOUSLY PUBLISHED VERSION:

- Improved mapping of emissions from energy and material according to EU Emission Trading System scheme.
- Improved modelling of raw materials and auxiliary materials

# REFERENCES

---

- General Programme Instructions of the International EPD® System. Version 3.1.
- PCR 2015:03 basic iron or steel products & special steels, except construction steel products v2.1.1
- ISO 14040:2006/Amd 1:2020
- ISO 14044:2006/Amd 1:2017/Amd 2:2020
- ISO 14025:2010
- Bo P. Weidema & Gregory A. Norris, "Avoiding co-product allocation in the metals sector", 2002
- AA. VV., A methodology to determine LCI of steel industry co-products, 2014
- [www.ecoinvent.org](http://www.ecoinvent.org)
- LCA technical report: «2026\_ Report LCA DUFERCO billette\_ENG»



[www.dufercotp.com](http://www.dufercotp.com)