

# Environmental Product Declaration



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

## Heavy steel plates

from

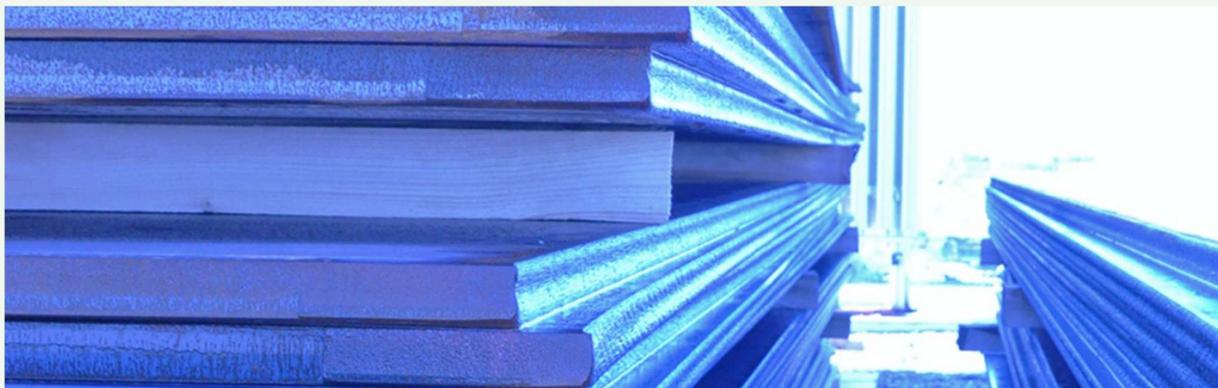
**Officine Tecnosider** srl



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	S-P-06858
Publication date:	2024-07-29
Valid until:	2029-07-28

*EPD of multiple products (steel plates with different size), based on the average results of the product group*

*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)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

### Accountabilities for PCR, LCA and independent, third-party verification

#### Product Category Rules (PCR)

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

Product Category Rules (PCR): *CONSTRUCTION PRODUCTS - PCR 2019:14 - VERSION 1.3.3*

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

#### Life Cycle Assessment (LCA)

LCA accountability: *e3 – studio associato di consulenza. www.ecubo.it*

#### 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: *Rina Services Spa* is an approved certification body accountable for the third-party verification

The certification body is accredited by: *Accredia, n. 0002VV*

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: Officine Tecnosider srl

Contact: Giorgio Giorgieri

Phone: +39 0431 628404 E-mail: [ggiorgieri@officinetecnosider.it](mailto:ggiorgieri@officinetecnosider.it)

Product-related or management system-related certifications:

- Environmental Management System according to ISO 14001
- Occupational Health and Safety Management System according to ISO 45001
- Quality Management System according to ISO 9001
- UK Conformity Assessed (UKCA) -Conformity of the Factory Production Control according to BS EN 10025-1: 2004
- Quality Assurance System in accordance with the Pressure Equipment Directive 2014/68/EU, Annex I, Section 4.3, AD 2000-Merkblatt W 0 as well as EN 764-5, Para. 4.2
- CE certificate of conformity according to EN 10025-1:2004

Name and location of production site: Via Jacopo Linussio, 1 - 33058 San Giorgio di Nogaro (UD)  
ITALY



## Officine Tecnosider

Officine Tecnosider is a company producing steel plates by hot rolling process and normalization by heat treatments; it stems from the desire of the Trasteel group with over 20 years of experience and know-how in the steel trading and industry.

Trasteel Group was founded in 2009 as the result of the vision of a group of entrepreneurs and professionals with 40 years of international experience in the steel industry. Today, Trasteel is a trading and industrial Group active in the steel, energy and metallurgical sectors. Headquartered in Lugano, it has now over 900 employees operating in four trading desks and different industrial plants in Europe, Middle East and Asia-Pacific. Sustainability and innovation are priorities and key aspects for the Group to focus on. Long-term targets are not an easy challenge to face, but Trasteel is committed to broaden its ESG policies. Group synergies with companies working in trading, design and steel plants construction has made possible the creation of a plant with regard to production capacity, versatility, quality and service. Officine Tecnosider is located in the industrial area of San Giorgio di Nogaro (Udine, Italy) inside of the industrial park Aussa Corno, the flagship of the region in terms of logistical support due to the presence of major roads and highways, a commercial port and a railway network. It stands on an area of 90,000 square meters, of which 20,000 are covered. Our commercial target is focused on the market interaction, in order to meet the customer's requirement in the whole through rapid and comprehensive responses to requests, prompt deliveries, staff competence and ongoing innovation. In

the same way the group shows a strong environment-oriented business approach and is characterized by a tight relation with the territory.

Our mill boasts a production capacity of 350.000 t of hot rolled plates per year.



## Product information

Information	Description
<b>Product identification</b>	Hot rolled steel plates -structural steels:
<b>Product features</b>	Thickness: 10 – 250 mm Width: 1500 – 2500 mm Length: 3000 – 22000 mm Weight: 5000 – 30000 kg
<b>UN CPC code</b>	41211 Flat-rolled products of non-alloy steel, not further worked than hot-rolled, of a width of 600 mm or more
<b>Product properties</b>	CPR Product conformity according to EN 10025-1:2004 Suitable for making high pressure vessels Suitable for naval constructions
<b>Geographical scope</b>	A1, A2: GLO A3: Italy C1-C4, D: EU 27

## LCA information

This is an EPD of multiple products (steel plates with different size), based on the average results of the product group. The differences between all products are less than 10% for all impact categories.

### Declared unit

The declared unit is 1 ton of steel plate.

Time representativeness: the reference year for the data collection is 2022.

Database and LCA software used: Ecoinvent 3.9.1 cut-off, ELCD; software: Sima Pro 9.5

The reference package used for impact indicator is based on EF 3.1.

Characterization factors for GWP-GHG refer to IPCC 2021.

### Modules declared

Cradle to gate with options: from Raw Materials supply (A1) to Transport (A2) of raw materials and Manufacturing (A3). The end of life of the packaging is in the system boundary (A5), as the end of life of the plates (C1-C4 + D).

### Geographical scope

Modules A1, A2: Global

Module A3: Italy

Modules A5, C1, C2, C3, C4, D: EU 27.

### LCA model - More information

The following specific data were collected for the objectives of the study:

- consumption of slabs: To model the steel slabs in the LCA model, the ecoinvent process of low alloy steel from blast furnaces was modified by inserting the energy mix and water of the country of production.
- incoming logistics
- energy consumption
- maintenance and general consumption
- emissions into air
- waste production

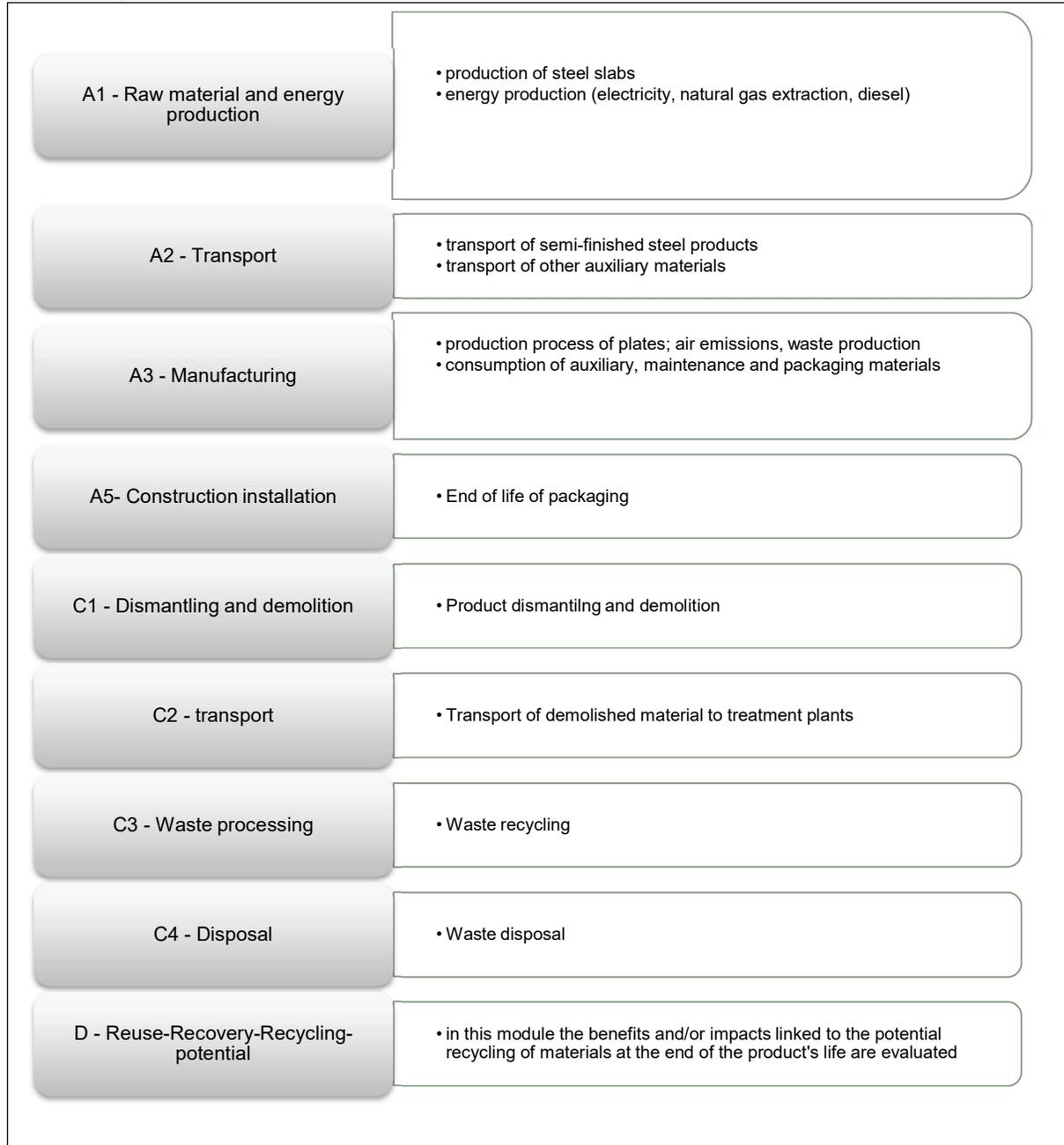
Data quality was assessed and validated during data collection process.

For electricity consumption it was considered the Italian residual mix, available in Ecoinvent 3.9.1.

The plant produces only heavy plates in difference sizes; the specific energy consumption was calculated by a mass allocation.

A cut-off of 1% in terms of environmental significance was used.

System diagram:



In the LCA model the infrastructures and the equipment production aren't considered.

Scenario:

**C1 – De-construction demolition**

It is assumed a diesel consumptions for the dismantling operations of 239 MJ/t.

**C2 – Transport**

An average distance of 50 km has been assumed for the transport to recycling facility.

**C1 – De-construction demolition****C3 – Waste processing**

A recycling percentage of 88% was used, deriving from the average recycling percentages weighted on the sales of the various countries - Eurostat data for demolition waste in Europe in 2020.

**C4 – Disposal**

A landfill percentage of 12% was assumed

**D – Benefits and loads beyond the system boundary**

Module D considers the potential environmental benefit of recycling steel on the market. The advantage is considered as the difference between the impacts of a blast furnace, in which virgin ores are used, and an EAF steel mill, using scraps. In calculating the environmental advantage, the R2 recycling rate from PEF document is considered, so the content of recycled scrap used in the production.

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

	Product stage			Construction process stage		Use stage							End of life stage			Resource recovery stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	IT	-	EU*	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used**	11%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	n.a.			-	-	-	-	-	-	-	-	-	-	-	-	-	-

\* The A5 module was declared limited to the end of life of used packaging.

\*\*According to the PCR, production data of the raw materials used are not considered specific data if they derive from the Ecoinvent database and not from primary data of the suppliers.

## Content information

Product components	Weight (kg/t steel plate)	Post-consumer material, weight-%	Biogenic material, weight kg C/t plate
Low alloy carbon steel	1000 kg/t	n.d.	0
<b>Packaging materials</b>			
Wood	3,27 kg/t	0	1,13 kg/t
Plastic	0,01 kg/t	0	0

In the product there are no substances contained in the product that are listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorisation” exceeding 0.1 % of the weight of the product.

## Results of the environmental performance indicators

### Mandatory impact category indicators according to EN 15804

Indicator	Unit	Tot.A1-A3	A5	C1	C2	C3	C4	D
<b>GWP-fossil</b>	kg CO <sub>2</sub> eq.	2,60E+03	1,56E-01	2,37E+01	5,19E+00	2,28E+01	7,29E-01	-8,87E+02
<b>GWP-biogenic</b>	kg CO <sub>2</sub> eq.	7,04E-01	3,69E+00	5,44E-03	3,99E-03	0,00E+00	4,18E-04	2,24E+00
<b>GWP-luluc</b>	kg CO <sub>2</sub> eq.	1,69E+00	3,44E-04	2,67E-03	2,44E-03	3,34E-02	4,40E-04	-1,32E-01
<b>GWP-total</b>	kg CO <sub>2</sub> eq.	2,61E+03	3,85E+00	2,37E+01	5,20E+00	2,24E+01	7,30E-01	-8,85E+02
<b>ODP</b>	kg CFC 11 eq.	5,38E-05	2,19E-09	3,77E-07	1,14E-07	3,63E-07	2,11E-08	-1,88E-05
<b>AP</b>	mol H <sup>+</sup> eq.	1,39E+01	8,56E-04	2,20E-01	1,75E-02	2,55E-01	5,49E-03	-3,69E+00
<b>EP-freshwater</b>	kg P eq.	1,40E+00	3,30E-05	7,28E-04	3,69E-04	1,34E-02	6,07E-05	-4,09E-01
<b>EP-marine</b>	kg N eq.	3,18E+00	7,53E-04	1,02E-01	6,05E-03	5,97E-02	2,11E-03	-8,20E-01
<b>EP-terrestrial</b>	mol N eq.	3,32E+01	3,34E-03	1,11E+00	6,39E-02	6,65E-01	2,26E-02	-8,87E+00
<b>POCP</b>	kg NMVOC eq.	1,47E+01	1,05E-03	3,28E-01	2,72E-02	1,99E-01	7,87E-03	-4,70E+00
<b>ADP-minerals&amp;metals*</b>	kg Sb eq.	1,69E-02	3,39E-07	8,28E-06	1,40E-05	1,40E-03	1,01E-06	-8,60E-03
<b>ADP-fossil*</b>	MJ	2,90E+04	1,97E+00	3,11E+02	7,59E+01	3,09E+02	1,82E+01	-8,01E+03
<b>WDP*</b>	m <sup>3</sup>	1,58E+02	1,02E-02	6,69E-01	3,63E-01	3,75E+00	8,03E-01	-5,91E+01
<b>Acronyms</b>	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption							

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

A negative value in module D indicates an environmental benefit.

## Additional mandatory and voluntary impact category indicators

Indicator	Unit	Tot.A1-A3	A5	C1	C2	C3	C4	D
<b>GWP-GHG<sup>1</sup></b>	kg CO <sub>2</sub> eq.	2,61E+03	2,34E-01	2,37E+01	5,20E+00	2,29E+01	7,30E-01	-8,87E+02

The other additional environmental indicators are calculated in the LCA report cited in the references.

## Resource use indicators

Indicator	Unit	Tot.A1-A3	A5	C1	C2	C3	C4	D
<b>PERE</b>	MJ	2,24E+03	1,64E+01	1,77E+00	1,11E+00	5,12E+01	7,69E-02	-7,27E+02
<b>PERM</b>	MJ	5,02E+01	-5,02E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>PERT</b>	MJ	2,29E+03	1,64E+01	1,77E+00	1,11E+00	5,12E+01	7,69E-02	-7,27E+02
<b>PENRE</b>	MJ	2,90E+04	8,07E+02	3,11E+02	7,59E+01	3,30E+02	9,09E+00	-9,23E+03
<b>PENRM</b>	MJ.	2,26E-01	-2,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>PENRT</b>	MJ	2,90E+04	8,07E+02	3,11E+02	7,59E+01	3,30E+02	9,09E+00	-9,23E+03
<b>SM</b>	kg	1,77E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>RSF</b>	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>NRSF</b>	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>FW</b>	m <sup>3</sup>	1,60E+01	5,55E-04	2,44E-02	1,19E-02	1,54E-01	1,93E-02	-1,62E+00
<b>Acronyms</b>	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water							

<sup>1</sup> Calculated according to IPCC 2021

## Waste indicators

Indicator	Unit	Tot.A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,93E-01	9,85E-06	2,09E-03	4,72E-04	1,71E-03	9,63E-05	-9,67E-02
Non-hazardous waste disposed	kg	1,22E+03	2,38E+00	4,45E-01	6,66E+00	8,89E+02	1,20E+02	-2,70E+02
Radioactive waste disposed	kg	1,61E-02	1,91E-06	3,40E-05	2,32E-05	6,26E-04	2,68E-06	1,07E-02

## Output flow indicators

Indicator	Unit	Tot.A1-A3	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	8,22E+01	1,05E+00	0,00E+00	0,00E+00	8,80E+02	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,87E-02	7,00E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

## References

- General Programme Instructions of the International EPD<sup>®</sup> System. Version 4.0.
- PCR CONSTRUCTION PRODUCTS - PCR 2019:14 - VERSION 1.3.3
- Ecoinvent Allocation cut-off, v.3.9.1, January 2023
- Studio LCA di lamiera in acciaio secondo la ISO 14040, ISO 14044, EN 15804:2012+A2:2019/AC:2021, Rev 0 del 16/04/2024



