Environmental Product Declaration

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

STAINLESS STEEL COLD DRAWN BAR & REBAR

Marcegaglia Stainless Sheffield Ltd

Programme: **The International EPD® System, www.environdec.com**

Programme operator: **EPD International AB**
EPD registration number: **EPD-IES-0012333:002**
Publication date: **2024-01-11**
Revision date: **2025-10-21**
Valid until: **2029-01-11**

MARCEGAGLIA STAINLESS SHEFFIELD

ECO PLATFORM EPD VERIFIED

EPD INTERNATIONAL EPD SYSTEM

GENERAL INFORMATION 1

Programme information 1
Company information 2
Product information 2
LCA information 3
Description of main activities 4
Content information 5
Modules declared 5

ENVIRONMENTAL INFORMATION 6

Stainless steel cold drawn bar/rebar 7

ADDITIONAL ENVIRONMENTAL INFORMATION 8

DIFFERENCES FROM THE PREVIOUS VERSION 8

REFERENCES 8

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

The standard EN 15804 serves as the core product category rules (PCR)

Product Category Rules (PCR):

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

Product Category Rules (PCR): Constructions products, 2019:14, version 1.3.2, UN CPC code 412
PCR review was conducted by: The Technical Committee of the International EPD® System.
Review chair: No chair appointed - Contact via the Secretariat www.environdec.com/contact

Life Cycle Assessment (LCA)
LCA accountability: Made HSE S.r.l.

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

☒ EPD verification by an accredited certification body

Third-party verification:
Bureau Veritas Italia S.p.A. *is an approved certification body accountable for the third-party verification.*

The certification body is accredited by: Accredia - accreditation number 0009VV

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:
Marcegaglia Stainless Sheffield Ltd

Contact:
To obtain more information about this product declaration and / or its configurations, the following references are available:

Mail: ben.lunn@marcegaglia.com - Tel.: +44 114 261 5226

Company description:
Marcegaglia is a leading industrial group in the international steel sector, which has been processing steel for over sixty years.
The Group is the world's leading independent steel processor with a product range that covers everything from carbon to stainless steel, from long to flat products, from commodity to specialty.

Product/system certifications:
- Quality management system ISO 9001;
- Environmental management system ISO 14001;
- Health and safety management system ISO 45001.

Production site's name and localization:
SSB (Stainless Steel Rods): Europa Link, Tinsley, Sheffield S9 1TZ, United Kingdom.

PRODUCT INFORMATION

Product name:
Stainless steel cold drawn bar & rebar.

Product identification:
Stainless steel cold drawn bar & rebar.

Product description:
Hot Rolled & Pickled Stainless Steel Coils in either Round, Square, Hexagon or Rebar are obtained. Rounds, Squares and Hexagons are cold drawn, straightened and cut to length though a combined drawing line. Stainless Steel Rebar is straightened and either cut into lengths or bent and cut into desired shapes.

UN CPC CODE:
412 Products of iron or steel

Geographical scope:
Worldwide

LCA INFORMATION

Functional unit:
The functional unit of the considered system is the tonne of cold drawn bar and rebar produced.

Reference service life - RSL:
For the products under study it is not possible to quantify the exact useful life as much also depends on their future use. However, it is emphasized that even when the deadline is reached, the product can be recycled and reused again to generate other raw materials.

Time representativeness:
The data used are representative of the year 2024.

Data Quality:
The primary data come from the company and the secondary data come from Ecoinvent database.

Database and LCA software used:
Ecoinvent database v.3.11, March 2025 / Software used SimaPro rel. 10.2.0.2.

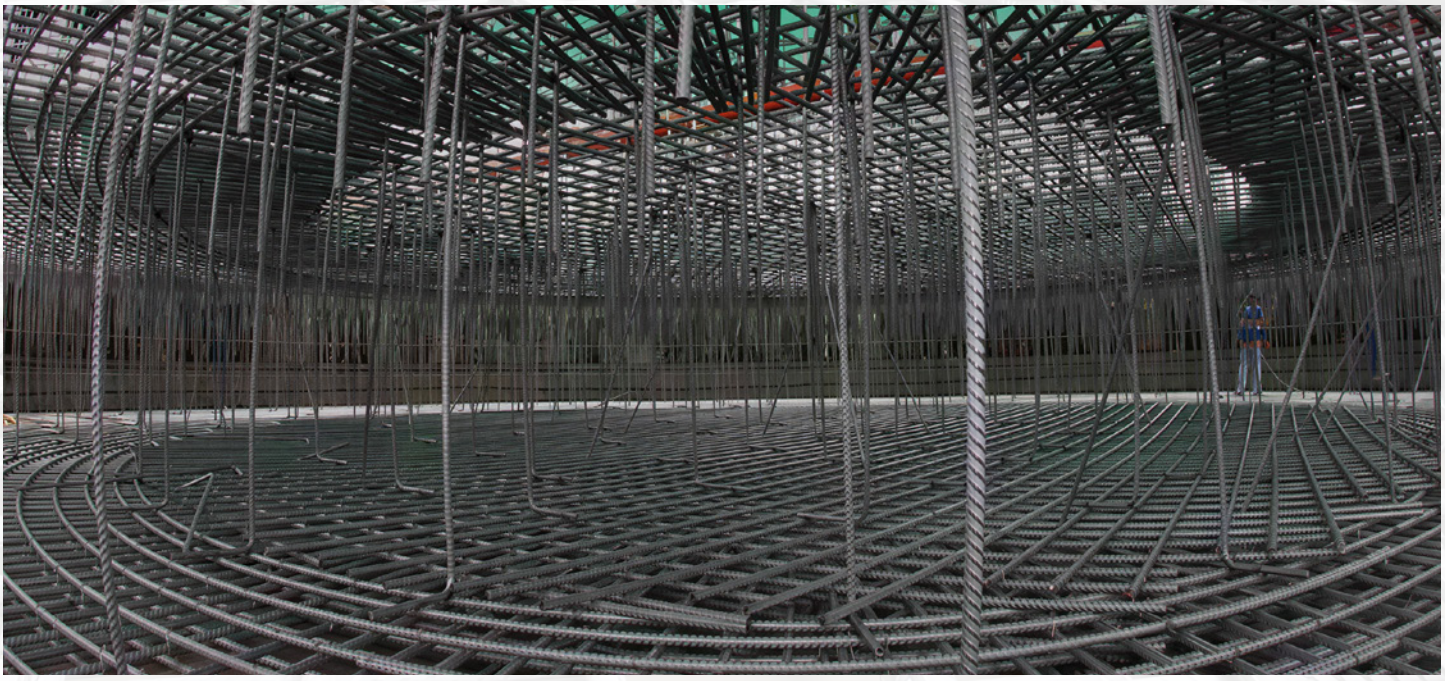
Description of system boundaries:
The study is "Cradle to gate with modules C1 – C4 and module D (A1 – A3 + C + D)" (reference: PCR 2019: 14 vers. 1.3.2).

Modules A1-A3 include material procurement processes (raw and auxiliary materials) as well as manufacturing processes. Modules C1-C4 consider the deconstruction, transport, sorting and disposal of components deriving from the end-of-life operations of the product. These operations cannot be controlled directly by the company: in this regard, data from the literature relating to the building sector are therefore used.

It is considered:

- an average consumption of diesel equivalent to 46 MJ for each ton of material demolished;
- an average distance of 80 km to transport the material to the recovery center;
- an average consumption of electricity equal to 28 kWh for each ton of material sorted.

Furthermore, it is assumed that 90% of the material delivered to the treatment center is recoverable. The remaining percentage (10%) is destined for landfill.
Module D considers the recovery and recycling potential of steel deriving from end-of-life processes: the calculation of the environmental benefits deriving from the recovery of steel is based on the indications provided by the document "Product Category Rules for Type III environmental product declaration of construction products to EN 15804: 2012 - Par. 6.3.4.6. Benefits and loads beyond the product system boundary, information Module D ".

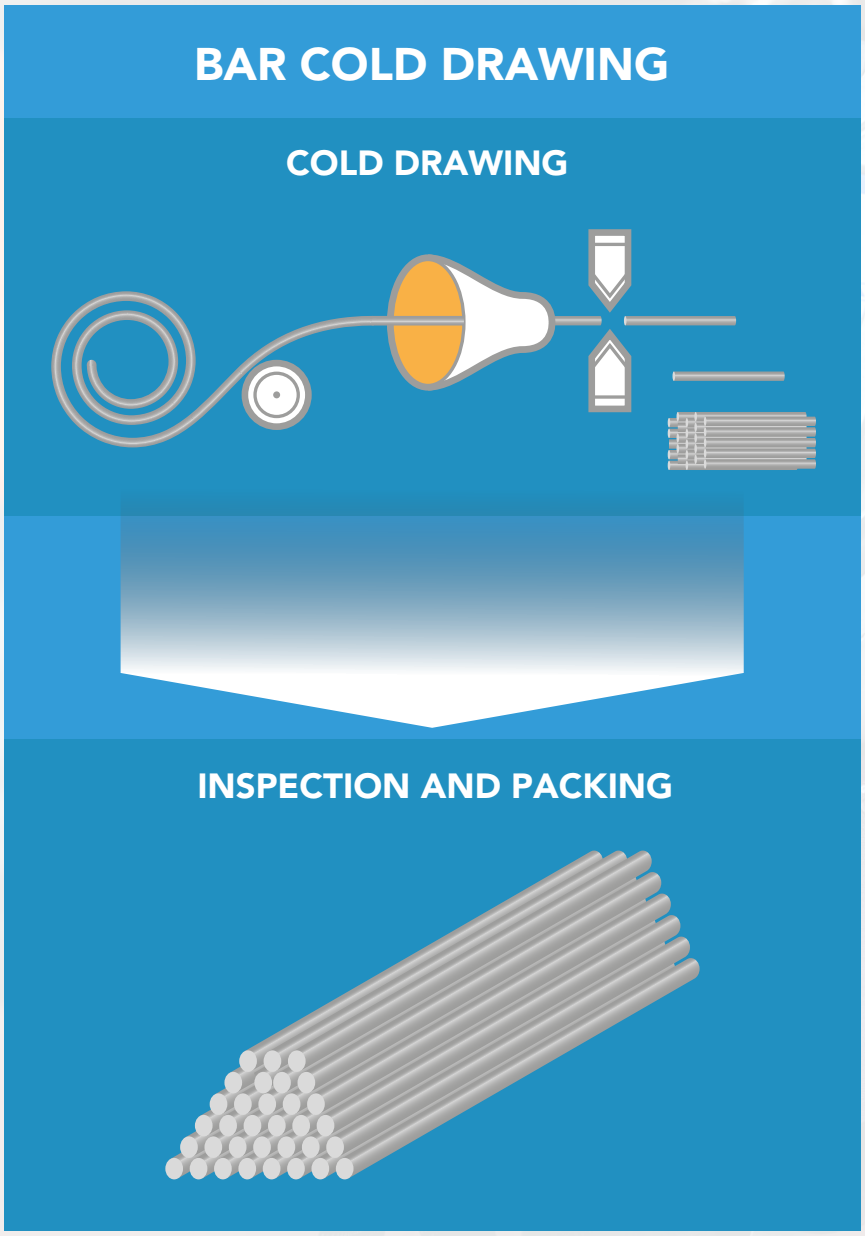


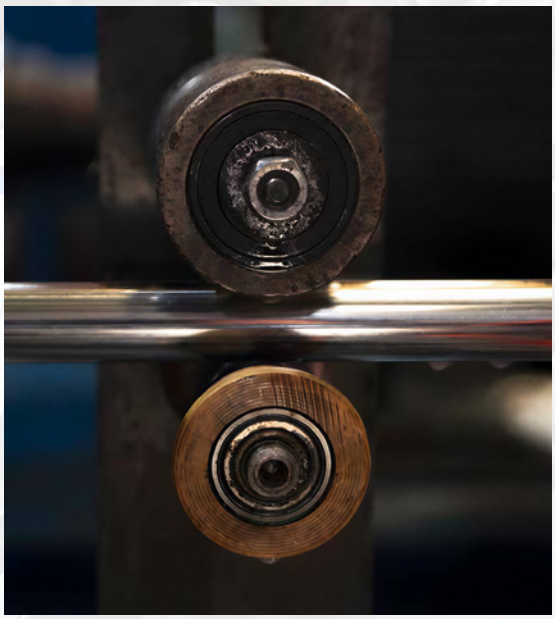
DESCRIPTION OF MAIN ACTIVITIES

For Cold Drawn Bar, Stainless Steel coils are first passed through a pre-drawing coating process. This applies coating to the coils which enables the lubricating oil to adhere to the bar during cold drawing.

Once the coils have been coated, the coils are fed into a combined drawing line, during this process the coil straightened and pulled through a tungsten carbide die which reduces the diameter by 0.5mm to 1.5mm TO improve mechanical properties and improve the surface finish. The cold drawn rod is then cut to length and packaged to customer requirements.

For Rebar, Stainless Steel coils are fed into Rebar Cut and Bending machines, where the Coil de-spooled and straightened and is either cut into lengths or bent and cut into desired shapes.





Allocation rules:
"Allocation" means the "distribution of pollutant flows to the various products and by-products leaving the supply chain considered according to parameters chosen on a more or less subjective basis (mass, energy value, economic value, etc.)".
The concept of allocation is a fundamental point of LCA and is linked to the fact that it is practically impossible to analyze a system, referring the available data to each individual activity. For this reason, a phase of subdivision (allocation) of the latter is necessary according to the desired parameters.

CONTENT INFORMATION

Product content	Weight, [t]	Post-consumer material, weight - %	Biogenic material, weight-% and kg C/kg
Chromium	maximum 0.30	-	-
Nickel	maximum 0.38	-	-
Molybdenum	maximum 0.11	-	-
Carbon	maximum 0.012	-	-
Iron	balance	-	-
TOTAL	**1**	**73.5**	**-**

Packaging materials	Weight-t	Weight-% (versus the product)	Biogenic material, weight-% and kg C/kg
Steel	0.00084	0.084	-
Wood	0.00069	0.069	< 5%
Plastic	0.00063	0.063	-

The materials used for the packaging of the final products consist of metal straps and wooden saddles. The quantities of these packaging compared to one ton of final product identify a value of less than 1%. The products do not contain hazardous substances from the SVHC Candidate List for Authorization in quantities greater than 0,1%.

MODULES DECLARED

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

	A1-A3 Product stage			A4-A5 Construction process stage		B1-B7 Use stage							C1-C4 End of life stage				D 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-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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	GB	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data	> 80%					-	-	-	-	-	-	-	-	-	-	-	-
Variations product	Not relevant					-	-	-	-	-	-	-	-	-	-	-	-
Variations site	Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

X = Module considered | **ND** = Module not declared | **GLO** = Global | **GB** = Great Britain

ENVIRONMENTAL INFORMATION

The environmental performance indicators refer to 1 tonne of stainless steel cold drawn bar/rebar.

Environmental impact

IMPACT CATEGORY	ABB.	UNIT
Climate change - total	GWP - t	kg CO_2 eq
Climate change - Fossil	GWP - fossil	kg CO_2 eq
Climate change - Biogenic	GWP - biogenic	kg CO_2 eq
Climate change - Land use and LU change	GWP - luluc	kg CO_2 eq
Climate change - Greenhouse Gases	GWP - GHG	kg CO2 eq
Ozone depletion	ODP	kg CFC11 eq
Photochemical ozone formation	POCP	kg NMVOC eq
Acidification of land and water	AP	mol H+ eq
Eutrophication	EP - freshwater	kg P eq
	EP - marine	kg N eq
	EP - terrestrial	mol N eq
Water use *	WDP	m^3 depriv.
Resource use, fossils *	ADP - F	MJ
Resource use, minerals, and metals *	ADP - MM	kg Sb eq

* The results of this environmental impact indicator shall be used with care as the uncertainties of the results are high and as there is limited experience with the indicator.

Resource use

IMPACT CATEGORY	ABB.	UNIT
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ
Use of renewable primary energy resources used as raw materials	PERM	MJ
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PERT	MJ
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PENRT	MJ
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ
Use of non-renewable secondary fuels	NRSF	MJ
Use of net fresh water	FW	m^3

Waste production

IMPACT CATEGORY	ABB.	UNIT
Hazardous waste disposed	HW	kg
Non-hazardous waste disposed	NHW	kg
Radioactive waste disposed	RW	kg

Output flows

IMPACT CATEGORY	ABB.	UNIT
Reuse	REUSE	kg
Materials for recycle	RECYCLE	kg
Materials for energy recovery	EN-REC	kg
Exported energy-electricity	EE-E	MJ
Exported energy-thermal energy	EE-T	MJ

HOT ROLLED STAINLESS WIRE ROD

Abb.	Unit	A1-A3	C1	C2	C3	C4	D
GWP - t	kg CO_2 eq	4,064E+03	4,631E+00	8,446E+00	1,252E+01	6,264E-01	-7,706E+02
GWP - fossil	kg CO_2 eq	4,046E+03	4,630E+00	8,438E+00	1,253E+01	6,258E-01	-7,599E+02
GWP - biogenic	kg CO_2 eq	1,441E+01	9,376E-04	5,158E-03	-1,237E-02	3,063E-04	-9,842E+00
GWP - luluc	kg CO_2 eq	3,774E+00	4,737E-04	3,030E-03	1,090E-03	3,557E-04	-8,401E-01
GWP - GHG	kg CO_2 eq	4,055E+03	4,631E+00	8,442E+00	1,253E+01	6,263E-01	-7,618E+02
ODP	kg CFC-11 eq	5,615E-05	6,878E-08	1,846E-07	3,439E-07	1,745E-08	-5,961E-06
POCP	kg NMVOC eq	1,614E+01	6,310E-02	4,425E-02	3,100E-02	6,632E-03	-2,560E+00
AP	mol H+ eq	4,708E+01	4,138E-02	2,792E-02	6,243E-02	4,383E-03	-4,386E+00
EP - freshwater	kg P eq	2,587E+00	1,493E-04	5,953E-04	4,266E-03	5,480E-05	-8,248E-01
EP - marine	kg N eq	4,069E+00	1,926E-02	9,482E-03	9,999E-03	1,682E-03	-7,826E-01
EP - terrestrial	mol N eq	4,427E+01	2,109E-01	1,032E-01	9,907E-02	1,838E-02	-8,141E+00
WDP	m^3 depriv.	1,939E+03	1,288E-01	5,611E-01	3,163E-01	6,681E-01	-2,039E+02
ADP - F	MJ	5,822E+04	6,030E+01	1,234E+02	2,709E+02	1,533E+01	-9,018E+03
ADP - MM	kg Sb eq	2,960E-01	1,652E-06	2,370E-05	8,447E-06	9,159E-07	-2,276E-02
PERE	MJ	8,812E+03	3,692E-01	1,847E+00	5,137E+00	1,380E-01	-2,465E+03
PERM	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
PERT	MJ	8,812E+03	3,692E-01	1,847E+00	5,137E+00	1,380E-01	-2,465E+03
PENRE	MJ	5,822E+04	6,030E+01	1,234E+02	2,709E+02	1,533E+01	-9,018E+03
PENRM	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
PENRT	MJ	5,822E+04	6,030E+01	1,234E+02	2,709E+02	1,533E+01	-9,018E+03
SM	kg	1,247E+03	5,702E-03	9,288E-03	3,629E-03	8,495E-04	-9,129E+01
RSF	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
NRSF	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
FW	m^3	2,772E+01	3,688E-03	1,892E-02	5,856E-02	1,569E-02	-3,146E+00
HW	Kg	1,728E+00	5,645E-04	3,522E-03	3,489E-03	2,240E-04	-3,785E-01
NHW	Kg	8,218E+02	4,069E-02	1,064E+01	2,043E-01	9,997E+01	-1,095E+02
RW	kg	1,918E-01	6,309E-06	3,396E-05	1,634E-03	2,236E-06	-1,778E-02
REUSE	Kg	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
RECYCLE	Kg	2,770E+00	9,309E-05	6,256E-04	1,495E-03	4,453E-05	-1,812E-01
EN-REC	kg	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
EE-E	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
EE-T	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00

ADDITIONAL ENVIRONMENTAL INFORMATION

The raw material purchased by Stainless Sheffield Ltd, understood as the mix of metal scrap and ferroalloys, is characterized by a recycled content of 73.5%: this percentage is calculated as a weighted average of the same value associated with the incoming raw material.

The energy mix is modeled considering the British residual electricity mix: the data are reported in the study published by AIB "European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2024 – version 1.0, 2025-05-30".

The electricity used in the manufacturing process of module A3 (manufactory phases) has an impact of 0.447 kgCO2eq/kWh (value resulting from the modelling of the Great Britain Residual Electricity Mix).

It should be noted that at the end of its useful life, the product is destined for recycling. In particular, the amount of steel destined for recycling is 90% in line with what is indicated in the "Metal Recycling Factsheet" - EuRIC AISBL – Recycling: Bridging Circular Economy & Climate Policy – February 2020.

Considering that the raw material contains a percentage of recycled material equal to 73.5%, this equivalent quantity is not considered in determining the value of the potentially recoverable steel. The final result is mainly influenced by the types of raw materials arriving at the plant, and in particular by elements such as scrap, ferronickel and ferrochrome. The contribution determined by the energy used on the site (in particular electricity) is also not negligible. The impact caused by the transport of the raw material is meaningless.

DIFFERENCES FROM THE PREVIOUS VERSION

Compared to the previous version of the EPD Declaration (revision on 2024-12-11), the main changes made to the analyzed data are listed below:

- site-specific data were collected and used (for modules A1, A2 and A3) in relation to all the environmental matrices considered with reference to the year 2024;
- the energy mix of electricity has been updated, considering the data published by AIB in the report "European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2024 – version 2.0, 2025-08-26";
- The reference database updated to the latest available version was used as well as the new version of the software (all processes refer to Ecoinvent 3.11 – March 2025 and the software SimaPro is in version 10.2.0.0).

REFERENCES

- General Programme Instructions of the International EPD® System. Version 4.0;
- PCR 2019:14 - Version 1.3.1 "CONSTRUCTION PRODUCTS" – Date 2023-07-08;
- BRE "Global Product Category Rules (PCR) For Type III EPD of Construction Products to EN 15804+A2" PN 514 Rev 3.0;
- Ecoinvent database v.3.11 – March 2025;
- UNI EN ISO 14025: 2010 "Environmental labels and declarations - Type III environmental declarations - Principles and procedures";
- UNI EN ISO 14040: 2021 "Environmental management - Life cycle assessment - Principles and framework";
- UNI EN ISO 14044:2021 "Environmental management - Life cycle assessment - Requirements and guidelines";
- UNI EN ISO 15804:2021 "Sustainability of buildings - Environmental product declarations - Development framework rules by product category";
- Association of Issuing Bodies - AIB "European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2024" – version 2.0, 2025-08-26;
- CSIRO "Metal recycling: The need for a life cycle approach" – May 2013;
- World Steel Association "Life Cycle inventory (LCI) study" - May 2021.
- "Metal Recycling Factsheet" - EuRIC AISBL – Recycling: Bridging Circular Economy & Climate Policy – February 2020.

MARCEGAGLIA

Registered seat:
Via Bresciani, 16 - 46040
Gazoldo degli Ippoliti (MN) - ITALY

Main offices and plant:
Europa Link, Tinsley, S9 1TZ, Sheffield - UK
Phone +44 114 261 5200
info@marcegaglia.com
www.marcegaglia.com

ECO PLATFORM EPD VERIFIED

EPD
INTERNATIONAL EPD SYSTEM

www.environdec.com

Environmental Product Declaration

Stainless steel cold drawn bar & rebar