

Environmental Product Declaration

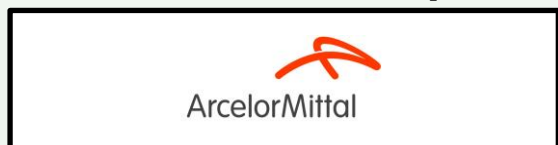


In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

XCarb[®] recycled and renewably produced Jetskin[®] steel coils

from

ArcelorMittal Europe – Flat Products



Programme:	The International EPD [®] System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products based on representative product
EPD registration number:	EPD-IES-0026573:001
Version date:	2026-08-03
Validity date:	2031-08-02

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



XCarb[®]

Recycled and renewably
produced

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)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products, version 2.0.1 Published on 2025.04.07. The product group classification for the assessed products is UN CPC 412
PCR review was conducted by: The Technical Committee of the International EPD® System. See https://www.environdec.com/about-us/the-international-epd-system-about-the-system for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/contact .

Third-party Verification
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: Dr Matthew Fishwick, Fishwick Environmental Ltd 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 EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: ArcelorMittal Europe – Flat Products.

Address: 24-26 Boulevard d'Avranches, L-1160 Luxembourg, Luxembourg.

Contact: ArcelorMittal Europe – Flat Products: flateurope@arcelormittal.com.

Address and contact information of the LCA practitioner commissioned by the EPD owner: Shubham Saini, ArcelorMittal Europe – shubham.saini@arcelormittal.com.

Description of the organisation: ArcelorMittal Europe – Flat Products is the largest producer of flat steel in Europe and produces hot rolled coils, cold rolled coils, coated products, tinplate, plate, hot-dip galvanised products, enamelled and electrical steels. Flat Products has 11 integrated and mini-mill sites, and primary facilities in five countries. It sells to a wide range of industries including packaging, general industry (civil engineering, construction, domestic appliances, oil & gas, renewable energies, yellow & green goods) and automotive.

Product-related or management system-related certifications: ArcelorMittal sites are covered by CE-marking including Declaration of Performances, ISO 9001, ISO 14001 and ISO 45001 certificates.

PRODUCT INFORMATION

Product name: XCarb® recycled and renewably produced Jetskin® steel coils.

Product identification: Jetskin® steel coils included into this EPD are covered by one of the following names: XCarb® RRP Jetskin® steel coils; XCarb® recycled and renewably produced Jetskin® steel coils. These products have the XCarb® recycled and renewably produced steel brand name and the associated certificates to prove the traceability.

Detailed steel and coating properties and chemical compositions for the different products in are available at:

https://industry.arcelormittal.com/products-solutions/productdocumentcentrenew?id_node=95

Visual representation of the product:

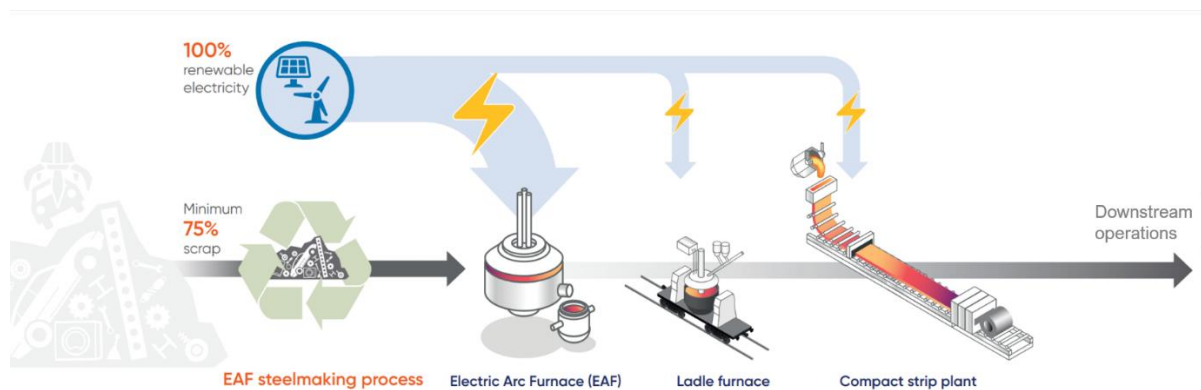


UN CPC code: 412 Products of iron or steel.

Product description:

This EPD refers to XCarb® recycled and renewably produced Jetskin® steel coils. XCarb® recycled and renewably produced Jetskin® is an advanced metallic coating for steel, applied through Jet Vapor Deposition (JVD) technology. It delivers a uniform layer on one or both sides of the steel, it offers excellent corrosion protection, particularly for indoor applications. XCarb® recycled and renewably produced Jetskin® steel coils are delivered in compliance with standard EN 10152.

The finished products are made exclusively from XCarb® recycled and renewably produced hot-rolled coils sourced from ArcelorMittal Sestao in Spain. These coils originate from an electric arc furnace facility that uses a high proportion of scrap and operates with 100% renewable electricity.



They are available in a wide range of steel grades aimed for indoor use processed by drawing, roll forming, bending, flanging, or spinning.

XCarb® recycled and renewably produced Jetskin® steel coils consist of a steel substrate coated with 100% zinc and are available in steel thicknesses ranging from 0,4 mm to 3,0 mm, with the following coating thicknesses:

- Top side 2,5 µm to 10 µm
- Back side 2,5 µm to 10 µm

This EPD covers multiple products using a representative reference product: 1,5 mm steel with a zinc coating of 2,5 µm on both surfaces of the steel substrate, resulting in a total coating thickness of 5 µm (35,6 g/m²), selected based on sales representativeness. While this specific product accounts for approximately 20% of total sales, products with the same total zinc coating thickness of 5 µm (35,6 g/m²) and steel thicknesses ranging from 0,4 mm to 3 mm collectively represent around 92% of total sales.

XCarb® recycled and renewably produced Jetskin® features a uniform metallic matt finish that enhances the visual appeal of coated applications. Applied directly to bare steel, it can be used in its natural state to preserve the metal's aesthetic or painted for additional customization. The fine crystalline microstructure of XCarb® recycled and renewably produced Jetskin® ensures that paint adheres evenly, delivering a smooth, consistent surface and superior aesthetic quality.

For the use and application of the product, the respective national provisions at the place of use apply.

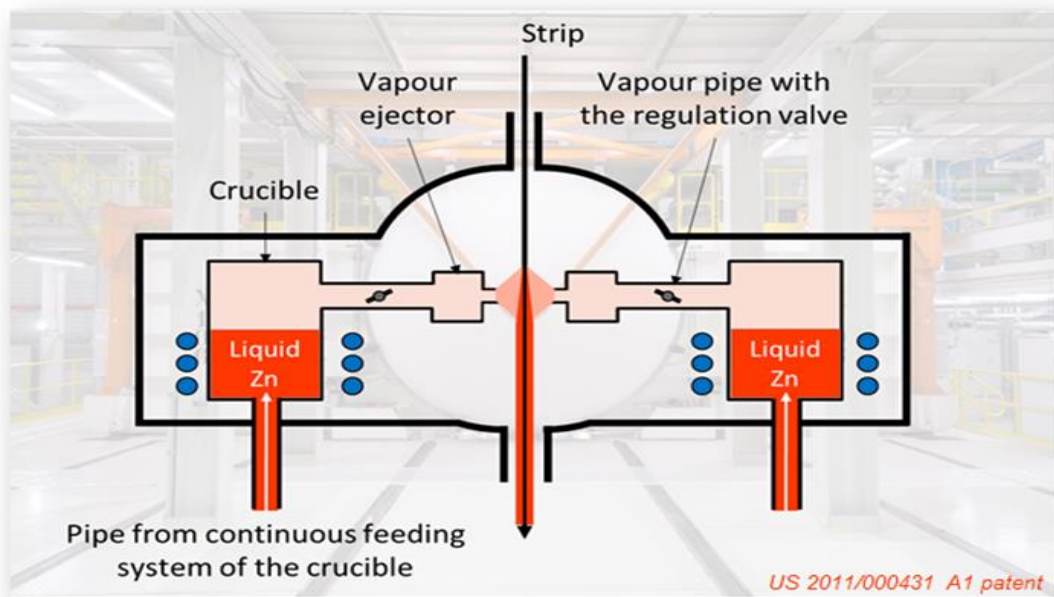
Name and location of production site:

- ArcelorMittal Kessales, Rue G. Baivy 50, 4101 Seraing, Belgium.

Manufacturing process:

XCarb® recycled and renewably produced Jetskin® steel coils are manufactured on continuous production lines. XCarb® recycled and renewably produced Jetskin® steel coils are produced by spraying zinc onto annealed cold-rolled steel coils at high speed within a vacuum chamber. The Jet Vapor Deposition (JVD) process enables ArcelorMittal to coat substrates that cannot be protected using conventional hot-dip galvanization.

It offers outstanding surface quality for unpainted or post-painted products, a homogeneous matt coating, single- or double-sided zinc application, and customizable coating thickness on each side.



Applications:

The surface quality of XCarb® recycled and renewably produced Jetskin® makes it ideal for manufacturing visible parts and components. XCarb® recycled and renewably produced Jetskin® can be post-painted and offers an outstanding surface aspect. The paint layer will adhere perfectly to the metallic coating.

XCarb® recycled and renewably produced Jetskin® is ideal for:

- Indoor applications
- Domestic appliances such as washing machines, dryers, dishwashers, cookers, microwave ovens, and refrigerators
- Electronics such as computers, laptops, hi-fi, and TV casings
- Furniture including cupboards, desks, shelves, and electrical cabinets
- Air conditioners
- Ceilings
- Drums (small and middle-sized).

More information: [Jetskin® - Industry](#)

CONTENT DECLARATION

The values presented in the following tables reflect the mass (weight) of one unit of the product, based on the declared unit of 1 tonne of XCarb® recycled and renewably produced Jetskin® steel coil. The content declaration corresponds to the representative product defined for this EPD, namely a 1,5 mm steel coil with 5 µm zinc coating (equivalent to 35,6 g/m²). The reported values therefore represent the average composition of products meeting this specific configuration.

Product Content

Component	Mass (kg), per declared unit	Post-consumer recycled material (% of product)	Biogenic material (% of product)	Biogenic material (kgC/declared unit)
Steel	996,96	26,8	0	0
JVD coating (100% Zinc)	3,04	0	0	0
Total	1000	26,8	0	0

Packaging Materials

Material	Mass (kg), per declared unit	Mass (% relative to the declared unit)	Biogenic material (kgC/declared unit)
Steel	0,80	0,080	0
Plastic	0,08	0,008	0
Timber	1,46	0,146	0,73
Cardboard	1,73	0,173	0,87
Total	4,07	0,407	1,60

Note: 1 kg biogenic carbon in the product (or packaging) is equivalent to the uptake of 44 (or 12 kg, respectively) of CO₂.

The products do not contain any of the substances of very high concern (SVHC) regulated by the Regulation (EC) No 1907/2006 (REACH) or the Regulation (EC) No 1272/2008 of European parliament. The composition below represents the average chemical composition of the steel substrate.

Composition of the Steel Substrate

Element	Mass (kg)
Iron	991,8
Manganese	4,8
Silicon	0,3
Carbon	0,5
Other	2,7

LCA INFORMATION

Declared unit:

1 metric tonne of XCarb® recycled and renewably produced Jetskin® steel coil. Results are based on a representative product with a 1,5 mm steel thickness and a total JVD coating thickness of 5 µm; the EPD is valid for all steel and coating thicknesses covered by the declared product range.

Reference service life:

A reference service life for XCarb® recycled and renewably produced Jetskin® steel coils not declared. The lifetime therefore will be limited by the application and corresponding service. At the end of life, the majority of product will be recovered and recycled into a new steel product.

Time representativeness:

The collection of the foreground data refers to the year 2022.

Databases and LCA software used:

The background data has been taken from the latest available Sphera LCA FE (GaBi) database, Managed LCA Content 2024.2 and the LCA model was created using LCA for Experts software, version 10.7.1.28.

Description of system boundaries:

The system boundaries are Cradle-to-gate with modules C1–C4, and module D. Modules A4, A5, and B are excluded because a cradle-to-gate EPD only accounts for impacts up to the point the product leaves the manufacturing facility. Transport to site, installation, and use-phase impacts are project-specific and occur beyond the defined system boundary.

Geographical scope: Europe (A1-A3, C, and D)

Data Quality Assessment

The EPD is based on data collected by ArcelorMittal Europe – Flat Products from a single production site over a one-year period (2022). It is representative of the production of XCarb® recycled and renewably produced Jetskin® steel coils in manufacturing site located in Belgium. The EPD encompasses the end-of-life stage within the European Union.

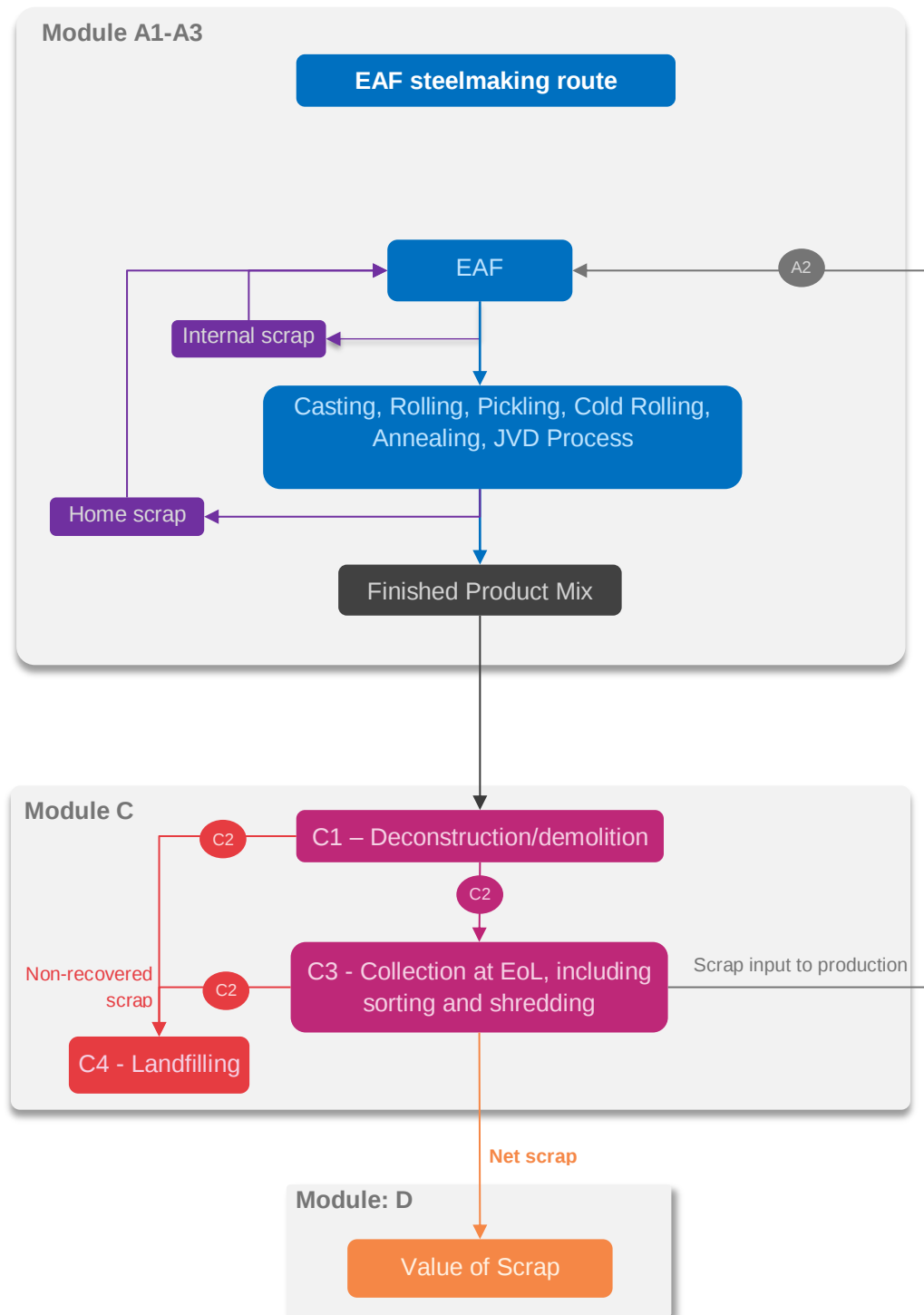
ArcelorMittal employs a consistent manufacturing process using the electric arc furnace (EAF) route to produce the XCarb® recycled and renewably produced Jetskin® steel coil. The Life Cycle Assessment (LCA) results were established specifically for this site, ensuring an accurate and representative reflection of the product's environmental impact based on its actual production conditions.

The EPD incorporates both primary data (71%) collected directly from the production sites and secondary data sourced from the Sphera LCA FE (GaBi) 2024.2 database. The quality of the data, assessed in terms of temporal coverage, geographical, and technological representativeness, is rated as good to very good using EN 15804:2012+A2:2019, Annex E, E.1. No dataset was assessed as poor, very poor or fair whilst contributing to >30% of core indicators.

In our steel production facility using the EAF route, off-gases generated during melting and refining are not reutilized internally; instead, they are considered as direct emissions in our calculations. These emissions are expressed in CO₂-equivalent terms. Compared to the BF-BOF route, where off-gases are commonly reused for energy recovery, the volume of off-gases in EAF operations is significantly lower.

Process	Source Type	Source	Reference Year	Data Category	Share of Primary Data (A1-A3)
Manufacturing of hot rolled coil	Collected data	EPD owner	2022	Primary data	69,2%
Manufacturing of XCarb® recycled and renewably produced Jetskin® steel coils	Collected data	EPD owner	2022	Primary data	1,8%
Total share of primary data, GWP-GHG results for A1-A3					71%

Process flow diagram:



- **Module A1 to A3:**

The product stage includes provision of all materials, products, and energy, as well as waste processing up to the end-of waste state or disposal of final residues during the product stage. Impacts on raw material transportation, including external scrap, and intermediate products are included.

These modules consider the production of hot rolled coils and the transport to ArcelorMittal finishing lines for pickling, cold rolling, annealing and JVD coating process. XCarb® recycled and renewably produced Jetskin® steel coil packaging is tailored to the needs of the clients. In general, the finished product is strapped with steel and wrapped with cardboard.

For modelling, the electricity supply for HRC was based on a renewable electricity grid mix with a GWP-GHG value of 25,88 g CO₂ eq./kWh. For downstream processes up to JVD, the residual electricity mix from Belgium was used, resulting in a GWP-GHG value of 162 g CO₂ eq./kWh

- **Module C1 to C4:**

Within this EPD, the modules C1-C4 are included. These modules consider the dismantling of the considered product (C1), the transportation of the dismantled components to their End of Life (EoL) destination (C2), the waste processing for recovery or recycling (C3) as well as the disposal (C4), if given.

At EoL, steel material leaves the product system in C3 for recycling in Module D. The environmental impacts from grinding, sorting and transportation of steel scrap are included. Based on common practices, the considered EoL scenario for the steel material is 98% recycling and 2% losses and total loss of coating.

Category	Subcategory	Unit	Quantity
Collection process	Collected separately	kg	1000
	Collected with mixed construction waste	kg	0
Recovery	Reuse	kg	0
	Recycling	kg	980
	Landfill	kg	20
	Incineration	kg	0
	Incineration with energy recovery	kg	0
	Energy conversion efficiency rate	kg	0
Disposal	Material for final disposal	kg	0
Transport	Deconstruction site to scrap processing plant	km	100
	Scrap processing plant to site for end of waste	km	200

- **Module D:**

Module D includes declared benefits and loads resulting from the net flow of secondary fuels or materials exiting the product system. This excludes flows that have been allocated as co-products.

Metals are assumed to reach the end of waste state after they have gone through a sorting and shredding process. The treatment as well as net benefits and loads of reuse or recycling potentials (for the net scrap amount only) are grouped to module D.

Potential environmental benefits are given for the net steel scrap that is produced at the end of a final product's life, calculated as follows:

Net scrap = Amount of steel recycled at end-of-life – Scrap input from previous product life cycles.

In the manufacturing of 1 tonne of XCarb® recycled and renewably produced Jetskin® steel coil, 1000 kg of external scrap was used. At the end-of-life, 980 kg of scrap are recovered for recycling and 0 kg for reuse. This means that the system has a net output of -20 kg of scrap (980 + 0 - 1000), which is shown in module D as an environmental credit or burden depending on the impact category.

As previously stated, due to the buildings life span, it is hard to predict what will happen. The scenarios included are either currently in use or deemed to be probable alternatives to happen at the end-of-life.

Cut-off criteria: The environmental impact of the product studied has been assessed by considering all significant processes, materials, and emissions. Excluded flows are assumed to have a negligible impact, contributing less than 5% to the cumulative impact assessment categories. No packaging was considered for the final product, while packaging materials and their transportation for intermediate products have been neglected due to their low contribution to the overall life cycle results. The production of capital equipment, facilities, and infrastructure required for manufacture has not been considered.

Data quality and sources: Data quality is compliant with ISO 14025:2006 and EN 15941:2024. All primary data were collected for 2022. All background data come from the Sphera LCA FE (GaBi) 2024.2 databases and are representative for the years 2018-2023.

Allocation: No allocation was assigned to the co-products (such as slag, dust, and sludge) generated within ArcelorMittal's production processes. Additionally, scrap steel exiting stages A1–A3 and C3 was treated according to the cut-off approach.

For pre-consumer scrap input, it is classified as waste at the point of generation, and it only ceases to be waste once it reaches the end-of-waste state within modules A1–A3. Although the scrap does have an economic value at the point of its generation, it does not meet all end-of-waste criteria at that stage, as defined in PCR 2019:14 v2.0.1, the EU Waste Framework Directive (Directive 2008/98/EC), and Council Regulation (EU) No 333/2011; the latter establishes the end-of-waste criteria specifically for iron and steel scrap. In particular, the requirement in Regulation 333/2011 that scrap must meet existing legislation and product standards is not fulfilled until waste processing, testing, and evaluation have been carried out at the scrapyard.

Following EPD International's interpretation of section 6.3.5.2 of EN15804:2012+A2:2019 provided in Annex 4 of the PCR—where co-product allocation is considered “not possible” for flows that are or have been waste, as it would violate the polluter-pays principle—waste allocation is applied to the pre-consumer scrap. The scrap is modelled as both an input and an output flow in modules A1–A3, with no environmental burdens allocated to the scrap prior to it reaching the end-of-waste state at the scrapyard, and is then treated as a secondary raw material in accordance with PCR 2019:14 v2.0.1. A sensitivity analysis where co-product allocation was applied at the point of generation demonstrated negligible influence on GWP results.

Utilities reported at site level (e.g. electricity, natural gas, water and compressed air) are allocated to products on a mass basis. The total annual utility consumption is divided by the total annual site production to derive a consumption per tonne of product, which is then applied to the declared products included in the study.

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				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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	EU	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Share of primary data	71%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	7,42%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	N/A (single site)			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ND – Not declared. EU – European Union.

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 products - main environmental performance results

The environmental performance of the declared unit of 1 metric tonne of XCarb® recycled and renewably produced Jetskin® steel coil is reported below using the parameters and units as specified in PCR 2019:14.

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. The impact assessment models, indicator's units and characterisation factors used to calculate the results are obtained on the package released on February 2023 for the EN 15804 based on EF Reference Package 3.1.

Mandatory impact category indicators according to EN 15804+A2:2019

Results per 1 metric tonne of XCarb® Jetskin® steel coil							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	8,00E+02	4,42E+01	2,77E+01	1,27E+00	2,99E-01	4,18E+01
GWP-biogenic	kg CO ₂ eq.	2,34E-01	0,00E+00	0,00E+00	5,47E-03	0,00E+00	0,00E+00
GWP-luluc	kg CO ₂ eq.	6,89E-01	7,03E-01	4,63E-01	3,16E-03	1,80E-03	5,59E-03
GWP-total	kg CO ₂ eq.	8,01E+02	4,49E+01	2,82E+01	1,27E+00	3,01E-01	4,18E+01
ODP	kg CFC 11 eq.	8,73E-08	1,78E-11	4,06E-12	2,51E-11	8,07E-13	-5,09E-11
AP	mol H ⁺ eq.	2,60E+00	3,00E-01	1,96E-01	2,91E-03	2,13E-03	9,28E-02
EP-freshwater	kg P eq.	6,85E-04	1,82E-04	1,18E-04	5,00E-06	6,80E-07	8,84E-06
EP-marine	kg N eq.	7,32E-01	1,48E-01	9,73E-02	8,98E-04	5,47E-04	1,49E-02
EP-terrestrial	mol N eq.	8,00E+00	1,64E+00	1,08E+00	9,64E-03	6,03E-03	1,34E-01
POCP	kg NMVOC eq.	2,10E+00	2,91E-01	1,90E-01	2,45E-03	1,67E-03	6,06E-02
ADP-minerals&metals*	kg Sb eq.	1,62E-03	3,78E-06	2,40E-06	2,33E-07	1,94E-08	2,15E-04
ADP-fossil*	MJ	1,03E+04	5,84E+02	3,63E+02	2,52E+01	3,95E+00	3,77E+02
WDP*	m ³	2,01E+02	8,03E-01	4,27E-01	3,06E-01	3,43E-02	2,56E+00
Acronyms	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.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).*

Resource use indicators according to EN 15804+A2:2019

Results per 1 metric tonne of XCarb® recycled and renewably produced Jetskin® steel coil							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,98E+04	5,52E+01	3,13E+01	1,70E+01	6,89E-01	-1,49E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,98E+04	5,52E+01	3,13E+01	1,70E+01	6,89E-01	-1,49E+01
PENRE	MJ	1,04E+04	5,84E+02	3,63E+02	2,52E+01	3,95E+00	3,77E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,04E+04	5,84E+02	3,63E+02	2,52E+01	3,95E+00	3,77E+02
SM	kg	1,00E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	5,54E+00	5,91E-02	3,48E-02	1,30E-02	1,05E-03	3,84E+00
Acronyms	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						

Waste indicators according to EN 15804+A2:2019

Results per 1 metric tonne of XCarb® recycled and renewably produced Jetskin® steel coil							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5,87E-05	3,71E-08	1,39E-08	3,36E-08	9,83E-10	2,82E-06
Non-hazardous waste disposed	kg	5,85E+01	1,03E-01	5,93E-02	1,94E-02	2,00E+01	-4,57E+00
Radioactive waste disposed	kg	4,65E-01	2,72E-03	6,61E-04	3,71E-03	4,14E-05	-4,13E-05

Output flow indicators according to EN 15804+A2:2019

Results per 1 metric tonne of XCarb® recycled and renewably produced Jetskin® steel coil							
Indicator	Unit	A1-A3	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
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	9,80E+02	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	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
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Other environmental performance indicators according to EN 15804+A2:2019

Results per 1 metric tonne of XCarb® recycled and renewably produced Jetskin® steel coil							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq.	8,01E+02	4,49E+01	2,82E+01	1,27E+00	3,01E-01	4,18E+01

* The indicator is calculated with characterization factors from IPCC AR6 GWP 100, excl biogenic carbon, and includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013

Alternative end of life scenarios

Ultimately, the user is responsible for defining the project-specific end-of-life scenario. This can be achieved by applying the three reference scenarios—100% reuse, 100% recycling, and 100% landfill. The project-specific scenario should be calculated by multiplying the actual proportions of reuse, recycling, and landfill in the project by the corresponding values provided in the next table.

The values for modules C1, C2, and C3 are not affected by the choice of end-of-life scenario and should be considered constant across all cases, apart from C3 MFR in the 100% recycling scenario (which is 1,000 kg) and C3 CRU in the 100% reuse scenario (which is 1,000 kg).

ENVIRONMENTAL INDICATOR		100% Recycling		100% Reuse		100% Landfill	
Environmental impact - core indicator	Unit	C4	D	C4	D	C4	D
Global warming potential - fossil fuels	kg CO ₂ eq.	0,00E+00	7,29E+00	0,00E+00	-8,00E+02	1,50E+01	1,74E+03
Global warming potential - biogenic	kg CO ₂ eq.	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Global warming potential - land use and land use change	kg CO ₂ eq.	0,00E+00	9,71E-04	0,00E+00	-6,89E-01	8,98E-02	2,32E-01
Global warming potential - total	kg CO ₂ eq.	0,00E+00	7,25E+00	0,00E+00	-8,01E+02	1,50E+01	1,73E+03
Depletion potential of the stratospheric ozone layer	kg CFC-11 eq.	0,00E+00	-9,79E-12	0,00E+00	-8,73E-08	4,04E-11	-2,34E-09
Acidification potential, accumulated exceedance	mol H ⁺ eq.	0,00E+00	1,78E-02	0,00E+00	-2,60E+00	1,06E-01	4,27E+00
Eutrophication, fraction of nutrients reaching freshwater end compartment	kg P eq.	0,00E+00	1,70E-06	0,00E+00	-6,85E-04	3,40E-05	4,06E-04
Eutrophication, fraction of nutrients reaching marine end compartment	kg N eq.	0,00E+00	2,87E-03	0,00E+00	-7,32E-01	2,74E-02	6,85E-01
Eutrophication, accumulated exceedance	mol N eq.	0,00E+00	2,57E-02	0,00E+00	-8,00E+00	3,01E-01	6,14E+00
Formation potential of tropospheric ozone photochemical oxidants	kg NMVOC eq.	0,00E+00	1,16E-02	0,00E+00	-2,10E+00	8,37E-02	2,78E+00
Abiotic depletion potential for non-fossil resources	kg Sb eq.	0,00E+00	4,13E-05	0,00E+00	-1,62E-03	9,70E-07	9,88E-03
Abiotic depletion potential for fossil resources	MJ, NCV	0,00E+00	7,25E+01	0,00E+00	-1,03E+04	1,97E+02	1,73E+04
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	m ³ world eq. deprived	0,00E+00	4,92E-01	0,00E+00	-2,01E+02	1,71E+00	1,18E+02
Additional environmental impact indicator							
Global warming potential – GWP-GHG	kg CO ₂ eq.	0,00E+00	7,24E+00	0,00E+00	-8,01E+02	1,50E+01	1,74E+03

Variation vs. representative product

This EPD declares a representative product for a family of products manufactured under the same processes. The table below reports the maximum absolute deviation (%) among the covered products relative to the representative product for the A1–A3 modules only. Deviations are assessed in both directions (±). In accordance with the PCR, only indicators showing an absolute deviation greater than 10% are disclosed.

Impact Category	Indicator	Unit	Variation (%) Min Max
Acidification	AP	[Mole of H ⁺ eq.]	-1,2 17,7
Resource use, mineral and metals	ADP-minerals&metals	[kg Sb eq.]	-42 640
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		

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EAFF	Electric Arc Furnace
EN	European Norm (Standard)
EF	Environmental Footprint
ISO	International Organization for Standardization
CE	Conformité Européenne
CEN	European Committee for Standardization
CPC	Central product classification
CPR	Construction Products Regulation
JVD	Jet vapor deposition
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory
SVHC	Substances of Very High Concern
ND	Not Declared
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
SVHC	Substances of Very High Concern
UN	United Nations

REFERENCES

- General Programme Instructions of the International EPD® System. Version 5.0.
- PCR 2019:14. Construction Products, Version 2.0
- Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data; CEN/TR 15941:2010
- CPR: Regulation (EU) No 305/2011 of the European parliament and of the council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC.
- EN 15804: EN 15804:2012+A2:2019: Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products.
- EN ISO 14025: EN ISO 14025:2011-10 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- EN ISO 14040: EN ISO 14040:2009-11 Environmental management - Life cycle assessment - Principles and framework
- EN ISO 14044: EN ISO 14044:2006-10 Environmental management - Life cycle assessment - Requirements and guidelines.
- LCA FE: LCA FE Software System and Database for Life Cycle Engineering, Sphera Solution GmbH, Leinfelden-Echterdingen, 2022 (<https://www.gabi-software.com/support/gabi>)
- EN 10346: EN 10346:2015 Continuously hot-dip coated steel flat products for cold forming - Technical delivery conditions.
- Worldsteel. (2014). A methodology to determine the LCI of steel industry co-products. World Steel Association, Brussels. Retrieved from <https://worldsteel.org/steel-topics/life-cycle-thinking/methodology-for-slag-lci-calculation/>

VERSION HISTORY

Original Version of the EPD, 2026-08-03

