

Environmental Product Declaration



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

Structural Hollow Sections made of XCarb[®] recycled and renewably produced steel

from

ArcelorMittal Europe – Tubular Products



Programme:	The International EPD [®] System, www.environdec.com
Programme operator:	EPD International AB
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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

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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

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): <i>PCR 2019:14 Construction products, version 1.2.5. Based on CEN standard EN 15804. ISO standard ISO 21930 and CEN standard EN 15804.</i>
PCR review was conducted by: The Technical Committee of the International EPD®System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact .
Life Cycle Assessment (LCA)
LCA accountability: <i>Julia Florin, Sphera Solutions GmbH</i>
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: <input checked="" type="checkbox"/> EPD verification by accredited certification body Third party verification: Tecnalia R&I Certificacion S.L. is an approved accountable for the third-party verification. The certification body is accredited by: ENAC n°125/C-PR283 accreditation
Procedure for follow-up of data during EPD validity involves third party verifier: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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: ArcelorMittal Europe – Tubular Products

Contact: constructube@arcelormittal.com

Description of the organisation: ArcelorMittal Europe – Tubular Products is part of the world's leading steelmaker and mining company. ArcelorMittal Tubular Products Europe is a pan-European producer and leading global supplier of pipes and tubes. With manufacturing operations in six countries, with strategically located production sites, and a robust distribution network, we deliver our comprehensive range of tubular products across Europe and major international markets. Active in many sectors like energy, construction, automotive, yellow, and green goods, and general mechanical engineering, we offer an extensive portfolio of tubular solutions that cover the full spectrum of customer needs. ArcelorMittal Tubular Products Europe stands at the forefront of the industry, offering one of the widest ranges of steel solutions available. Our product range includes seamless and longitudinally welded tubes (including precision and CDW), complemented by various processes and finishing options such as galvanizing, coating, laser cutting, and tube bending. Our journey towards becoming carbon neutral by 2050 is well underway. In line with the Paris Climate Goals and the European Green Deal, ArcelorMittal has also committed to reduce CO2 emissions in our European operations by 35% by 2030.

Product-related or management system-related certifications: ArcelorMittal Tubular Products Legutio is covered by CE-marking including Declaration of Performances, ISO 9001, ISO 14001, ISO 45001 and UK CA certificates.

Name and location of production site(s): ArcelorMittal Tubular Products Legutio, S.A.U., Carretera de Bergara por Urbina, km 14, 01170, Álava, Spain



Aerial view of the ArcelorMittal Tubular Products plant Legutio (AMTPL)

Product information

Product name: Structural Hollow Sections made of XCarb[®] recycled and renewably produced steel.

Product identification: Structural Hollow Sections included into this Environmental Product Declaration are covered by one of the following names: Structural Hollow Sections (SHS) and Hollow Structural Sections (HSS).

Coils used to make these products have the XCarb[®] recycled and renewably produced steel brand name and the associated certificates to prove the traceability.

Product description:

This EPD corresponds to cold formed welded structural hollow sections of non-alloy and fine grain steels for construction, manufactured by ArcelorMittal using XCarb[®] steel in accordance with EN 10219-1; EN10219-2 standards. The technical delivery conditions follow the guidelines set by the European Union/European Free Trade Association (EU/EFTA) (excluding Switzerland) Regulation (EU) No. 305/2011 (CPR).

Hollow sections produced in accordance with EN10219-1 are marked with the CE mark, and each supply is accompanied by a material certificate and a declaration of performance.

Manufacturing process:

This product comprises cold formed structural welded hollow sections from ArcelorMittal Europe - Tubular Products Legutio (Spain), made with XCarb[®] recycled and renewably produced steel. The hot rolled coils used are sourced from ArcelorMittal Sestao in Spain, meeting the requirements for the XCarb[®] recycled and renewably produced branding. This entails production in an electric arc furnace (EAF) using a minimum of 75% scrap and 100% renewable electricity. Cold-formed structural hollow sections are tubular steel products created by processing steel coils. The coils are first slit into strips of the appropriate width and then rolled into a circular shape. Next, the two edges of the strips are welded together using a high-frequency induction process. If needed, further rolling operations are performed to achieve the final shape and size of the cold-formed hollow section. Finally, the tubes go through non-destructive testing and are precisely cut to the required lengths.

Applications:

Structural hollow sections fabricated with XCarb[®] steel are highly versatile products that can be used as structural elements in various applications, including agricultural equipment, cranes, buildings, pavilions, stadiums, civil and mechanical engineering, and other sectors such as renewable energy installations.

These products are widely used in the construction industry and are considered in EN 1993 (Eurocode 3), the European reference code for the design of steel structures, in EN 1090, the European reference standard for the execution of steel structures, as well as in Regulation (EU) No. 5/2011, the European Regulation for Construction Products.

UN CPC code: 41288 - Tubes and pipes, of non-circular cross-section, welded, of steel

Geographical scope: Europe

LCA information

Functional unit / declared unit:

1 ton of Structural Hollow Sections made of XCarb® recycled and renewably produced steel.

Reference service life:

Not applicable.

Time representativeness:

The collection of the foreground data refers to the year 2021.

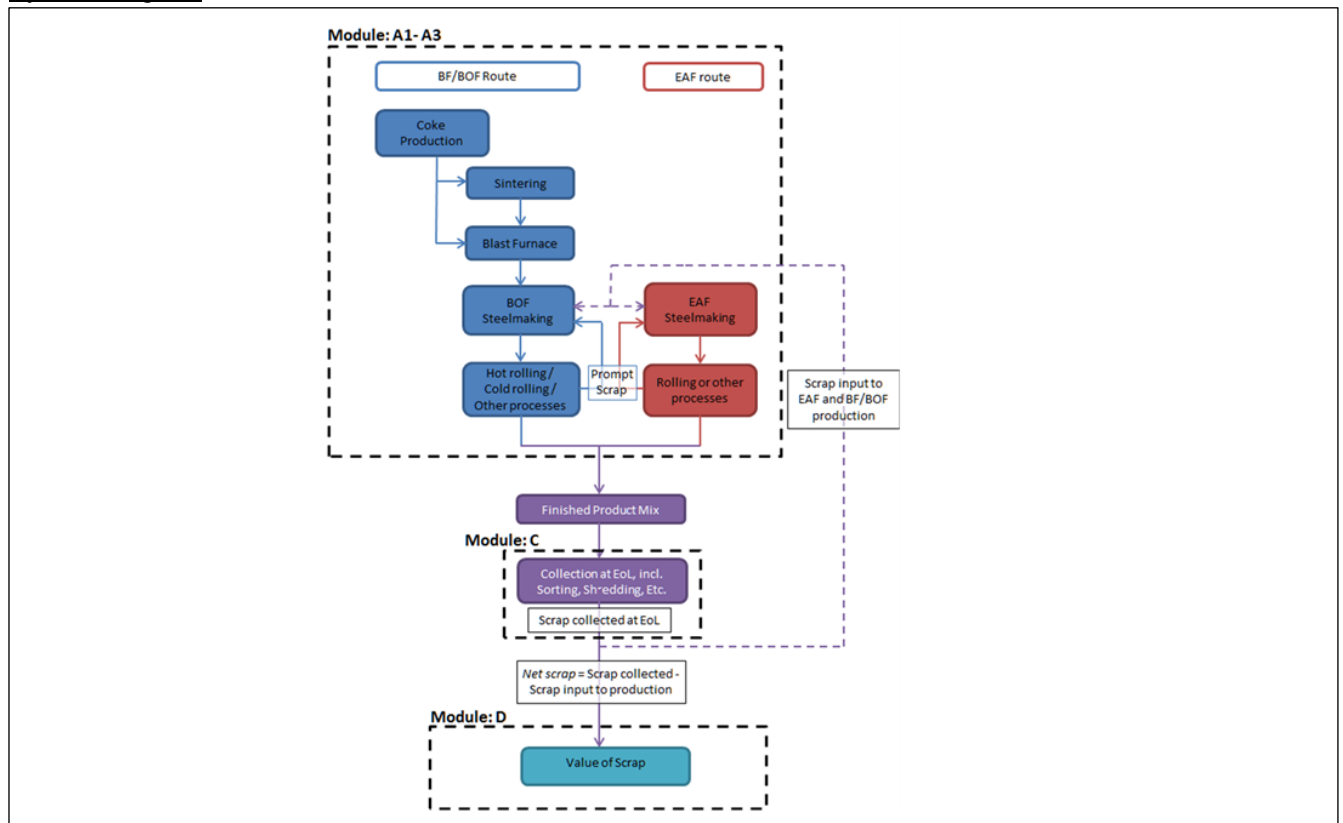
Database(s) and LCA software used:

The background data has been taken from the latest available Sphera LCA FE (GaBi) database CUP 2023.1.

Description of system boundaries:

The system boundaries are: Cradle to gate with options, modules C1–C4, and module D.

System 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.

These modules consider the production of hot rolled coil at the site Sestao in Spain, the transport between the sites as well as the manufacturing of cold-formed structural hollow sections at the site Legutio in Spain. Packaging with steel straps is not considered.

- 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, the 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 not included.

The considered End-of-Life scenario for the steel material is 93% recycling and 7% reuse.

- *Module D:*

Module D includes any declared benefits and loads from net flows leaving the product system that have not been allocated as co-products and that have passed the end-of-waste state in the form of reuse, recovery and/or recycling potentials.

Metals are assumed to reach the end of waste status directly at the construction site. 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. This net scrap is determined as follows:

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

For the products under study, in case of 100% recycling: 960,76 kg steel scrap is used in the production/manufacturing of 1 ton of structural hollow sections. After use, 930 kg steel is recycled and 70 kg is reused. The potential environmental impact calculated for the end-of-life stage (module D) is based on the net amount of scrap left in the system, 36,49 kg. The system net surplus of scrap, either shows a benefit or a burden in module D, depending on the impact category..

Cut-off criteria: No processes, materials or emissions that are known to make a significant contribution to the environmental impact of the products studied have been omitted. On this basis, there is no evidence to suggest that input or outputs contributing more than 1% to the overall mass or energy of the system or that are environmentally significant have been omitted. It can be assumed, that all excluded flows contribute less than 5% to the impact assessment categories.

More information: <https://tubular.arcelormittal.com/>

C4 and D modules parameters

Processes	Values per declared unit
Collection process specified by type	1000 kg collected separately
Recovery system specified by type	70 kg for reuse
	930 kg for recycling
	0 kg for energy recovery
Disposal specified by type	0 kg for landfill
Assumptions for scenario development	Transportation for dismantled component is considered by truck over a distance of 100km for recycling and 200 km for reuse.

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	NR	NR	NR	NR	NR	NR	NR	NR	NR	X	X	X	X	X
Geography	ES	ES	ES	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data used	>95%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

NR- Not reported. MNR- Module not declared.

Content information

Average composition for 1 ton of Structural Hollow Sections made of XCarb® recycled and renewably produced steel.

Product composition	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Steel substrate (XCarb® Hot Rolled Coil)	1000	26,8%	0 resp. 0

Packaging Materials	Weight, kg	Weight (as % of product weight)	Weight biogenic carbon, kg C/kg
Steel seal and steel staples	0,944	0,095	0
Plastic (VCI Bag + Slings)	0,411	0,041	0

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.

Results of the environmental performance indicators

Results for 1 ton of Structural Hollow Sections made of XCarb® recycled and renewably produced steel.

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

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	6,46E+02	4,26E+01	2,61E+01	1,34E+00	0,00E+00	-1,08E+02
GWP-biogenic	kg CO ₂ eq.	2,57E-01	-1,44E-01	-1,08E-01	9,82E-03	0,00E+00	1,43E-02
GWP-luluc	kg CO ₂ eq.	3,41E-01	3,73E-01	2,45E-01	1,04E-03	0,00E+00	-2,52E-02
GWP-total	kg CO ₂ eq.	6,46E+02	4,28E+01	2,63E+01	1,36E+00	0,00E+00	-1,08E+02
ODP	kg CFC 11 eq.	9,06E-08	1,54E-11	3,45E-12	2,20E-11	0,00E+00	-6,34E-09
AP	mol H ⁺ eq.	1,90E+00	2,46E-01	1,92E-01	3,30E-03	0,00E+00	-2,69E-01
EP-freshwater	kg P eq.	4,97E-04	1,50E-04	9,69E-05	4,80E-06	0,00E+00	-4,65E-05
EP-marine	kg N eq.	4,36E-01	1,19E-01	9,51E-02	9,70E-04	0,00E+00	-5,44E-02
EP-terrestrial	mol N eq.	4,77E+00	1,32E+00	1,05E+00	1,04E-02	0,00E+00	-5,43E-01
POCP	kg NMVOC eq.	1,31E+00	2,31E-01	1,82E-01	2,63E-03	0,00E+00	-1,88E-01
ADP-minerals & metals*	kg Sb eq.	7,95E-04	2,77E-06	1,76E-06	1,95E-07	0,00E+00	-2,13E-04
ADP-fossil*	MJ	6,93E+03	5,81E+02	3,61E+02	2,71E+01	0,00E+00	-1,07E+03
WDP*	m ³	2,98E+02	6,23E-01	3,20E-01	2,66E-01	0,00E+00	-3,26E+01
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.

Potential environmental impact – additional mandatory indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG*	kg CO2 eq.	6,36E+02	4,27E+01	2,62E+01	1,36E+00	0,00E+00	-1,05E+02

* 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

Resource use indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	2,06E+04	4,68E+01	2,63E+01	1,51E+01	0,00E+00	-1,40E+03
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,06E+04	4,68E+01	2,63E+01	1,51E+01	0,00E+00	-1,40E+03
PENRE	MJ	6,95E+03	5,83E+02	3,62E+02	2,71E+01	0,00E+00	-1,07E+03
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	6,95E+03	5,83E+02	3,62E+02	2,71E+01	0,00E+00	-1,07E+03
SM	kg	9,61E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,73E+01
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	7,54E+00	4,96E-02	2,88E-02	1,22E-02	0,00E+00	-7,93E-01
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

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	9,01E-06	9,53E-10	1,12E-09	-1,96E-09	0,00E+00	-6,35E-07
Non-hazardous waste disposed	kg	2,63E+01	9,69E-02	5,52E-02	1,87E-02	0,00E+00	6,96E+00
Radioactive waste disposed	kg	4,33E-02	2,88E-03	6,78E-04	3,99E-03	0,00E+00	-2,96E-03

Output flow indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	7,00E+01	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	9,30E+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

References

- General Programme Instructions of the International EPD® System. Version 4.0.
- PCR 2019:14. Construction Products, Version 1.2.5
- 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>)
- EN10219: Cold formed welded structural hollow sections of non-alloy and fine grain steels
 - Part 1: Technical delivery conditions.
 - Part 2: Tolerances, dimensions and sectional properties.

Additional Information

To ensure consistency within the different versions of the EN 15804 for user performing a complete LCA of a building, the table below indicates the environmental performances for 1 ton of Structural Hollow Sections made of XCarb® recycled and renewably produced steel according to EN 15804:2012+A1:2013.

Results are calculated using the same assumptions mentioned throughout the document.

Environmental Impact

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	6,31E+02	4,22E+01	2,59E+01	1,34E+00	0,00E+00	-1,04E+02
Depletion potential of stratospheric ozone layer	kg CFC 11 eq.	1,07E-07	1,82E-11	4,06E-12	2,59E-11	0,00E+00	-7,47E-09
Acidification potential of land and water	kg SO ₂ -Eq..	1,54E+00	1,68E-01	1,31E-01	2,57E-03	0,00E+00	-2,23E-01
Eutrophication potential	kg(PO ₄) ₃ --Eq	1,53E-01	4,20E-02	3,31E-02	4,06E-04	0,00E+00	-1,87E-02
Formation potential of tropospheric ozone photochemical oxidants	kg ethene-Eq.	1,15E-01	-6,19E-02	-5,10E-02	2,30E-04	0,00E+00	-3,72E-02
Abiotic depletion potential for non-fossil resources	kg Sb-Eq.	7,96E-04	2,77E-06	1,75E-06	2,22E-07	0,00E+00	-2,13E-04
Abiotic depletion potential for fossil resources	MJ	6,57E+03	5,67E+02	3,55E+02	1,56E+01	0,00E+00	-1,06E+03

VERIFICATION STATEMENT CERTIFICATE CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

Certificate No. / Certificado nº: EPD09201

TECNALIA R&I CERTIFICACION S.L., confirms that independent third-party verification has been conducted of the Environmental Product Declaration (EPD) on behalf of:

TECNALIA R&I CERTIFICACION S.L., confirma que se ha realizado verificación de tercera parte independiente de la Declaración Ambiental de Producto (DAP) en nombre de:

ARCELORMITTAL TUBULAR PRODUCTS LEGUTIO, S.A.U.
Carretera de Bergara por Urbina, km 14
01170 LEGUTIO (Alava) - SPAIN

for the following product(s):
para el siguiente(s) producto(s):

Structural Hollow Sections made of XCarb® recycled and renewably produced steel.
Tube estructural de secciones de acero XCarb® reciclado y producido de forma renovable.

with registration number **S-P-09773** in the International EPD® System (www.environdec.com).
con número de registro S-P-09773 en el Sistema Internacional EPD® (www.environdec.com).

it's in conformity with:
es conforme con:

- **ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations.**
- **General Programme Instructions for the International EPD® System v.4.0.**
- **PCR 2019:14 Construction products (EN 15804:A2) v.1.2.5.**
- **UN CPC 41288 Tubes and pipes, of non-circular cross-section, welded, of steel.**

Issued date / Fecha de emisión:	17/10/2023
Update date / Fecha de actualización:	17/10/2023
Valid until / Válido hasta:	16/10/2028
Serial N° / N° Serie:	EPD0920100-E



Carlos Nazabal Alsua
Manager

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