

Environmental Product Declaration



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

Pickled steel tubes



From Aratubo S.A.U

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

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

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction products (EN 15804:A2) Version 1.3.4
PCR review was conducted by: 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 .
Independent third-party verification of the declaration and data, according to ISO 14025:2006: <input checked="" type="checkbox"/> External <input type="checkbox"/> Internal Covering <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification
Third party verifier: Elisabet Amat, GREENIZE Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input checked="" 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: Aratubo S.A.U

Description of the organisation:

Aratubo is a private company with more than 25 years of experience in the manufacture of integral solutions in precision welded steel tubes.

Our purpose is to ensure the generation of value for all our stakeholders, backed by a culture of sustainability and excellence in quality and service, adapting to the needs of each client. We currently have a total surface area of 70,000 m², a production capacity of 130,000 tonnes per year, 190 people and a presence in more than 25 countries, exporting 90% of our production.

At Aratubo we align our business strategy with the Sustainable Development Goals established in the 2030 Agenda and we are members of the United Nations Global Compact. We are committed to carrying out actions that cover all spheres of sustainability: economic, social and environmental.

Aratubo's commitment to the future involves making new investments that will allow us to adapt to trends in the steel market, the development of R&D&I projects, addressing priority issues such as Industry 4.0 linked to its digital transformation, as well as continuing to expand our range of precision welded steel tubes. All of this framed under a responsible and sustainable brand approach.

Name and location of production site:

Aratubo S.A.U.
Pol. Ind. Jundiz - Mendigorritxu, 54
01015 Vitoria - España

Contact:

Iker Seoane (iseoane@aratubo.com)

Product information

Product name: "Pickled steel tubes"

Product description: A precision welded and descaled steel tubes.



Figure 1. Welded and descaled steel tubes.

The technical specifications of the steel tube are as follows:

General	Diameter	9,8-88,9 mm
	Thickness	0,7-4 mm
	Length	8500 mm
	Manufacturing standard	UNE-EN 10305-3

Steel tubes are used in a wide variety of applications across various industrial sectors. They are commonly used in the automotive industry, furniture manufacturing, construction and structural engineering, industrial and commercial equipment, as well as in heating and air conditioning systems and by other tube distributors.

UN CPC code: CPC 4219 – "Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium; plates, rods, angles, shapes, sections, profiles, tubes and the like, prepared for use in structures, of iron, steel or aluminium; props and similar equipment for scaffolding, shuttering or pit propping".

LCA information

Unidad declarada: “1 ton of decoated steel pipe”.

Reference service life: Not relevant for this EPD.

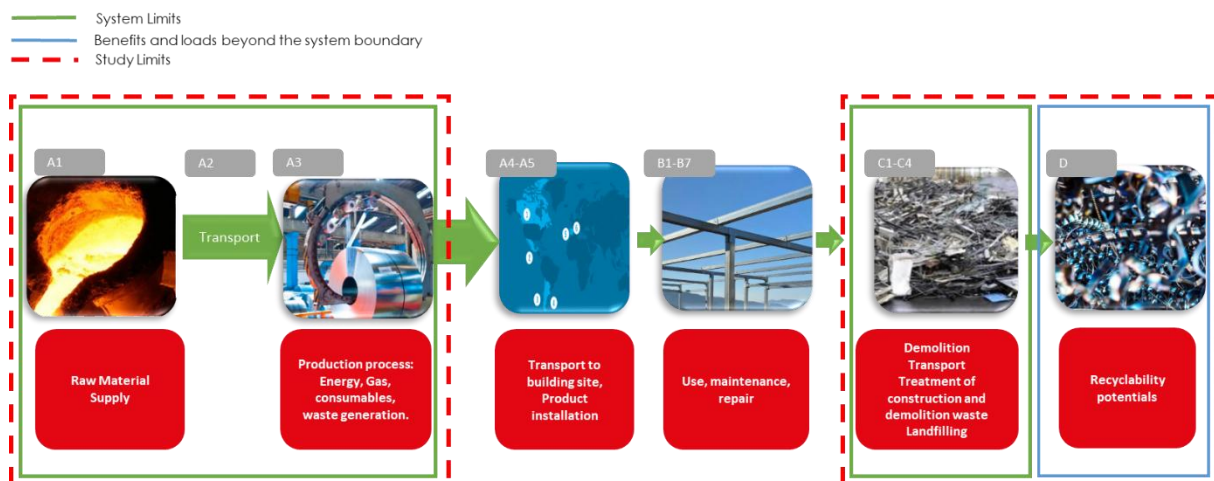
Geographical scope: The geographical scope of this EPD is global.

Time representativeness: The data collection from factory (primary data) and electricity mix are from 2023. In this study, no datasets older than 10 years were used.

Database(s) and LCA software used: All the data used to model the process and obtain the Life Cycle Inventory are specific data and have been obtained by measurements made during the period from 2023. They are representative of the different processes implemented during the manufacturing process. The data has been measured directly at the company's own premises. In addition, the most complete and highest quality European life cycle inventory database, Ecoinvent 3.9, has been used, as this database contains the most extensive and updated information and its scope coincides with the geographical, technological and temporal area of the project. The LCA was modelled with Simapro 9.6.0.3.

Description of system boundaries: According to the standard UNE-EN 15804:2012+A2:2020/AC:2021/AC:2021 (september 2021) and PCR 2019:14 CONSTRUCTION PRODUCTS (versión 1.3.4) the system boundary is cradle to gate with modules C1–C4 and module D (A1–A3 + C + D). The life cycle stages A4-A5, B1-B7 were excluded from the LCA study.

System diagram:



Manufacturing process:

The process begins outside the Aratubo premises with the receipt of the necessary raw materials. The raw materials required to manufacture steel tubes are mainly steel coils. These coils are moved by magnetic cranes within the plant until they are positioned at the start of the production line.

From there, the coil is cut to the desired width using blades and rewound. In the next stage, the coil passes through a forming machine which shapes it into a tube; the sides of the tube are then welded using induction, and the resulting burr is sanded down with a blade. These burrs are recycled by sending them to an external company.

From here, it moves to a second forming machine where the tube takes on the desired shape, which may be round, square, rectangular, oval or profiled. Finally, it is cut to the desired length and passes through a compressor to remove any excess cutting fluid that may be inside the tubes.

The tubes are then automatically stored and prepared for dispatch. Depending on the type of tube, it will be fitted with just a strap and/or a block.

Author of the Life Cycle Assessment:

IK ingeniería

Av. Cervantes 51, Edif. 10, planta 5, dpto.

48970 Basauri, Bizkaia (Spain)

Data quality:

The environmental impact of the galvanized steel has been calculated. It is based on the international standards established for the development of environmental product declarations, such as ISO 14025 for the preparation of the environmental product declaration, ISO 14040 and ISO 14044 for the preparation of the life cycle analysis, EN 15804:2012+A2:2020 (September 2021) and the Product Category Rules PCR - "2019:14 Construction products " (Version 1.3.4).

Data has been collected from 2023 and is representative of that year. Data for raw material supply, transport to fabrication plant and production (A1-A3) is based on specific consumption data for the factory at Paio Pires. Generic background datasets were used for the downstream processes. SimaPro v9.6.0.3. software was used to prepare the life cycle analysis together with the Ecoinvent 3.10 database. Characterization factors from EN15804: 2012 + A2:2019. The geographical coverage is global. Technological coverage is typical or average. The characterization factors are in line with those set out in the standard 'EN 15804 Reference Package EF 3.1.

Assumptions:

The modularity principle, as well as the polluter-payer principle have been followed. The following assumptions have been made in this EPD:

- It does not include the manufacturing processes of the capital goods or spare parts and/or maintenance with a life of more than three years.
- The environmental impact of infrastructure for general management, office, and headquarters operations is not included.
- The impact caused by people (common activities, travel for work...) will not be considered.
- It does not include the consumption of natural gas for sanitary hot water from showers and heating system for the comfort of people.
- The processes associated with fuel production are intrinsically included in the indicators in ECOINVENT's database used in carrying out the LCA.
- The environmental impact of external transport has been calculated using lorries from the ECOINVENT 3.10 database, EURO 5. These lorries have been selected to reflect the most realistic scenario possible.

Cut-off rules:

The standard ISO 14025 and the PCR "2019:14 CONSTRUCTION PRODUCTS" indicate that the life cycle inventory data should include a minimum of 95% of the total inputs (materials and energy) for each stage. This cut-off rule does not apply for hazardous materials and substances. No such cut-off criteria have been taken into account in this study.

Allocation:

In cases where necessary, such as for waste generation and energy consumption, an allocation based on production has been used.

Greenhouse gas emission from the use of electricity in the manufacturing phase:

Electricity mix (supplier)	Amount	Units
Iberdrola Clientes	2,00E-02	Kg CO2-eqv/kWh

LCA Scenarios and additional technical information

Dismantling/demolition (module C1):

The consumption of energy (diesel) of dismantling machinery is considered. These consumptions have been based on Ecoinvent data.

Transport (module C2):

With a collection rate of 100%, the transports are carried out by lorry (EURO 5) over 50 km.

Waste processing (modules C3 and C4):

A recycling ratio of 95% is considered in accordance with the recycling rate (R2) for building steel sheets, established in the Annex C of the Environmental Footprint Method. The remaining 5% is considered to be landfilled.

The recycling percentage is representative of the scope of the EPD. Given the type of material being treated (economic value), a high degree of recyclability of the product is justified internationally.

Recyclability potentials (module D):

Module D contains credits from the recycling of the galvanized steel in module C3. The steel recycled is credited with the avoided production of the raw material they would be displacing in the technosphere if recycled. The loads of recycling process and the benefits of substitution of virgin raw materials have been considered.

LCA Scenarios for end of life

Processes	Per Declared unit	
Collection process specified by type	1,00E+03	Kg collected separately
	0,00E+00	Kg collected with mixed construction waste
Recovery system specified by type	0,00E+00	Kg for reuse
	9,50E+02	Kg for recycling
	0,00E+00	Kg for energy recovery
Disposal specified by type	5,00E+01	Kg for final disposal
Assumptions for scenario transportation	Lorry 16-32 metric ton, EURO5 Consumption: 0,03kg/km Distance:50 km	

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

Module	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	ES	ND	ND	ND	ND	ND	ND	ND	ND	ND	GLO	GLO	GLO	GLO	GLO
Specific data	9,67%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ND: Not declared

Content information

Product components	Per 1 ton		
	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
Steel	1,00E+03	36,27%	0,00%
TOTAL	1,00E+03	36,27%	0,00%
Packaging materials	Weight, kg	Weight-% (versus the product)	
Second-hand pallets	1,73E-03	0,17%	
Strapped boards	2,73E-03	0,27%	
Spacer blocks	3,10E-03	0,31%	
Palebox	1,55E-03	0,15%	
Steel strapping	1,97E-03	0,20%	
Plastic (LDPE)	1,64E-04	0,02%	
Sling	5,70E-04	0,06%	
TOTAL	1,18E-02	1,18%	

Packaging: Depending on the product and the customer's specifications, the packaging will consist of strapping, wooden blocks and/or plastic film. None of the substances included in the Candidate List of Substances of Very High Concern for authorisation under the REACH Regulation are present in the products manufactured by ARATUBO, either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).

Environmental Information

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.

Usage of results from A1-A3 without considering the results of module C is not encouraged.

Potential environmental impact – mandatory indicators according to EN 15804 (reference package EF 3.1):

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2,56E+03	6,27E+01	9,68E+00	2,20E-01	3,13E-01	-1,03E+03
GWP-biogenic	kg CO ₂ eq.	9,78E+00	5,51E-03	1,72E-03	3,19E-03	8,39E-05	-9,59E-02
GWP-luluc	kg CO ₂ eq.	1,36E+00	5,45E-03	3,17E-03	1,34E-04	1,62E-04	-2,10E-01
GWP-total	kg CO ₂ eq.	2,56E+03	6,27E+01	9,68E+00	2,24E-01	3,13E-01	-1,03E+03
ODP	kg CFC 11 eq.	2,43E-05	9,60E-07	1,92E-07	6,18E-09	9,04E-09	-4,10E-06
AP	mol H ⁺ eq.	1,45E+01	5,66E-01	3,03E-02	2,24E-03	2,22E-03	-3,54E+00
EP-freshwater	kg P eq.	1,46E-01	2,20E-04	7,44E-05	8,33E-06	3,07E-06	-5,02E-02
EP-marine	kg N eq.	3,26E+00	2,62E-01	1,01E-02	4,88E-04	8,39E-04	-7,60E-01
EP-terrestrial	mol N eq.	3,57E+01	2,87E+00	1,11E-01	5,61E-03	9,22E-03	-9,04E+00
POCP	kg NMVOC eq.	1,16E+01	8,57E-01	4,74E-02	1,73E-03	3,30E-03	-3,12E+00
ADP-minerals&metals*	kg Sb eq.	1,27E-02	2,18E-05	3,09E-05	1,53E-05	4,86E-07	-4,91E-04
ADP-fossil*	MJ	2,69E+04	8,20E+02	1,36E+02	1,19E+01	7,67E+00	-1,06E+04
WDP	m ³ deprive	9,09E+02	2,40E+00	7,56E-01	1,36E+00	3,41E-01	-8,07E+01

* 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 and voluntary indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2,56E+03	6,27E+01	9,68E+00	2,24E-01	3,13E-01	-1,03E+03

Use of resources

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	2,70E+03	5,02E+00	2,30E+00	1,18E+01	7,11E-02	-2,20E+02
PERM	MJ	3,23E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,70E+03	5,02E+00	2,30E+00	1,18E+01	7,11E-02	-2,20E+02
PENRE	MJ	2,69E+04	8,20E+02	1,36E+02	1,19E+01	7,67E+00	-1,06E+04
PENRM	MJ.	3,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,69E+04	8,20E+02	1,36E+02	1,19E+01	7,67E+00	-1,06E+04
SM	kg	3,83E+02	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	2,45E+01	5,86E-02	1,86E-02	3,95E-02	7,98E-03	-1,95E+00

¹ The indicator 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.

Waste production

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7,74E+02	9,16E-01	1,96E-01	2,42E-02	8,52E-03	-9,59E+01
Non-hazardous waste disposed	kg	9,55E+03	1,25E+01	4,13E+00	6,17E-01	1,95E-01	-2,05E+03
Radioactive waste disposed	kg	1,78E-02	9,01E-05	4,33E-05	1,34E-04	1,19E-06	-2,94E-03

Output flows

Results per declared unit							
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	9,73E+01	0,00E+00	0,00E+00	9,50E+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

Information on biogenic carbon content

The weight of the packaging (wood), represents less than 5% of the total weight of the declared unit, so it is not mandatory to declare the biogenic carbon content.

Additional information

More information can be found in the following webpage:

<https://www.aratubo.com>

Or contact us via the following email address:

Iker Seoane iseoane@aratubo.com

Information related to Sector EPD

This is an individual EPD.

Differences versus previous versions

This is the first version of the EPD.

References

- General Programme Instruction of the International EPD®System. Version 4.0.
- ISO 14020:2000 Environmental labels and declarations-General principles.
- ISO 14025:2010 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures.
- ISO 14040:2006 Environmental Management-Life Cycle Assessment-Principles and framework.
- ISO 14044:2006 Environmental Management-Life Cycle Assessment-Requirements and guidelines.
- PCR 2019:14 Construction products (EN 15804: A2) version 1.3.4
- UNE-EN 15804:2012+A2:2020/AC:2021. Sustainability of construction works - Environmental product declarations.
- LCA REPORT ARATUBO, May 2025.
- Annex C - EPLCA - European Union:
(eplca.jrc.ec.europa.eu/permalink/Annex_C_V2.1_May2020.xlsx)

