Environmental Product Declaration

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

Genius Copper Wire Rod

from

Programme:	The International EPD® System, www.environdec.com
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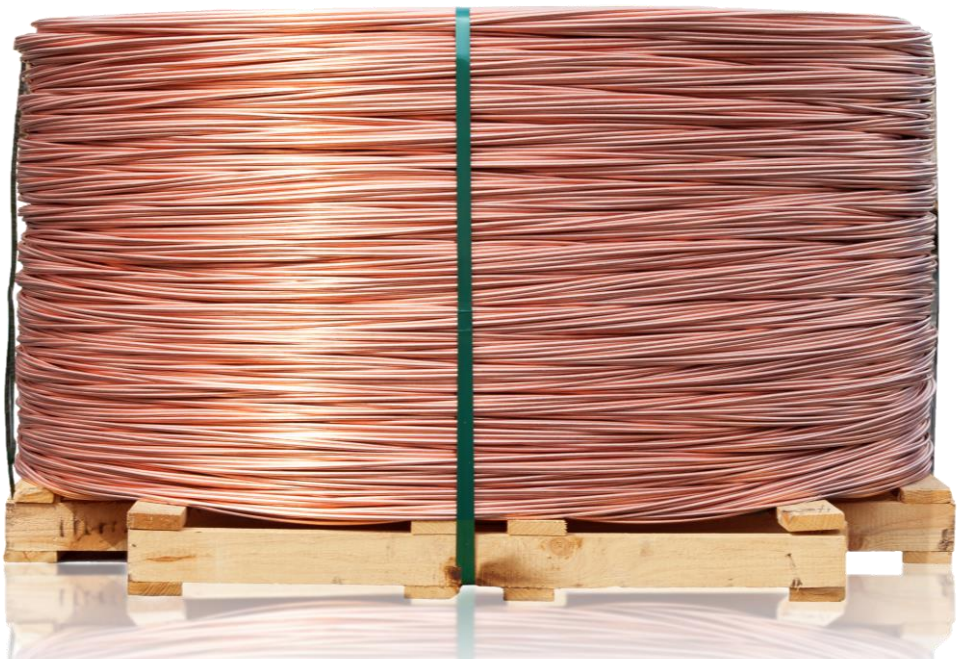
An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



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
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 and ISO standard ISO 21930 serve as the core Product Category Rules (PCR)
Product category rules (PCR): *PCR 2019:14 Construction Products, version 1.3.1*
PCR review was conducted by: *The Technical Committee of the International EPD® System. See* www.environdec.com/TC *for a list of members. The review panel may be contacted via the Secretariat* www.environdec.com/contact*.*
Life cycle assessment (LCA)
LCA accountability: Ana Rodríguez (Grup Carles), Raúl Antúnez (Grup Carles), Laura Clemente (Grup Carles).
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006 and ISO 21930:2017 ☒ EPD verification by accredited certification body Third-party verification: TECNALIA R&I CERTIFICACION, S.L. is an approved certification body accountable for the third-party verification The certification body is accredited by: *ENAC nº125/C-PR283 accreditation*
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 from different programs may not be comparable.

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.

1. Company information

Owner of the EPD: LA FARGA YOURCOPPERSOLUTIONS S.A.
Colònia Lacambra S/N, Crta, C-17z, Km. 73.5,
08508 Les Masies de Voltregà (Barcelona)
T: +34 93 850 41 00; www.lafarga.es

Contact: Xavier Rovira
xavier.rovira@lafarga.es

Description of the organisation: La Farga is a metallurgy-family business that produces semi-finished products of copper and its alloys for sectors such as energy, automotive, telecommunications, construction, metal packaging and the railway industry, among others.

Sustainability is the backbone element of our corporate strategy that allows us to create value and generate a positive impact on society. And we are a company with a strong commitment to our purpose: "Maximize the use of recycled copper and the development of the technologies that make it possible".

World reference in technology and recycling process with the first patent in 1986. We offer circular copper solutions with the lowest carbon footprint.

We generate long-term value, permanently involving ourselves in continuous improvement, and innovation to gain sustainability.

Product-related or management system-related certifications:

- Organisation certifications:

Company certified in accordance with the requirements of ISO 9001, ISO 14001, ISO 45001 and ISO 50001.

Social, environmental, and economic aspects are integrated transversely throughout La Farga. Balancing business goals with social and environmental objectives to create value is the root of the strategy to work towards the sustainability of the company and its long-term stability.

- Product certifications:

Product certified in accordance with the requirements of CE marking, EN 1977 and ASTM B-49.

Name and location of production site: Colònia Lacambra S/N, Crta, C-17z, Km. 73.5, 08508 Les Masies de Voltregà, Barcelona, Spain.

2. Product information

Product name and description

Name

Genius copper wire rod.

Identification

Cu-FRHC Recycled Copper wire rod.

Brief description

High conductivity copper wire rod suitable for fabrication into wire by cold drawing, principally for the manufacture of electrical conductors. Its production process is optimized in terms of performance, obtaining a rod of maximum purity, quality and with technical features required for the market.

Intermediate solid wrought product, of circular uniform cross-section its whole length. The product is supplied in coils along. The main scrap origins are: copper recovered in origin (foundries, refineries and finished or semi-finished products), industrial processes (copper scrap recovery and obsolete final products) and obsolete and end-of-life materials (construction, coins, power cables, data cables, special cables, automotive sector, train infrastructures, airplanes and ships). A high copper grade (92-96%) scrap is selected in LaFarga to produce the Genius copper wire rod.

Product specifications

Technical characteristics	Cu-FRHC Recycled Copper wire rod
Chemical composition	1. Cu+Ag > 99,90% 2. ∑ impurities ≤ 600 ppm 3. Oxygen ≤ 400 ppm
Elongation	A200 ≥30%
Electrical properties	1. Conductivity ≥ 100,8% IACS 2. Volume resistivity ≤ 0,017104 μΩ*m
Annealability	Not required

This product can be grouped in the UN CPC code 415 – Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys.

Genius copper wire rod may be delivered in the following formats:

Nominal diameter (mm)	Linear density (Kg/Km)
8	446,86
10	698,22

Geographical scope Global

Product composition

The product is made of 100% copper scrap.

For more information visit:
https://www.lafarga.es/en/products-and-markets/copper-rod

Standard reference

Standard	Reference
EN 1977	CW005A
ASTM B-49	C11020, C11025

3. LCA information

Declared unit: 1kg of Genius copper wire rod

Data collection period: 2022

Time representativeness: Where possible the most current data was used. For generic data, the limit has been stablished to 10 years and for specific data, a maximum of 5 years was allowed. The time period over which inputs and outputs from the system will be accounted for is 100 years.

Database(s) and LCA software used: Generic data is obtained from GaBi software database. This database is based on the International Reference Life Cycle Data System (ILCD), as required by EN 15804:2012+A2:2019/AC:2021.

- GaBi Professional v. 10.6.2.9
- GaBi database: 2022.2

System diagram: see figure 2.

Description of system boundaries: cradle to gate with modules C1-C4 and module D (A1-A3 + C + D). This includes the following life cycle stages:

- Modules A1-A3: Product stage
  - A1: Raw materials supply
  - A2: TransportA3: Manufacturing
- Modules C1-C4: End of life stage
  - C1: Deconstruction, demolition
  - C2: Transport
  - C3: Waste processing
  - C4: Disposal
- Module D: Benefits and loads beyond the system boundary
  - D: Reuse, recovery, recycling, potential

Excluded lifecycle stages: The following processes are excluded from the analysis, according to the PCR selected:

- Inventory flows from infrastructure, construction, production equipment and tools.
- Inventory flows from personnel-related processes, such as transportation to and from work.

More information:
Company website: https://www.lafarga.es

The **rules for allocation** employed in this study are the ones stated in ISO 14044:2006, 4.3.4., and include the specifications for construction products detailed in EN 15804:2012+A2:2019/AC:2021. Allocation has been avoided as far as possible by dividing the unit process to be allocated into different sub-processes that can be allocated to each one of the co-products and collecting specific data on those sub-processes. In case it has not been possible, the allocation has been done taking into account the following considerations:

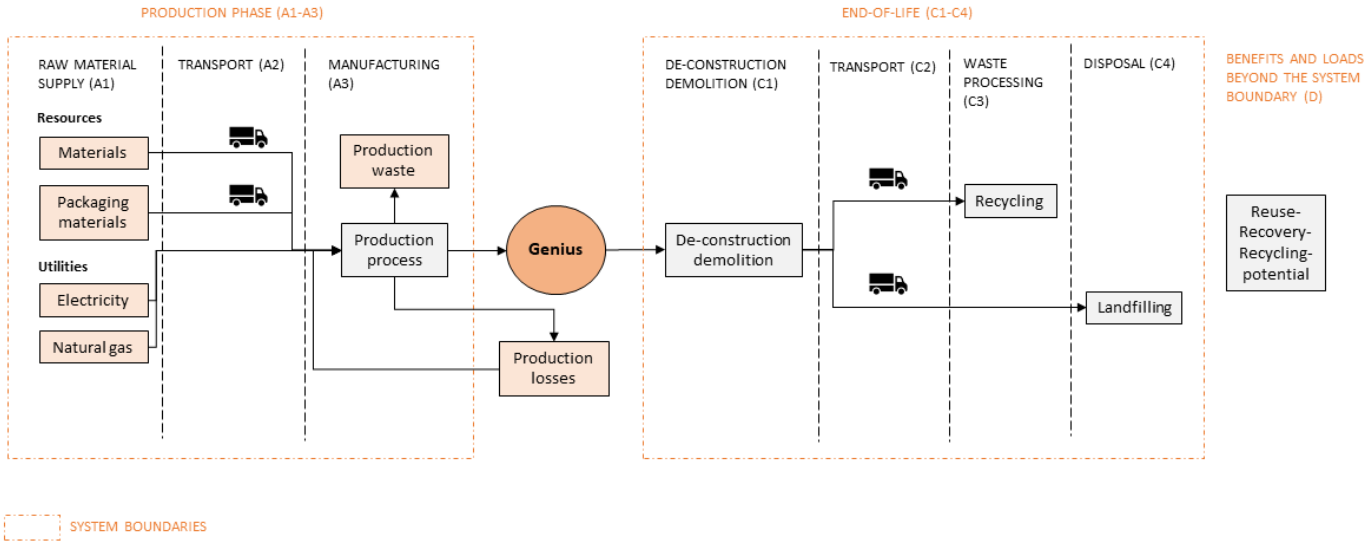
- Raw materials and energy consumption and waste generated are allocated between Genius and other products produced at the same production line considering the total mass produced;
- Economic allocation have been applied to allocate part of the production environmental impacts to the scrap (co-product) generated;
- For the scrap entering the system, no environmental impacts have been allocated to post-consumer scrap whereas the environmental impacts of post-industrial (pre-consumer) scrap have been estimated using internal data.

A mass **cut-off rule** has been applied for the plastic of packaging (<1% of raw materials consumed). No other specific cut-off rules have been applied.

Figure 1. Modules declared

	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	Global	Global	ES	ND	ND	ND	ND	ND	ND	ND	ND	ND	Global	Global	Global	Global	Global
Specific data used	>90% specific data is used in the EPD					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0% (results are for one product)					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0% (one manufacturing site)					-	-	-	-	-	-	-	-	-	-	-	-

Figure 2. Flow diagram of the system under study



A1-A3 PRODUCT STAGE

- **A1-A3. Raw materials supply / Transport / Manufacturing:** this module includes:
    - The extraction and processing of raw materials and the energy that is produced prior to the manufacturing process under study.
    - The transport of the different raw materials from the manufacturer to the factory. The distance and type of concrete truck for each raw material has been introduced.
    - The consumption of energy and fuels used during the manufacturing process, as well as the transport and management of the factory-produced waste.

C1-C4 END OF LIFE STAGE

- **C1-C4. Deconstruction/Transport / Waste processing / Disposal**:
    - Energy and resources used in deconstruction and demolition. C1 module does not represent a significant energy or resource consumption. Therefore, no deconstruction or demolition impact is considered.
    - The transport of each type of waste to its processing location. Using a 7.5-ton truck (GLO: Truck, 1980s, 7.5 t - 12t gross weight / 5t payload capacity Sphera <u-so>) to cover a distance of 50 km to the waste management facility.
    - Treatment and final disposal of each waste. 95% of the copper is recycled and 5% is not recycled and send to a landfill. The data source for determining the recycling percentage and the disposal to the landfill is the PEF Guidance document, Annex _C_V2.1_May2020.

Processes	Unit (per declared unit)	C1-C4
Collection process specified by type	[Kg collected separately]	0,00
	[Kg collected with mixed construction waste]	1,00
Recovery system specified by type	[Kg for re-use]	0,00
	[Kg for recycling]	0,95
	[Kg for energy recovery]	0,00
Disposal specified by type	[Kg product or material for final deposition]	0,05
Waste transportation	[km]	50,00

D BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY

In this life cycle analysis study, Module D is incorporated to assess the waste exiting the product system.

The formula used to calculate the net flow is recommended in PCR 2019:14. Using the variables from Annex D of EN 15804, the net flow can be described as the difference between M MR in and M MR out, taking into account the material yield (designated here as Y). In other words, the formula is:

Net Flow = (M MR in - M MR out) × Y where 1 * (0.95 - 1) = -0.05 ≈ 0. The conclusion of a net flow of 0 indicates that the system does not displace virgin material because, despite its high recyclability (95%), it is made of 100% recycled material.

4. Content declaration

Product

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Copper Scrap	1	90%	0%
TOTAL	**1**	**90%**	**0%**
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Pallet	0,006	0,60%	0,003
TOTAL	**0,006**	**0,6%**	**0,003**

The product is made from 100% recycled copper scrap from La Farga's own clients who acquire the product subject to this EPD. 90% is post-consumer copper scrap (obtained from phases B and C of the life cycle) and 10% is considered pre-consumer, since by definition it is what is obtained from modules A1-A3.

None of the final product components are included in the “Candidate list of substances of very high concern for authorisation” of the REACH regulation.

Packaging

Distribution packaging (inside the manufacturing plant):
The Genius copper wire rod produced at the foundry is stored using wooden pallets before the expedition.
A mass cut-off rule has been applied for the plastic of packaging (film and strapping) because this is <1% of raw materials consumed.

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product:
The copper scrap used for the manufacture of this product is a post-consumer part (90%) generated in modules B and C as industrial processes (recovery of copper scrap and obsolete end products) and obsolete and end-of-life materials (construction, coins, power cables, data cables, special cables, etc.). And another part of pre-consumer scrap (10%), originating from A1-A3 modules, such as copper recovered at La Farga's clients production site.
According to PCR 2019:14 Construction products version 1.3.1, scrap entering a product's system will carry an environmental load if it originated from modules A1-A3 of a previous product system, and the calculation of this load will be based on the co-product allocation.

Electric mix. kg CO_2 eq./kWh

- ES: Electricity from wind power: 0,07704 kg CO2 eq./kWh.

5. Results of the environmental performance indicators

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.
It is hereby disclosed that the results presented in modules A1-A3 of this Environmental Product Declaration (EPD) are intended to be interpreted comprehensively and in conjunction with the results from module C. The isolated use of A1-A3 data without simultaneous consideration of module C results is strongly discouraged. Failure to integrate these modules may impact the accuracy and completeness of the environmental impact associated with the product. A holistic assessment that incorporates all modules provided in the EPD is highly recommended for an accurate understanding of the product's life cycle.

Mandatory impact category indicators according to EN 15804

Potential environmental impact

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq.	2,90E-01	0,00E+00	2,43E-02	0,00E+00	7,56E-04	0,00E+00
GWP-biogenic	kg CO2 eq.	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-luluc	kg CO2 eq.	9,62E-05	0,00E+00	1,66E-04	0,00E+00	2,22E-06	0,00E+00
GWP-total	kg CO2 eq.	2,87E-01	0,00E+00	2,42E-02	0,00E+00	7,36E-04	0,00E+00
ODP	kg CFC 11 eq.	4,88E-14	0,00E+00	2,41E-15	0,00E+00	2,94E-18	0,00E+00
AP	mol H+ eq.	4,00E-04	0,00E+00	3,73E-04	0,00E+00	5,39E-06	0,00E+00
EP-freshwater	kg P eq.	2,27E-07	0,00E+00	8,78E-08	0,00E+00	1,27E-09	0,00E+00
EP-marine	kg N eq.	1,41E-04	0,00E+00	1,90E-04	0,00E+00	1,40E-06	0,00E+00
EP-terrestrial	mol N eq.	1,55E-03	0,00E+00	2,10E-03	0,00E+00	1,54E-05	0,00E+00
POCP	kg NMVOC eq.	4,14E-04	0,00E+00	3,57E-04	0,00E+00	4,24E-06	0,00E+00
ADP-minerals&metals*(2)	kg Sb eq.	8,88E-07	0,00E+00	2,48E-09	0,00E+00	7,13E-11	0,00E+00
ADP-fossil*(2)	MJ	4,64E+00	0,00E+00	3,23E-01	0,00E+00	1,00E-02	0,00E+00
WDP*(2)	m3	4,50E-02	0,00E+00	2,75E-04	0,00E+00	8,11E-05	0,00E+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						

*(2) 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.

Additional mandatory and voluntary impact category indicators

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG*(3)	kg CO2 eq.	3,00E-01	0,00E+00	2,46E-02	0,00E+00	7,61E-04	0,00E+00

*(3) Disclaimer: This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

Results per declared unit							
Optional Indicators	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Particulate matter (PM)	[Disease incidences]	9,70E-09	0,00E+00	2,94E-09	0,00E+00	6,69E-11	0,00E+00
Ionising radiation, human health (IRP)*(1)	[kBq U235 eq.]	2,48E-03	0,00E+00	9,08E-05	0,00E+00	1,10E-05	0,00E+00
Ecotoxicity, freshwater (ETP-fw)*(2)	[CTUe]	3,39E-01	0,00E+00	2,29E-01	0,00E+00	5,72E-03	0,00E+00
Human toxicity, cancer (HTP-c)*(2)	[CTUh]	6,64E-11	0,00E+00	4,80E-12	0,00E+00	8,43E-13	0,00E+00
Human toxicity, non-cancer (HTP-nc)*(2)	[CTUh]	1,89E-09	0,00E+00	3,26E-10	0,00E+00	9,30E-11	0,00E+00
Land Use [Pt] *(2)	[Pt]	5,20E-01	0,00E+00	1,37E-01	0,00E+00	2,03E-03	0,00E+00

*(1) Disclaimer: The impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.
*(2) Disclaimer: the results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Resource use indicators

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	1,11E+00	0,00E+00	2,24E-02	0,00E+00	1,35E-03	0,00E+00
PERM	MJ	1,72E+01	0,00E+00	3,45E-01	0,00E+00	2,09E-02	0,00E+00
PERT	MJ	1,83E+01	0,00E+00	3,68E-01	0,00E+00	2,22E-02	0,00E+00
PENRE	MJ	4,64E+00	0,00E+00	3,24E-01	0,00E+00	1,00E-02	0,00E+00
PENRM	MJ	1,52E+02	0,00E+00	1,06E+01	0,00E+00	3,29E-01	0,00E+00
PENRT	MJ	1,57E+02	0,00E+00	1,09E+01	0,00E+00	3,39E-01	0,00E+00
SM	kg	1,04E+00	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	m3	1,09E-03	0,00E+00	2,58E-05	0,00E+00	2,48E-06	0,00E+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

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	7,84E-10	0,00E+00	1,71E-12	0,00E+00	1,07E-12	0,00E+00
Non-hazardous waste disposed	kg	1,27E-02	0,00E+00	5,28E-05	0,00E+00	5,00E-02	0,00E+00
Radioactive waste disposed	kg	1,77E-05	0,00E+00	6,01E-07	0,00E+00	1,05E-07	0,00E+00

Output flow indicators

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0,00	0,00	0,00	0,00	0,00	0,00
Material for recycling	kg	0,006	0,00	0,00	0,95	0,00	0,00
Materials for energy recovery	kg	0,00	0,00	0,00	0,00	0,00	0,00
Exported energy, electricity	MJ	0,00	0,00	0,00	0,00	0,00	0,00
Exported energy, thermal	MJ	0,00	0,00	0,00	0,00	0,00	0,00

Other environmental indicators

Biogenic carbon content

Biogenic carbon content	Unit	A1 - A3
Biogenic carbon content in product	[Kg C]	0,00E+00
Biogenic carbon content in accompanying packaging	[Kg C]	2,98E-03

*1 kg biogenic carbon is equivalent to 44/12 kg CO2.

In the Life Cycle Assessment (LCA) calculation process, specific attention has been given to adhere to the guidelines outlined in Annex 2 of the Product Category Rules (PCR), providing comprehensive guidance on calculating the Global Warming Potential (GWP) associated with biogenic carbon. To handle scenarios where biogenic CO2 emissions do not arise from the burning or degradation of the product, a meticulous approach has been adopted. Emissions and uptakes of biogenic carbon have been balanced within each individual module by setting emissions to zero for flows that do not end up as content in the product or packaging. Regarding the specific case of biogenic carbon associated with packaging (pallet) in this study, since module A5 (Installation) is not included in the scope, the “balancing-out” of the biogenic CO2 of packaging has been accounted for in module A3 as a production waste. This ensures that the overall biogenic carbon mass balance aligns with the modular approach, as recommended by EN 15804 and the PCR.

6. Additional mandatory impact category indicators to comply with ISO 21930

Unlike EN 15804 standard, ISO 21930 standard does not consider the environmental loads of pre-consumer scrap, as can be verified by comparing the results obtained, in modules A1-A3, for both standards.

Mandatory impact categories and default characterization methods

To ensure compliance with ISO 21930 requirements, the following mandatory impact categories and default characterization methods are provided for this Environmental Product Declaration (EPD).

In the first table, the default international characterization methods are presented:

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	D
Global warming potencial (GWP 100)*(4)	kg CO_2 eq.	2,80E-01	0,00E+00	2,78E-09	0,00E+00	2,64E-10	0,00E+00
Ozone depletion potential (ODP)*(5)	kg CFC 11 eq.	4,88E-14	0,00E+00	2,41E-15	0,00E+00	2,94E-18	0,00E+00
Eutrophication potential (EP)*(6)	kg PO4 eq.	6,59E-05	0,00E+00	6,53E-05	0,00E+00	4,91E-07	0,00E+00
Acidification potential (AP)*(7)	kg SO2 eq.	3,07E-04	0,00E+00	2,52E-04	0,00E+00	4,32E-06	0,00E+00
Photochemical oxidant creation potential (POCP)*(8)	kg C2H2 eq.	3,33E-05	0,00E+00	-1,20E-04	0,00E+00	3,29E-07	0,00E+00

*(4) **Default international characterization method used: IPCC** [IPCC. 2014. Climate Change 2013. The Physical Science Basis. Cambridge University Press. http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm]
*(5) **Default international characterization method used: WMO** [WMO. 1999. Scientific Assessment of Ozone Depletion: 1998, World Meteorological Organization Global Ozone Research and Monitoring Project – Report No. 44, WMO, Geneva]
*(6) **Default international characterization method used: Heijungs et al.** [HEIJUNGS R., GUINÉE J.B., HUPPES G., LANKREIJER R.M., UDO DE HAES H.A., WEGENER SLEESWIJK A. Environmental Life Cycle Assessment of Products: Guide and backgrounds. CML. Leiden University, Leiden, 1992]
*(7) **Default international characterization method used: Hauschild and Wenzel** [HAUSCHILD M.Z., & WENZEL H. Environmental Assessment of Products. Springer, US, Vol. 2, 1998]
*(8) **Default international characterization method used: Goedkoop et al.** [JENKIN M.E., & HAYMAN G.D. Photochemical ozone creation potentials for oxygenated volatile organic compounds: sensitivity to variations in kinetic and mechanistic parameters. Atmospheric Environment. 1999, 33 (8) pp. 1275-1293]

In the second table, the default North American market characterization methods are presented: TRACI 2.1:

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP	kg CO_2 eq.	2,90E-01	0,00E+00	2,39E-02	0,00E+00	7,41E-04	0,00E+00
ODP	kg CFC 11 eq.	1,83E-15	0,00E+00	5,01E-17	0,00E+00	3,92E-18	0,00E+00
EP	kg N eq.	3,42E-05	0,00E+00	2,42E-05	0,00E+00	2,00E-07	0,00E+00
AP	kg SO2 eq.	3,62E-04	0,00E+00	3,50E-04	0,00E+00	4,63E-06	0,00E+00
POCP	kg O3 eq.	8,65E-03	0,00E+00	8,06E-03	0,00E+00	8,87E-05	0,00E+00

In the third table, the results of the default European market characterization method are presented, as provided in (EN 15804 A2):

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP	kg CO_2 eq.	2,87E-01	0,00E+00	2,42E-02	0,00E+00	7,36E-04	0,00E+00
ODP	kg CFC 11 eq.	4,88E-14	0,00E+00	2,41E-15	0,00E+00	2,94E-18	0,00E+00
EP	kg P eq.	2,27E-07	0,00E+00	8,78E-08	0,00E+00	1,27E-09	0,00E+00
AP	Mole of H+ eq.	4,00E-04	0,00E+00	3,73E-04	0,00E+00	5,39E-06	0,00E+00
POCP	kg NMVOC eq.	4,14E-04	0,00E+00	3,57E-04	0,00E+00	4,24E-06	0,00E+00

Additional impact categories indicators

In this section, only the additional indicators not covered by EN 15804 standard are declared. In this context, the only additional ones are radioactive waste, categorized into two sub-indicators:

ISO 21930 EPD Indicators - Output flows and waste categories

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
High-level radioactive waste, conditioned, to final repository (HLRW)	[kg]	1,60E-08	0,00E+00	5,10E-10	0,00E+00	1,12E-10	0,00E+00
Intermediate- and low-level radioactive waste, conditioned, to final repository (ILLRW)	[kg]	1,77E-05	0,00E+00	6,01E-07	0,00E+00	1,05E-07	0,00E+00

Differences versus previous versions

This updated EPD supersedes the initial version published.

The recalculation of this EPD was necessitated by operational changes at the production facility, wherein certain machinery was replaced to enhance process efficiency.
Notably, the recalculation employs different software; the initial EPD was generated using SimaPro and the Ecoinvent database, while the current version utilizes the GABI software and the Sphera database.
Also, an update from PCR 2012:01 to PCR 2019:14 v1.3.1 has been done.

Key Changes:

- Process efficiency improvements due to the replacement of specific machinery.
- Transition from SimaPro and the Ecoinvent database to GABI and the Sphera database.
- Update PCR used from PCR 2012:01 to PCR 2019:14 v1.3.1.

The revision reflecting the latest adjustments made to accurately represent the environmental performance of the product in light of the operational, software and PCR changes.

References

General Programme Instructions of the International EPD® System. Version 4.0.

UNE-EN 15804:2012+A2:2019/AC:2021. Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.

PCR 2019:14. Construction products (EN 15804:A2). (v 1.3.1)

CNMC. 2020. National Commission of Markets and Competition. 2020. Agreement on statistical information of the system of guarantees of origin related to the energy produced in the year 2020.

ISO 14025: 2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures

ISO 21930:2017, Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.

ISO 14040: 2006 Environmental management - Life cycle assessment - Principles and framework

ISO 14044: 2006 Environmental management - Life cycle assessment - Requirements and guidelines

EN 1977. Copper and copper alloys. Copper wire rod.

IPCC. 2014. Climate Change 2013. The Physical Science Basis. Cambridge University Press. http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

WMO. 1999. Scientific Assessment of Ozone Depletion: 1998, World Meteorological Organization Global Ozone Research and Monitoring Project – Report No. 44, WMO, Geneva

HEIJUNGS R., GUINÉE J.B., HUPPES G., LANKREIJER R.M., UDO DE HAES H.A., WEGENER SLEESWIJK A. Environmental Life Cycle Assessment of Products: Guide and backgrounds. CML. Leiden University, Leiden, 1992

HAUSCHILD M.Z., & WENZEL H. Environmental Assessment of Products. Springer, US, Vol. 2, 1998

JENKIN M.E., & HAYMAN G.D. Photochemical ozone creation potentials for oxygenated volatile organic compounds: sensitivity to variations in kinetic and mechanistic parameters. Atmospheric Environment. 1999, 33 (8) pp. 1275-1293

VERIFICATION STATEMENT CERTIFICATE

CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

Certificate No. / Certificado nº: EPD04302

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:*

LA FARGA YOURCOPPERSOLUTIONS, S.A.
Ctra. C-17z km 63,5, Colonia Lacambra, s/n,
08509 LES MASIES DE VOLTREGA (Barcelona) - SPAIN

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

Genius copper wire rod
Alambrón de cobre Genius

with registration number **S-P-02032** in the International EPD® System *(www.environdec.com).*
*con número de registro **S-P-02032** en el Sistema International 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 1.3.1**
- **UN CPC 415 Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys**

Issued date / *Fecha de emisión:*	30/10/2020
Update date / *Fecha de actualización:*	19/12/2023
Valid until / *Válido hasta:*	15/12/2028
Serial Nº / *Nº Serie:*	EPD0430201-E

Carlos Nazabal Alsua
Manager

CERTIFICACIÓN ISO 17065 Nº125 / C-PR283

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