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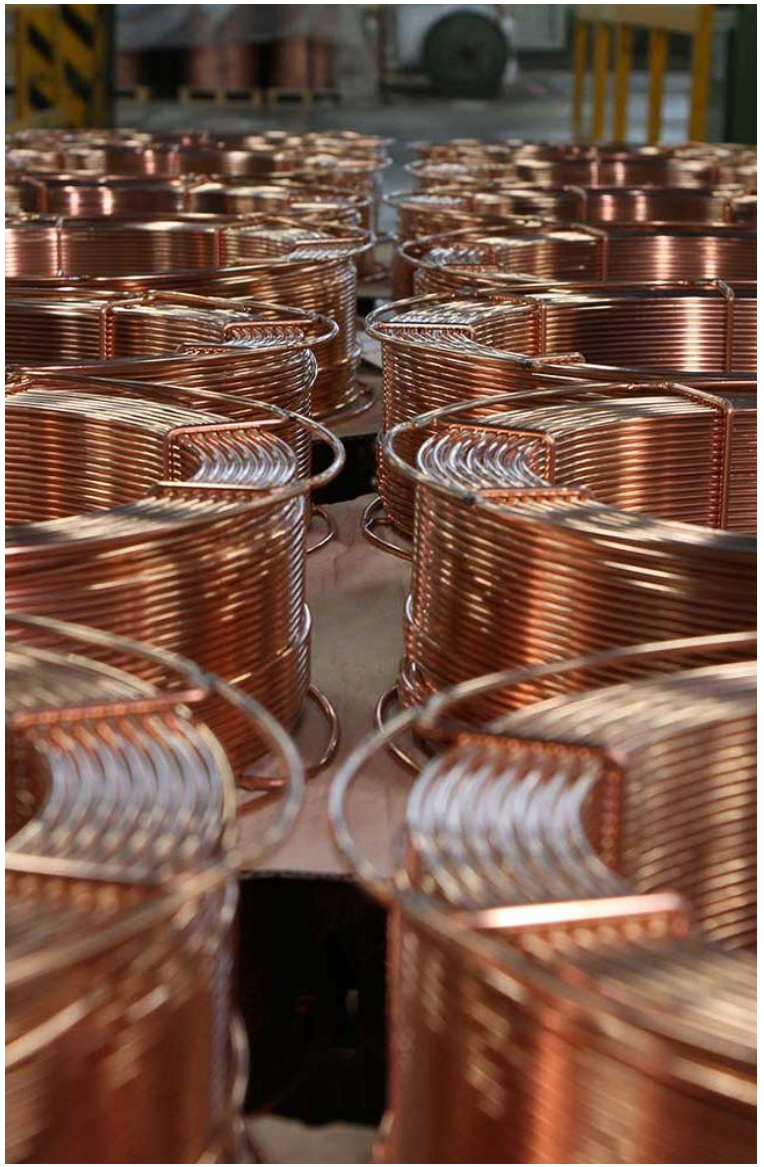
Environmental Product Declaration

Conforme a ISO 14025 e EN15804+A2:2019

SAW WELDING WIRE



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S.I.A.T. S.p.A. – Divisione PITTARC
Via della Cartiera, 3
Osoppo (UD), Italia

The EPD has been independently verified according to ISO 14025 by an accredited third-party verifier. The verification complies with the requirements of EN 15804+A2:2019.

General information

EPD owner:
S.I.A.T. S.p.A
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Independent evaluation by:
ICMQ S.p.A., via Gaetano De Castillia n° 10 – 20124 Milano, Italia. Accredited by ACCREDIA.

Plant location:
S.I.A.T. S.p.A. – Divisione PITTARC
Via della Cartiera, 3
Osoppo (UD), Italia

Environmental declarations published within the same product category, but belonging to different programs, might not be comparable. Specifically, EPDs regarding products for the building sector may not be comparable if not compliant with the EN 15804 standard. The EPD Owner releases EPDItaly from any non-compliance with environmental legislation. The declaration holder shall be responsible for the information and supporting evidence provided. EPDItaly declines any responsibility regarding the information, data, and results supplied by the EPD Owner for the life cycle assessment.

Reference documents: This declaration was drafted following EDPItaly's General Programme Instruction, available on www.epditaly.it.

EPDItaly Regulation rev.7.1 (05/09/2025)

PCR ICMQ-001/15 rev 4 (issued 10/11/2025)

LCA report: "Studio di Life Cycle Assessment di fili ramati e fili per saldatura SAW, GMAW", Rev. 2 del 12/06/2026

CPC CODE: 4124

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INDEPENDENT VERIFICATION OF DECLARATION AND DATA CARRIED OUT ACCORDING TO ISO 14025	
☐ EPD Process certification (Internal)	☒ EPD Verification (External)

Company profile

S.I.A.T. S.p.A. operates three production sites:
- S.I.A.T. Industrial Drawn Products Division (S.I.A.T.-Trafilati) – Gemona del Friuli (UD)
- S.I.A.T. PITTARC Division (S.I.A.T.-PITTARC) – Osoppo (UD)
- S.I.A.T. S.I.A.T. 3 Division – San Tomaso di Majano (UD)

S.I.A.T. S.p.A. – Società Italiana Acciai Trafilati is a leading manufacturer of drawn wire, cold-rolled flat steel products made from low- and medium-carbon wire rod, and welding wires for both gas-shielded and submerged arc welding applications.

S.I.A.T. S.p.A. began its operations in the early 1970s, establishing itself as a benchmark in the drawn steel products market. In the cold-rolled flat steel sector, S.I.A.T. S.p.A. holds an undisputed international leadership position and ranks among the leading European manufacturers.

In 1972, S.I.A.T. S.p.A. became part of the Pittini Group.

Filarc S.p.A. began production activities in 1974 and was acquired by the Pittini Group in 1982. Following several relocations, it was transferred to S.I.A.T. S.p.A. in 1995 and became S.I.A.T. S.p.A. – PITTARC Division.

PITTARC is the brand name of the welding wires manufactured by S.I.A.T., a company within the Pittini Group. PITTARC welding wires are produced through a carefully controlled manufacturing process at every stage, from wire rod production to the finished product.

A recently incorporated addition to S.I.A.T. S.p.A. is a new production facility located in the Majano industrial area. This facility, formerly the lattice girder division of the Pittini Group, underwent a complete refurbishment during 2023 and is intended to house eight drawn steel production lines as well as the new chemical pickling plant. The addition of this new facility is strategically important for accommodating new investments, increasing drawn wire production capacity (doubling current output), and diversifying the product portfolio to enter new markets.

The product: SAW welding wire

DECLARED UNIT: 1.000 kg of SAW welding wire

S.I.A.T. S.p.A. – PITTARC Division has been operating in the market for more than 40 years, manufacturing welding wires for gas-shielded welding and submerged arc welding (SAW), marketed under the PITTARC brand.

The SAW welding wires produced by PITTARC are used in the fabrication of steel structures for the construction industry and have contributed to the realization of major civil engineering and heavy fabrication projects worldwide, including bridges, structural frameworks for industrial buildings, and infrastructure.

Their quality is internationally recognized thanks to the experience and expertise of the customer service team, combined with the high performance of the submerged arc welding wires.

The low-alloy welding wires feature very low levels of impurities and gases, ensuring welded joints with excellent mechanical properties and outstanding toughness at low temperatures.

Available packaging:25 kg, 27 kg, 90 kg and 100 kg spools; coils from 450 kg to 1,200 kg; metal baskets/spools from 300 kg to 400 kg; drums from 300 kg to 1,000 kg.

*The product does not contain substances included in the "**Candidate list of substances of very high concern (SVHC)**".*

Campo di applicazione e tipo di EPD

Moduli: I confini del sistema includono i moduli obbligatori A1, A2, A3, C1, C2, C3, C4 e D previsti dallo standard EN 15804 secondo un'applicazione di tipo "From cradle to gate with modules C1-C4 and D".

Tipo di EPD: Questa dichiarazione è specifica per i fili SAW in diversi diametri, realizzati presso lo stabilimento di Osoppo (UD).

Localizzazione geografica: Le prestazioni sono state calcolate in riferimento all'impianto di Osoppo. Il mercato di riferimento è globale.

Database: Ecoinvent 3.11 cut-off by classification

Software: SimaPro 10.2.2

Anno di riferimento: 2024

Electricity from grid (GWP 100): 0,683 kg CO2e/kWh

FASE DI PRODUZIONE			FASE DI COSTRU-ZIONE		FASE DI UTILIZZO							FASE DI FINE VITA				BENEFICI E CARICHI OLTRE IL CONFINE DEL SISTEMA
Approvvigionamento delle materie prime	Trasporto	Fabbricazione	Trasporto al luogo di utilizzo	Messa in opera	Utilizzo	Manutenzione	Riparazione	Sostituzione	Ristrutturazione	Consumo di energia durante l'utilizzo	Consumo di acqua durante l'utilizzo	De-costruzione/Demolizione	Trasporto al luogo di trattamento	Trattamento rifiuto	Smaltimento	Riutilizzo/recupero/Riciclo
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
✓	✓	✓	MND	MND	MND	MND	MND	MND	MND	MND	MND	✓	✓	✓	✓	✓

Scope and EPD type

Modules: The system modules include the compulsory modules A1, A2, A3, C1, C2, C3, C4 and D as per EN 15804 standard, following a “from cradle to gate with modules C1-C4 and D” approach.

EPD type: Specific for the SAW welding wires in different diameters produced in Osoppo (UD).

Geographical location: Performances were calculated considering the plant of Osoppo. The reference market is european.

Database: Ecoinvent 3.11 cut-off by classification

Software: SimaPro 10.2.2

Reference year: 2024

Electricity from grid (GWP 100): 0,683 kg CO2e/kWh

PRODUCTION STAGE			CONSTRUCTION PROCESS		USE							END OF LIFE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
Raw material supply	Transport	Manufacturing	Transport	Construction/intallation	USe	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-commissioning/Demolition	Transport	Waste processing	Disposal	Reuse/Recovery/Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
✓	✓	✓	MND	MND	MND	MND	MND	MND	MND	MND	MND	✓	✓	✓	✓	✓

Environmental performance: SAW welding wire

Data referring to 1.000 kg of SAW welding wire

ENVIRONMENTAL IMPACT PARAMETERS	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
GWP - Total	kg CO2 eq	**1,27E+3**	MND	7,05E+0	1,87E+1	8,50E-1	1,25E+0	8,77E+1
GWP- Fossil	kg CO2 eq	**1,26E+3**	MND	7,05E+0	1,87E+1	8,46E-1	1,25E+0	8,76E+1
GWP - Biogenic	kg CO2 eq	**1,42E+0**	MND	7,83E-4	3,99E-3	1,72E-3	3,07E-4	2,32E-2
GWP – LU&T	kg CO2 eq	**2,53E+0**	MND	7,32E-4	6,34E-3	2,19E-3	4,97E-4	1,40E-2
Ozone Depletion	kg CFC11 eq	**8,07E-6**	MND	2,14E-9	9,29E-9	1,98E-9	6,07E-10	1,56E-7
Acidification	mol H+ eq	**2,94E+0**	MND	6,30E-2	4,01E-2	5,10E-3	4,20E-3	3,57E-1
EP - Freshwater	kg P eq	**8,44E-2**	MND	2,46E-5	1,39E-4	7,45E-5	1,00E-5	4,89E-3
EP - Marine	kg N eq	**8,27E-1**	MND	2,93E-2	9,42E-3	8,80E-4	1,31E-3	7,54E-2
EP - Terrestrial	mol N eq	**6,26E+0**	MND	3,21E-1	1,04E-1	9,92E-3	1,44E-2	8,83E-1
Photochemical Ozone Formation	kg NMVOC eq	**2,92E+0**	MND	9,60E-2	6,36E-2	3,13E-3	6,49E-3	2,98E-1
ADP - Mineral And Metals[2]	kg Sb eq	**9,13E-3**	MND	2,51E-6	6,41E-5	1,04E-5	3,66E-6	8,04E-4
ADP – Fossil[2]	MJ	**7,68E+3**	MND	3,57E+0	2,12E+1	1,26E+1	1,52E+0	6,71E+2
WDP[2]	m3 depriv.	**6,73E+2**	MND	1,96E-1	1,04E+0	1,85E-1	3,86E-1	9,70E+0

MND=Module Not Declared

2 The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: SAW welding wire

Data referring to 1.000 kg of SAW welding wire

ENVIRONMENTAL IMPACT PARAMETERS	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
PM	disease inc.	**3,64E-5**	MND	1,80E-6	1,39E-6	3,59E-8	1,20E-7	7,87E-6
IRP[1]	kBq U-235 eq	**6,86E+1**	MND	1,53E-2	1,16E-1	1,47E-1	7,58E-3	-8,37E-1
ETP-fw[2]	CTUe	**2,88E+3**	MND	4,97E+0	3,56E+1	2,61E+0	2,33E+0	5,65E+2
HTP-c[2]	CTUh	**7,19E-6**	MND	7,16E-10	3,12E-9	2,73E-10	2,12E-10	3,06E-8
HTP-nc[2]	CTUh	**1,38E-5**	MND	1,13E-8	1,67E-7	1,21E-8	9,60E-9	6,63E-7
SQP[2]	Pt	**5,17E+3**	MND	6,09E+0	1,59E+2	1,83E+1	2,30E+1	2,76E+2

MND=Module Not Declared

[1] *This 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*
[2] *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.*
The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: SAW welding wire

Data referring to 1.000 kg of SAW welding wire

RENEWABLE RESOURCES	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ	**5,37E+2**	MND	4,74E-1	3,43E+0	4,02E+0	2,25E-1	4,72E+1
Use of renewable primary energy resources used as raw materials (PERM)	MJ	**5,96E+2**	MND	1,04E-1	9,44E-1	4,74E-1	6,53E-2	1,36E+1
Total use of renewable primary energy resources (PERT)	MJ	**1,13E+3**	MND	5,77E-1	4,38E+0	4,49E+0	2,91E-1	6,07E+1

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: SAW welding wire

Data referring to 1.000 kg of SAW welding wire

NON RENEWABLE RESOURCES	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials (PENRE)	MJ	**1,39E+4**	MND	3,57E+0	2,12E+1	1,26E+1	1,52E+0	6,71E+2
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Total use of non renewable primary energy resources (PENRT)	MJ	**1,39E+4**	MND	3,57E+0	2,12E+1	1,26E+1	1,52E+0	6,71E+2

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: SAW welding wire

Data referring to 1.000 kg of SAW welding wire

USE OF SECONDARY MATERIALS	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Use of secondary materials (SM)	Kg	**1,01E+3**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Use of renewable secondary fuels (RSF)	MJ	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Use of non renewable secondary fuels (NRSF)	MJ	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
USE OF FRESH WATER								
Net use of fresh water (FW)	m3	**1,55E+1**	MND	5,73E-3	3,12E-2	1,09E-2	9,45E-3	4,52E-1

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Environmental performance: SAW welding wire

Data referring to 1.000 kg of SAW welding wire

WASTE DISPOSAL	UNIT	A1-A3	A4, A5, B1 ÷ B7	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	**7,47E-2**	MND	6,39E-4	1,81E-3	5,58E-5	1,39E-4	9,43E-3
Non-hazardous waste disposed (NHWD)	kg	**1,83E+2**	MND	6,21E-2	1,29E+1	6,79E-2	5,06E+1	5,52E+0
Radioactive waste disposed (RWD)	kg	**4,97E-1**	MND	9,60E-6	7,90E-5	1,20E-4	5,07E-6	-8,16E-4
Components for re-use (CRU)	kg	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Materials for Recycling (MFR)	kg	**0,00E+0**	MND	0,00E+0	0,00E+0	9,50E+2	0,00E+0	0,00E+0
Materials for Energy Recovery (MER)	kg	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Exported Energy (EE)	MJ	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Biogenic carbon content in product	kg C	**0,00E+0**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Biogenic carbon content in packaging	kg C	**2,45E+1**	MND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0

MND=Module Not Declared

The LCA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, safety margins or risks. Module D results are reported separately and shall not be included in the aggregation of life cycle stages.

Scope and EPD type

DESCRIPTION OF THE PROCESSES INCLUDED:

Transport of material from production site to Osoppo has been included.
All **transports of raw materials from suppliers** to the production plant are included in the primary-information model.
Inventory quantity, expressed in kgkm, is defined as the product between the mass of the material and the distance covered.
Transports of waste from production site to the treatment plants are included based of primary data.
Processing of materials entering the plant, the **process of copper-coating of wire** is included.

A1 **RAW MATERIAL SUPPLY**

A2 **TRANSPORT**

A3 **MANUFACTURING** (waste processing, ancillary materials, emissions)

Following the review of the EN 15804 standard, groups C1, C2, C3, C4 and D have been included.
The groups C1-C4 include the impacts associated with the removal of the material from the building in which it is installed, the transport of the waste to the treatment center and the related activities (recycling, treatment ecc.), including the disposal in landfill.
The group D, includes the benefits coming from the outputs of recycling (intended as avoided products) and energy recovery operations.

C1 **DE-CONSTRUCTION/DEMOLITION**

C2 **TRANSPORT**

C3 **WASTE TREATMENT**

C4 **DISPOSAL**

D **REUSE/RECOVERY/RECYCLING POTENTIAL**

SCOPE	PROCESSES
Preparation for wire drawing	**Wire rod processing (outsourced):** annealing (<6% of total incoming wire rod)
Internal transports and machinery used in the plant	**Inbound transport** with truck
	Internal transport with forklift
	Handling of final product with forklift
	Transport of waste to treatment plants with truck
Wire drawing	**Wire rod processing:** descaling
	Wire rod processing: lubrication and reduction of diameter
	Wire rod processing: chemical pickling
	Wire rod processing: wire rod rinsing
	Wire rod processing: copper coating
	Wire rod processing: polishing
	Wire rod processing: packaging
End of life	**Demolition**, including use of machinery
	Transport to sorting plants and sorting process
	Recovery, recycle, disposal

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Scope and type of EPD

After being loaded onto the pay-off stands, the wire rod undergoes a **descaling process** and an initial **diameter reduction** before entering the **in-line electrolytic pickling process**.
Following pickling, the wire rod is subjected to a series of washing stages to ensure the complete removal of any residual acid from its surface.

After washing, the wire is **copper-coated, washed and polished**. The final stage is packaging according to customer requirements.

PITTARC **SAW (Submerged Arc Welding) wires** are available in diameters ranging from **1.2 mm to 5.0 mm** and in a wide variety of packaging formats:

- 25 kg, 27 kg, 90 kg and 100 kg spools;
- coils from 450 kg to 1,200 kg;
- metal baskets from 300 kg to 400 kg;
- drums from 300 kg to 1,000 kg.

PITTARC submerged arc welding wires are the result of a **highly innovative manufacturing process**, both in terms of the production method employed and the advanced manufacturing equipment utilized.

Calculation rules

DECLARED UNIT: 1.000 kg of SAW welding wire

Assumptions: System boundaries include the compulsory modules A1, A2, A3, C1, C2, C3, C4 and D as required by EN 15804 Standard, according to a "from cradle to gate with modules C1-C4 and D" approach. It should be noted that **building, maintenance and decommissioning of the infrastructures - intended as buildings - and use of industrial ground, were not taken into consideration**, because their contribution to environmental impact relating to the declared unit is deemed negligible. C**onsumption of oils, detergents and other technical materials for machine maintenance, energy consumption for plant lighting, energy consumption for office activities related to the management of the steel mill are included. Moreover, it should be noted that product distribution, use and disposal phases are not included in this study.**

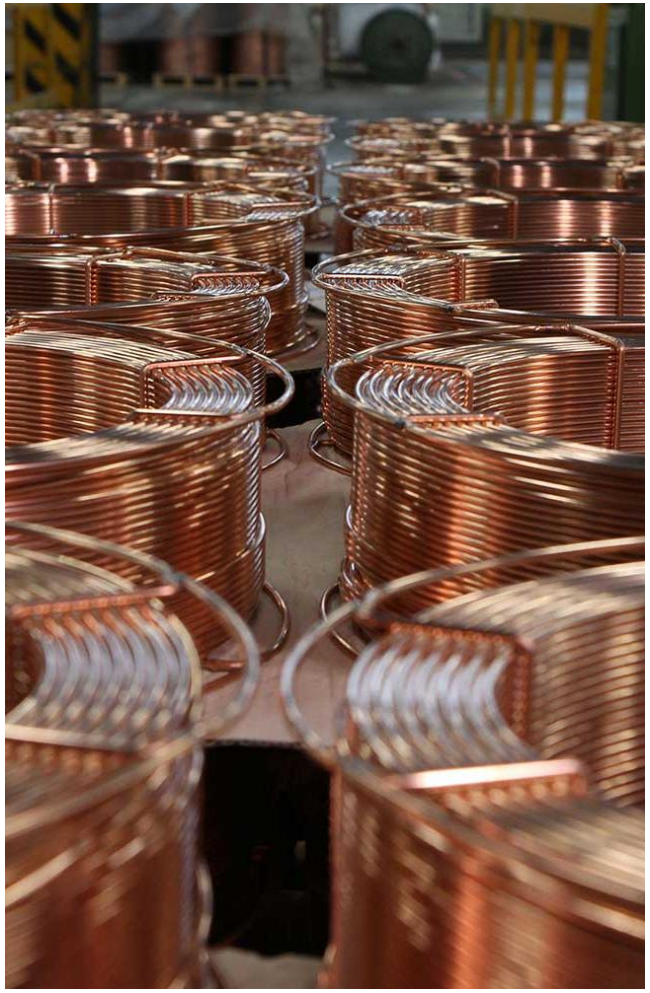
Cut-off rules: The criterion chosen for the initial inclusion of the inbound and outbound elements, takes into account a 1% cut-off level, both in terms of mass, energy and environmental relevance. This means that a process was neglected if responsible of less than 1% of the total amount of mass, primary energy and total impact. However, all processes for which data are available were taken into account, even though with a contribution less than 1%. As a consequence, this threshold value was used in order to avoid collecting unknown data, not with the purpose of neglecting available data.

Data quality: The calculation of data quality has been applied to the most relevant life cycle processes identified, according to EN 15804 (table 2 annex E) requirements. In particular, every relevant process has been assigned a score in a range from 1 to 5 (where 1 means maximum representativity) for the following quality parameters: technological representativity, geographical representativity, time representativity and accuracy. For the product subject of the EPD the final DQR obtained combining weights and scores resulted lower than 2; this corresponds to a quality level of «optimum».

Allocations: **allocation was avoided, whenever possible, by dividing the system into sub-systems**. Otherwise, physical allocation was applied. As for waste modeling, the "Polluter pays principle" was applied.

Calculation rules – inventory analisys

MODULE	DESCRIPTION
A1	For the characterization of raw materials entering the plant, reference was made to the Ecoinvent 3.11 cut-off by classification datasets, using the dataset considered most representative. The company also provided information on the electricity and natural gas consumption of the entire facility, appropriately allocated to the individual product
A2	The origin of raw materials and the related transport process were specifically modeled for all components. Distances were calculated using web-based tools such as Google Maps and EcoTransIT.
A3	The plant's production process was characterized by considering water consumption, auxiliaries, maintenance oils, and waste management. In addition, the company provided detailed information regarding the packaging used for the finished products
C1	The impacts associated with demolition were not considered, since the dismantling of the steel structures is considered negligible.
C2	At the end of its life, the product is sent to sorting facilities; therefore, a transport distance of 100 km is assumed. The means of transport is represented by the following dataset: Transport, freight lorry, 16–32 t, EURO 6. This scenario is consistent with assumptions made in other EPDs by steel producers.
C3	The product is then subjected to a sorting process.
C4	In accordance with the recycling rates proposed in (European Commission, 2018) for steel, it is assumed that 5% of the steel is sent to landfill after the sorting process. This flow is modeled using the following dataset: Inert waste, for final disposal {Europe without Switzerland} | treatment of inert waste, inert material landfill | Cut-off, U .
D	Module D is calculated by considering the potential impacts and benefits associated with the recycling activity of the product, using the Circular Footprint Formula.



References

- **ISO 14040:2006/Amd 1:2020** Environmental management — Life cycle assessment — Principles and framework
- **ISO 14044:2006/Amd 2:2020** Environmental management — Life cycle assessment — Requirements and guidelines — Amendment 1
- **ISO 14020:2000** Environmental labels and declarations — General principles
- **EN 15804:2012+A2:2019** Sustainability of construction works – Environmental product declarations — Core rules for the product category of construction works
- **PD CEN/TR 16970:2016** Sustainability of construction works — Guidance for the implementation of EN 15804
- **PD CEN/TR 15941:2010** Sustainability of construction works — Environmental Product Declarations — Methodology for selection and use of generic data
- **PCR ICMQ-001/15** rev 4 (10/11/2025)
- **Regulation EPDItaly** rev.7.1 (05/09/2025)
- **S.I.A.T. S.p.A. – PITTARC division**, "Studio di Life Cycle Assessment di fili ramati e fili per saldatura SAW, GMAW", Rev. 2, 12/06/2026