MEGASA

Electrowelded mesh

EN ISO 14025:2010 | EN 15804:2012+A2:2019/AC:2021 | UNE 36904-2:2018

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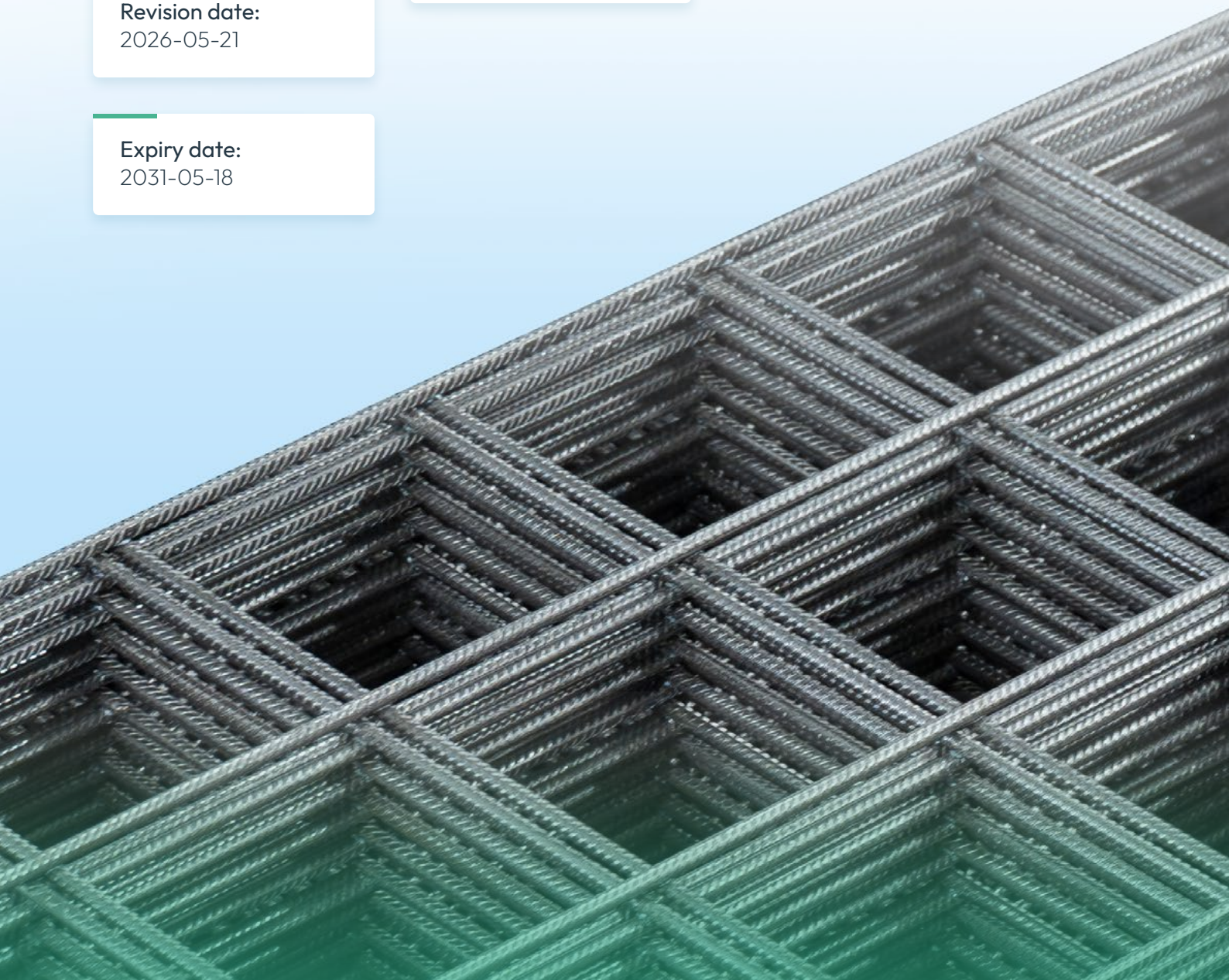

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INDEX

The holder of this Declaration is responsible for its content, as well as for keeping the supporting documentation that justifies the data and statements included in it for the duration of its validity.

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AENOR is a founding member of ECO Platform, the European Association of Environmental Product Declaration Verification Programmes.

UNE 36904-2:2018

European Standard EN 15804:2012+A2:2019/ AC:2021 serves as RCP.

Independent verification of the declaration and data, in accordance with Standard EN ISO 14025:2010

☐ Interna ☑ Externa

Verification body:

AENOR

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1 GENERAL INFORMATION

1.1. The organisation

GRUPO MEGASA is a family-owned company specialising in the production and distribution of long steel products. The group has more than a thousand employees, spread across its various production plants and distribution units in the Iberian Peninsula and France.

With an installed capacity of over three million tonnes, MEGASA uses electric arc furnaces to produce a wide range of long steel products: reinforcing bars and coils, wire rod, welded mesh, and merchant bars and sections.

- **Megamalla S.L.** - Cr. De Castilla 802-820 - 15570 Narón, A Coruña (Spain)

  Megamalla joined the Megasa Group in the late 1990s. The company is located in the municipality of Narón (northwestern Spain), very close to the Port of Ferrol.

  Its main activity is the manufacture of electrowelded mesh—both standard and custom-made—as well as lattice girders. All of its production is made from hot-rolled ribbed steel supplied in either bar or coil form.

- **SN Transformados S.A.** - Ideia de Paio Pires - 2840-996 Piao Pires, Sixal (Portugal)

  Based in Seixal, near Lisbon (southern Portugal), SN Transformados manufactures both standard and special electrowelded mesh made from cold-rolled wire as well as hot-rolled coils. Its production also includes cold-rolled ribbed wire coils.

- **SRD - Société Rouennaise de Déroulage** -Quai Saint-Wandrille,76490 Rives-en-Seine (Francia)

  SRD began its operations in 1991. Since March 2023, it has been part of MEGASA. This acquisition has enabled MEGASA to diversify and strengthen its presence in Europe, while offering its full range of products through SRD.

1.2. Scope of the Declaration

This environmental product declaration describes the environmental information relating to the cradle-to-gate life cycle with options, modules C1-C4 and module D (A1-A3 + A4+ C + D) of the electrowelded mesh manufactured by the Megasa Group at its plants in Spain, Portugal and France.

The EPD corresponds to the average mesh product, weighted according to the total production volume manufactured at each of the three plants.

The EPD will be used for communication with the company's customers (B2B).

1.3. Life cycle and compliance

This EPD has been developed and verified in accordance with the standards EN ISO 14025:2010, EN 15804:2012+A2:2019/AC:2021, and UNE 36904-2, Steel Industry – Environmental Product Declarations – Product Category Rules – Steel Products for Structural Applications – Part 2: Processed Products and Prestressing System Applicators.

Registration/version	UNE 36904-2
Date of issue	2018
Administrator	AENOR

System boundaries. Information modules considered			
Product stage	A1	Supply of raw materials	X
	A2	Transport to factory	X
	A3	Manufacturing	X
Construction	A4	Transport to site	X
	A5	Installation/construction	ND
Stage of use	B1	Use	ND
	B2	Maintenance	ND
	B3	Repair	ND
	B4	Replacement	ND
	B5	Rehabilitation	ND
	B6	Energy use in service	ND
	B7	Water consumption during operation	ND
End of life	C1	Deconstruction/demolition	X
	C2	Transport	X
	C3	Waste treatment	X
	C4	Disposal	X
	D	Potential for reuse, recovery and/or recycling	X

***X** = Module included in the LCA; **ND** = Module not declared*

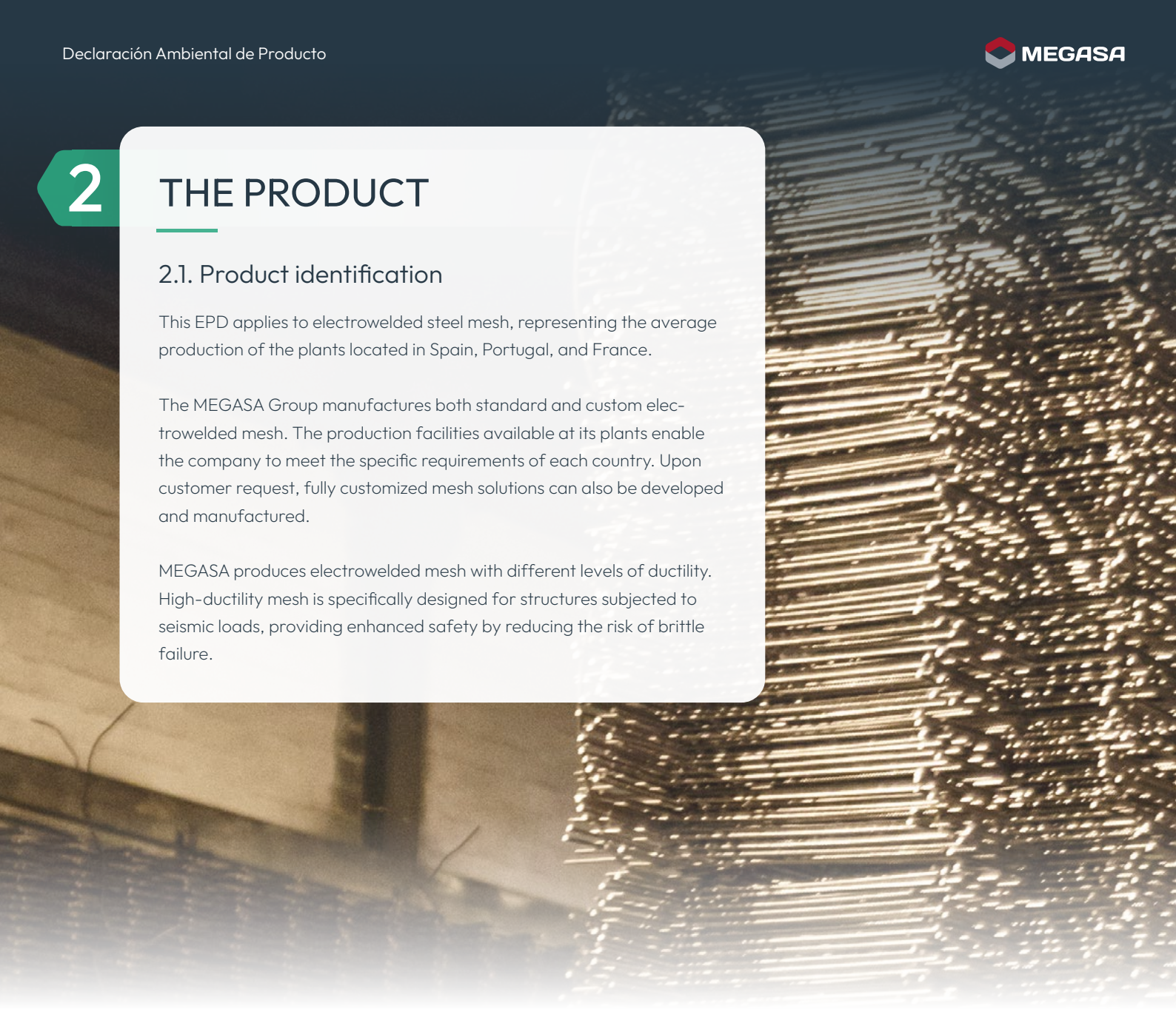
This EPD may not compare with those developed in other programmes or in accordance with different reference documents; specifically, it may not compare with declarations not developed and verified in accordance with Standard EN 15804.

Similarly, EPDs may not compare if the source of the data is different (e.g. databases), not all relevant information modules are included, or they are not based on the same scenarios.

The comparison of construction products must be made on the same function, applying the same declared unit and at the level of the building (or architectural or engineering work), i.e. including the behaviour of the product throughout its life cycle, as well as the specifications of section 6.7.2 of Standard EN ISO 14025.

1.4. Differences from previous versions of this EPD

Revision 1 of this EPD has been issued to to correct the format and MER indicator.



2 THE PRODUCT

2.1. Product identification

This EPD applies to electrowelded steel mesh, representing the average production of the plants located in Spain, Portugal, and France.

The MEGASA Group manufactures both standard and custom electrowelded mesh. The production facilities available at its plants enable the company to meet the specific requirements of each country. Upon customer request, fully customized mesh solutions can also be developed and manufactured.

MEGASA produces electrowelded mesh with different levels of ductility. High-ductility mesh is specifically designed for structures subjected to seismic loads, providing enhanced safety by reducing the risk of brittle failure.

Electrowelded mesh is mainly used in reinforced concrete slabs or walls and in the compression layer of floor systems, although there are alternative applications such as in the agricultural sector or for fencing. In its primary construction application, it offers significant advantages such as:

- *Higher productivity*
  Reduced installation time
- *Shorter lead times*
  Guaranteed dimensional accuracy
- *Greater efficiency*
  Reduced offcuts and material waste
- *Lower costs*
  No specialized labor required for installation

The type of welding used by the MEGASA Group in the manufacture of electrowelded mesh is floating welding, i.e., independent node-by-node welding.

Unidirectional welded mesh

Meshes in which the main reinforcing steel is placed only in the longitudinal direction. In the transverse direction, assembly bars are provided to ensure panel handling. These transverse assembly bars are of the smallest possible diameter depending on the main bar diameter of the panel, generally Ø 8 bars with a spacing of 850–1000 mm. For main bar diameters greater than 12 mm, Ø 10 assembly reinforcement is required to ensure proper welding.

Depending on the required diameter, panel widths range from 1 m to 2 m, so that the weight of each panel never exceeds 200 kg.

Special electro welded mesh (non-standard)

These are meshes in which panel dimensions, lap lengths, and the combination of bar diameters are adapted to the customer's requirements in order to avoid overlapping reinforcement. The use of this type of mesh is particularly suitable for the reinforcement of walls, retaining structures, and tunnel segments.

Dimension (mm)			
Diameters	4 / 5	6 / 7 / 8 / 10 / 12	16 / 20 / 25
Minimum spacing Als	100	75	100
Minimum spacing Ats	100	50	75
Minimum length	3,000	2,000	3,000
Minimum width	1,600	900	900
Maximum length	6,000	14,000	14,000
Maximum width	2,500	3,650	3,650

CPC code: 41261 – Bars and wire rod, cold-formed or cold-finished or otherwise worked, of non-alloy iron or steel.

2.2. Product composition

The product covered by this study is steel produced in an electric arc furnace using 100% scrap. The composition of the declared average product is:

Material	% by weight
Post-consumer scrap	84.63%
Pre-consumer scrap	15.37%

During the product's life cycle, no hazardous substances listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorisation" are used in a percentage greater than 0.1% of the product's weight.

2.3. Packaging

The primary packaging used for product shipment (distribution packaging) has been included in the study, based on an average of all the plants participating in the study.

Material	kg/unit declared
Wood	3.10E+00
Binding wire	1.60E+00
Paper	7.64E-03
Metal hooks	6.02E03
Steel strapping	7.90E-02

2.4. Regulations applicable to the producto

Regulations – Mesh	
UNE 36060	Welded steel meshes for reinforcement in structural applications in reinforced concrete. Welded steel meshes manufactured using B500SD steel bars.
UNE 36061	Welded steel meshes for structural reinforcement in reinforced concrete. Welded steel meshes manufactured using B500S steel bars.
UNE 36092	Welded steel meshes for structural reinforcement in reinforced concrete. Welded steel meshes manufactured using B500T steel wires.
BS 4483	Steel mesh for reinforced concrete reinforcement.
EN 10080	Steel for concrete reinforcement. Weldable steel for reinforced concrete reinforcement. General requirements.
LNEC E 458	Welded wire mesh for reinforced concrete reinforcement. Characteristics, testing, and marking.
LNEC E 479	Small-diameter welded wire mesh. Characteristics, testing, and marking.
NF A 35-024	Reinforcing steel for concrete – welded wire mesh sheets made of wires with a nominal diameter of less than 5 mm.
NF A 35-080-2	Aciers pour béton armé - Aciers soudables - Partie 2 : treillis soudés
NS 3576-4	Steel for the reinforcement of concrete – Dimensions and properties – Part 4: Welded fabric.
SFS 1300	Reinforcing steels – Minimum requirements for weldable reinforcing steel and welded fabric.
SS 212540	Product specification for SS-EN 10080:2005 – Steel for the reinforcement of concrete – Weldable reinforcing steel – Technical deli¬very conditions for bars, coils, welded fabric and lattice girders.
DIN 488	Reinforcing steel – Welded wire mesh.
EN 1992-1-1	Eurocode 2
DS/INF 165	National Annex to Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings.

3 INFORMATION ON LCA

3.1. Life cycle analysis

The Life Cycle Assessment report for the Environmental Product Declaration (EPD) of the Megasa Group's steel mesh, dated April 2026, was prepared by Abaleo S.L.

The study was carried out using data from the Megasa Group's processing plants located in Spain, France, and Portugal.

For the development of the study, the Ecoinvent 3.11 database (allocation, cut-off by classification, March 2025) and the SimaPro 10.3.0.1 software were used.

The Life Cycle Assessment (LCA) study follows the recommendations and requirements of international standards.

ISO 14040:2006 ISO 14044:2006

UNE 36904-2:2018 EN 15804:2012+A2:2019/AC:2021.

3.2. Scope of the study

The scope of this EPD is cradle-to-gate with options, including Modules C and D (A1–A3 + A4 + C + D), for the average mesh produced by the Megasa Group.

The product is manufactured in Europe and distributed worldwide.

3.3. Study limitations

The following have not been included:

- All equipment with a service life longer than 3 years.
- The construction of plant buildings, nor other capital goods.
- Business travel by personnel, nor commuting to and from work by personnel.
- Research and development activities.
- Long-term emissions.

3.4. Declared unit

The declared unit is one tonne (1,000 kg) of product, including its distribution packaging.

Welded steel mesh performs its function as a passive reinforcement element in the construction sector.

3.5. Allocation criteria

In accordance with the criteria of the reference standard, allocation of inputs and outputs within the system has been applied based on economic values, as the difference between revenues from the product and co-products is very significant. This allocation approach has been applied to general plant consumption (raw materials and energy use), transport, and waste.

The quantities of the different materials used and produced in the manufacturing process are based on measurements taken at the processing plants themselves.

The EPD corresponds to the average mesh product, weighted by the total production volume manufactured.

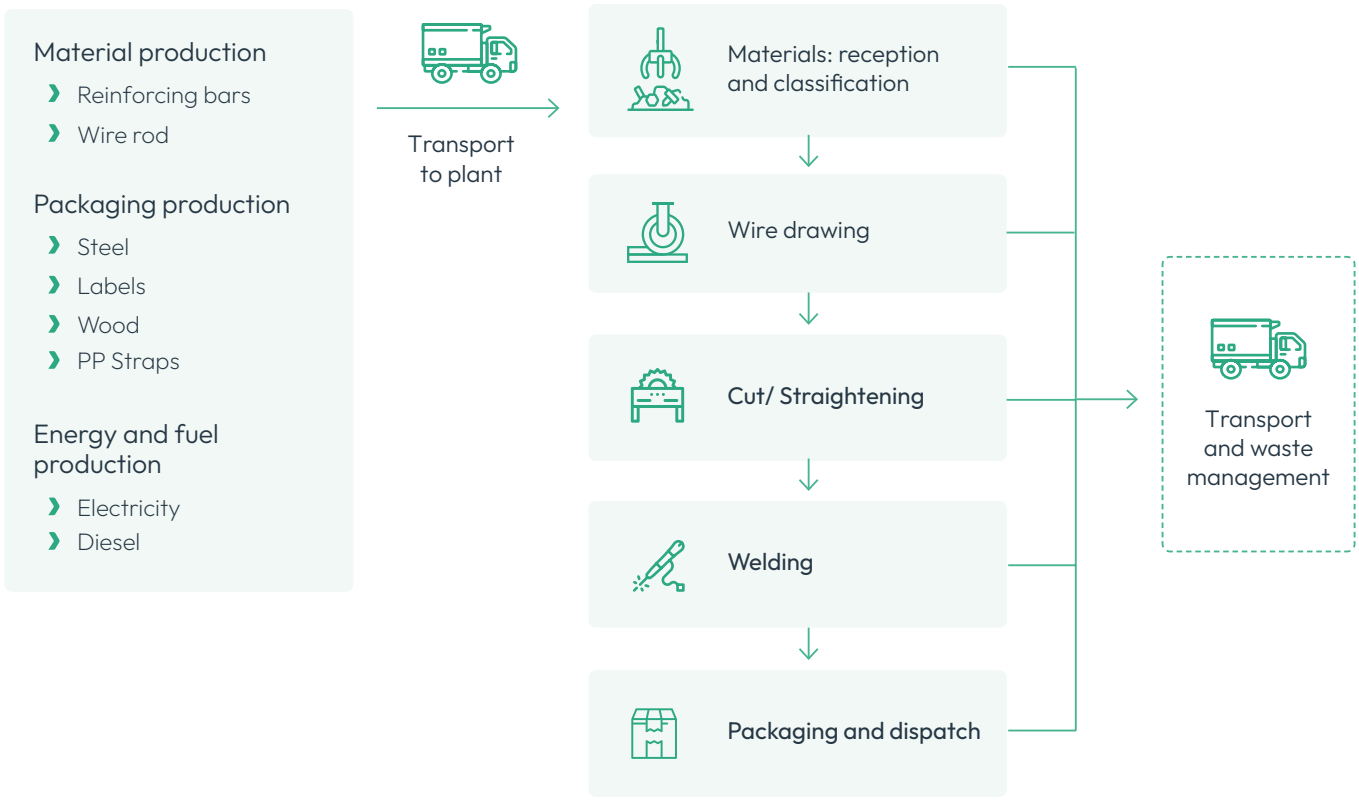
3.6. Cut-off rules

The LCA includes the gross weight/volume of all materials used in the manufacturing process, in order to capture at least 99% of environmental impacts.

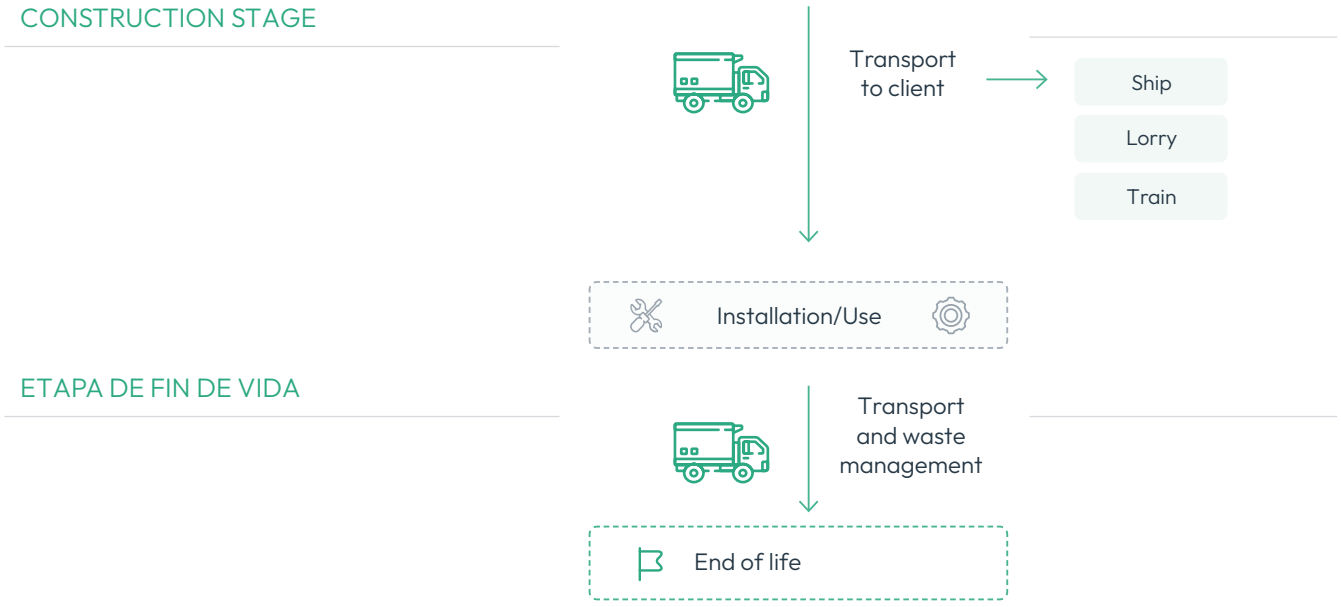
No energy consumption has been excluded.

3.7. Manufacturing process diagram

PRODUCT STAGE



CONSTRUCTION STAGE



ETAPA DE FIN DE VIDA

Electrowelded meshes are made of reinforcing steel bars, cold- or hot-rolled, arranged longitudinally and transversely in an orthogonal pattern and welded at all intersections, forming generally rectangular panels.

The manufacture of cold-rolled mesh begins with the wire drawing process, which consists of the cold rolling of wire rod. Through this drawing process, the diameter of the wire rod is reduced, its structure is modified, and the material is ribbed so that the resulting steel achieves the required mechanical and geometric properties.

The process is carried out in wire drawing machines, which unwind the wire rod, mechanically pickle it, lubricate it, draw it, and rewind it into coils or feed it directly into the mesh production machine. Drawn wire is the raw material used to feed the cold-rolled mesh production lines.

For hot-rolled mesh, the raw material used is reinforcing steel bar or coil, which is fed directly into the mesh production line or undergoes a prior straightening and cutting process.

In the mesh production lines, the two sets of elements—transverse and longitudinal bars—are joined to form the panel through a resistance welding process. The mesh production lines are automated and equipped with advanced software which, by entering specific parameters, automatically adjusts the machine settings, enabling the production of different types of welded wire mesh.

3.8. Representativeness, quality and selection of data

To model the manufacturing process of the studied product, production data corresponding to the year 2025 were used. Data on material and energy consumption, supplier transport distances, and waste generation were obtained for the plants located in Narón (Spain), Seixal (Portugal), and Rives-en-Seine (France).

To represent the production of reinforcing steeel and wire rod for mesh used by the plants in mesh manufacturing, the corresponding current published EPDs for each product were used:

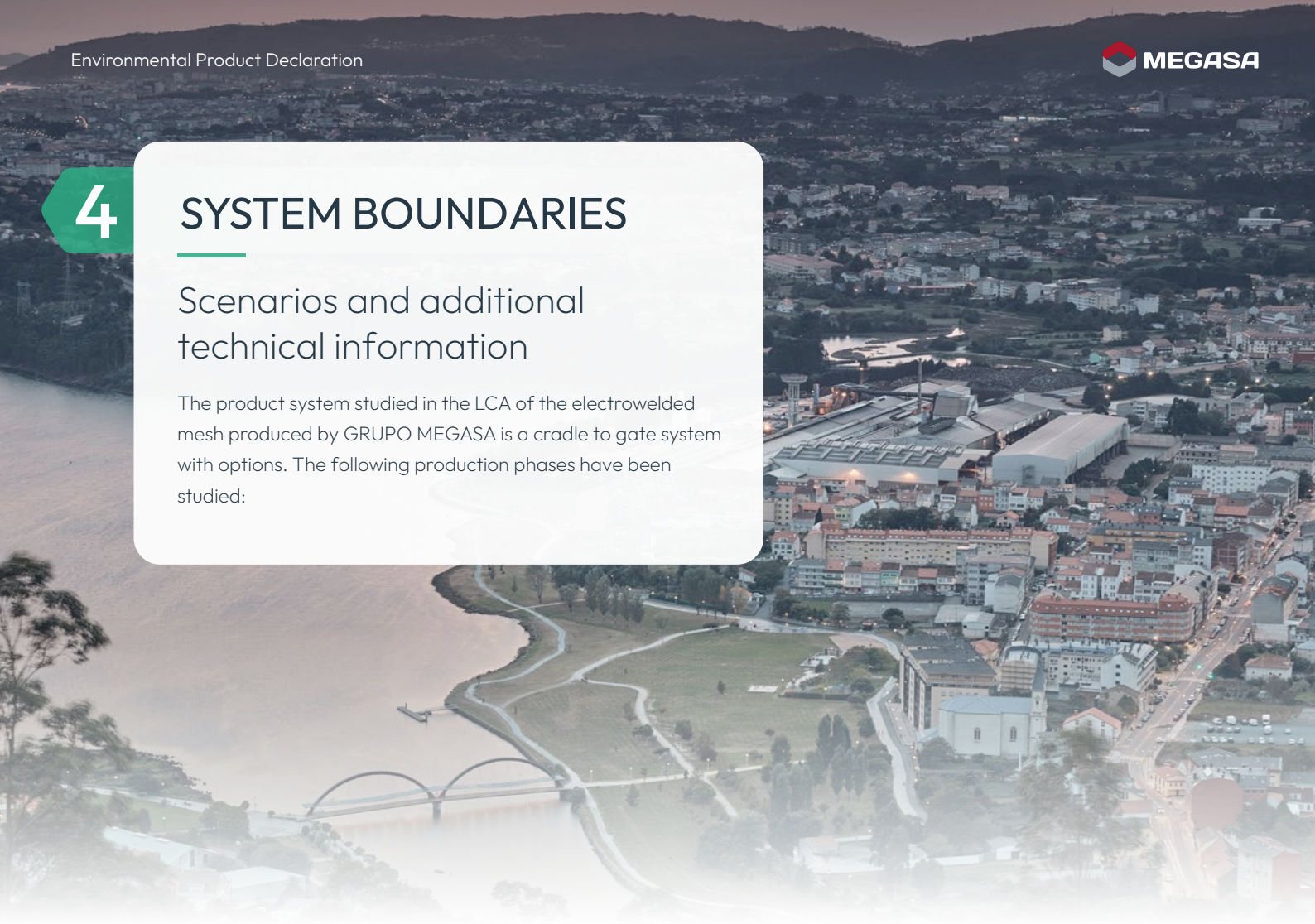
- **GlobalEPD 001-028-rev2**
  Hot-rolled reinforcing bars and coils from the electric arc furnace of Megasa Siderúrgica plant (Narón).
- **GlobalEPD 001-033-rev2**
  Hot-rolled mesh-quality wire rod from the electric arc furnace of SN Seixal plant.
- **GlobalEPD 001-030 rev2**
  Hot-rolled reinforcing bars and coils from the electric arc furnace of SN Seixal plant.

When necessary, the Ecoinvent 3.11 database (March 2025) was used, which is the latest version available at the time of conducting the LCA.

To assess the quality of the primary data used in the LCA, the semi-quantitative data quality assessment criteria proposed by the European Union in its Product and Organisation Environmental Footprint Guide have been applied. The following results were obtained:

- Technological Representativeness (TeR) – 1.85
- Geographical Representativeness (GeR) – 2.03
- Time-related Representativeness (TiR) – 1.88
- Precision (P) – 1.85

Based on the above results, the Data Quality Rating (DQR) is 1.90, indicating that the data quality is very good.



4 SYSTEM BOUNDARIES

Scenarios and additional technical information

The product system studied in the LCA of the electrowelded mesh produced by GRUPO MEGASA is a cradle to gate system with options. The following production phases have been studied:

Module A1:
Raw material production

This module covers the raw material production process, which considers:

- The extraction of resources and production of raw materials.
- Transport to raw material treatment/production centres.
- Energy and fuel consumption during the production of raw materials.
- The consumption of other resources (such as water) during the production of raw materials.
- The generation of waste and emissions to air and discharges to water and soil during the production of raw materials.
- The generation of electricity used in the manufacturing process.

Module A2:
Transport

Transport by truck and ship of raw and auxiliary materials from the production sites (suppliers) to the mesh production facilities has been considered. The transport distances have been provided by the plant managers, who are aware of the location of their suppliers' facilities.

Internal plant transport is also included.

Module A3:
Manufacturing

This stage considers the consumption of auxiliary materials for production; the production of packaging necessary for product distribution to customers; and the transport and treatment by waste managers of waste generated during this stage of the life cycle.

Module A4:
Transport to the place of use

The transport of the finished product from the plants where the mesh is manufactured to the customer has been taken into account, distinguishing the mode of transport used: truck, average European freight train, or container ship. European scope.

Parameter		Value (per declared unit)
Litres of diesel	Lorry	0.0440 l/tkm
	Train	0.0008 l/tkm
	Ship	0.0025 l/tkm
Average distance	Lorry	424.73 km
	Train	18.59 km
	Ship	2,031.72 km
Occupancy rate (including empty return journeys)		50%
Apparent density of transported products		0.125 – 0.499 kg/m
Useful capacity factor		1

Module C1:
Deconstruction/demolition

In the LCA, it has been assumed that 100% of the mesh product is used as concrete reinforcement, meaning that it is integrated into other structures. To represent the demolition process, a generic process from the Ecoinvent database has been used.

Module C2:
Transport to the waste treatment/ recovery site

In accordance with the PCR 2019:14 guidelines, it is assumed that at the end of its service life, the mesh is transported by road over a distance of 80 km to landfill or recycling facilities, and 130 km to incineration, using EURO 5 trucks with a load capacity of 16–32 tonnes.

Life Cycle Information UNE-EN 15804															Additional information
A1 to A3			A4 to A5		B1 to B7							C1 to C4				D
Produt stage			Cons-truction process stage		Use stage							End-of-life stage				Benefits and burdens beyond the system
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Supply of raw materials	Transport	Manufacturing	Transport	Construction/installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Energy use in service	Water consumption during operation	Deconstruction, demolition	Transport	Waste treatment	Waste disposal	Potential for reuse, recovery and recycling
			Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	Scenario	

X: Module evaluated. / **ND:** Module not declared

Module C3 and C4:
Waste treatment, and Waste disposal

To determine the waste rates for recycling, incineration, and landfill, the criteria set out in Part C of Annex 2 V2.1 (May 2020) of the Circular Footprint Formula of the European Union Environmental Footprint methodology are applied (COMMISSION RECOMMENDATION (EU) 2021/2279 of 15 December 2021 on the use of Environmental Footprint methods to measure and communicate the environmental performance of products and organizations throughout their life cycle). It is assumed that the energy efficiency of the waste sent for incineration is below 60%.

Parameter	Value (per declared unit)
Demolition	0.626 MJ
Collection process, specified by type	0 kg separately collected
	1000 kg collected mixed with construction waste
Recovery system, specified by type	0 kg for reuse
	850 kg for recycling
	0 kg for energy recovery
Disposal, specified by type	82,5 kg for landfill disposal (55% of the non-recycled fraction)
	67,5 kg for incineration (45% of the non-recycled fraction)
Assumptions for scenario development (transport of waste to the waste manager)	Average distance -EURO 5 truck (16–32 t) -Incineration: 130 km -Recycling and landfill: 80 km

Module D:
Benefits and burdens beyond the system

This module declares the benefits and burdens resulting from the net flow of fuels or secondary materials leaving the product system, excluding flows classified as by-products. It is assumed that metals reach the end-of-waste state after a sorting and shredding process. Treatment, as well as the net benefits and burdens associated with reuse or recycling potentials (only for the net amount of scrap), are grouped in this module.
The potential environmental benefits are presented for the net steel scrap generated at the end of the product's life cycle, calculated as follows:

Net scrap = Amount of steel recycled at the end of the product's life cycle – Scrap originating from previous product life cycles.

A 10% material loss reduction factor is applied in the recovery of the avoided product.

The environmental benefit of the material sent to incineration in module C4, assuming that incineration has an efficiency of less than 60%, is zero due to the negligible calorific value of the metal.

5 DECLARATION OF LCA AND LCI ENVIRONMENTAL PARAMETERS

The results of the end-of-life stages (modules C1–C4) must be considered when using the results of the product stage (modules A1–A3). The estimated impact results are relative and do not indicate the final value of the impact categories, nor do they refer to threshold values, safety margins, or risks. The EN 15804 characterization factors are based on EF 3.1.

Mandatory impact category indicators according to EN 15804							
Parameter	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	3.52E+02	8.35E+01	5.92E+01	1.28E+01	4.30E+00	7.98E-01	4.23E-01
GWP-fossil	3.49E+02	8.34E+01	5.92E+01	1.28E+01	4.29E+00	7.97E-01	3.11E-01
GWP-biogenic	5.24E-01	3.69E-03	2.97E-03	4.44E-04	6.68E-03	9.58E-04	1.12E-01
GWP-luluc	1.96E+00	2.54E-03	2.44E-03	2.02E-04	8.65E-03	2.55E-05	1.21E-04
ODP	8.62E-06	1.73E-06	9.02E-07	2.90E-07	6.52E-08	1.61E-08	3.30E-09
AP	1.15E+00	6.85E-01	5.47E-01	3.30E-02	2.70E-02	5.89E-03	9.58E-04
EP-freshwater	6.91E-03	8.34E-05	5.58E-05	7.89E-06	2.85E-04	2.70E-06	6.04E-06
EP-marine	2.66E-01	1.69E-01	2.58E-01	1.26E-02	8,11E-03	2.71E-03	7.25E-04
EP-terrestrial	2.59E+00	1.87E+00	2.83E+00	1.38E-01	8.94E-02	2.97E-02	4.02E-03
POCP	1.13E+00	6.04E-01	8.44E-01	5.46E-02	2.71E-02	9.08E-03	1.27E-03
ADP-minerals&-metals [2]	2.54E-04	1.84E-06	2.08E-06	3.33E-07	2.39E-07	2.65E-08	7.05E-09
ADP-fossil [2]	6.47E+03	1.09E+03	7.75E+02	1.70E+02	8.62E+01	1.06E+01	2.56E+00
WDP [2]	1.74E+02	4.38E-01	6.35E-01	5.58E-02	6.79E-01	1.30E-02	7.52E-03

- GWP-total (kg CO^2 eq): Global warming potential.
- GWP - biogenic (kg CO^2 eq): Biogenic global warming potential.
- GWP-fossil (kg CO^2 eq): Global warming potential of fossil fuels.
- GWP - luluc (kg CO^2 eq): Global warming potential of land use and land use change.
- ODP (kg CFC-11 eq): Ozone depletion potential.
- AP (mol H+ eq): Acidification potential, cumulative surplus.
- EP-freshwater (kg P eq): Eutrophication potential, fraction of nutrients reaching the final freshwater compartment.
- EP-marine (kg N eq): Eutrophication potential, fraction of nutrients reaching the final marine water compartment.
- POFP (kg NMVOC eq): Tropospheric ozone formation potential.
- EP-terrestrial (mol N eq): Eutrophication potential, cumulative surplus.
- ADP-minerals&metals (kg Sb eq): Abiotic depletion potential for non-fossil resources.
- WDP (m^3): Water deprivation potential (user), weighted wáter deprivation consumption.
- APD-fossil (MJ, v.c.n): Abiotic depletion potential for fossil resources.

Additional mandatory and voluntary impact category indicators							
Parameter	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG*	3.52E+02	8.35E+01	5.92E+01	1.28E+01	4.30E+00	7.98E-01	4.23E-01
PM	2.45E-05	4.29E-06	1.58E-05	8.50E-07	4.17E-07	2.18E-07	1.65E-08
IRP 1	4.35E+01	1.60E-01	6.44E-02	1.63E-02	6.03E-01	1.12E-03	8.37E-03
ETP-fw [2]	5.67E+02	3.99E+01	2.22E+01	6.07E+00	5.98E+00	1.55E+01	2.14E+00
HTP-c [2]	4.24E-07	6.80E-09	3.16E-09	8.61E-10	3.81E-10	1.10E-09	1.28E-10
HTP-nc [2]	8.44E-06	4.66E-07	5.82E-08	8.47E-08	1.61E-08	4.43E-09	3.15E-09
SQP [2]	8.54E+02	2.16E+00	1.32E+00	2.16E-01	7.74E+00	1.03E+01	2.45E-01

- GWP-GHG. Global warming potential excluding biogenic carbon.
- PM (disease incidence). Potential for disease incidence due to particulate matter emissions.
- IRP (kBq U235 eq). Human exposure efficiency relative to U235.
- ETP-fw (CTUe). Comparative toxic unit potential for ecosystems - freshwater.
- HTP-c (CTUh). Comparative toxic unit potential for ecosystems - carcinogenic effects.
- HTP-nc (CTUh). Comparative toxic unit potential for ecosystems - non-carcinogenic effects.
- SQP (Pt). Soil quality potential index.

Note 1. This impact category deals mainly with the potential impacts of low doses of ionising radiation on human health from the nuclear fuel cycle. It does not consider the effects of possible nuclear accidents or occupational exposure due to the disposal of radioactive waste in underground facilities. The ionising radiation potential of soil due to radon or certain building materials is also not measured in this parameter.

Note 2. The results of this environmental impact indicator should be used with caution as the uncertainties in the results are high and experience with this parameter is limited.

*This indicator accounts for all greenhouse gases except the absorption and emissions of biogenic carbon dioxide and biogenic carbon stored in the product. Therefore, the indicator is identical to the total GWP, except that the conversion factor for biogenic CO^2 is set to zero.

Indicators for resource use								
Parameter	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ, v.c.n	1.48E+03	4.00E+00	1.66E+00	4.18E-01	1.47E+01	3.55E-02	2.06E-01
PERM	MJ, v.c.n	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, v.c.n	1.48E+03	4.00E+00	1.66E+00	4.18E-01	1.47E+01	3.55E-02	2.06E-01
PENRE	MJ, v.c.n	6.47E+03	1.09E+03	7.75E+02	1.70E+02	8.67E+01	1.06E+01	2.56E+00
PENRM	MJ, v.c.n	5.17E-01	0.00E+00	0.00E+00	0.00E+00	-4.40E-01	-7.76E-02	0.00E+00
PENRT	MJ, v.c.n	6.47E+03	1.09E+03	7.75E+02	1.70E+02	8.62E+01	1.06E+01	2.56E+00
SM	Kg	1.01E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, v.c.n	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, v.c.n	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	3.55E+00	2.49E-02	2.35E-02	3.29E-03	4.07E-02	5.01E-04	5.35E-04

- PERE (MJ, v.c.n.). Use of renewable primary energy excluding renewable primary energy resources used as raw materials.
- PERM (MJ, v.c.n.). Use of renewable primary energy used as raw materials.
- PERT (MJ, v.c.n.). Total use of renewable primary energy.
- PENRE (MJ, v.c.n.). Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials.
- PENRM (MJ, v.c.n.). Use of non-renewable primary energy used as raw materials.
- PENRT (MJ, v.c.n.). Total use of non-renewable primary energy;.
- SM (kg). Use of secondary materials.
- RSF (MJ, v.c.n.). Use of renewable secondary fuels.
- NRSF (MJ, v.c.n.). Use of non-renewable secondary fuels.
- FW (m^3). Net use of fresh water resources.

La energía empleada como materia prima se declarada según opción A del PCR 2019:14.

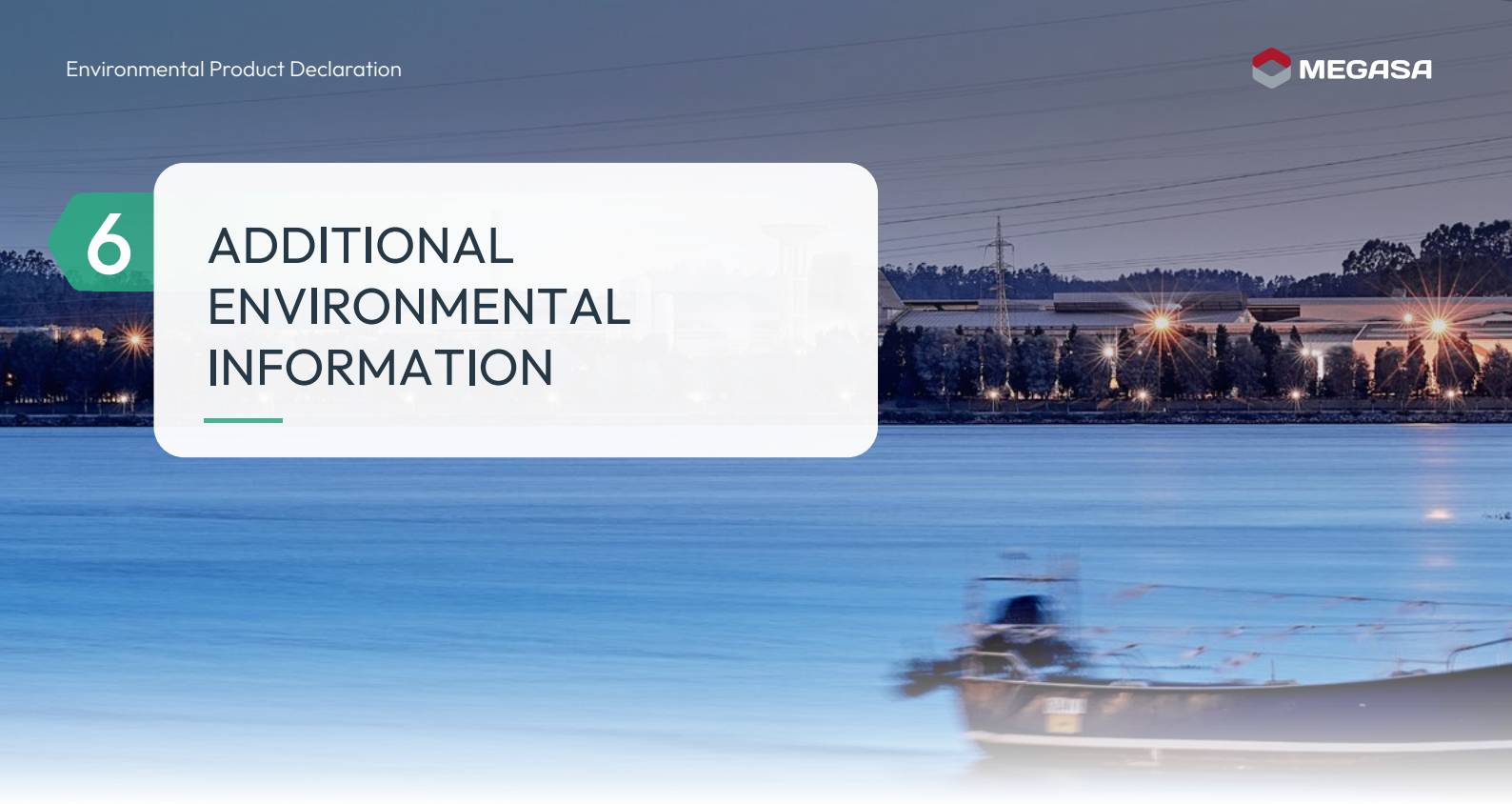
> The balance of biogenic CO_2 and the energy used as raw material forpackaging has been calculated in modules A1-A3.

Waste categories							
Parameter	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	2.22E-02	6.81E-03	5.32E-03	1.13E-03	2.58E-04	6.89E-05	1.29E-05
NHWD	1.44E+01	3.72E-02	2.77E-02	5.72E-03	4.43E-02	1.27E+02	2.36E-01
RWD	2.56E-02	1.10E-04	3.61E-05	1.03E-05	4.94E-04	7.03E-07	6.84E-06

- HWD (kg). Hazardous waste disposed of.
- NHWD (kg). Non-hazardous waste disposed of.
- RWD (kg). Radioactive waste disposed of.

Output flows							
Parameter	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
CRU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	5.08E+00	0.00E+00	0.00E+00	0.00E+00	8.50E+02	0.00E+00	0.00E+00
MER	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- CRU (kg). Components for reuse.
- MFR (kg). Materials for recycling.
- MER (kg). Materials for energy recovery.
- EEE (MJ). Electrical energy exported.
- EET (MJ). Thermal energy exported.



6 ADDITIONAL ENVIRONMENTAL INFORMATION

6.1. Other indicators

The manufacturing of the mesh generates scrap as a by-product, intended for sale to third parties:

Parameter	Kg (per declared unit)
Scrap	13.18

6.2. Indoor air emissions

The manufacturer declares that the electrowelded mesh does not generate emissions to indoor air during its useful life.

6.3. Emissions to soil and water

The manufacturer declares that the steel mesh does not generate significant emissions to soil or water during its service life.

6.4. Biogenic carbon content

The manufacturer declares that the steel mesh does not contain biogenic carbon materials.

The packaging containing biogenic carbon used for product distribution is shown in the following table:

Parameter	kg of biogenic C (per declared unit)
Product	0
Packaging	1.37E+00

6.5. Electricity mix used

The following electricity mix has been used:

- For the plant in Spain: the residual mix of the electricity supplier, obtained from the annual report of the CNMC.
- For the plant in Portugal: the baseline energy mix of the continental Portuguese system.
- For the plant in France: the national electricity generation mix in France published in the annual report of Réseau de Transport d'Électricité.

At the Megamalla plant (Spain), 12.16% of the electricity consumed comes from on-site photovoltaic panels, which represents 5.14% of the energy used in the manufacturing of the average mesh studied.

Mix - GWP - gCO2 eq/kWh	
Average mix	179.96

REFERENCES

1

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EN 15804:2012+A2:2019/AC:2021. Sustainability in construction. Environmental product declarations. Core product category rules for construction products.

3

General Instructions for the GlobalEPD Programme, 3rd revision. AENOR. October 2023.

4

EN ISO 14025:2010 Environmental labels. Type III environmental claims. Principles and procedures (ISO 14025:2006).

5

EN ISO 14040:2006/A1:2021. Environmental management. Life cycle assessment. Principles and framework. Amendment 1. (ISO 14040:2006/Amd 1:2020).

6

EN ISO 14044:2006/A1:2021. Environmental management. Life cycle assessment. Requirements and guidelines. Amendment 2. (ISO 14044:2006/Amd 2:2020).

7

Life cycle analysis report for environmental producto declarations for Megasa Group steel products, prepared by Abaleo S.L., April 2026, 3rd version.

8

Databases and environmental impact assessment methodologies applied using SimaPro 10.3.0.1.

9

GlobalEPD 001-028-rev2. Hot-rolled reinforcing steel from electric arc furnace from the Megasa Siderúrgica plant (Narón). Valid until 2030-12-18.

10

GlobalEPD 001-033-rev2. Hot-rolled wire rod for welded mesh from electric arc furnace from the SN Seixal plant. Valid until 2030-12-18.

11

GlobalEPD 001-030-rev2. Hot-rolled reinforcing steel from electric arc furnace from the SN Seixal plant. Valid until 2030-12-18.

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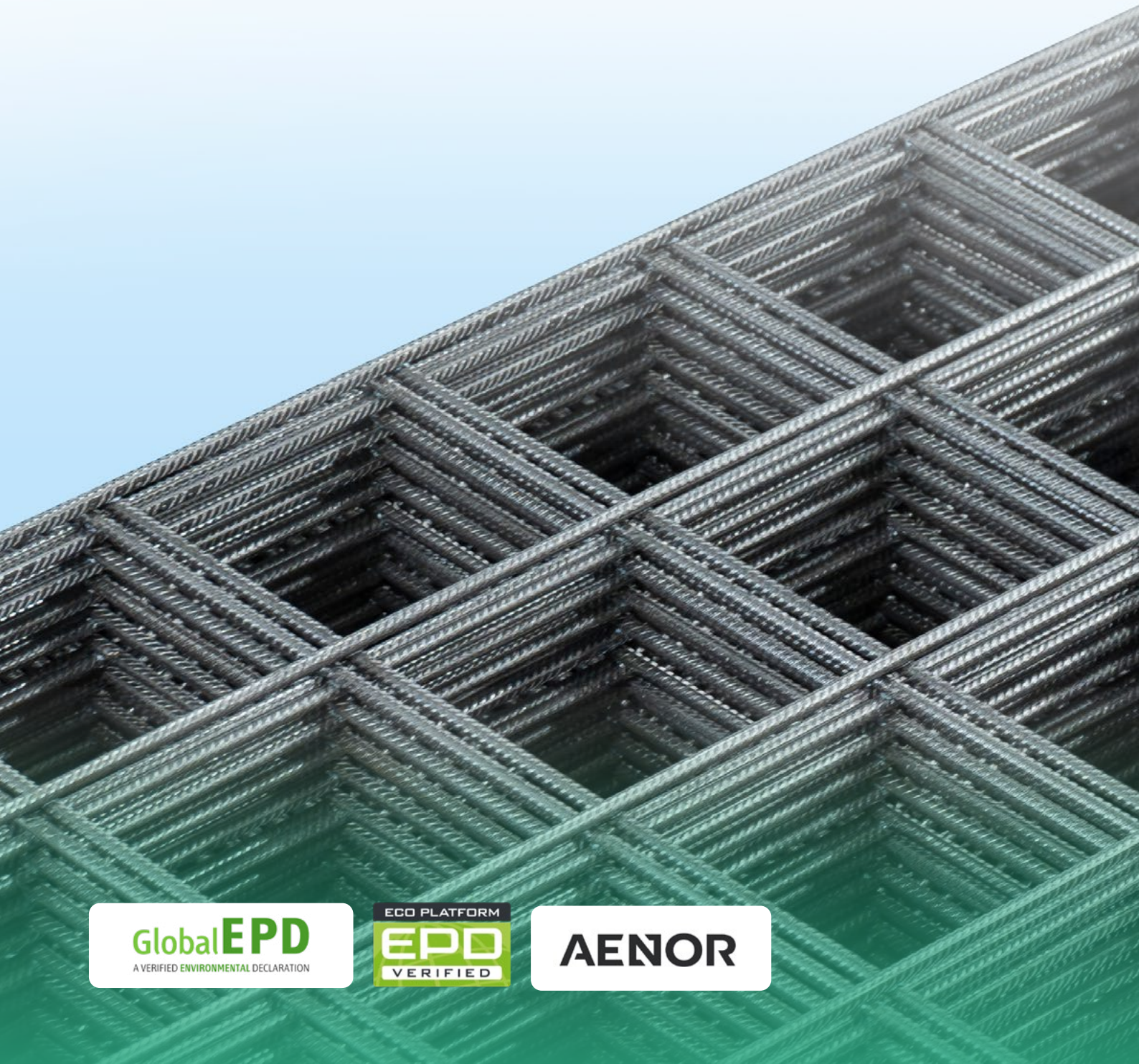
Environmental Product Declaration



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