Environmental Product Declaration

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

Reinforcing Steel electro-welded mesh

from

Gallega de Mallas, S.L.

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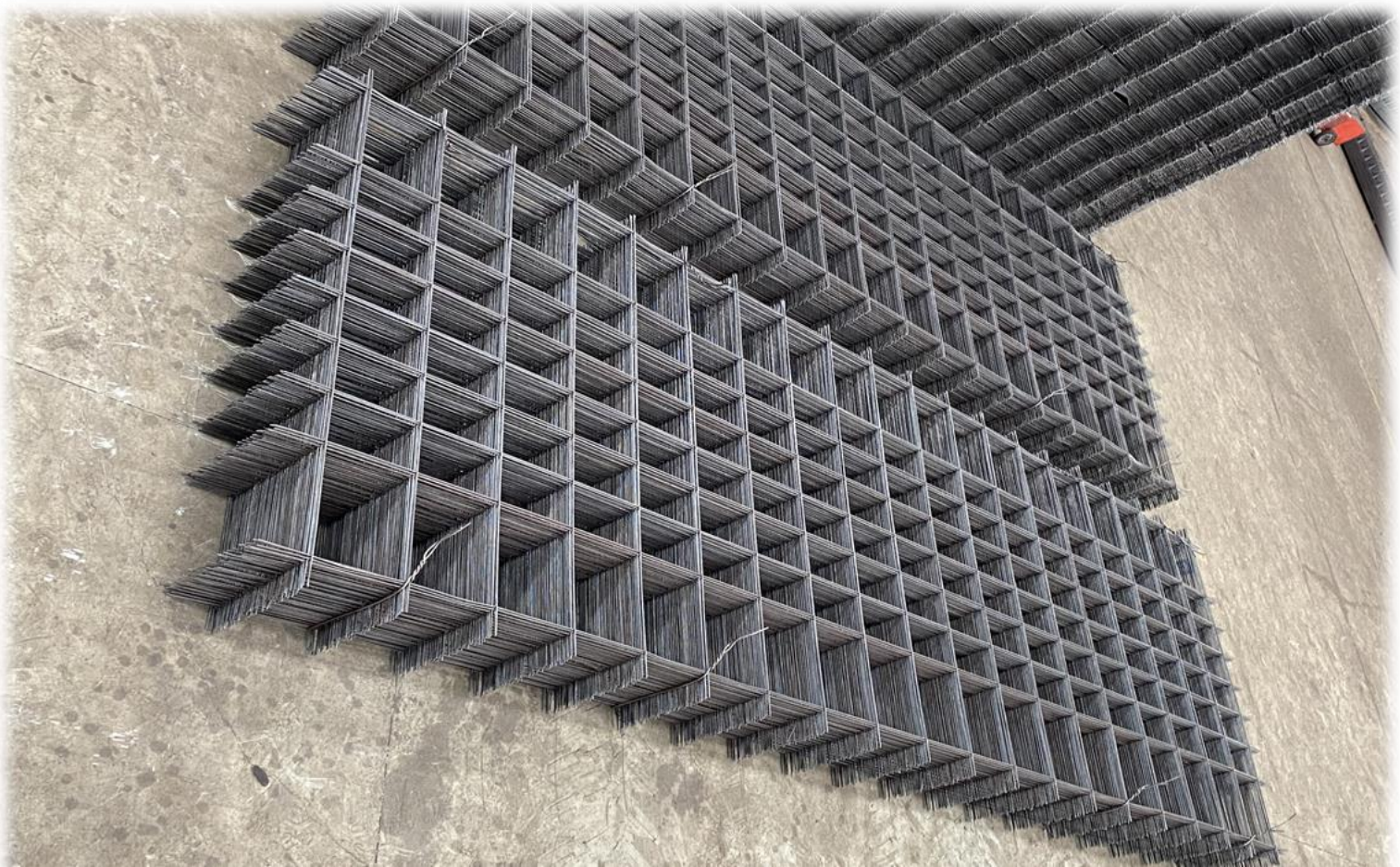


General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): **PCR 2019:14** Construction products (EN 15804:2012+A2:2019/AC :2021) Version 1.3.2
The PCR review was conducted by: The Technical Committee of the International EPD ® System. Chair: No chair appointed. Contact via info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: APPLUS – LGAI Technological Center S.A
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Marcel Gómez Ferrer | info@marcelgomez.com Approved by: The International EPD® System

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 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: Gallega de Mallas, S.L.
Contact: Ismael Vieito, Ismael@galcore.es
Pozuelo de Alarcón
15105 Carballo - A Coruña (Spain)

Description of the organisation:

In 1985, Mr Manuel Añón Rey founded *Hierros Añón* in Laracha, A Coruña, from a rebar workshop and iron warehouse established by his father, Mr. Manuel Añón González. The company was initially dedicated to the commercialization of steel for construction, being an iron distributor with sales throughout Galicia. Then, after the closing of *Sidegasa* in 1986, they looked for new suppliers and established commercial relations with *Siderúrgica Nacional Portuguesa.*

In early 90´s, they began importing steel form England, Germany and Turkey to diversify their supply sources. In 1994, the privatization of *Siderúrgica Portuguesa* led to a decision to stop supplying iron to *Hierros Añón,* which prompted the company to focus even more on importing and approving steel.

At the en of 1994, **Gallega de Mallas, S.L.** was created, a company dedicated to the manufacture of electrowelded mesh and joist reinforcement with commercial success throughout Galicia and Spain in the b2b market. Faced with the lack of a constant supply of iron, *Hierros Añón* decided to manufacture its own steel and established *Siderúrgica Añón* in 2000.

Later, they were able to homologate their products, and in 2004, they acquired a modern steel mill, *Acieria de L´Atlantique*, in Bayonne, France. In 2006, *Siderúrgica añón do Brasil*, Ltda. Was incorporated.

In 2017 **Gallega de Mallas, S.L.** moved to new facilities in Carballo and acquired stakes in *Laminoirs des Landes, SA* and *Comercial de Laminados* from the German Group *Kloeckner.*

Gallega de Mallas, S.L. has a Production Plant in the Bértoa Industrial Estate (Carballo - A Coruña), on a plot of 51,079 m2 and with a covered surface area of 16,540 m2, it has one of the most modern and best equipped factories in the sector for the production of electrowelded mesh.
Its technology and facilities are focused on a single objective: to achieve a top-quality product that satisfies the demands of its customers. To achieve this, they apply what they have learnt over the last 30 years, acquiring new knowledge in their process of continuous improvement.

Product-related or management system-related certifications:
Certified by Applus in ISO 9001 with certificate nº: EC-9028/18 and accreditation nº: 02/C-S032 and DCOR "Officially Recognized Quality Distinctive" RD. 1247/2008 for the product: Steel for active reinforcement with certificate nº: PR-1791/088

Name and location of production site(s): Gallega de Mallas, S.L.
Polígono Industrial de Bértoa, parcela E2.
15105 Carballo - A Coruña (Spain)

Product information

Product name: Reinforcing steel electro-welded mesh

Product identification: Reinforcing steel electro-welded mesh, Steel for concrete reinforcement, weldable steel for reinforced concrete reinforcement, general. (UNE-EN 10080)

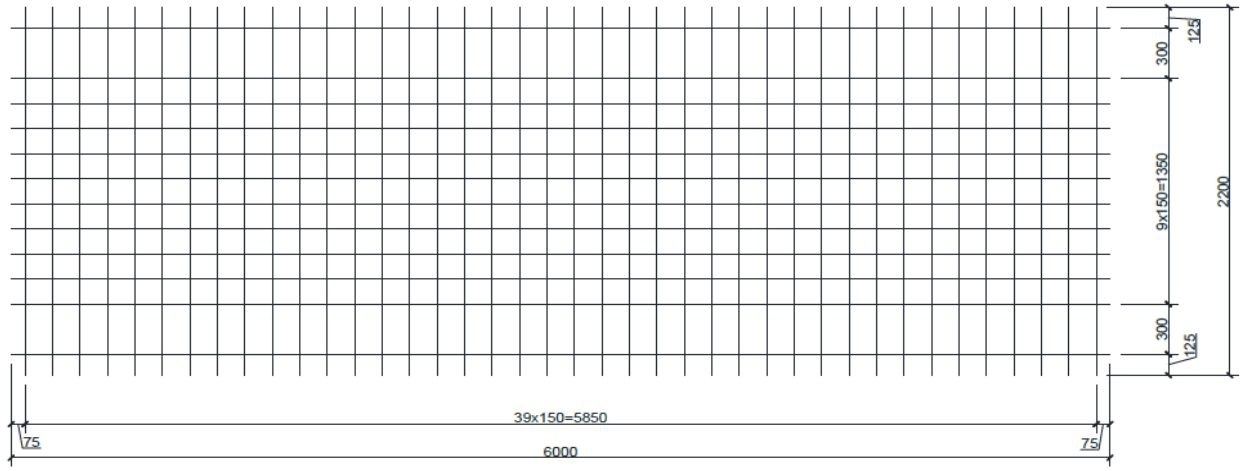
Product description:

The product **Reinforcing steel electro-welded mesh**, from now on "Reinforcing steel mesh" is a vital construction element, consisting of interconnected beams. It efficiently distributes loads and provides stability to structures like roofs and bridges. Reinforcing steel mesh are lightweight yet strong, thanks to their strategic design. They come in various types, each suited for specific load-bearing needs. Made from materials like steel or aluminium, Reinforcing steel mesh endure tension and compression forces, ensuring stability. Reinforcing steel mesh are essential for creating safe, open spaces in modern construction.

This product is third party verified by Applus according to the DCOR (Officially Recognised Quality Mark) and SPC-085 "Steel products for concrete", achieving great product capabilities.

REINFORCING STEEL MESH can be found in different proportions and dimensions, depending on the demand. The following table exemplifies the different product characteristics that can be found under Gallega de Mallas portfolio:

Designation	*Sections (mm2/m)		Separation between elements		Diametre (mm)		Nº Elements		Flights/Panel projections				Saving zone	Panel Data		Data Package			
									u1	u2	u3	u4	pA						High
	AL	Ac	PL	PC	ØL	ØC	NL	NC	(mm)	(mm)	(mm)	(mm)	(mm)	kg/m2	kg/pnl	Pnls	Kgs	m2	(m)
C1054	0,084	0,084	150	150	4,0	4,0	**12**	**40**	75	75	125	125	300	1,200	15,84	110	1.742	1.452	0,44
C2004	0,063	0,063	200	200	4,0	4,0	**9**	**30**	100	100	100	100	400	0,900	11,88	110	1.307	1.452	0,44
C2004 SA	0,063	0,063	200	200	4,0	4,0	**11**	**30**	100	100	100	100	X	0,990	13,07	110	1.437	1.452	0,44
R2004	0,063	0,042	200	300	4,0	4,0	**9**	**20**	150	150	100	100	400	0,735	9,70	110	1.067	1.452	0,44
R2004 SA	0,063	0,042	200	300	4,0	4,0	**11**	**20**	150	150	100	100	X	0,825	10,89	110	1.198	1.452	0,44
C1505	0,131	0,131	150	150	5,0	5,0	**12**	**40**	75	75	125	125	300	1,867	24,64	70	1.725	924	0,36
C2005	0,098	0,098	200	200	5,0	5,0	**9**	**30**	100	100	100	100	400	1,400	18,48	90	1.663	1.188	0,46
R2005	0,098	0,065	200	300	5,0	5,0	**9**	**20**	150	150	100	100	400	1,143	15,09	90	1.358	1.188	0,46
R1505	0,131	0,065	150	300	5,0	5,0	**12**	**20**	150	150	125	125	300	1,353	17,86	90	1.608	1.188	0,46
C1506	0,189	0,189	150	150	6,0	6,0	**12**	**40**	75	75	125	125	300	2,691	35,52	50	1.776	660	0,31
C2006	0,142	0,142	200	200	6,0	6,0	**9**	**30**	100	100	100	100	400	2,018	26,64	60	1.598	792	0,37
R1506	0,189	0,094	150	300	6,0	6,0	**12**	**20**	150	150	125	125	300	1,951	25,75	60	1.545	792	0,37
C1508	0,335	0,335	150	150	8,0	8,0	**11**	**40**	75	75	200	200	300	4,608	60,83	30	1.825	396	0,25
PL1508	0,335	0,335	150	150	8,0	8,0	**12**	**37**	450	150	400	150	X	4,590	60,59	30	1.818	396	0,25
C2008	0,252	0,252	200	200	8,0	8,0	**8**	**30**	100	100	200	200	400	3,411	45,03	40	1.801	528	0,33
PL2008	0,252	0,252	200	200	8,0	8,0	**9**	**28**	400	200	400	200	X	3,459	45,99	40	1.826	528	0,33
C1510	0,523	0,523	150	150	10,0	10,0	**11**	**40**	75	75	200	200	300	7,198	95,02	20	1.900	264	0,21
PL1510	0,523	0,523	150	150	10,0	10,0	**11**	**36**	600	150	550	150	X	6,787	89,59	20	1.792	264	0,21
C2010	0,363	0,363	200	200	10,0	10,0	**8**	**30**	100	100	200	200	400	5,329	70,34	25	1.758	330	0,26
PL2010	0,363	0,363	200	20	10,0	10,0	**8**	**27**	600	200	600	200	X	5,020	66,27	25	1.657	330	0,26
C1512	0,753	0,753	150	150	12,0	12,0	**9**	**40**	75	75	350	350	300	9,553	126,10	15	1.891	198	0,19
PL1512	0,753	0,753	150	150	12,0	12,0	**10**	**36**	600	150	700	150	X	9,364	123,61	15	1.854	198	0,37
C2012	0,565	0,565	200	200	12,0	12,0	**7**	**30**	100	100	300	300	400	7,265	95,90	20	1.918	264	0,25
PL2012	0,565	0,565	200	200	12,0	12,0	**8**	**27**	600	200	600	200	X	7,225	95,37	20	1.907	264	0,25



UN CPC code: **4126** Bars, rods, angles, shapes and sections, cold processed of further worked, of iron or steel; angles, shapes and sections, hot-rolled, hot drawn or extruded, of alloy steel; steel wire According to the Statistical document "Central Product Classification (CPC) Series M No. 77, Ver.2.1.

Geographical scope: Coverage of Global raw materials and transportation (A1-A2), Spanish technologies and processes during the Production process stage (A3) and European coverage during the Transport, Usage, End of Life Stage and Resource Recovery Stage (A4, C and D).

Applicable test and characteristics of the Reinforcing steel mesh are the following:

REINFORCING STEEL MESH		
Characteristics **UNE-EN 10080 / UNE-EN 15630-1 / UNE-EN 15630-2 / UNE 36740**	**Unit**	**Value**
MECHANICAL PROPERTIES		
Elastic limit (Rp0.2)	MPa	≥ 510
Tensile strength (Rm)	Mpa	≥ 565
Relation (Rm/Rp0.2)	%	≥ 1.03

Elongation at break (A)	%	≥ 8
SHEAR IN THE WELD		
Nominal diameter	mm	ø4 - ø5 - ø6 - ø8 - ø10 - ø12
Minimal breakout force	A	1602 - 2503 - 3605 - 6409 - 10014 - 14420
ADHERENCE		
τbm	MPa	Ø < 8 = 6.88 Mpa; 8 ≤ Ø ≤ 32 = 7.84-0.12Ø; 32 < Ø = 4
τbu	MPa	Ø < 8 = 11,22; 8 ≤ Ø ≤ 32 = 12,74-0,19Ø; 32 < Ø = 6,66
GEOMETRY OF THE CORRUGATIONS		
Nominal diameter	mm	ø4 - ø5 - ø6 - ø8 - ø10 - ø12
Minimum height of corrugations	mm	0.14 – 0.18 – 0.22 – 0.29 – 0.36 – 0.50
Maximum separation between corrugations	mm	3.0 – 3.8 – 4.5 – 6.0 – 7.5 – 8.5
Perimeter without corrugations (sum)	mm	3.04 -3.80 – 4.56 – 6.24 – 7.60 – 7.20
Angle of corrugations (tracing)	º	35-65 | 35-65 | 35-65 | 35-65 | 35-65 | 35-75
SIMPLE BENDING TEST		
Nominal diameter	mm	ø4 - ø5 - ø6 - ø8 - ø10 - ø12
Chuck diameter	mm	12 - 15 - 18 - 24 - 30 - 36(30)
CHEMICAL COMPOSITION		
On "Colada"	%	[C=0.22], [S=0.05], [P=0.05], [N=0.12], [Cu=0.8], [Ceq=0.5]
On Product	%	[C=0.24], [S=0.055], [P=0.055], [N=0.14], [Cu=0.85], [Ceq=0.52]

LCA information

Declared unit: In the present study, the declared unit is considered being 1 ton of Reinforcing steel mesh. According to UNE 36904-2:2018. The reference unit to express environmental information is 1000 kg of basic construction steel product.

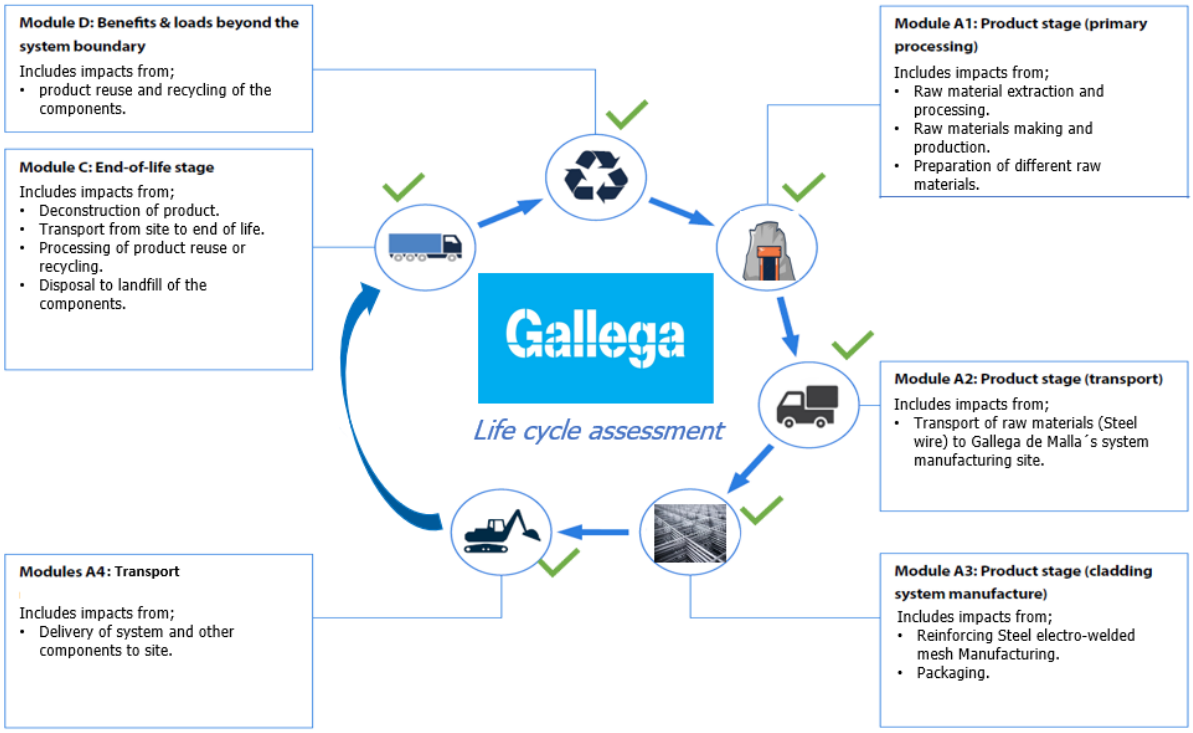
Reference service life: The RSL used in this EPD is 50 years. According to the UNE 36904-2 standard: "The reference useful life of the structure in which the products under consideration are located". The product is placed in construction structures and, according to the concrete structural code information, its useful life is 50 years.

Time representativeness: The data collected are for the year 2022, based on the production from the same year.

Database(s) and LCA software used: The LCA database profile is EcoInvent version 3.6 (September 2019) and the LCA software is SimaPro 9.1.1 with the characterization method based in EN 15804 + A2 Method v1.0.

Description of system boundaries: The scope of the Declaration and the limits of the system apply from "Cradle to gate with options" covering all information modules A1 to A4, C1 to C4 and D.

System diagram:



The life cycle analysis is based on the EN 15804:2012+A2:2019/AC :2021 standard, where the following cutting criteria are applied:

PRODUCT STAGE (A1 - A3): The production stage consists of the extraction of raw materials, transportation of the raw materials, processing the raw materials into materials and the production of the product. The required energy for production, external treatments, ancillary materials, packing material and production emissions are included, energy consumed comes from ES energy supplier and it´s specific energy mix, with a value of 0.267 kg CO eq/kWh. The limits of the system to nature are related between the resources derived from petroleum and the Technosphere in the production of Truss girders, where most of its content is Steel.

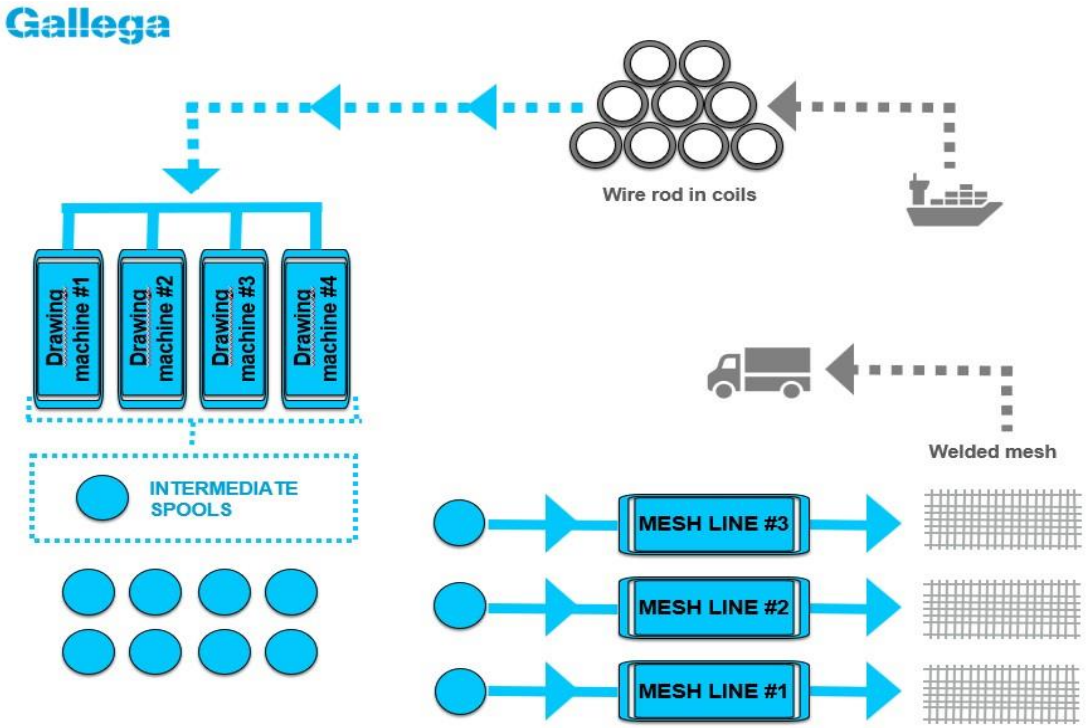
With regards to the production process of the Stages A1-A3, it can be described as the following:
To produce reinforcing steel mesh, Gallega de Mallas begins with steel wire rod in coils, with different chemical compositions and diameters depending on the product to be manufactured. The raw material, most of which is moved on cargo ships, is stored at the manufacturer's facilities in piles according to diameter, supplier, and type of steel. To ensure correct behaviour during further processing, the wire rod must remain for a week in an enclosed location protected from the weather, thus achieving a dry surface. All movements between the wire rod yard, the drying room, and the wire drawing machines are carried out using forklift trucks.

The first industrial process carried out is wire rod drawing, in which the cross-section of the wire rod is reduced, and the mechanical properties of the different grades produced are achieved. Drawing is carried out by means of cold-rolling cassettes. Each cassette is fitted with a series of lamination rolls,

arranged in sets of three, which produce a progressive reduction of the steel cross-section. In the last step, in addition to reduction, the wire is indented or corrugated: a series of marks are printed on the surface of the steel, aiming to improve the adherence between the reinforcement steel and the concrete in which it is embedded. The depth and geometry of these marks are adjusted to each diameter and specification produced in the factory. Throughout the process, temperatures are controlled by cooling the wire using a cold water closed circuit. It is also necessary to apply a powder lubricant, which requires a wire rod surface free of rust and scale. This surface is achieved by mechanical descaling, without the use of chemicals.

The wire drawn is then coiled on 5-tonne spools, constituting an intermediate product that feeds all the electro-welded wire mesh machines that Gallega de Mallas operates. In these machines, a series of wire spools feed the longitudinal wires of the mesh, while another series of spools feed the wires that are placed in the transversal direction. Although there are small differences depending on the machine, the basic production process consists of moving the longitudinal wires as a transversal wire is injected. This transverse wire, which undergoes a straightening and cutting process, is joined to the longitudinal wires by means of the electro-welding technique: an electric current is passed between two copper electrodes which touch the longitudinal and transverse wires at each point of intersection. The electric current flowing, the time during which it is applied, and the mechanical pressure involved define the strength of the weld and the degree to which the steel is affected.

Once the mesh panels have been produced, they are stacked in bundles of several units, depending on their size and weight, and are secured by automatic tying and compacting devices. Once they have been discharged from the machine, they are labeled and transferred to the corresponding piles, awaiting dispatch to the customer. 100% of the processed product is stored in the warehouse, protected from the weather. All electro-welded mesh handling operations are carried out using overhead cranes equipped with special tools.
The production process is represented in the following system diagram:



CONSTRUCTION PROCESS STAGE (A4 - A5): This stage consists of transporting the product from Gallega´s production plan to an average distance of their buyers during the 2022. It also includes the loss of material during construction. This includes additional production required, transportation, and end-of-life material lost during construction.
It also includes the end of the useful life of the packaging material until the end of the state of disposal or final waste disposal. Installation of the product, including manufacturing, transportation, and end-of-life of auxiliary materials and any use of energy or water necessary for the installation or operation of the product construction works are considered.

Stage A4 - Transport to construction site: It includes transport from the production site to a central warehouse where it will be further distributed. During this stage, no transport losses are assumed.

SCENARIO INFORMATION	VALUE/DESCRIPTION
Type of vehicle used for transport	Lorry (Truck) > 32t, EURO4
Vehicle lead capacity	> 32 Ton
Fuel type and consumption	Diesel: 30L/100km
Distance to the site	500 km
Capacity of utilization (including empty returns)	Default value from Ecoinvent 3.6
Bulk density of transported products	Kg/m^3
Volume capacity utilization factor	Not Applicable

END OF LIFE STAGE (C1 - C4): When the end of the product life stage is reached, the deconstruction begins. This EPD includes deconstruction (C1), which includes the removal of the building's floor covering, including the initial on-site selection of materials; necessary transportation (C2) from the deconstruction site to the sorting location and the distance to final disposal. The end of life stage includes final landfill disposal (C4), where the waste is disposed of, which includes physical pre-treatment and management at the disposal site, waste processing (C3), being the incineration and necessary recycling processes to the final point of disposal.

BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D): This stage contains the potential loads and benefits of recycling and re-use of raw materials/products. The loads contain the needed recycling processes from end-of-wastepoint up to the point-of-equivalence of the substituted primary raw material and a load for secondary material that will be lost at the end-of-life stage.
The loads and benefits of recycling and reuse are included in this module. The benefits are calculated based on the primary content and the primary equivalent.

SCENARIO INFORMATION	VALUE/DESCRIPTION
Collection process specified by type	Reinforcing steel (i.a. metals): 1000 kg with mixed construction waste.
Recovery system specified by type	0 kg for Incineration
	950 kg for Recycling
	0 kg for Re-use
Elimination specified by type	50 kg disposal to landfill
Assumptions for scenario development (e.g. transport)	Lorry (Truck), unspecified (default) | market group for (GLO) Distance to landfill 100 km, to incineration 150 km and to recycling 50 km

In addition, the benefits of energy recovery are granted at this stage. The amount of avoided energy is based on the Lower Heating Values of the materials and the efficiencies of the incinerators as mentioned in the NMD Determination method v1.0 or EcoInvent 3.6 (2019).

Therefore, it will be considered that in this EPD, of all the previously declared cut criteria, only modules **"A1-A4"; "C1-C4" and "D"** are declared; being the minimum required by the EN 15804:2012+A2:2019/AC :2021 standard.

Data quality: All process-specific data was collected for the 2022 operating year and is therefore up-to-date.

The data is obtained from the company and verified by **APPLUS - LGAI Technological Center S.A**

The generic data were taken from the database EcoInvent (version 3.6). The data quality assessment covers geography representativeness, technology representativeness and time representativeness, and is based on the data quality criteria from the Annex E, Table E.2 of EN 15804:2012+A2:2019/AC :2021.

The data quality overall can be classified as very good. Geographically. the data are from A1 and A2 stages is global, from stage A3 is Euro and the rest stages (A4, C1, C2, C3, C4 and D) are European. Temporally, the data are current, from the year 2022, thus qualifying as very good. Technically, the same manufacturing system and machinery (drawing machines) is followed for the development of the products.

With regard to the exclusion criteria for inputs and outputs (cut-off rules), what is indicated in the UNE-EN 36904-2:2018 standard is considered, which indicates that If there is not enough information, the energy of the process and the materials that represent less than 1% of the total energy and mass used can be excluded (if they do not cause significant impacts). The sum of all excluded inputs and outputs cannot exceed 5% of the total mass and energy used, as well as the environmental emissions produced. The following processes have been excluded:

- Manufacture of equipment used in production, buildings or any other capital asset;
- Transportation of personnel to the plant;
- Transportation of personnel within the plant;
- Research and development activities;
- Long- term emissions.

With other criteria, the polluter pays principle, the principle of modularity and that it does not consider the emissions generated in the long term have been considered.

The system's LCA calculation did not consider flows related to the construction of production plants, application machines and employee transport and the study cover at least 95% of the materials and energy per module and at least 99% of the total material and energy use of each unit process.

Allocation:
Whenever allocations could be avoided, primary data have been used. Where this has not been possible, mass-based physical allocations have been used.
The allocation for inputs of materials, such as raw materials or packaging materials, are direct.

The allocation for consumptions, such as energy, water and steam, have been allocated from 2022 production.
For production waste, only the packaging material of the Reinforcing steel mesh has been taken into account, knowing the kg that could be produced from it.

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	Global	Global	ES	EU													EU
Specific data used	>90% GWP			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0 %			EU average for Gallega	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

This EPD is representative for one ton of **Reinforcing Steel electro-welded mesh** with the trade name Reinforcing steel mesh manufactured at the production site Gallega de Mallas, S.L.

The data for Reinforcing steel mesh has been used for the calculation as it is one of the main products manufactured by Gallega de Mallas.

The components for Gallega´s Reinforcing steel mesh product is detailed here and his explanation of each phase:

Products Component: Also known as raw material supply, The % for manufacturing one ton of Reinforcing steel mesh.

Packing Material: Includes amount of packaging materials used for one ton of the product.

Ancillary materials: Refers to those materials used during the life cycle of a product, but which are not directly part of the final product.

Energy consumption: Refers to the energy consumed to manufacture one ton of the product. From 2022 ES specific mix from energy supplier.

Product components	**Weight, %**	**Post-consumer material, weight, %**	**Biogenic material, weight, % and kg C/kg**
Steel Wire	98	17.51	0
Steel Wire 1	2	95	0
TOTAL	**100**	**19.05**	**0**
Packaging materials	**Mass per declared unit (kg/ton)**	**Weight, % (versus the product)**	**Weight biogenic carbon, kg C/ton**
High-strength steel strap	1.78E-01	0.17	0
TOTAL	**1.78E-01**	**0.17**	**0 kg C**

Hazardous Materials Content:
During the life cycle of the product, no dangerous substance included in the "List of substances candidates for authorization (SVHC)" in a percentage greater than 0.1% of the weight of the product.

RESULTS:
ENVIRONMENTAL INFORMATION

Reinforcing Steel electro-welded mesh

Results of the environmental performance indicators

Classification of disclaimers to the declaration of core and additional environmental impact indicators

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

Disclaimer 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 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.

Disclaimer 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.

Mandatory impact category indicators according to EN 15804

** 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.*

Results of 1 ton Reinforcing Steel electro-welded mesh

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,32 E+03	4,51 E+01	ND	ND	ND	ND	ND	ND	ND	ND	6,95 E-01	7,09 E+00	0,00 E+00	2,63 E-01	-1,10 E+03
GWP-biogenic	kg CO_2 eq.	-1,92 E+00	3,30 E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	3,46 E-03	1,91 E+00	1,14 E+01
GWP-luluc	kg CO_2 eq.	1,35 E+00	1,33 E-02	ND	ND	ND	ND	ND	ND	ND	ND	5,48 E-05	2,60 E-03	0,00 E+00	7,35 E-05	8,09 E-01
GWP-total	kg CO_2 eq.	1,18 E+01	4,52 E+01	ND	ND	ND	ND	ND	ND	ND	ND	6,95 E-01	7,09 E+00	0,00 E+00	2,64 E-01	-1,09 E+03
ODP	kg CFC 11 eq.	1,46 E-04	1,07 E-05	ND	ND	ND	ND	ND	ND	ND	ND	1,50 E-07	1,56 E-06	0,00 E+00	1,09 E-07	-2,68 E-05
AP	mol H^+ eq.	1,18 E+01	2,31 E-01	ND	ND	ND	ND	ND	ND	ND	ND	7,27 E-03	4,11 E-02	0,00 E+00	2,50 E-03	-4,23 E+00
EP-freshwater	kg P eq.	1,32 E-01	3,47 E-04	ND	ND	ND	ND	ND	ND	ND	ND	2,53 E-06	7,15 E-05	0,00 E+00	2,95 E-06	-3,88 E-02
EP-marine	kg N eq.	2,37 E+00	7,83 E-02	ND	ND	ND	ND	ND	ND	ND	ND	3,21 E-03	1,45 E-02	0,00 E+00	8,60 E-04	-7,85 E-01
EP-terrestrial	mol N eq.	2,71 E+01	8,64 E-01	ND	ND	ND	ND	ND	ND	ND	ND	3,52 E-02	1,60 E-01	0,00 E+00	9,50 E-03	-9,17 E+00
POCP	kg NMVOC eq.	1,15 E+01	2,58 E-01	ND	ND	ND	ND	ND	ND	ND	ND	9,68 E-03	4,56 E-02	0,00 E+00	2,76 E-03	-6,24 E+00
ADP-minerals&metals*	kg Sb eq.	3,87 E-02	7,77 E-04	ND	ND	ND	ND	ND	ND	ND	ND	1,07 E-06	1,80 E-04	0,00 E+00	2,41 E-06	-7,41 E-04
ADP-fossil*	MJ	2,55 E+04	7,08 E+02	ND	ND	ND	ND	ND	ND	ND	ND	9,57 E+00	1,07 E+02	0,00 E+00	7,36 E+00	-7,66 E+03
WDP*	m^3	7,32 E+02	2,30 E+00	ND	ND	ND	ND	ND	ND	ND	ND	1,28 E-02	3,82 E-01	0,00 E+00	3,30 E-01	-2,09 E+02
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															

Additional mandatory and voluntary impact category indicators

Results of 1 ton Reinforcing Steel electro-welded mesh															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	2,32 E+03	4,52 E+01	ND	ND	ND	ND	ND	ND	ND	ND	6,95 E-01	7,09 E+00	0,00 E+00	2,64 E-01	-1,09 E+03
ETP - fw	CTUe	1,03 E+05	5,64 E+02	ND	ND	ND	ND	ND	ND	ND	ND	5,77 E+00	9,53 E+01	0,00 E+00	4,77 E+00	-3,68 E+04
PM	disease incidence	1,97 E-04	4,20 E-06	ND	ND	ND	ND	ND	ND	ND	ND	1,93 E-07	6,37 E-07	0,00 E+00	4,86 E-08	-6,36 E-05
HTP - c	CTUh	1,87 E-05	1,39 E-08	ND	ND	ND	ND	ND	ND	ND	ND	2,01 E-10	3,09 E-09	0,00 E+00	1,11 E-10	-1,42 E-07
HTP - nc	CTUh	1,35 E-04	6,41 E-07	ND	ND	ND	ND	ND	ND	ND	ND	4,95 E-09	1,04 E-07	0,00 E+00	3,40 E-09	2,16 E-04
IR	kBq U235 eqv.	6,41 E+01	3,09 E+00	ND	ND	ND	ND	ND	ND	ND	ND	4,10 E-02	4,48 E-01	0,00 E+00	3,02 E-02	1,88 E+01
SQP	Pt	9,43 E+03	8,11 E+02	ND	ND	ND	ND	ND	ND	ND	ND	1,22 E+00	9,27 E+01	0,00 E+00	1,54 E+01	-1,69 E+03
Acronyms	**ETP-fw** = Ecotoxicity, freshwater; **PM** = Particulate Matter; **HTP-c** = Human toxicity, cancer; **HTP-nc** = Human toxicity, non-cancer; **IR** = Ionising radiation, human health; **SQP** = Land use.															

Resource use indicators

Results of 1 ton Reinforcing Steel electro-welded mesh															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,45 E+03	8,91 E+00	ND	ND	ND	ND	ND	ND	ND	ND	5,17 E-02	1,34 E+00	0,00 E+00	5,95 E-02	2,23 E+02
PERM	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT	MJ	2,45 E+03	8,91 E+00	ND	ND	ND	ND	ND	ND	ND	ND	5,17 E-02	1,34 E+00	0,00 E+00	5,95 E-02	2,23 E+02
PENRE	MJ	2,71 E+04	7,51 E+02	ND	ND	ND	ND	ND	ND	ND	ND	1,02 E+01	1,13 E+02	0,00 E+00	7,82 E+00	-7,95 E+03
PENRM	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	2,71 E+04	7,51 E+02	ND	ND	ND	ND	ND	ND	ND	ND	1,02 E+01	1,13 E+02	0,00 E+00	7,82 E+00	-7,95 E+03
SM	kg	1,74 E+02	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m^3	2,04 E+01	8,06 E-02	ND	ND	ND	ND	ND	ND	ND	ND	4,92 E-04	1,30 E-02	0,00 E+00	7,85 E-03	-3,97 E+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														

[1] 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 CO_2 is set to zero.

Waste indicators

Results of 1 ton Reinforcing Steel electro-welded mesh															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1,49 E-01	1,72 E-03	ND	ND	ND	ND	ND	ND	ND	ND	2,61 E-05	2,71 E-04	0,00 E+00	1,10 E-05	-1,32 E-01
Non-hazardous waste disposed	kg	1,01 E+03	6,16 E+01	ND	ND	ND	ND	ND	ND	ND	ND	1,13 E-02	6,78 E+00	9,50 E+02	5,00 E+01	-1,07 E+02
Radioactive waste disposed	kg	6,66 E-02	4,83 E-03	ND	ND	ND	ND	ND	ND	ND	ND	6,64 E-05	7,02 E-04	0,00 E+00	4,84 E-05	6,47 E-03

Output flow indicators

Results of 1 ton Reinforcing Steel electro-welded mesh																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E +00	0,00 E+00	0,00 E+00	0,00 E+00	0,00E +00
Material for recycling	kg	9,98 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E +00	0,00 E+00	9,50 E+02	0,00 E+00	0,00E +00
Materials for energy recovery	kg	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E +00	0,00 E+00	0,00 E+00	0,00 E+00	0,00E +00
Exported energy, electricity	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E +00	0,00 E+00	0,00 E+00	0,00 E+00	0,00E +00
Exported energy, thermal	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E +00	0,00 E+00	0,00 E+00	0,00 E+00	0,00E +00

Other environmental performance indicators

Results per declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	0,00E+00

Estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Information related to Sector EPD

- This is an individual EPD.

Differences versus previous versions

- This is the first version of the EPD.

References

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