CELSA GROUP

QUIJANO BEDDING & SEATING

EPD®

Environmental Product Declaration

In accordance with ISO 14025 for:

Steel Wire for mattress springs, upholstery and different applications.

From:

QUIJANO BEDDING & SEATING

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

Programme operator:
EPD International AB

EPD registration number:
S-P-06577

Issue date:
2022-09-27

Valid until:
2027-09-26

Index

1. Programme information

Programme:

The International EPD® System,
www.environdec.com

EPD International AB
Box 210 60
SE-100 31 Stockholm
Sweden

www.environdec.com
info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

PCR 2014:10 Fabricated steel products, except construction products, machinery and equipment, version 2.12. UN CPC 412, 422, 429.

PCR review was conducted by:
The International EPD® System
Technical Committee

Visit www.environdec.com for full list of members.

Chair of the PCR review: Massimo Marino.
The review panel may be contacted via info@environdec.com

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2010, via:

☑ EPD verification by individual verifier

Rubén Carnerero - IK Ingeniería

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third-party verifier:

☑ Yes ☐ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable.

For more information on comparability see ISO 14025.

2. Company information

Owner of the EPD:

GLOBAL SPECIAL STEEL PRODUCTS, S.A.U.
QUIJANO BEDDING & SEATING
Polígono Industrial Nueva Montaña S/N
39011 Santander (Cantabria, Spain)

(+34) 942 200 457
www.bsquijano.com

Name and location of the production site:

Global Steel Products, S.A.U.
Quijano Bedding & Seating (BSTQ)
Polígono Industrial Nueva Montaña S/N
39011 Santander
Cantabria
Spain

Certifications related to the product or management system:

UNE-EN-ISO 9001: 2015, UNE-EN-ISO 14001:2015, ISO 45001:2018, OEKO-TEX.

Description of the organisation:

Quijano Bedding & Seating is a company dedicated to the exclusive manufacture of wires for springs that are used in the manufacturing of mattresses and upholstery.

About the company

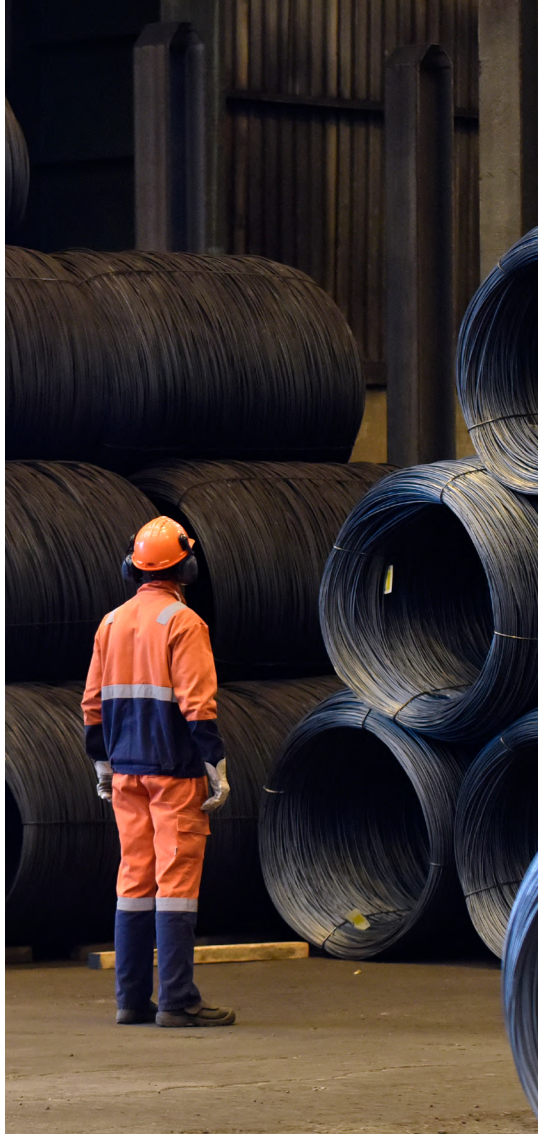
Quijano Bedding & Seating is a leader in the wire sector for mattress and upholstery springs.

Quijano Bedding & Seating is a wire drawing company belonging to the Global Steel Wire Group, part of CELSA Group™.

The Global Steel Wire Group consists of an electric steel mill, rolling mill and 6 other integrated companies for wire rod processing.

Additionally, the Global Steel Wire Group is integrated into CELSA Group™, the leading European circular steel manufacturer with 8 million tons of scrap recovered annually and an annual transformation and sale of 7 million tons of steel.

In Quijano Bedding & Seating and all CELSA Group™, steel is only manufactured from the recycling of scrap in electric arc furnaces, the most energy and environmentally efficient steel manufacturing process, which allows CELSA Group™ to produce steel with low CO2 emissions.



The GSW Group, in its firm commitment to the circular economy, allows waste to be reincorporated back into the economic cycle, valorizing 98% of the waste generated in the manufacture of steel. This waste is used as a secondary raw material for processes such as road construction or for reuse in the steel process itself.

3. Product information

Product name:

Wires for springs used in manufacturing of mattresses and upholstery.

Product identification:

Steel wire for the manufacture of bedding and upholstery springs (bonnell, pocket and helical springs), mainly used in the manufacture of mattress units.

Product description

Quijano Bedding & Seating is a leading supplier of wire for mattress springs as well as wires for various uses with diameters between 1.20 mm and 5 mm, manufactured in accordance with international standards and tailored to the technical specifications of our customers.

The wire rod used as a raw material is manufactured by the Celsa Group in an electric furnace from scrap metal.

Quijano Bedding & Seating obtains its finished product through mechanical pickling that does not use acids. In addition, wires can be supplied in different presentation formats depending on the needs of clients.

Quijano Bedding & Seating is one of the leading European manufacters in the upholstery sector.

Wires for:

- Mattress spring.
- Steel wool.
- Screen Wire.
- Wire nails service.
- Tying wire.
- ACSR

CPC code: 4126. **/ Geographical scope:** Global.

4. LCA information

Name and contact information of LCA author:

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Declared unit:

1 ton (1,000 kg) of wire steel, including packaging.

Temporal representativeness:

Production dates come from the year 2021.

Databases and ACL software used:

Ecoinvent 3.8 database and Environmental Footprint Database 2.0. Software SimaPro 9.3.0.3

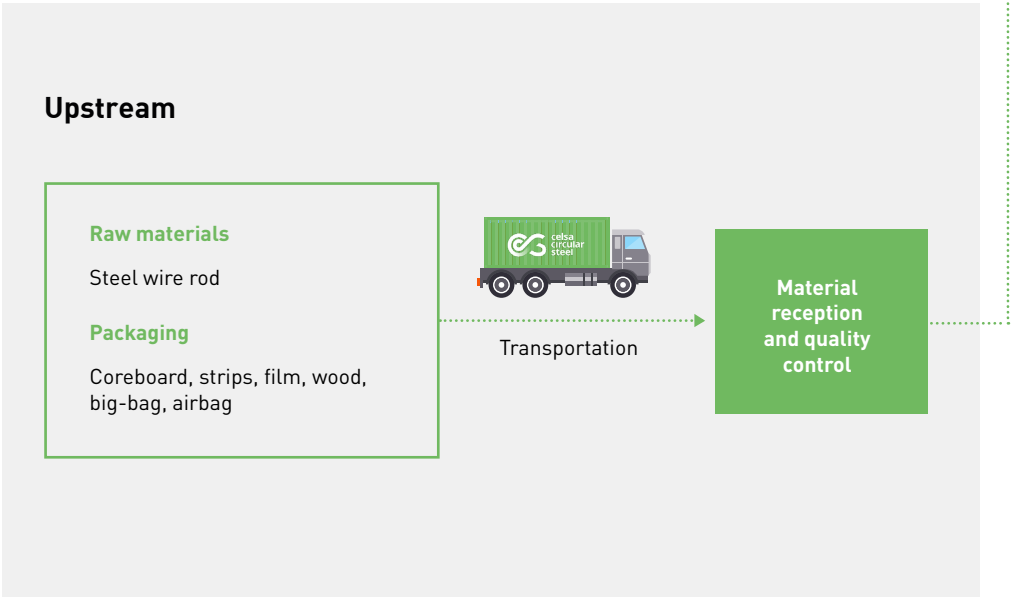
The following criteria were used to select the most representative processes:

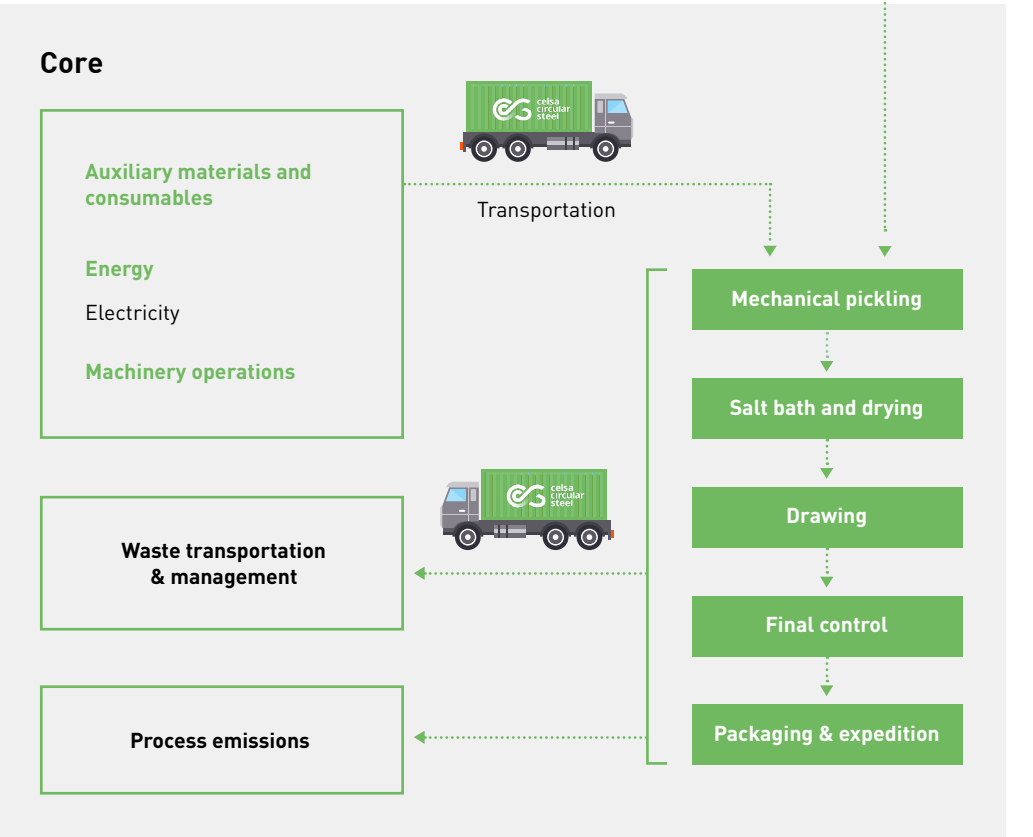
- The data must be representative of the technological development applied in the manufacturing processes. If no information was available, a data representative of an average technology has been chosen.
- Average regionalised data.
- The data should be as up to date as possible.

System diagram:

Upstream and core process of the production of steel wire have been studied.

The system boundaries studied in the Life Cycle Assessment are shown below in the diagram of Quijano Bedding & Seating steel wire.





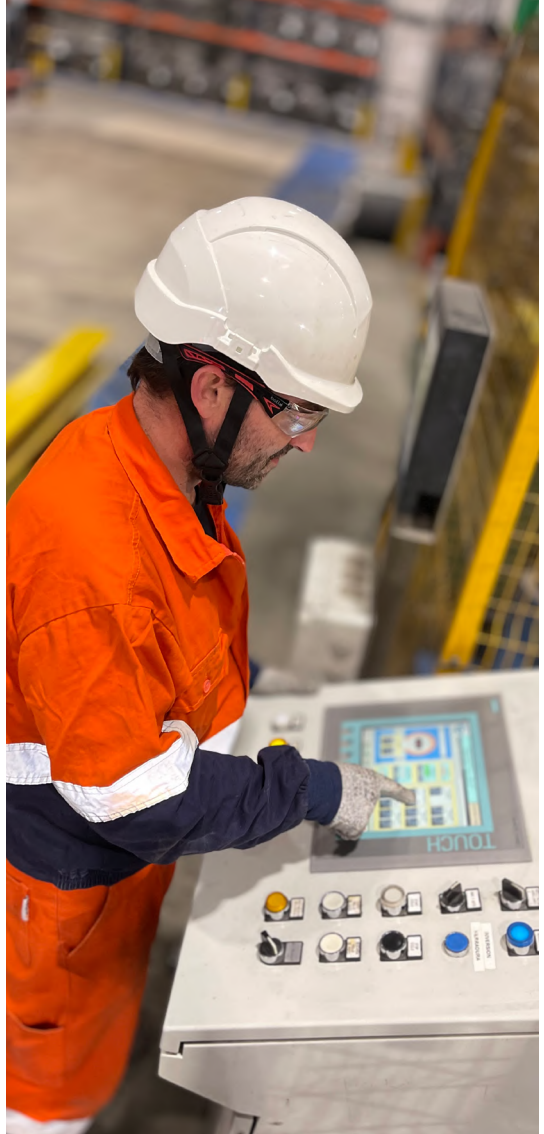
Quijano Bedding & Seating manufacturing process begins with the reception and sorting of the various raw materials.

Subsequently, after the plant planning process, the lines of work are fed with the designated raw materials. The wire rod coils are winded in the cargo foal, passing in line to a mechanical pickling carried out with sandpaper. The next step consists of a salt bath.

After this phase, the material is dried and introduced into the cold drawing installation. At this point the material will go through a series of stages in which it will be lubricated and reduced in diameter until it reaches the desired target diameter.

Once the bundle is finished, it is moved to the labeling and weighing area to later be stored.

In the logistics area, the cargo will be prepared with its designated packaging pending its departure from the plant.



Description of system boundaries:

The EPD covers the upstream and core process stages.

Upstream:

- Extraction and production of raw materials.
- Production of primary and secondary packaging and its transport to the plant.

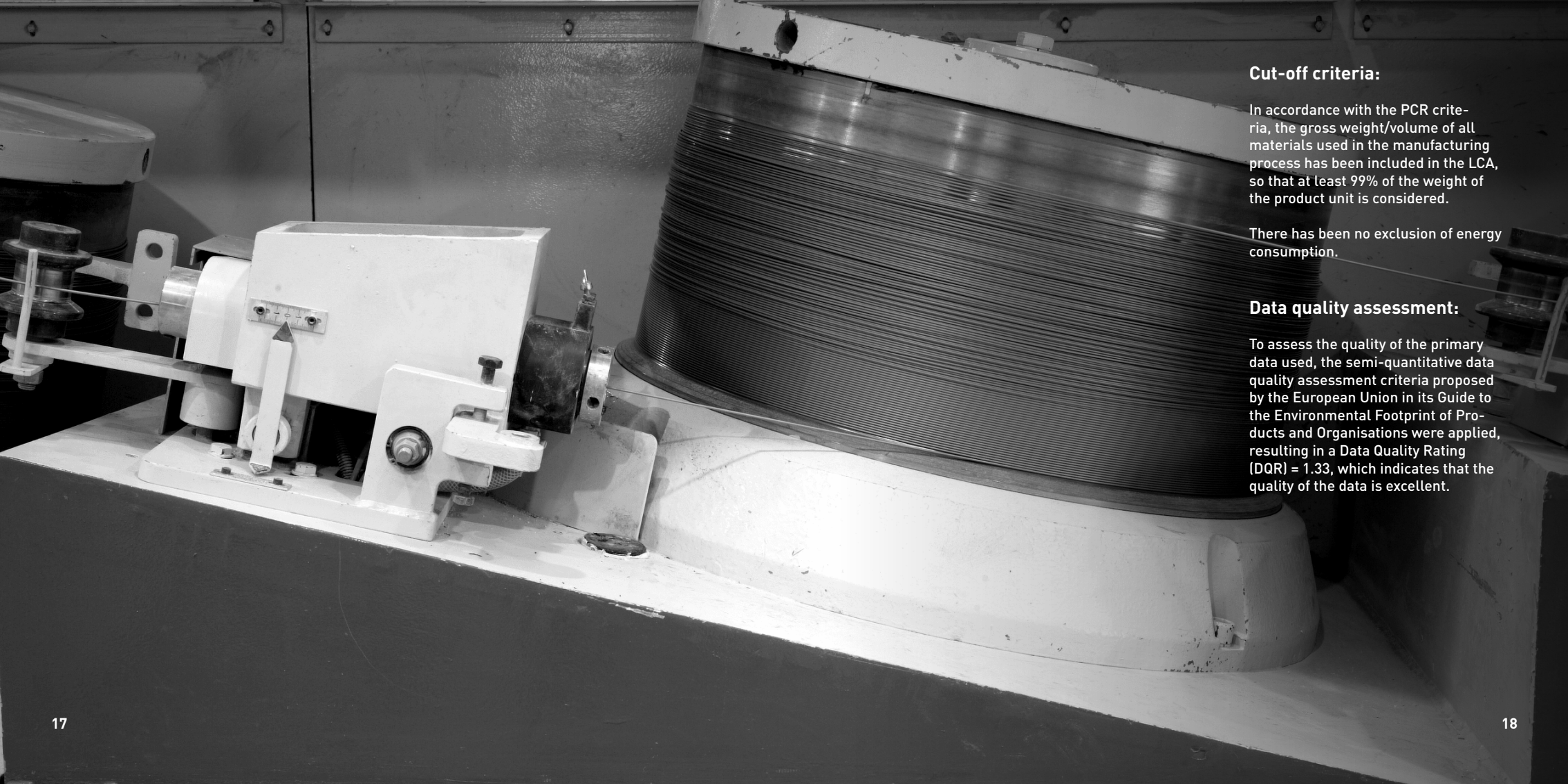
Core:

- Steel wire manufacturing process.
- Transportation of raw materials to the production plant.
- Waste generated during the manufacturing process and their transport and treatment.
- Emissions to air and water during the manufacturing process.
- Impacts due to the production of the energy consumed.
- Production and transportation of auxiliary materials to the production plant.

The polluter pays principle and the modularity principle (environmental burdens are assigned to the stage where the impact occurs) have been followed.

The EPD covers the phases from cradle to gate.

The remaining phases of the life cycle are highly dependent on scenarios and are best developed for each specific product.



Cut-off criteria:

In accordance with the PCR criteria, the gross weight/volume of all materials used in the manufacturing process has been included in the LCA, so that at least 99% of the weight of the product unit is considered.

There has been no exclusion of energy consumption.

Data quality assessment:

To assess the quality of the primary data used, the semi-quantitative data quality assessment criteria proposed by the European Union in its Guide to the Environmental Footprint of Products and Organisations were applied, resulting in a Data Quality Rating (DQR) = 1.33, which indicates that the quality of the data is excellent.

5. Content declaration

Packaging

Primary and secondary packaging for the shipment of the product (distribution packaging) has been included in the study.

Product:

Steel, the single component of the wire, is a material in which iron is the predominant element (more than 95%), with a carbon content generally lower than 1% and also containing other minority elements (UNE-EN 10020 Definition and classification of steel grades).

Chemical composition and properties of the wire is set out in the following product standards:

- UNE-EN ISO 16120-1, UNE-EN ISO 16120-2, UNE-EN ISO 16120-3;

- UNE-EN ISO 10270-1.

No substances listed in "Candidate List of Substances of Very High Concern (SVHC) for authorisation" are used during the wire cycle production in a percentage greater than 0.1% and less than 0.3% of the weight of the product.

Recycled material

Origin of the recycled materials (pre-consumer or post-consumer) in the product

Quijano Bedding & Seating wire is obtained from steel wire rod manufactured by Global Steel Wire S.A. The recycled materials come from the scrap and derivatives used in the wire rod manufacturing process, with a proportion of 23.31% post-consumer and 53.10% pre-consumer.

The pre-consumer wire waste generated in the wire production process is returned to Global Steel Wire S.A. for recycling.

6. Environmental information

In the table below are presented the different environmental parameters requested by the PCR, obtained from the Life Cycle Assessment (LCA), of production of 1 ton of Quijano Bedding & Seating steel wire, for the two stages of the life cycle.

Potential enviromental impacts:

Declared unit: 1,000 kg Quijano Bedding & Seating steel wire					
Parameter		Unit	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO2 eq.	606.61	62.09	668.71
	Biogenic	kg CO2 eq.	5.40	2.17E-01	5.62
	Land use and land use change	kg CO2 eq.	1.58	5,10E-01	2.09
	TOTAL	kg CO2 eq.	613.59	62,82	676.41
Ozone Depletion Potential (ODP)		kg CFC 11 eq.	6.71E-05	6,65E-06	7.38E-05
Acidification potential (AP)		mol H+ eq	2.44	2,72E-01	2.72
Eutrophication potential (EP)		kg P eq	1.79E-02	1,37E-03	1.93E-02
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	1.75	1,53E-01	1.90
Abiotic depletion potential (ADP) for non-fossil resources		kg Sb eq.	2.94E-03	1,06E-05	2.95E-03
Abiotic depletion potential (ADP) for fossil resources		MJ, net calorific value	7,756.95	815.20	8,572.14
Water deprivation potential (WDP)		m3 eq.	268.60	70.65	339.25

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.

Use of resources:

Declared unit: 1,000 kg of Quijano Bedding & Seating steel wire					
Parameter		Unit	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1,107.80	398.80	1,506.60
	Used as raw materials	MJ, net calorific value	0.00	0.00	0.00
	TOTAL	MJ, net calorific value	1,107.80	398.80	1,506.60
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	11,742.08	1.903.95	13,646.02
	Used as raw materials	MJ, net calorific value	0.00	0.00	0.00
	TOTAL	MJ, net calorific value	11,742.08	1,903.95	13,646.02
Secondary material		kg	772.25	0.00	772.25
Renewable secondary fuels		MJ, net calorific value	0.00	0.00	0.00
Non-renewable secondary fuels		MJ, net calorific value	0.00	0.00	0.00
Net use of fresh water		m3	12.99	7,78E-01	13.77

Waste production and output flows:

Waste production:

Declared unit: 1,000 kg Quijano Bedding & Seating steel wire				
Parameter	Unit	Upstream	Core	TOTAL
Hazardous waste disposed	kg	9.48E-03	9.15E-04	1.04E-02
Non-hazardous waste disposed	kg	127.53	2.34	129.86
Radioactive waste disposed	kg	6.47E-02	1.59E-02	8.06E-02

Note: The materials generated during the production process that are considered waste are those sent to landfill for final disposal (materials that are not reused, recycled and/or recovered).

Output flows:

Declared unit: 1,000 kg Quijano Bedding & Seating steel wire				
Parameter	Unit	Upstream	Core	TOTAL
Components for reuse	kg	0,00	0,00	0,00
Material for recycling	kg	0,00	1.10E-02	1.10E-02
Materials for energy recovery	kg	0,00	0,00	0,00
Exported energy, electricity	MJ	0,00	0,00	0,00
Exported energy, thermal	MJ	0,00	0,00	0,00

7. References

- Product Category Rules 2014:10 Fabricated steel products, except construction products, machinery and equipment. version 2.12. UN CPC 412, 422,429. DATE 2019-09-06. VALID UNTIL: 2022-10-04.
- S-P-06129 Special Steel wire rod produced in Electric Arc Furnace. EPD International AB. Publication date 2022-06-01; Valid until: 2027-05-31.
- EPD International (2019). General Programme Instructions for the Internacional EPD® System. Version 3.1. Date 2019-09-18, based on ISO 14025 and ISO 14040/14044.
- Life Cycle Assessment Report for the environmental product declaration of steel wire for mattress springs, upholstery and various applications, carried out by Abaleo S.L. July 2022. Version 1.0.
- Environmental impact databases and methodologies applied through SimaPro 9.3.0.3.
- Standard UNE-EN ISO 14025:2010. Environmental labels and declarations. Type III environmental declarations. Principles and procedures. (ISO 14025:2006).
- Standard UNE-EN ISO 14040:2006/A1:2021. Environmental Management. Life Cycle Analysis. Principles and reference framework. Amendment 1. (ISO 14040:2006/Amd 1:2020).
- Standard UNE-EN ISO 14044:2006/A1:2021. Environmental management. Life cycle assessment. Requirements and guidelines. Amendment 2. (ISO 14044:2006/Amd 2:2020).

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