# Environmental Product Declaration

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

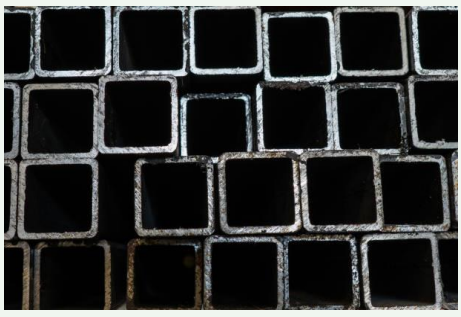
## Steel Tubes:

Pickled tubes,
Galvanized tubes,
and Special tubes.
from
**G.P. MANUFACTURAS DEL ACERO**

G. P. MANUFACTURAS DEL ACERO, S.A.

| | |
|---|---|
| Programme: | The International EPD® System, www.environdec.com |
| Programme operator: | EPD International AB |
| EPD registration number: | S-P-02432 |
| Publication date: | 2020-12-14 |
| Valid until: | 2025-12-13 |

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



# General information

## Programme information

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

| |
|---|
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR) |
| Product category rules (PCR): Construction Products, PCR 2019:14, 2019-12-20 (version 1.0). |
| PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members.<br>Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006:<br><br>☐ EPD process certification ☒ EPD verification |
| Third party verifier:<br>Marcel Gómez Ferrer, Marcel Gómez Consultoria Ambiental<br>Email: info@marcelgomez.com<br><br>*In case of recognised individual verifiers:*<br>Approved by: The International EPD® System |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><br>☒ Yes ☐ No |

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

EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

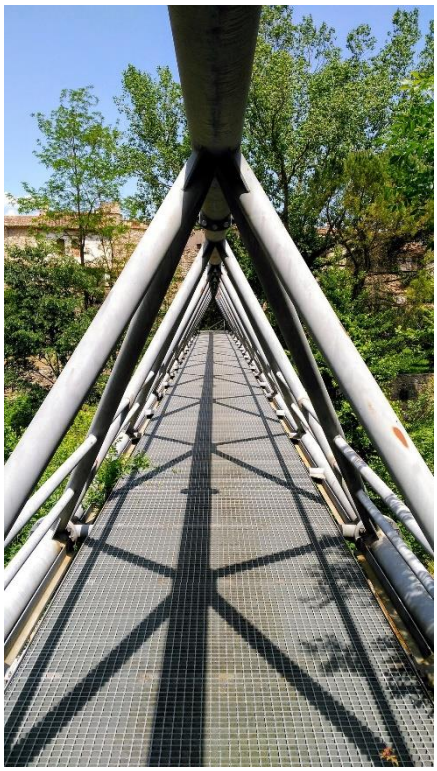
Owner of the EPD: G.P. Manufacturas del Acero S.A.

Contact: Rafael Bueno Maldonado - gptecnica@gpacero.es

Description of the organisation: G.P. Manufacturas del Acero is a company dedicated to the manufacture, production, and sale of reinforced steel for concrete (rebars, welded mesh, lattice girders…), steel tubes and steel sheets. The company has three factories distributed throughout Spain: Dos Hermanas (Sevilla), Alicante and Pinto (Madrid).

Name and location of production site: the declared section steel products are produced by G.P. Manufacturas del Acero in the main production plant located in:

- DOS HERMANAS (SEVILLA)
  Vereda del rayo, s/n
  41700. Dos Hermanas, Sevilla, Spain.



In Addition, the company has two other plants located in:

- ALICANTE
  St. Alisos, 35 (Parcela 60).
  Industrial Park Plá Vallonga. 03006. Alicante, Spain.

- PINTO (MADRID)
  St. Publicistas, 7
  Industrial Park Ampliación Mateu Cromo 28320. Pinto, Madrid, Spain

## Product information

Product name: Steel Tubes: Pickled tubes, Galvanized tubes, and Special tubes.

Product identification: tubes and planes have the CE marking, according to Euronorm EN 10219.

Product description: steel tubes are produced in three main formats:

- Pickled tubes: The pickled steel tubes are characterized by their great superficial finish, allowing its use in works that require aesthetics values, as can be the manufacture of furniture.
- Galvanized tubes: The galvanized steel tubes are resistant to weather and humidity, which favours its use in plumbing and exterior constructions.
- Special tubes: The special tubes are characterized by having different geometric shapes. They are used in precision works as can be the metallic carpentry. GP produce special tubes (quality DD11 / S275OH) according to the European Standard EN 10305.

| Characteristic | Value |
|---|---|
| Length (Spanish Code on Structural Concrete) | 4 to 12 meters |
| Thickness (Spanish Code on Structural Concrete) | 6 to 15 mm |
| Round (Spanish Code on Structural Concrete) | 12 to 127 mm |
| Square (Spanish Code on Structural Concrete) | 12x12 / 100x100 |
| Rectangular (Spanish Code on Structural Concrete) | 20x10 / 120x80 |
| Packages | 900-1500 Kg |

UN CPC code: 412 Products of iron or steel

## LCA information

Declared unit: 1 ton of steel tubes in the form of Pickled tubes, Galvanized tubes, and Special tubes for being used in construction for a minimum period of 50 years.

Reference service life: 50 years

Time representativeness: primary data from manufacturing site refer to year 2018.

Database(s) and LCA software used: Ecoinvent v3.5 (allocation, cut-off by classification) database and SimaPro 9.1 software have been used for the LCA calculations. LCA methods used are EN 15804:A2 compliant.

Description of system boundaries: Cradle to gate with options: the EPD covers modules A1-A3, A4-A5, B1-B7, C1–C4 and Module D. The modularity and the polluter payer principles have been followed. The next processes have been excluded:

- Flows related to human activities such as employee transport
- The construction of plants, production of machines and transportation systems, as well as maintenance activities.

A1. Raw Material Supply

- Extraction and processing of raw materials
- Generation of electricity and heat from primary energy resources
- Processing up to the end-of-waste state or disposal of final residues including any packaging not leaving the factory gate with the product.

A2. Transportation

- External transportation to the core processes and internal transport.

A3. Manufacturing

- Manufacturing of the construction product and co-products.
- Production of ancillary materials or pre-products.
- Treatment of waste generated from the manufacturing processes. Processing up to the end-of-waste state or disposal of final residues including any packaging not leaving the factory gate with the product.

A4. Transport

- Transportation from the production gate to the construction site

| SCENARIO INFORMATION | VALUE/DESCRIPTION |
|---|---|
| Vehicle type used for transport | Long distance truck |
| Vehicle load capacity | 24 tones |
| Fuel type and consumption | 51,62 liters of diesel per 100 km |
| Distance to construction site | 202 km |
| Capacity utilisation (including empty returns) | 49.9% as assumed in Ecoinvent |
| Bulk density of transported products | Mass of the transported product |
| Volume capacity utilisation factor | < 1 |

A5. Construction Installation:

- Installation of the product into the building including manufacture and transportation of ancillary materials and water required for installation.

| SCENARIO INFORMATION | VALUE/DESCRIPTION |
|---|---|
| Ancillary materials for installation | For each ton of product installed, it is necessary:<br>3,67E-07 ton of drilling emulsion<br>8,40E-08 ton of anticortit |
| Water use | 4,37E-05 m3 per ton of product |
| Other resource use | Not required |
| Quantitative description of the energy type and consumption during the preparation and installation process | - |
| Direct emissions to ambient air, soil and water | No generation |
| Waste materials on the building site, generated by the product's installation | No generation |
| Output materials as result of waste processing at the construction site | No generation |

C1. Deconstruction/demolition

- The de-construction and/or dismantling of the product take part of the demolition of the entire building. In our case, the environmental impact is assumed to be very small and can be neglected

C2. Transport

- Transportation of the discarded product accounts for part of the waste processing, e.g. to a recycling site and transportation of waste.

C3. Waste processing for reuse, recovery and/or recycling

- The impact is considered negligible.

C4. Disposal

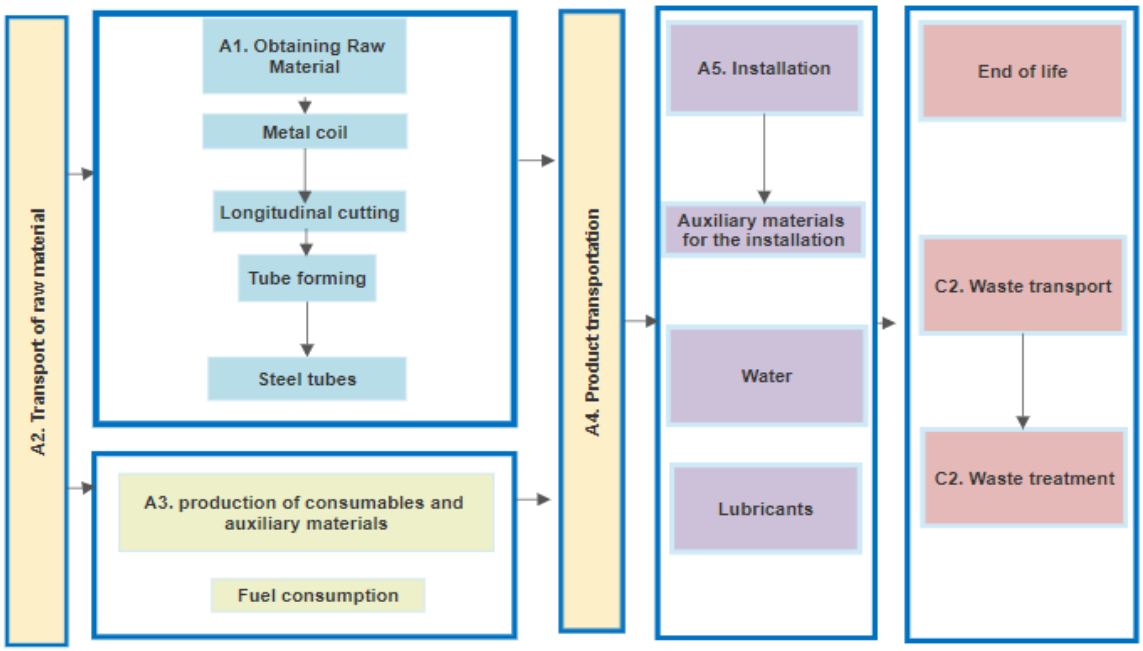
- Waste disposal including physical pre-treatment and management of the disposal site. Emissions from waste disposal are considered part of the product system under study and therefore part of this module, according to the “polluter pays principle”.

| SCENARIO INFORMATION | VALUE/DESCRIPTION |
|---|---|
| Collection process specified by type | 1 ton of collected product mixed with construction waste |
| Recovery system specified by type | 95% Steel Recycling |
| Disposal specified by type | 0.95 tonnes of steel for recycling<br>0.5 tonnes of steel to be landfilled |
| Assumptions for scenario development (e.g. transport) | Lorry of the size class 16-32 metric tons gross and Euro VI emissions class<br>Average load: 5.79 tones<br>Diesel Fuel consumption: 25.5 l/100 Km<br>Distance: 50 km |

D. Reuse-recovery-recycling potential

It is considered that 95% of the product is collected and recycled. As a result of the recycling process the production of steel is avoided.

System diagram:

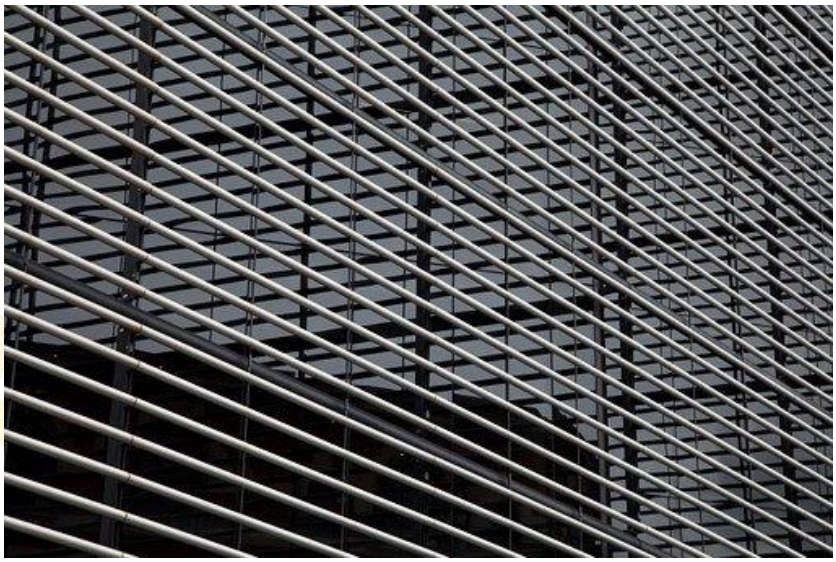



More information:

The underlying LCA study has been carried out by Juan Felipe Bermeo Losada.

The study covers at least 95% of the materials and energy per module and at least 99% of the total use of materials and energy of each unit process.

More information about the product is available at www.gpacero.es



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

| | 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 | X | X | X | X | X | X | X | X | X | X | X | X | X |
| **Geography** | ES | ES | ES | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU |
| **Specific data** | >90% GWP-GHG | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| **Variation – products** | Variation of the impact products declared< 10% - for each product group | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| **Variation – sites** | Manufactured in sites<10% | | | | | - | - | - | - | - | - | - | - | - | - | - | - |

## Content information

| Product components | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---|---|---|---|
| Steel | 1.000 | 100% | 0 |
| **Packaging materials** | **Weight, kg** | **Weight-% (versus the product)** | |
| No packaging used | 0 | 0 | |

During the life cycle of the product no hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has been used in a percentage higher than 0.1% of the weight of the product.

# Environmental Information

## Potential environmental impact – mandatory indicators according to EN 15804

| Results per declared unit | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A4** | **A5** | **A1-A5** | **B1 - B7** | **C1** | **C2** | **C3** | **C4** | **Total** | **D** |
| GWP-fossil | kg $CO_2$ eq. | 3,89E+03 | 5,10E-02 | 5,10E-01 | 3,29E+01 | 2,03E-03 | 3,93E+03 | 0 | 0 | 8,14E+00 | 0 | 2,16E-01 | 3,94E+03 | -9,49E+02 |
| GWP-biogenic | kg $CO_2$ eq. | 8,05E+00 | 2,66E-05 | 1,73E-05 | 1,04E-02 | 5,18E-06 | 8,06E+00 | 0 | 0 | 2,57E-03 | 0 | 1,84E-04 | 8,06E+00 | -1,07E-01 |
| GWP-luluc | kg $CO_2$ eq. | 2,92E+00 | 2,36E-05 | 9,00E-06 | 9,77E-03 | 1,48E-06 | 2,93E+00 | 0 | 0 | 2,42E-03 | 0 | 3,49E-05 | 2,93E+00 | -8,86E-02 |
| GWP-total | kg $CO_2$ eq. | 3,90E+03 | 5,11E-02 | 5,10E-01 | 3,29E+01 | 2,03E-03 | 3,94E+03 | 0 | 0 | 8,14E+00 | 0 | 2,16E-01 | 3,95E+03 | -9,50E+02 |
| ODP | kg CFC 11 eq. | 2,26E-04 | 1,05E-08 | 9,27E-09 | 7,56E-06 | 1,27E-09 | 2,33E-04 | 0 | 0 | 1,87E-06 | 0 | 1,07E-07 | 2,35E-04 | -3,95E-05 |
| AP | mol $H^+$ eq. | 2,74E+01 | 9,66E-04 | 5,25E-03 | 9,47E-02 | 1,56E-05 | 2,75E+01 | 0 | 0 | 2,34E-02 | 0 | 2,12E-03 | 2,75E+01 | -4,39E+00 |
| EP-freshwater | kg $PO_4^{3-}$ eq. | 2,33E-01 | 8,32E-07 | 4,59E-07 | 4,96E-04 | 1,37E-07 | 2,34E-01 | 0 | 0 | 1,23E-04 | 0 | 2,80E-06 | 2,34E-01 | -4,34E-02 |
| EP-marine | kg N eq. | 4,36E+00 | 1,89E-04 | 2,61E-03 | 1,76E-02 | 1,88E-06 | 4,38E+00 | 0 | 0 | 4,37E-03 | 0 | 7,71E-04 | 4,39E+00 | -7,25E-01 |
| EP-terrestrial | mol N eq. | 5,31E+01 | 2,13E-03 | 2,87E-02 | 2,02E-01 | 2,44E-05 | 5,33E+01 | 0 | 0 | 4,99E-02 | 0 | 8,60E-03 | 5,34E+01 | -8,48E+00 |
| POCP | kg NMVOC eq. | 1,41E+01 | 5,71E-04 | 7,69E-03 | 7,66E-02 | 4,16E-05 | 1,42E+01 | 0 | 0 | 1,90E-02 | 0 | 2,44E-03 | 1,42E+01 | -5,01E+00 |
| ADP-minerals&metals* | kg Sb eq. | 1,23E-01 | 5,23E-08 | 7,54E-08 | 9,96E-05 | 1,76E-08 | 1,23E-01 | 0 | 0 | 2,47E-05 | 0 | 2,30E-07 | 1,23E-01 | -9,74E-05 |
| ADP-fossil* | MJ | 4,59E+04 | 7,44E-01 | 6,51E-01 | 5,03E+02 | 1,02E-01 | 4,65E+04 | 0 | 0 | 1,24E+02 | 0 | 7,13E+00 | 4,66E+04 | -9,35E+03 |
| WDP | $m^3$ | 6,86E+02 | 4,40E-03 | 3,73E-03 | 2,56E+00 | 1,62E-03 | 6,88E+02 | 0 | 0 | 6,34E-01 | 0 | 2,76E-02 | 6,89E+02 | -6,55E+01 |
| 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 | | | | | | | | | | | | | |

** 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.*

## Potential environmental impact – additional mandatory and voluntary indicators

| Results per declared unit | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A4** | **A5** | **A1-A5** | **B1 - B7** | **C1** | **C2** | **C3** | **C4** | **Total** | **D** |
| GWP-GHG | kg $CO_2$ eq. | 3,82E+03 | 5,06E-02 | 5,06E-01 | 3,26E+01 | 1,99E-03 | 3,86E+03 | 0 | 0 | 8,07E+00 | 0 | 2,12E-01 | 3,87E+03 | -8,97E+02 |

*Disclaimers shall be added, if required by EN 15804.*

## Use of resources

| Results per declared unit | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A4** | **A5** | **A1-A5** | **B1 -B7** | **C1** | **C2** | **C3** | **C4** | **Total** | **D** |
| PERE | MJ | 1,29E+04 | 1,43E-02 | 7,64E-03 | 5,35E+00 | 2,07E-03 | 1,29E+04 | 0 | 0 | 1,32E+00 | 0 | 9,34E-02 | 1,29E+04 | -7,48E+01 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PERT | MJ | 1,29E+04 | 1,43E-02 | 7,64E-03 | 5,35E+00 | 2,07E-03 | 1,29E+04 | 0 | 0 | 1,32E+00 | 0 | 9,34E-02 | 1,29E+04 | -7,48E+01 |
| PENRE | MJ | 4,59E+04 | 7,44E-01 | 6,51E-01 | 5,03E+02 | 1,02E-01 | 4,64E+04 | 0 | 0 | 1,24E+02 | 0 | 7,13E+00 | 4,65E+04 | -9,35E+03 |
| PENRM | MJ. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PENRT | MJ | 4,59E+04 | 7,44E-01 | 6,51E-01 | 5,03E+02 | 1,02E-01 | 4,64E+04 | 0 | 0 | 1,24E+02 | 0 | 7,13E+00 | 4,65E+04 | -9,35E+03 |
| SM | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| RSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| NRSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FW | $m^3$ | 1,18E+05 | 7,38E-02 | 3,52E-02 | 2,37E+01 | 7,37E-03 | 1,18E+05 | 0 | 0 | 5,88E+00 | 0 | 4,15E-01 | 1,18E+05 | -4,24E+02 |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | | | |

## Waste production and output flows

### Waste production

| Results per declared unit | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A4** | **A5** | **A1-A5** | **B1 -B7** | **C1** | **C2** | **C3** | **C4** | **Total** | **D** |
| Hazardous waste disposed | kg | 4,88E-02 | 4,49E-07 | 3,02E-07 | 3,20E-04 | 4,48E-08 | 4,91E-02 | 0 | 0 | 7,93E-05 | 0 | 2,44E-06 | 4,92E-02 | -1,01E-01 |
| Non-hazardous waste disposed | kg | 5,41E+03 | 1,15E-02 | 1,21E+00 | 2,40E+01 | 1,51E-04 | 5,44E+03 | 0 | 0 | 5,95E+00 | 0 | 5,00E+01 | 5,50E+03 | -3,84E-04 |
| Radioactive waste disposed | kg | 1,31E-01 | 4,91E-06 | 4,17E-06 | 3,40E-03 | 5,94E-07 | 1,35E-01 | 0 | 0 | 8,41E-04 | 0 | 4,88E-05 | 1,36E-01 | -8,94E-03 |

### Output flows

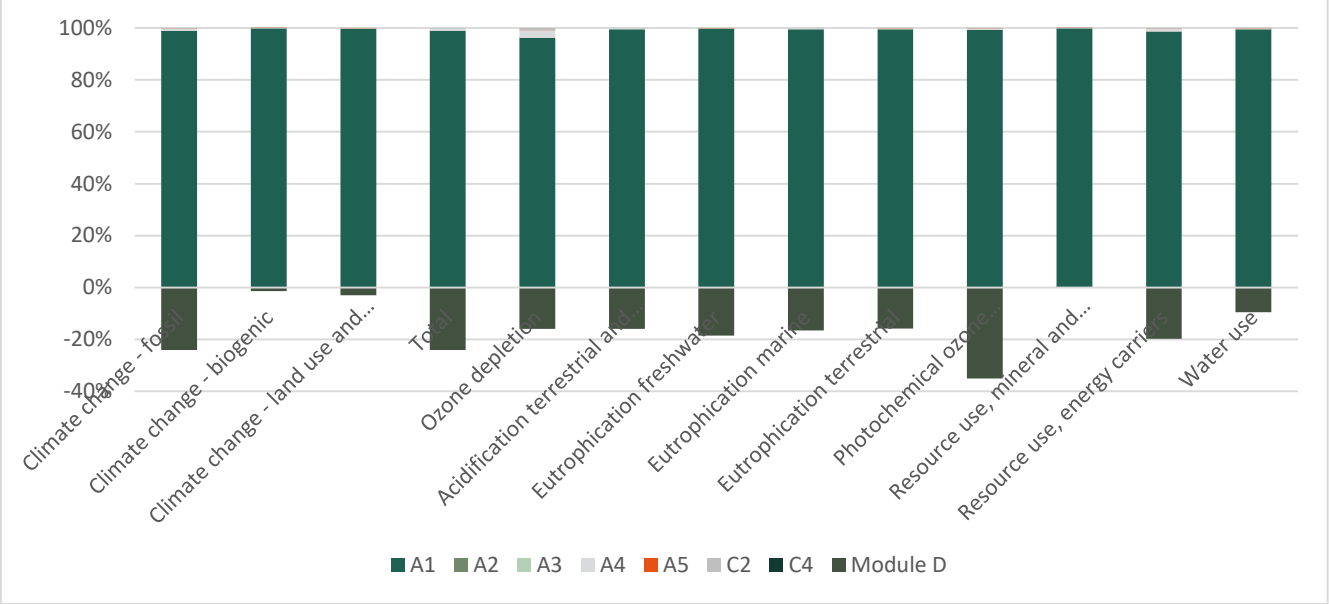
| Results per declared unit | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A4** | **A5** | **A1-A5** | **B1 -B7** | **C1** | **C2** | **C3** | **C4** | **Total** | **D** |
| Components for re-use | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 |
| Material for recycling | kg | 0.00E+00 | 0.00E+00 | 7,20E-02 | 0.00E+00 | 0.00 E+00 | 7,20E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9,50E+02 | 0.00E+00 | 9,50E+02 | 0.00E+00 |
| Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 |
| Exported energy, electricity | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 |
| Exported energy, thermal | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 |

## Information on biogenic carbon content

| Results per functional or declared unit | | |
|---|---|---|
| **BIOGENIC CARBON CONTENT** | **Unit** | **QUANTITY** |
| Biogenic carbon content in product | kg C | 0 |
| Biogenic carbon content in packaging | kg C | 0 |

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg $CO_2$.*

In general terms, as it is shown in the table of potential environmental impact, and figure results impact categories, A1 module has the biggest impact, representing at least 99,16% of the whole impact. A4 module has a little impact, representing at most 0,66% of the life cycle impact. C2 and C4 module has little impact too, representing at most 0,16% and 0,01% respectively of the whole impact. Finally, Module D represents savings between 0,1% and 24,1% of the total impact. The life cycle has an impact of 3,95E+03kg of CO2 equivalent.




**Results on impact categories**

# Additional information

### Protection and Conservation of soils and vegetation.

The following measures are proposed: delimitation of working area, definition of exclusion areas as well as restriction to the location of landfills and support facilities, reuse of topsoil, vegetation protection, priority habitat protection and protection of public utility.

### Protection of the hydrologic system and water quality.

The following measures or actions are taken: rectification and channeling banks are avoided, by not allowing the concentration of several ones in a single work of drainage and the remaining of isolated pools with fish are also avoided because of the mortality risk for them, hence applying, in this case, systems for the recovery of affected individuals.

In addition, during construction, there are barriers for sediment retention, settling ponds, infiltration trenches or other similar devices to avoid the removal of soil to the rivers, ensuring that the placement of these systems does not alter the environmental values to be protected, and their subsequent removal after their function.

### Protection of wildlife

In order to protect the fauna around the new infrastructure and minimize the barrier effect, the following steps are taken: measures for correction of barrier effect for amphibians and reptiles, measures to protect fish fauna as well as birds, measures for correction the barrier effect for micro and meso-mammals, and establishment of wildlife crossings for vertebrates, being perfectly located, sized and integrated into the environment.

### Atmospheric protection.

To avoid the inconvenience of dust generated during construction of the road, regular irrigation is made to all access roads to work as well as auxiliary facilities areas and machinery parks. The frequency of watering is adapted to the characteristics of the soil and the weather, to keep the roads used permanently wet. The materials capable of emitting dust into the atmosphere are transported covered.

### Defense against erosion, environmental restoration, and landscaping of the work.

Measures against erosion, environmental restoration and landscaping of the work are applied, consisting of the restoration of all items directly associated with the work, as abutments, mouths of the tunnels, etc. Additionally, measures for restoring other associated items indirectly are proposed, as loan and landfill areas, work roads and auxiliary facilities.

# Information related to Sector EPD

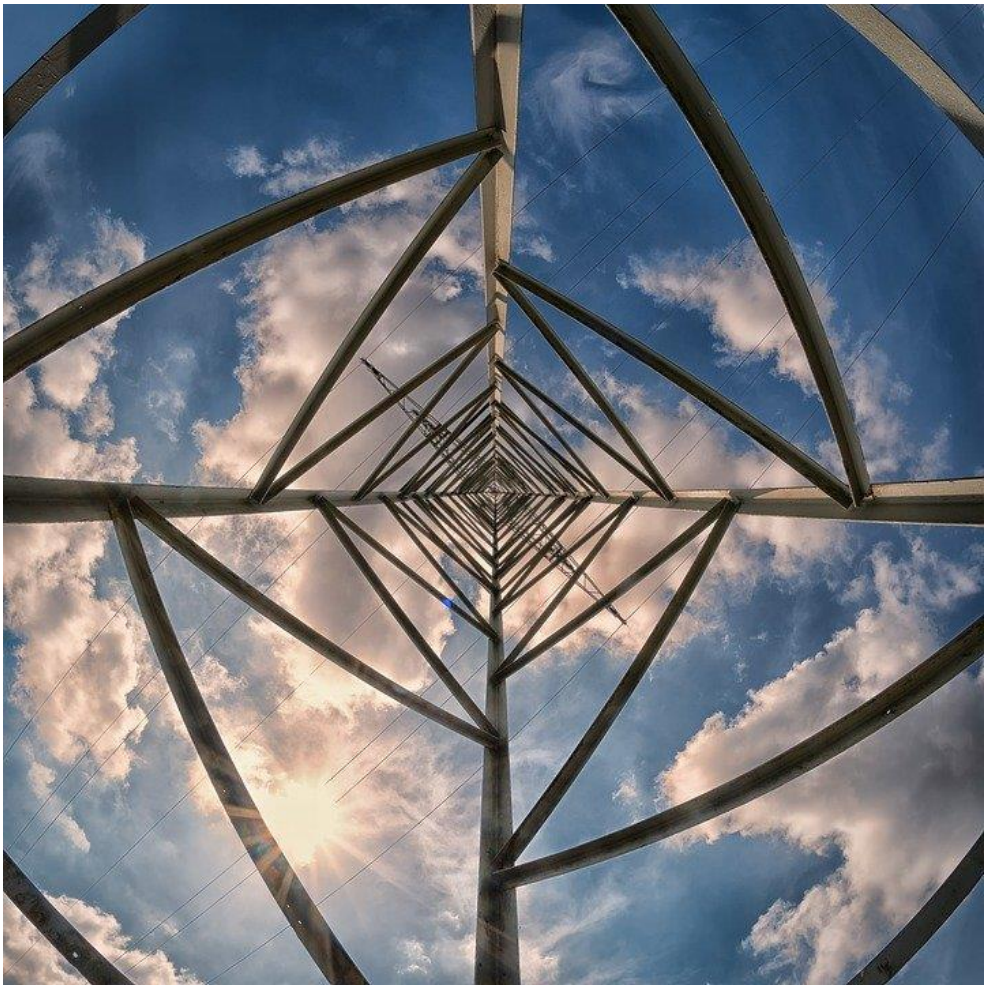
This is not a sector EPD.

# Differences versus previous versions

This is the first version of the EPD®.

# References


- General Programme Instructions of the International EPD® System. Version 3.01.
- PCR 2019:14. Construction Products. 2019-12-20 (version 1.0)
- CEN (2019): EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for product category of construction products.
- ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and framework.
- ISO 14044:2006: Environmental Management-Life Cycle Assessment-Requirements and guidelines.
- ISO 14025:2006: Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures.
- ISO 14020:2000: Environmental labels and declarations — General principles.
- LCA G.P. MANUFACTURAS DEL ACERO.

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