# Environmental Product Declaration

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

## Altech Carbon Steel Pipes

from

## Saint-Gobain Building Distribution (SGDS)

| | |
|---|---|
| Programme: | The International EPD® System, www.environdec.com |
| Programme operator: | EPD International AB |
| EPD registration number: | S-P-07060 |
| Publication date: | 2022-09-23 |
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*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 |

| **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. Version 1.11, date 2021-02-05.* |
| PCR review was conducted by: *The Technical Committee of the International EPD® System. Chair: Claudia A. Peña. Contact via info@environdec.com* |
| **Life Cycle Assessment (LCA)** |
| LCA accountability: *Anna Liljenroth, IVL Swedish Environmental Research Institute* |
| **Third-party verification** |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:<br><br>☒ EPD verification by individual verifier<br><br>Third-party verifier: *Vladimír Kočí, Prague, Czech Republic, lcastudio.cz*<br><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 programmes 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:
Saint-Gobain Distribution Sweden (SGDS Gruppen AB)

Contact:
SGDS - Beriar Maroof (beriar.maroof@sgdsgruppen.se)
Optimera - Henrik Björk (henrik.bjork@optimera.se)

Description of the organisation:.
SGDS Gruppen AB is the mother company of some of Sweden's leading trading companies in distribution of building material within construction products, sheet metal, tiles and installation products for plumbing, heating and sanitary.
• Optimera - construction products
• Dahl - plumbing, heating, sanitary, civil engineering, industry, cooling and facility management
• Bevego - sheet metal, ventilation and technical insulation
• Kakelspecialisten and Konradssons Tiles - tiles, tiling and bathroom equipment
The company's focus on sales and services to professional customers with direct contact to about 150 000 customers on a regular basis.

Saint-Gobain Distribution Sweden group is owned by Saint-Gobain with presence in 64 countries and having over 190 000 employees worldwide.

Product-related or management system-related certifications:
ISO 9001 and ISO 14001

Location of production site:
Netherlands

## Product information

Product name:
Altech carbon steel pipes

Product identification:
All sizes 12, 15, 18, 22, 28, 35, 42, 54, 76, 89, 108 (mm) in 3- and 6-meters length.

Product description:
Altech Carbon steel pipes are produced accordingly to EN10305-3 and are to be found in the 12, 15, 18, 22, 28, 35, 42, 54, 76, 89 and 108mm in 3- and 6-meters length. (Delivered with a protective cap to prevent dirt from getting on the inside of the pipe.)

UN CPC code:
41287

UNSPSC code:
40171601

Geographical scope:
The Nordic countries

## LCA information

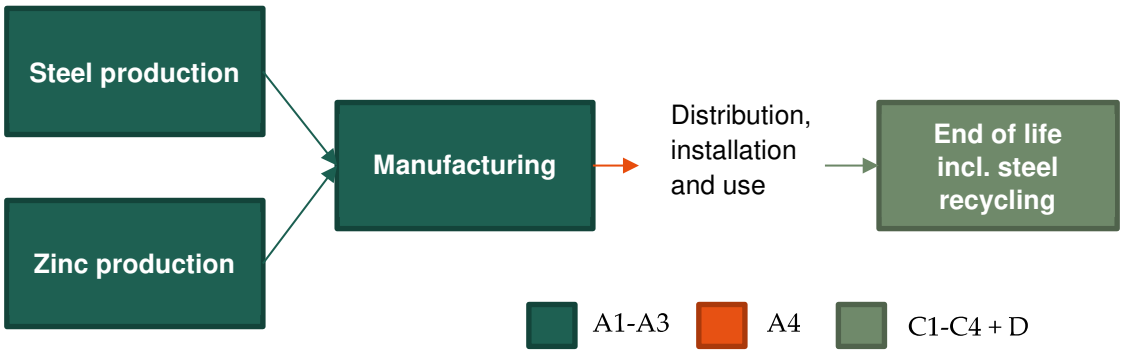
Declared unit:
1 kg of Altech carbon steel pipes

Time representativeness:
The data used to model product manufacturing corresponds to year 2021. The data from generic databases are from 2018 - 2021. No data used is older than 10 years.

Database(s) and LCA software used:
Databases used are the Sphera GaBi databases (content version 2022.1). The LCA software used is GaBi (version 10.6).

Description of system boundaries:
Cradle to gate with options, modules C1-C4, module D and with optional module A4 and partly A5 (to account of biogenic carbon balance for packaging).

System diagram:




Steel and zinc are transported to a manufacturing plant where the carbon steel pipes are manufactured. The carbon steel pipes are transported to a central warehouse from where they are distributed to the final customers. After use the product is transported to waste processing, and the steel and zinc are recycled as one material.

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**[1] | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Modules declared | X | X | X | X | X | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |
| Geography | NL | NL | NL | NL-NC | NC | - | - | - | - | - | - | - | NC | NC | NC | NC | NC |
| Specific data used | 0.5 % | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | 0.1% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | Not relevant | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

X: Module declared, ND: Module not declared, NL: Netherlands, NC: The Nordic countries

The results presented reflect the average material composition of all investigated variants. The variation between the best and worst case was 0.1% and therefore an average composition was used.

Allocation:
Weight allocation has been applied to allocate the manufacturing data, delivered for the complete plant, to 1 kg of Altech carbon steel pipes product.

Data quality:
Site-specific manufacturing data has been retrieved from the manufacturer. The upstream and downstream processes have been modelled based on generic data from databases. The collected data was reviewed according to EN 15804 and is deemed as of good quality.

Cut-off criteria:
The maximum cut-off criteria established by the PCR is 1% of all material and energy flows to a single unit process and 5% of total inflows (mass and energy) per module, e.g. per module A1-A3, A4-A5, C1-C4 and module D. No cut-offs exceeding this limit have been made.

[1] Module A5 is only partly included to account for biogenic carbon dioxide balance for packaging

# Content information

| Product components | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---|---|---|---|
| Steel | 0.994 | Unknown | 0% |
| Zinc | 0.006 | Unknown | 0% |
| TOTAL | 1.0 | Unknown | 0% |
| **Packaging materials** | **Weight, kg** | **Weight-% (versus the product)** | |
| Wood | 0.0053 | 0.5% | |
| Steel banding | 0.0009 | 0.1% | |
| TOTAL | 0.0062 | 0.6% | |

No substances that appear in the REACH candidate list of SVHC (Candidate List of Substances of Very High Concern) are present or used in the product.

# Environmental Information

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

| Results per 1 kg of Altech Carbon Steel Pipe | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot. A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-total | kg CO2 eq | 2.75E+00 | 7.27E-03 | 4.39E-03 | **2.76E+00** | 8.30E-02 | 1.00E-02 | 3.37E-04 | 9.04E-03 | 2.29E-03 | 2.25E-03 | -1.26E+00 |
| GWP-fossil | kg CO2 eq | 2.75E+00 | 7.17E-03 | 1.43E-02 | **2.77E+00** | 8.18E-02 | 0.00E+00 | 3.34E-04 | 8.94E-03 | 2.27E-03 | 2.24E-03 | -1.26E+00 |
| GWP-biogenic | kg CO2 eq | 8.26E-04 | 2.35E-05 | -9.91E-03 | **-9.06E-03** | 2.67E-04 | 1.00E-02 | 1.03E-06 | 2.83E-05 | 9.26E-06 | 7.54E-06 | 5.43E-04 |
| GWP-luluc | kg CO2 eq | 5.71E-04 | 7.65E-05 | 1.54E-05 | **6.63E-04** | 8.67E-04 | 0.00E+00 | 1.87E-06 | 7.37E-05 | 1.05E-05 | 4.13E-06 | -2.76E-05 |
| ODP | kg CFC-11 eq | 1.14E-14 | 1.17E-18 | 8.02E-14 | **9.16E-14** | 4.98E-17 | 0.00E+00 | 2.01E-17 | 1.15E-18 | 3.37E-15 | 5.26E-15 | -3.00E-15 |
| AP | mole H+ eq | 6.89E-03 | 7.74E-06 | 2.91E-05 | **6.93E-03** | 1.01E-04 | 0.00E+00 | 1.94E-06 | 8.50E-06 | 1.17E-05 | 1.59E-05 | -2.24E-03 |
| EP-freshwater | kg PO43- eq | 2.61E-06 | 1.61E-07 | 1.86E-07 | **2.96E-06** | 1.83E-06 | 0.00E+00 | 3.07E-09 | 8.21E-08 | 2.00E-08 | 1.16E-08 | -8.41E-07 |
| EP-freshwater | kg P eq | 8.52E-07 | 5.26E-08 | 6.06E-08 | **9.65E-07** | 5.96E-07 | 0.00E+00 | 1.00E-09 | 2.67E-08 | 6.51E-09 | 3.79E-09 | -2.74E-07 |
| EP-marine | kg N eq | 1.52E-03 | 2.17E-06 | 1.00E-05 | **1.53E-03** | 3.13E-05 | 0.00E+00 | 9.51E-07 | 2.63E-06 | 5.35E-06 | 4.06E-06 | -4.33E-04 |
| EP-terrestrial | mole N eq | 1.62E-02 | 2.95E-05 | 1.09E-04 | **1.63E-02** | 4.09E-04 | 0.00E+00 | 1.05E-05 | 3.16E-05 | 5.91E-05 | 4.46E-05 | -4.37E-03 |
| POCP | kg NMVOC eq | 5.31E-03 | 5.62E-06 | 3.21E-05 | **5.35E-03** | 8.11E-05 | 0.00E+00 | 1.83E-06 | 7.33E-06 | 1.46E-05 | 1.23E-05 | -1.93E-03 |
| ADP-minerals & metals* | kg Sb eq | 6.16E-06 | 6.89E-10 | 1.85E-08 | **6.17E-06** | 7.83E-09 | 0.00E+00 | 2.80E-11 | 6.86E-10 | 2.51E-09 | 2.29E-10 | -3.13E-06 |
| ADP-fossil* | MJ | 2.71E+01 | 9.19E-02 | 2.81E-01 | **2.75E+01** | 1.05E+00 | 0.00E+00 | 4.48E-03 | 1.20E-01 | 4.43E-02 | 2.93E-02 | -1.23E+01 |
| WDP* | m3 | 8.52E-01 | 1.01E-04 | -9.40E-05 | **8.52E-01** | 1.15E-03 | 0.00E+00 | 3.01E-06 | 7.82E-05 | 4.38E-04 | 2.45E-04 | -3.43E+00 |
| | 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 1 kg Altech Carbon Steel Pipe | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot. A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[2] | kg $CO_2$ eq. | 2.67E+00 | 7.09E-03 | 1.41E-02 | **2.69E+00** | 8.09E-02 | 0.00E+00 | 3.30E-04 | 8.84E-03 | 2.22E-03 | 2.21E-03 | -1.21E+00 |

## Use of resources

| Results per 1 kg Altech Carbon Steel Pipe | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot. A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 1.82E+00 | 9.66E-03 | 5.44E-02 | **1.89E+00** | 1.09E-01 | 0.00E+00 | 2.55E-04 | 6.69E-03 | 3.56E-03 | 4.40E-03 | 7.76E-01 |
| PERM | MJ | 0.00E+00 | 0.00E+00 | 8.37E-02 | **8.37E-02** | 0.00E+00 | -8.37E-02 | 0.00E+00 | 0.00E+00 | -8.37E-02 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 1.82E+00 | 9.66E-03 | 1.38E-01 | **1.97E+00** | 1.09E-01 | 0.00E+00 | 2.55E-04 | 6.69E-03 | 3.56E-03 | 4.40E-03 | 7.76E-01 |
| PENRE | MJ | 2.71E+01 | 9.20E-02 | 2.82E-01 | **2.75E+01** | 1.05E+00 | 0.00E+00 | 4.49E-03 | 1.20E-01 | 4.44E-02 | 2.94E-02 | -1.23E+01 |
| PENRM | MJ. | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | MJ | 2.71E+01 | 9.20E-02 | 2.82E-01 | **2.75E+01** | 1.05E+00 | 0.00E+00 | 4.49E-03 | 1.20E-01 | 4.44E-02 | 2.94E-02 | -1.23E+01 |
| SM | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | $m^3$ | 2.10E-02 | 1.24E-05 | 1.70E-04 | **2.12E-02** | 1.41E-04 | 0.00E+00 | 2.88E-07 | 7.66E-06 | 1.24E-05 | 7.45E-06 | -8.02E-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 | | | | | | | | | | |

[2] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Waste production and output flows

### Waste production

| Results per 1 kg Altech Carbon Steel Pipe | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot. A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 1.66E-08 | 4.78E-12 | 5.05E-11 | **1.66E-08** | 5.41E-11 | 0.00E+00 | 2.15E-14 | 6.05E-12 | 5.55E-13 | 1.51E-12 | 2.70E-09 |
| Non-hazardous waste disposed | kg | 9.30E-02 | 2.11E-05 | 6.12E-04 | **9.36E-02** | 2.39E-04 | 0.00E+00 | 6.44E-07 | 1.78E-05 | 1.18E-05 | 1.50E-01 | 1.57E-01 |
| Radioactive waste disposed | kg | 2.09E-05 | 1.38E-07 | 5.72E-06 | **2.68E-05** | 1.57E-06 | 0.00E+00 | 5.53E-09 | 1.45E-07 | 5.85E-07 | 3.27E-07 | 1.34E-06 |

### Output flows

| Results per 1 kg Altech Carbon Steel Pipe | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot. A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Material for recycling | kg | 0.00E+00 | 0.00E+00 | 1.24E-01 | **1.24E-01** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, electricity | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, thermal | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

## Information on biogenic carbon content

| Results per 1 kg Altech Carbon Steel Pipe | | |
|---|---|---|
| **Biogenic carbon content** | **Unit** | **Quantity** |
| Biogenic carbon content in product | kg C | 0.00E+00 |
| Biogenic carbon content in packaging | kg C | 1.00E-02 |

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

# References

ISO (2000): ISO 14020:2000, Environmental labels and declarations – General principles

ISO (2006a): ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures

ISO (2006c). ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines.

General Programme Instructions of the International EPD® System. Version 3.01.

PCR 2019:14 Construction products. Version 1.11

CEN (2019): EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

Liljenroth, A., Borisova, S. (2022) LCA methodology report for Altech Carbon Steel Pipes.

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