# Environmental Product Declaration

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

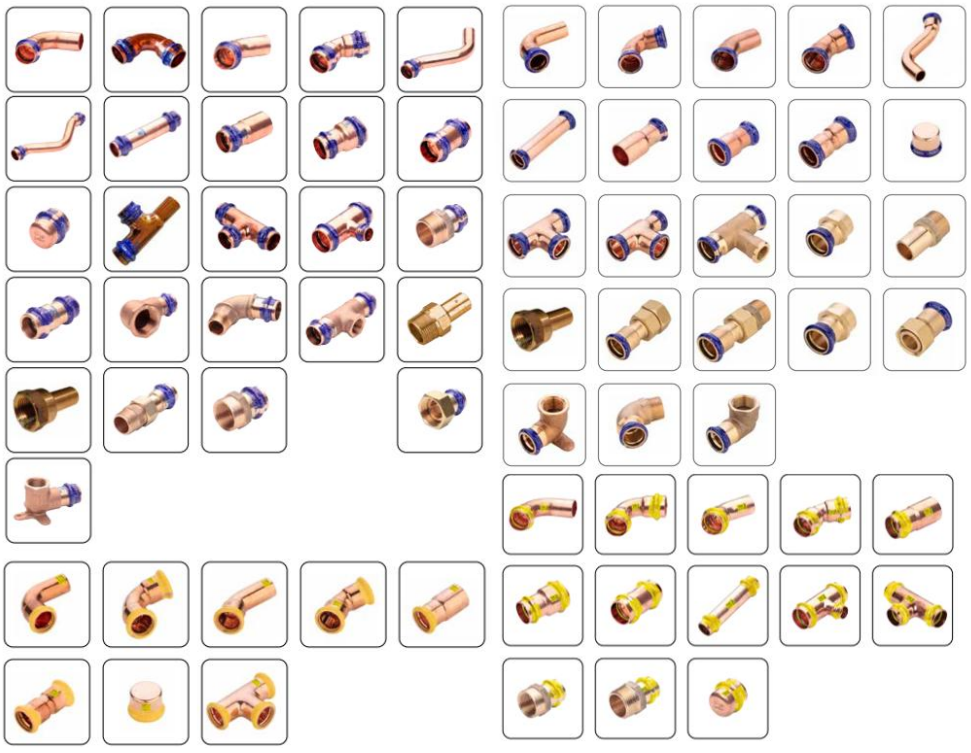
## Altech press fittings Copper and Bronze-Copper M/V profile (Koppar och Rödgods) & Altech capillary tube fittings (kapillärrörsdelar)

from

## *Saint-Gobain Building Distribution (SGDS)*

| | |
|---|---|
| Program: | The International EPD® System, www.environdec.com |
| Program operator: | EPD International AB |
| EPD registration number: | S-P-08467 |
| Publication date: | 2023-03-20 |
| Revision date: | 2024-07-17 (Version 1.2) |
| Valid until: | 2028-03-19 |

*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):** Construction Products PCR 2019:14 version 1.2.3 |
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR) |
| PCR review was conducted by: *The Technical Committee of the International EPD@ System.* |
| **Life Cycle Assessment (LCA)** |
| LCA accountability: *Nadeen Hassan, EANDO AB* |
| **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, LCA Studio s.r.o, Czech Republic<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 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

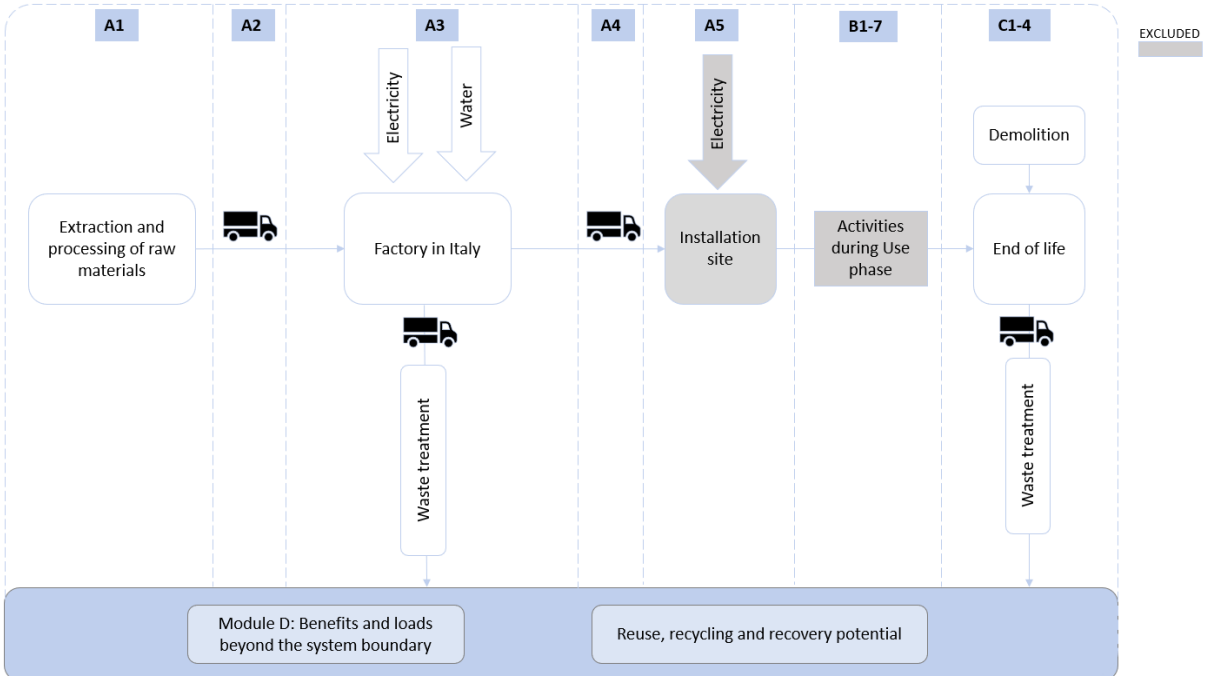
| | |
|---|---|
| ***Owner of the EPD*** | Saint-Gobain Distribution Sweden |
| ***Contact*** | SGDS - Beriar Maroof (beriar.maroof@saint-gobain.se) |
| ***Description of the organisation*** | SGDS Gruppen - specialists in collaboration for more efficient business in construction and installation. SGDS Gruppen AB is the head company of some of Sweden's leading trading companies in construction, sheet metal, tiles and installation. All the companies have long and solid industry experience and provide most of Sweden's craftsmen with materials for various projects. Customers in different companies can also buy support items from the sister companies in the group, and in selected cases, we take joint projects to facilitate the logistics of the supply of goods, which is then often critical for a smooth construction project.<br>• Optimera - construction trade for professional carpenters<br>• Dahl – heat, plumbing and sanitary specialist<br>• Bevego - building sheet metal, ventilation and technical insulation<br>• Kakelspecialisten and Konradsson's Tiles - tiles, tiling and bathroom fittings<br><br>The company's focus is on sales and services with direct contact up to about 150,000 customers regularly.<br><br>Saint-Gobain Distribution Sweden group (SGDS) is owned by Saint-Gobain with a presence in 64 countries and over 190 000 employees worldwide. |
| ***Name and location of the production site*** | Brescia, Italy |

## Product information

| | |
|---|---|
| ***Product name*** | Altech press fittings Copper M/V profile |
| ***Product identification*** | Pipe fittings<br><br>The EPD is a specific EPD for this product and not an average. |
| ***Product description*** | Altech press fittings Copper M/V profile is used for drinking water and heating and for oil-free compressed air with O-ring, standard, EPDM (black). Press fittings for gas have an O-ring, HNBR (yellow). |
| ***UN CPC code*** | 41516 - Tubes, pipes and tube or pipe fittings, of copper |
| ***Use*** | This product is used for drinking water, heating and gas installations. |

## LCA information

| | |
|---|---|
| ***Functional unit / declared unit*** | 1 kg of Altech press fitting |
| ***Reference service life*** | Not relevant |
| ***Database(s) and LCA software used*** | Calculation completed in GaBi v10.6.29 with an integrated Ecoinvent database 3.8 |
| ***System boundaries*** | Cradle to grave, with options. (A1-A3, A4,C1-C4, D) |




**More information**

The EPD covers the following range of products form DAHL:

- Altech press fittings Copper and Bronze-Copper M/V profile (Koppar och Rödgods)
- Altech capillary tube fittings (Altech kapillärrördelar)

| Article numbers | | | | | |
|---|---|---|---|---|---|
| 1189462 | 1770068 | 1760229 | 1760170 | 1752699 | 1770149 |
| 1189463 | 1770069 | 1760231 | 1760171 | 1752700 | 1770150 |
| 1189464 | 1770070 | 1760232 | 1760173 | 1752701 | 1770151 |
| 1189465 | 1770071 | 1182886 | 1760174 | 1752702 | 1770152 |
| 1189466 | 1770073 | 1182888 | 1760175 | 1752703 | 1770153 |
| 1189467 | 1770074 | 1182889 | 1760176 | 1752704 | 1770154 |
| 1189468 | 1770075 | 1182890 | 1760177 | 1770036 | 1770156 |
| 1189469 | 1770076 | 1182891 | 1760178 | 1770037 | 1770157 |
| 1189470 | 1182866 | 1182887 | 1760179 | 1770038 | 1770158 |
| 1189471 | 1182867 | 1760217 | 1760180 | 1770039 | 1770159 |
| 1189472 | 1182868 | 1760218 | 1185670 | 1189512 | 1770160 |
| 1189473 | 1182869 | 1760219 | 1185671 | 1189513 | 1770161 |
| 1189474 | 1182870 | 1760220 | 1770276 | 1770272 | 1770162 |
| 1189475 | 1182871 | 1760221 | 1770277 | 1770273 | 1770164 |
| 1189476 | 1182872 | 1760222 | 1770278 | 1770274 | 1770165 |
| 1770027 | 1182873 | 1760223 | 1770279 | 1770275 | 1770166 |
| 1770028 | 1182874 | 1757796 | 1770280 | 1770086 | 1770167 |
| 1770029 | 1182875 | 1760098 | 1770281 | 1770087 | 1770168 |
| 1770030 | 1182876 | 1760099 | 1770282 | 1770088 | 1770169 |
| 1770032 | 1760141 | 1760100 | 1770359 | 1770089 | 1770170 |
| 1770033 | 1760142 | 1760101 | 1757786 | 1770090 | 1770172 |
| 1770034 | 1760143 | 1760102 | 1757787 | 1770091 | 1770173 |
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| 1189477 | 1760145 | 1760104 | 1757789 | 1770093 | 1770175 |
| 1189478 | 1760146 | 1760105 | 1757790 | 1770077 | 1770176 |
| 1189479 | 1760147 | 1760106 | 1757791 | 1770078 | 1770177 |
| 1189480 | 1760148 | 1760110 | 1757792 | 1770079 | 1770178 |
| 1189481 | 1189520 | 1760111 | 1757794 | 1770081 | 1185614 |
| 1189482 | 1189521 | 1760112 | 1757793 | 1770082 | 1185615 |
| 1189483 | 1189522 | 1760113 | 1757795 | 1770083 | 1185616 |
| 1770009 | 1189523 | 1760114 | 1770103 | 1770084 | 1185617 |
| 1770010 | 1189524 | 1752705 | 1770104 | 1770085 | 1185618 |
| 1770011 | 1189525 | 1752709 | 1770105 | 1182953 | 1185619 |
| 1770012 | 1760133 | 1752708 | 1770107 | 1182877 | 1185620 |
| 1770013 | 1760134 | 1752711 | 1770108 | 1182878 | 1185621 |
| 1770014 | 1760135 | 1752706 | 1770109 | 1182879 | 1185622 |
| 1770016 | 1760136 | 1752707 | 1770110 | 1182880 | 1185623 |
| 1770017 | 1760137 | 1752710 | 1770111 | 1182881 | 1185624 |
| 1770018 | 1760138 | 1760091 | 1770112 | 1182882 | 1185626 |
| 1770019 | 1760139 | 1760092 | 1770113 | 1182883 | 1185625 |
| 1770020 | 1760140 | 1760093 | 1770115 | 1182884 | 1185627 |
| 1770021 | 1189526 | 1760094 | 1770116 | 1182885 | 1185628 |
| 1770022 | 1189527 | 1760095 | 1770117 | 1770124 | 1185629 |
| 1770024 | 1189528 | 1760096 | 1770118 | 1770125 | 1185630 |
| 1770025 | 1189529 | 1760097 | 1770119 | 1770126 | 1185680 |
| 1770026 | 1760124 | 1760083 | 1752676 | 1770127 | 1185631 |
| 1189484 | 1760125 | 1760084 | 1752678 | 1770128 | 1185632 |

| | | | | | |
|---|---|---|---|---|---|
| 1189485 | 1760126 | 1760085 | 1752679 | 1770129 | 1185633 |
| 1189486 | 1760127 | 1760086 | 1752680 | 1770131 | 1185634 |
| 1189487 | 1760128 | 1760087 | 1752681 | 1770132 | 1185635 |
| 1189488 | 1760129 | 1760088 | 1752682 | 1185603 | 1185636 |
| 1189489 | 1760130 | 1760089 | 1752683 | 1185604 | 1185637 |
| 1189490 | 1760132 | 1760090 | 1752684 | 1185605 | 1185638 |
| 1189491 | 1189530 | 1760150 | 1752685 | 1185606 | 1185639 |
| 1189492 | 1189531 | 1760151 | 1752686 | 1185607 | 1185640 |
| 1189493 | 1189532 | 1760152 | 1752687 | 1185608 | 1185642 |
| 1189494 | 1189533 | 1760153 | 1752688 | 1185609 | 1185641 |
| 1770000 | 1760116 | 1760154 | 1752689 | 1185610 | 1185643 |
| 1770001 | 1760117 | 1760155 | 1752690 | 1185611 | 1185644 |
| 1770002 | 1760118 | 1760156 | 1752691 | 1185612 | 1185645 |
| 1770003 | 1760119 | 1760157 | 1752692 | 1185613 | 1185646 |
| 1770004 | 1760120 | 1185665 | 1752693 | 1770133 | 1185647 |
| 1770005 | 1760121 | 1185666 | 1752694 | 1770134 | 1185648 |
| 1770006 | 1760122 | 1185667 | 1752695 | 1770135 | 1185649 |
| 1770008 | 1760123 | 1185668 | 1752696 | 1770137 | 1185650 |
| 1189495 | 1189534 | 1185669 | 1752697 | 1770138 | 1185651 |
| 1189496 | 1189535 | 1760158 | 1770094 | 1770139 | 1185652 |
| 1189497 | 1189536 | 1760159 | 1770095 | 1770140 | 1185653 |
| 1189498 | 1189537 | 1760160 | 1770096 | 1770141 | 1185654 |
| 1189499 | 1189538 | 1760161 | 1770097 | 1770142 | 1185655 |
| 1189500 | 1189539 | 1760162 | 1770099 | 1770143 | 1185425 |
| 1189501 | 1760224 | 1760163 | 1770100 | 1770144 | 1185426 |
| 1189502 | 1760225 | 1760166 | 1770101 | 1770145 | 1185427 |
| 1189503 | 1760226 | 1760167 | 1770102 | 1770146 | 2004273 |
| 1189504 | 1760227 | 1760168 | 1752698 | 1770147 | 2004281 |
| 1189505 | 1760228 | 1760169 | 1752677 | 2003796 | 2004299 |
| 2000024 | 2000461 | 2001089 | 2003093 | 2003838 | 2004349 |
| 2000032 | 2000479 | 2001097 | 2003119 | 2003846 | 2004356 |
| 2000040 | 2000487 | 2001113 | 2003127 | 2003853 | 2004372 |
| 2000065 | 2000495 | 2001121 | 2003135 | 2003861 | 2004380 |
| 2000073 | 2000511 | 2001139 | 2003416 | 2003879 | 2004398 |
| 2000081 | 2000529 | 2001436 | 2003481 | 2003887 | 2004422 |
| 2000099 | 2000628 | 2001444 | 2003499 | 2003895 | 2004430 |
| 2000115 | 2000636 | 2001469 | 2003531 | 2003960 | 2004448 |
| 2000123 | 2000644 | 2001477 | 2003549 | 2003978 | 2004455 |
| 2000222 | 2000669 | 2001485 | 2003556 | 2003986 | 2004463 |
| 2000230 | 2000677 | 2001493 | 2003564 | 2003994 | 2004471 |
| 2000248 | 2000685 | 2001519 | 2003663 | 2004034 | 2004489 |
| 2000263 | 2000693 | 2001527 | 2003671 | 2004042 | 2004497 |
| 2000271 | 2000719 | 2003044 | 2003689 | 2004067 | 2004505 |
| 2000289 | 2000727 | 2003010 | 2003705 | 2004075 | 2004513 |
| 2000297 | 2001022 | 2003028 | 2003713 | 2004125 | 2004695 |
| 2000313 | 2001030 | 2003036 | 2003721 | 2004141 | 2004737 |
| 2000321 | 2001048 | 2003069 | 2003739 | 2004158 | 2004752 |
| 2000438 | 2001063 | 2003077 | 2003762 | 2004224 | 2004760 |

| | | | | | |
|---|---|---|---|---|---|
| 2000446 | 2001071 | 2003085 | 2003770 | 2004257 | 2004778 |
| 2004828 | 2004992 | 2006740 | 2006898 | 2007045 | 2007359 |
| 2004836 | 2005007 | 2006757 | 2006906 | 2007060 | 2007391 |
| 2004851 | 2005023 | 2006781 | 2006955 | 2007276 | 2007409 |
| 2004869 | 2006633 | 2006799 | 2006971 | 2007227 | 2007425 |
| 2004877 | 2006641 | 2006815 | 2006989 | 2007243 | 2007458 |
| 2004950 | 2006666 | 2006849 | 2006997 | 2007250 | 2007466 |
| 2004968 | 2006674 | 2006856 | 2007029 | 2007284 | |
| 2004984 | 2006716 | 2006864 | 2007037 | 2007342 | |

All product ranges are produced in the same factory and have the same material composition with a slight ratio difference.
The worst-case product is represented in this EPD.
At the end of life, the copper in the product is assumed to be 95 % recycled and 5 % landfilled.
The rubber is assumed to be 70 % incinerated with energy recovery and 30 % recycled.

***A1, Raw material supply***
*This module considers the extraction and processing of all raw materials, energy, and transportation which occur upstream to the studied manufacturing process, including packaging material.*

***A2, transport to the manufacturer***
*The raw materials are transported to the manufacturing site.*

***A3, manufacturing***
*This module includes all resources used during the production of Alterna press fittings and waste produced. This also includes additives and packaging material.*

***A4, Transport***
*Transportation from the manufacturing site in Italy to SGDS Gruppen's distribution centre and then from the distribution centre to the building site is included.*

***A5, Construction installation***
*This stage is not declared.*

***B1-B7 Use stage***
*This stage is not declared.*

***C1 Deconstruction/Demolition***
*This stage includes the de-construction and/or demolition of the building. This is not relevant as the product included in this study is not used in the construction process.*

***C2 Transport***
*This stage represents the transport distance to the waste processing facility.*

***C3 Waste processing***
*This stage includes any waste treatment needed.*

***C4 Final disposal***
*This includes any material that is landfilled.*

***D Benefits and loads beyond the system boundary***
*Emission credits obtained from energy recovery and/or recycling materials.*

***Cut-off criteria:***
*All input and output flows in a unit process were considered i.e., taking into account the value of all flows in the unit process and the corresponding LCI where data was available. Data gaps were filled by conservative assumptions with average or generic data. Any assumptions in such a case were documented. The use of cut-off criterion on mass inputs and primary energy at the unit process level (1%) and at the information module level (5%).*

## Content declaration

### *Content*

| Content declaration* | Amount (kg) |
|---|---|
| Copper | 0,988 |
| EPDM | 0,012 |
| ***Total*** | ***1*** |

*Content declaration for Altech press fittings Copper M/V profile with EPDM O-ring (representing the “Worst case” scenario).

| Packaging materials | Weight, kg | Weight-% (versus the product) |
|---|---|---|
| Polyethylene film | 0,0278 | 2,8% |
| ***Total*** | **0,0278** | **2,8%** |

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 concerning this EPD.

***Modules declared and geographical scope***

| | Product stage | | | Assembly stage | | Use stage | | | | | | | End of life stage | | | | Benefits & loads beoyond system boundary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| **Modules** | **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 | IT | IT | IT | EU | - | - | - | - | - | - | - | - | EU | EU | EU | EU | EU |
| Specific data used | 32% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation products | 0% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation sites | 0% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# Environmental Information

## Potential environmental impact – indicators according to EN 15804+A2

| | | Results per functional or declared unit: 1 kg | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A1-A3** | **A4** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-total | kg CO2 eq | 1,8E+00 | 2,7E-05 | 8,2E-01 | 2,6E+00 | 1,2E-01 | 0,0E+00 | 4,8E-03 | 2,2E-02 | 2,4E-03 | -1,6E+00 |
| GWP-fossil | kg CO2 eq | 1,8E+00 | 2,6E-05 | 8,2E-01 | 2,6E+00 | 1,2E-01 | 0,0E+00 | 4,8E-03 | 2,2E-02 | 2,4E-03 | -1,6E+00 |
| GWP-biogenic | kg CO2 eq | 2,2E-04 | 1,0E-07 | 5,0E-04 | 7,2E-04 | 4,8E-04 | 0,0E+00 | 1,9E-05 | 1,1E-06 | 3,4E-06 | -9,3E-05 |
| GWP-luluc | kg CO2 eq | 4,4E-04 | 1,5E-07 | 4,3E-05 | 4,8E-04 | 6,8E-04 | 0,0E+00 | 2,7E-05 | 8,4E-08 | 1,4E-06 | -4,3E-04 |
| ODP | kg CFC-11 eq | 4,9E-11 | 1,6E-18 | 4,8E-10 | 5,3E-10 | 7,3E-15 | 0,0E+00 | 2,9E-16 | 1,3E-15 | 3,1E-15 | -2,5E-09 |
| AP | mole H+ eq | 1,4E-02 | 4,9E-08 | 5,0E-04 | 1,4E-02 | 2,1E-04 | 0,0E+00 | 8,3E-06 | 2,2E-06 | 7,5E-06 | -1,3E-02 |
| EP-freshwater | kg P eq | 7,7E-06 | 7,8E-11 | 2,4E-05 | 3,2E-05 | 3,6E-07 | 0,0E+00 | 1,4E-08 | 5,7E-10 | 1,8E-09 | -1,0E-05 |
| EP-marine | kg N eq | 1,9E-03 | 2,1E-08 | 1,5E-04 | 2,0E-03 | 8,6E-05 | 0,0E+00 | 3,4E-06 | 5,6E-07 | 1,8E-06 | -1,8E-03 |
| EP-terrestrial | mole N eq | 2,0E-02 | 2,3E-07 | 1,7E-03 | 2,2E-02 | 9,8E-04 | 0,0E+00 | 3,8E-05 | 1,0E-05 | 2,0E-05 | -1,9E-02 |
| POCP | kg NMVOC eq | 5,7E-03 | 4,4E-08 | 4,5E-04 | 6,2E-03 | 1,9E-04 | 0,0E+00 | 7,4E-06 | 1,6E-06 | 5,8E-06 | -5,4E-03 |
| ADP-minerals & metals | kg Sb eq | 6,5E-04 | 2,2E-12 | 1,7E-07 | 6,5E-04 | 1,0E-08 | 0,0E+00 | 4,0E-10 | 3,3E-11 | 1,7E-10 | -6,1E-04 |
| ADP-fossil | MJ | 2,1E+01 | 3,5E-04 | 6,9E+00 | 2,8E+01 | 1,6E+00 | 0,0E+00 | 6,4E-02 | 3,5E-03 | 3,4E-02 | -1,9E+01 |
| WDP | m3 | 1,1E+00 | 2,4E-07 | 1,4E-01 | 1,3E+00 | 1,1E-03 | 0,0E+00 | 4,3E-05 | 1,9E-03 | -2,3E-05 | -1,1E+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 | | | | | | | | | | |

## Use of resources

| | | Results per functional or declared unit: 1 kg | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A1-A3** | **A4** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 2,4E+00 | 2,0E-05 | 3,2E+00 | 5,6E+00 | 9,3E-02 | 0,0E+00 | 3,6E-03 | 8,3E-04 | 2,8E-03 | -2,3E+00 |
| PERM | MJ | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| PERT | MJ | 2,4E+00 | 2,0E-05 | 3,2E+00 | 5,6E+00 | 9,3E-02 | 0,0E+00 | 3,6E-03 | 8,3E-04 | 2,8E-03 | -2,3E+00 |
| PENRE | MJ | 2,1E+01 | 3,5E-04 | 6,7E+00 | 2,7E+01 | 1,6E+00 | 0,0E+00 | 6,4E-02 | 3,5E-03 | 3,4E-02 | -1,9E+01 |
| PENRM | MJ | 3,8E-01 | 0,0E+00 | 1,7E-01 | 5,5E-01 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| PENRT | MJ | 2,1E+01 | 3,5E-04 | 6,9E+00 | 2,8E+01 | 1,6E+00 | 0,0E+00 | 6,4E-02 | 3,5E-03 | 3,4E-02 | -1,9E+01 |
| SM | kg | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| RSF | MJ | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| NRSF | MJ | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| FW | m3 | 2,6E-02 | 2,3E-08 | 3,2E-03 | 2,9E-02 | 1,1E-04 | 0,0E+00 | 4,1E-06 | 4,5E-05 | 4,8E-07 | -2,5E-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 | | | | | | | | | | |

## Additional voluntary indicators

| | | Results per functional or declared unit: 1 kg | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A1-A3** | **A4** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[2] | kg CO2 eq | 1,7E+00 | 2,6E-05 | 8,1E-01 | 2,5E+00 | 1,2E-01 | 0,0E+00 | 4,7E-03 | 2,2E-02 | 2,3E-03 | -1,6E+00 |
| Acronyms | GWP-GHG global warming potential - greenhouse gases | | | | | | | | | | |

## Waste and output flows

### *Waste*

| | | Results per functional or declared unit: 1 kg | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A1-A3** | **A4** | **C1** | **C2** | **C3** | **C4** | **D** |
| HWD | kg | 1,7E-06 | 1,7E-15 | 1,3E-01 | 1,3E-01 | 7,8E-12 | 0,0E+00 | 3,1E-13 | 3,1E-13 | 5,1E-12 | -1,6E-06 |
| NHWD | kg | 6,2E-02 | 5,0E-08 | 1,0E-01 | 1,6E-01 | 2,3E-04 | 0,0E+00 | 9,2E-06 | 6,7E-04 | 5,0E-02 | -5,8E-02 |
| RWD | kg | 8,2E-04 | 4,3E-10 | 2,1E-04 | 1,0E-03 | 2,0E-06 | 0,0E+00 | 7,9E-08 | 2,0E-07 | 4,1E-07 | -7,6E-04 |
| Acronyms | HW Hazardous waste disposed; NHW Non-hazardous waste disposed; RW Radioactive waste disposed | | | | | | | | | | |

[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.

### *Output flows*

| | | Results per functional or declared unit: 1 kg | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **A1-A3** | **A4** | **C1** | **C2** | **C3** | **C4** | **D** |
| CRU | kg | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| MFR | kg | 0,0E+00 | 0,0E+00 | 2,5E-01 | 2,5E-01 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 9,4E-01 | 0,0E+00 | 0,0E+00 |
| MER | kg | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 8,6E-03 | 0,0E+00 | 0,0E+00 |
| EEE | MJ | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 |
| EET | MJ | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 0,0E+00 | 3,5E-02 | 0,0E+00 | 0,0E+00 |
| Acronyms | CRU Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy | | | | | | | | | | |

## *Information on biogenic carbon content*

| **Biogenic carbon content** | **Unit per DU** | **Amount** |
|---|---|---|
| Biogenic carbon content in product | kg C | 0 |
| Biogenic carbon content in packaging | kg C | 0 |

*1 kg biogenic carbon is equivalent to 44/12 kg CO2.*

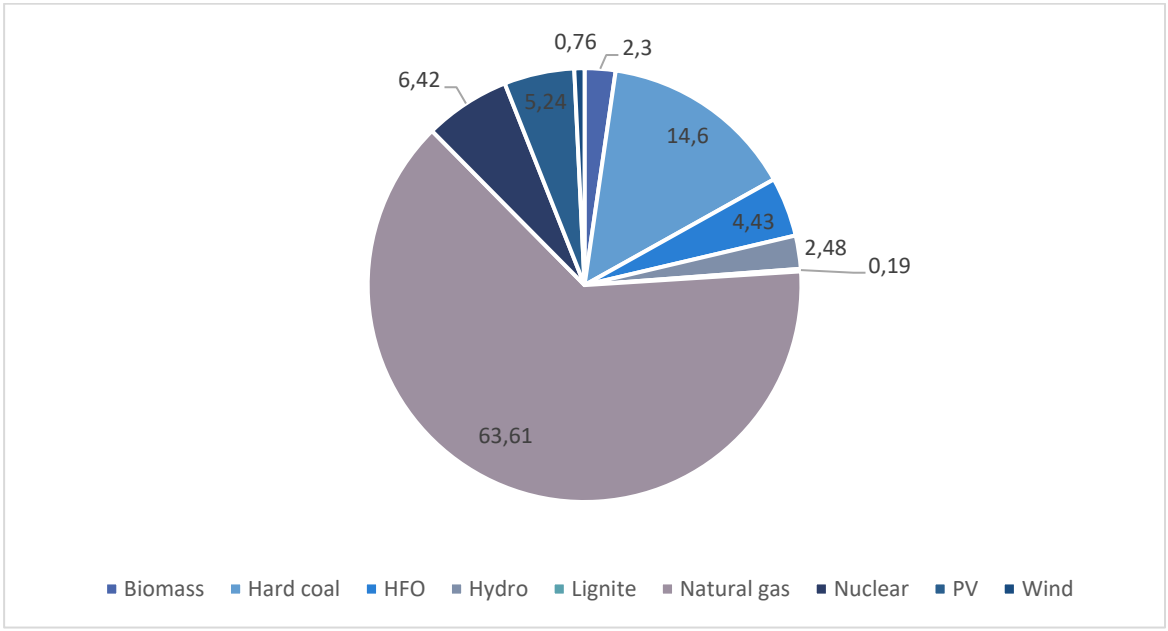
## Disclaimers

| ILCD classification | Indicator | Disclaimer |
|---|---|---|
| ILCD Type 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 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 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. | | |

# Additional information

The electricity mix is based on Italy's residual mix 2021 (Source: European Residual Mixes 2021 - Association of Issuing Bodies).

| Residual mix | Unit | Value |
|---|---|---|
| **Location** | | Italy |
| **Electricity mix** | | Biomass: 2,3%<br>Hard coal: 14,6%<br>HFO: 4,43%<br>Hydro: 2,48%<br>Lignite: 0,19%<br>Natural gas: 63,61%<br>Nuclear: 6,42%<br>PV: 5,24%<br>Wind: 0,76% |
| **Reference year** | | 2021 |
| **Source** | | European Residual Mixes 2021 - Association of Issuing Bodies |
| **GWP excl. biogenic** | kg CO2 -eq/kWh | 0,53 |



# Differences Versus Previous Versions

2023-03-20 Version 1

2024-04-22 Version 1.1
***Editorial change**: Added article numbers covered by this EPD.*

2024-07-17 Version 1.2
***Editorial change**: Biogenic carbon content corrected to balance out over whole lifecycle.*

# References


| | |
|---|---|
| General Programme Instructions of the International EPD® System. Version 4. | General Programme Instructions of the International EPD® System. Version 4. |
| ISO 14020:2000 Environmental labels and declarations — General principles | ISO 14020:2000 Environmental labels and declarations — General principles |
| ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures | ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures |
| ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines | ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines |
| EN 15804:2012+A2:2019- Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products | EN 15804:2012+A2:2019- Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products |
| Construction Products PCR 2019:14 version 1.2.3 | EPD International (2021): PCR 2019:14 Construction products and construction services, version 1.2.3 |