# Environmental Product Declaration

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

**TESA TEX26 Concealed Door Closer with Cam Action Technology and Guide Rail**

from

ASSA ABLOY

| | |
|---|---|
| Programme: | The International EPD® System, www.environdec.com |
| Programme operator: | EPD International AB |
| EPD registration number: | EPD-IES-0023913 |
| EPD Type: | Product Specific |
| Publication date: | 2025-06-03 |
| Revision Date | N/A |
| Valid until: | 2030-06-03 |
| | 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 1.3.3 |
| c-PCR to PCR 2019:14 Building hardware (EN 17610:2022) Version: 2022-11-04 |
| PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact. |
| **Life Cycle Assessment (LCA)** |
| LCA accountability: Marquis Miller - Sustainable Solutions Corporation |
| ***Main Database: Sphera*** |
| ***LCA Software: LCA for Experts (Previously know as GaBi) v10.6*** |
| ***LCA/EPD Tool: ASSA ABLOY EMEIA EPD Generator*** |
| **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: Jane Anderson, Ph.D. Jane Anderson<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.<br><br>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/functional 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: | Abloy Oy<br>Wahlforssinkatu 20<br>80100 Joensuu, FINLAND |
| Contact: | Olympia Dolla<br>olympia.dolla@assaabloy.com |
| Description of the organisation: | ASSA ABLOY remains committed to the principles of the UN Global Compact in the areas of human rights, labor, the environment, and anti-corruption. |
| Product-related or management system-related certifications: | ASSA ABLOY works hard to minimize the environmental impacts of its business activities through various corporate-wide sustainability initiatives. To learn more, please visit:<br>https://www.assaabloy.com/sv/com/sustainability/sustainability-report/ |
| Name and location of production site: | Joensuu, Finland |

## Product Information

| | |
|---|---|
| Product name: | TESA TEX26 Concealed Door Closer with Cam Action Technology and Guide Rail |
| Product identification: | Door closer certified according to EN1154 |
| Product description: | Product Name: TEX26<br>Product Characteristic: Concealed Door Closer<br>The TESA TEX26 is a Concealed Cam Action Door Closer used with Slide Arm. Additional features include:<br>- Can be adjusted to meet the requirements of a light door opening resistance while still strong enough top close the door<br>- Adjustable closing and latching speed<br>- Covers right hand and left hand applications<br>- Available in Silver<br>The TEX 26 is ideal for a wide range of applications, including but not limited to: Interior and exterior doors, left and right handed applications and to all four mounting options |
| UN CPC code: | 42999 |
| Geographical scope: | Europe, Middle East, America, Asia and Africa |

## LCA Information

Functional unit / declared unit:

The declaration refers to the declared unit of 1 kilogram of door closer, as specified in the Builders Hardware PCR. For any product group EPDs, an impact assessment was completed for each product and the highest impacts were reported as conservative representations of the product group. Product grouping was considered appropriate if the individual product impacts differed by no more than ±10% in any impact category.

| Name | Value | Unit |
|---|---|---|
| Declared Unit | 1 | kg |
| Mass Per Product | 2.2 | kg |
| Products Required to Achieve Declared Unit | 0.454 | - |

Reference service life:

The reference service life of the TESA TEX26 Concealed Door Closer with Cam Action Technology and Guide Rail is estimated to be 30 years. The 30 years is based on the support & service life of the TESA TEX26 Concealed Door Closer with Cam Action Technology and Guide Rail and neither factual nor estimated life time.

Time representativeness:

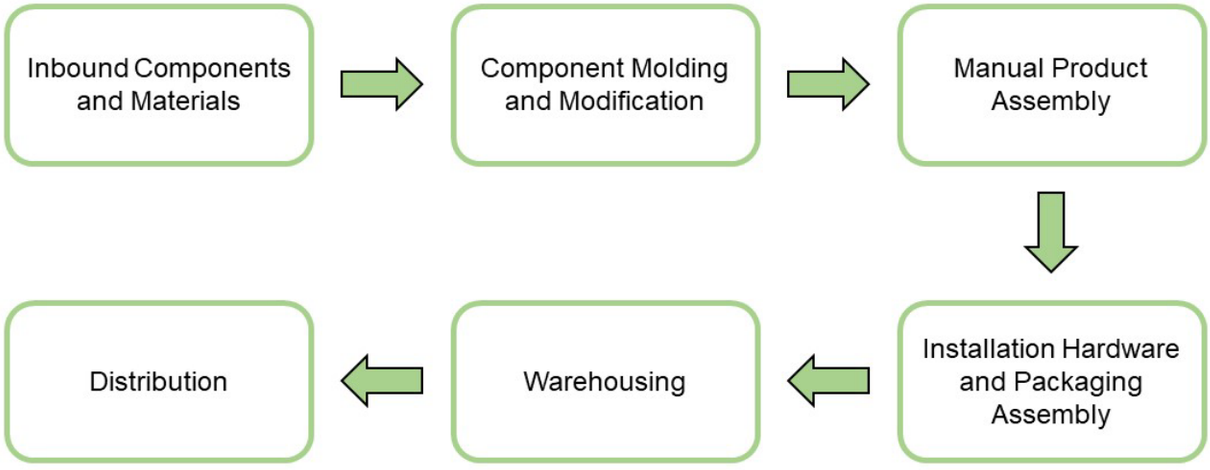
The period under review is the full calendar year of 2022.

Database(s) and LCA software used:

LCA for Experts developed by Sphera was the LCA software used for the study. Primary data were collected for every process in the product system under the control of ASSA ABLOY Corporate. Secondary data from the LCA for Experts Sphera database were utilized. These data were evaluated and have temporal, geographic, and technical coverage appropriate to the scope of the Builder’s Hardware product category.

Description of system boundaries:

Cradle to grave and module D (A + B + C + D)




Cut-off Criteria:

Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected. The sum of the neglected processes may not exceed 5% by mass and by 5% of the considered impact categories for each module. For that a documented assumption is admissible. The below activities were cut off as they met the above criteria.

- Human Activity
- Capital Equipment

| | Product Stage | | | Construction Process Stage | | Use Stage | | | | | | | End-of-Life Stage† | | | | Benefits and Loads Beyond the System Boundaries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw material supply | Transport | Manufacturing | Transport from gate to the site | Construction/ installation process | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction /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 | Europe | Europe | Europe | Europe | Europe | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA | EMEIA |
| Specific data used | 2% | | | | | | | | | | | | | | | | |
| Variation - Products | Not Relevant | | | | | | | | | | | | | | | | |
| Variation - sites | Not Relevant | | | | | | | | | | | | | | | | |

**(X = Included; MND = Module Not Declared)**

* These phases are zero and may be removed from tables for formatting.
† This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of waste state or disposal of final residues.

## Content Information

The LCI method principle for the processes used in this study was attributional and no impact has been assigned to pre- or post-consumer recycled materials entering or leaving the system.

| Product Components | Weight, kg | Post-consumer material, weight-% | Pre-consumer material, weight-% | Total secondary material, weight-% | Biogenic material, kg C/kg |
|---|---|---|---|---|---|
| Brass | 2.84E-03 | 74.0% | 16.0% | 90.0% | - |
| Stainless Steel | 2.25E-01 | 42.0% | 20.0% | 62.0% | - |
| Steel | 3.79E-01 | 3.0% | 10.0% | 13.0% | - |
| Aluminum | 3.54E-01 | - | 56.0% | 56.0% | - |
| Copper | 0.00E+00 | - | 2.0% | 2.0% | |
| Glass | 0.00E+00 | - | 25.0% | 25.0% | |
| Electronics/Mechanics | 0.00E+00 | - | - | - | - |
| Plastics | 1.72E-03 | - | - | - | - |
| Other | 3.78E-02 | - | - | - | - |
| **Total** | **1.00E+00** | **-** | **-** | **-** | **-** |
| **Packaging Materials** | **Weight, kg** | **Post-consumer material, weight-%** | **Pre-consumer material, weight-%** | **Total secondary material, weight-%** | **Biogenic material, kg C/kg** |
| Cardboard | 1.41E-02 | Not Specified | Not Specified | 27.3% | 4.73E-03 |
| Paper | 6.81E-03 | - | - | - | 2.29E-03 |
| Plastics | 4.54E-05 | - | - | - | - |
| **Total** | **2.09E-02** | **-** | **-** | **-** | **7.02E-03** |

The product has been tested for substances which exceed the limits for registration with the European Chemicals Agency regarding the “Candidate List of Substances of Very High Concern for Authorisation”. For more information, please visit: https://echa.europa.eu/scip-database

# Additional Environmental Information

## Transportation

ASSA ABLOY EMEIA products are sold globally. The assumptions used are based off of major product markets and the PCR. End users may need to adapt impacts based on their location.

| Transport to Building Site (A4) | | |
|---|---|---|
| **Name** | **Value** | **Unit** |
| Liters of fuel | 0.16 | l/100km per kg |
| Transport distance (Truck) | 400 | km |
| Capacity utilization (including empty runs) | 36 | % |
| Gross density of products transported | - | $kg/m^3$ |
| Capacity utilization volume factor | 1.00 | - |

## Product Installation

TESA TEX26 Concealed Door Closer with Cam Action Technology and Guide Rail products are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and requirements.

| Installation into the building (A5) | | |
|---|---|---|
| **Name** | **Value** | **Unit** |
| Auxiliary materials | - | kg |
| Water consumption | - | $m^3$ |
| Other resources | - | kg |
| Electricity consumption | 0.000 | kWh |
| Other energy carriers | - | MJ |
| Waste materials at construction site | 0.021 | kg |
| Output substance (recycle) | 0.013 | kg |
| Output substance (landfill) | 0.004 | kg |
| Output substance (incineration) | 0.004 | kg |
| Direct emissions to ambient air*, soil, and water | 0.026 | kg $CO_2$ |

*CO2 emissions to air from disposal of packaging

| Reference Service Life | | |
|---|---|---|
| **Name** | **Value** | **Unit** |
| Reference Service Life | 30 | years |

## Product Use

The product is possible to reuse during the reference service life and can be moved from one similar door opening to another. No auxiliary or consumable materials are incurred for maintenance and usage of the product. Repairs or replacement are not usually necessary. No cleaning efforts need to be taken into consideration.

| Operational Energy Use (B6) | | |
|---|---|---|
| **Name** | **Value** | **Unit** |
| Water consumption (from tap, to sewer) | - | $m^3$ |
| Electricity consumption | 0.0 | kWh |
| Other energy carriers | - | MJ |
| Equipment output | - | kW |
| Direct emissions to ambient air, soil, and water | - | kg |

## Disposal

The product can be mechanically dissembled to separate the different materials. For applicable products, 95% of the metal materials used are recyclable, 42.5% of the electronics are recyclable, and 30% of the glass is recyclable. The remainder of components are disposed by sending to landfill.

Disclaimer: The results of Module A should not be used without considering the results of Module C.

| End of life (C1-C4) | | |
|---|---|---|
| **Name** | **Value** | **Unit** |
| Collected separately | 0.91 | kg |
| Collected as mixed construction waste | 0.09 | kg |
| Reuse | 0.00 | kg |
| Recycling | 0.91 | kg |
| Energy recovery | 0.00 | kg |
| Landfilling | 0.09 | kg |

## Re-use Phase

The majority, by weight, of door components is metal, which can be recycled. Module D is modelled to reflect the offset of virgin material production in the next product life by calculating the net benefit of the primary material process and the point of substitution recycling process.

| Module D Flows | | |
|---|---|---|
| **Input** | **Value** | **Unit** |
| Recycling potential aluminium sheet | 1.33E-01 | kg/kg |
| Recycling potential copper sheet | 0.00E+00 | kg/kg |
| Glass cullet | 0.00E+00 | kg/kg |
| EAF Steel billet / slab / bloom | 3.55E-01 | kg/kg |
| Zinc scrap elZinc - Asturiana de Laminados (D out A5) | 1.91E-03 | kg/kg |
| Plastic granulate secondary (low metal contamination) | 1.02E-05 | kg/kg |
| Corrugated Board 2018; 84,5% recycled fiber; cut-off EoL | 6.14E-03 | kg/kg |
| **Outputs** | **Value** | **Unit** |
| Aluminium ingot mix | -1.33E-01 | kg/kg |
| Brass component (EN15804 A1-A3) | -2.43E-04 | kg/kg |
| Copper sheet mix (Europe 2015) | 0.00E+00 | kg/kg |
| Float flat glass (open sec. material) | 0.00E+00 | kg/kg |
| Ferro nickel (29%) | 0.00E+00 | kg/kg |
| BF Steel billet / slab / bloom | -3.55E-01 | kg/kg |
| Zinc redistilled mix | -1.91E-03 | kg/kg |
| Electronics scrap [Waste for recovery] | 0.00E+00 | kg/kg |
| High impact polystyrene (HIPS) | 0.00E+00 | kg/kg |
| Polyethylene low density granulate (LDPE/PE-LD) | -1.02E-05 | kg/kg |
| Corrugated board excl. paper production 2015, open paper input, average composition | -6.14E-03 | kg/kg |

# Results of the Environmental Performance Indicators

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Results shown below were calculated using EN 15804+A2 (EF 3.1) Methodology.

**EN 15804+A2 Impact Assessment**

| Parameter | Parameter | Unit | A1-A3 | A4 | A5 | B6 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|
| GWP-total | Climate change - total | kg CO2-Eq. | 6.32E+00 | 3.67E-02 | 1.16E-02 | 0.00E+00 | 4.50E-03 | 1.41E-02 | 7.89E-02 | -6.47E-01 |
| GWP-fossil | Climate change, fossil | kg CO2-Eq. | 6.35E+00 | 3.60E-02 | 7.97E-04 | 0.00E+00 | 4.41E-03 | 1.40E-02 | 9.68E-03 | -6.48E-01 |
| GWP-biogenic | Climate change, biogenic | kg CO2-Eq. | -2.57E-02 | 0.00E+00 | 2.57E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| GWP-lulc | Climate change, land use and land use change | kg CO2-Eq. | 4.70E-03 | 6.11E-04 | 2.27E-06 | 0.00E+00 | 7.48E-05 | 4.50E-06 | 8.25E-06 | -3.32E-04 |
| ODP | Ozone depletion | kg CFC-11 Eq. | 1.18E-11 | 5.35E-15 | 3.15E-15 | 0.00E+00 | 6.56E-16 | 1.87E-13 | 8.74E-15 | 4.42E-10 |
| AP | Acidification | Mole of H+ eq. | 3.21E-02 | 2.31E-04 | 4.97E-06 | 0.00E+00 | 2.83E-05 | 7.02E-05 | 2.31E-05 | -3.15E-03 |
| EP-freshwater | Eutrophication, freshwater | kg P eq. | 7.22E-06 | 1.55E-07 | 3.53E-08 | 0.00E+00 | 1.90E-08 | 6.36E-08 | 1.78E-06 | 9.65E-07 |
| EP-marine | Eutrophication, marine | kg N eq. | 6.37E-03 | 1.13E-04 | 2.26E-06 | 0.00E+00 | 1.38E-05 | 3.19E-05 | 2.02E-05 | -5.31E-04 |
| EP-terrestrial | Eutrophication, terrestrial | Mole of N eq. | 6.88E-02 | 1.25E-03 | 2.22E-05 | 0.00E+00 | 1.53E-04 | 3.47E-04 | 8.50E-05 | -5.86E-03 |
| POCP | Photochemical ozone formation, human health | kg NMVOC eq. | 1.89E-02 | 2.24E-04 | 6.62E-06 | 0.00E+00 | 2.74E-05 | 8.62E-05 | 4.84E-05 | -1.79E-03 |
| ADP-minerals&metals | Resource use, mineral and metals | kg Sb eq. | 3.69E-05 | 3.17E-09 | 7.86E-11 | 0.00E+00 | 3.88E-10 | 2.30E-09 | 1.91E-10 | -5.08E-06 |
| ADP-fossil | Resource use, fossils | MJ | 7.93E+01 | 4.79E-01 | 1.10E-02 | 0.00E+00 | 5.86E-02 | 2.49E-01 | 6.74E-02 | -4.85E+00 |
| WDP | Water use | m³ world equiv. | 2.69E+00 | 5.63E-04 | 7.94E-04 | 0.00E+00 | 6.89E-05 | 2.62E-03 | 3.21E-04 | -2.77E-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 | | | | | | | | | |

**All use phase stages have been considered and only those with non-zero values have been reported*

The following table contains disclaimers from EN 15804+A2 for the impact categories used above.

| 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. | | |

Results shown below were calculated using EN 15804+A2 (EF 3.1) Methodology.

**Additional Mandatory Impact Assessment**

| Parameter | Parameter | Unit | A1-A3 | A4 | A5 | B6 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|
| GWP-GHG | Climate change - GHG | kg CO2-Eq. | 6.35E+00 | 3.66E-02 | 7.99E-04 | 0.00E+00 | 4.48E-03 | 1.40E-02 | 9.69E-03 | -6.48E-01 |
| PM | Particulate matter | Disease incidences | 6.33E-07 | 1.01E-09 | 3.57E-11 | 0.00E+00 | 1.24E-10 | 5.85E-10 | 2.33E-10 | -5.24E-08 |
| IR-human health | Ionising radiation, human health | kBq U235 eq. | 3.73E-01 | 1.27E-04 | 7.80E-05 | 0.00E+00 | 1.55E-05 | 4.55E-03 | 1.22E-04 | 2.40E-02 |
| Ecotox | Ecotoxicity, freshwater | CTUe | 2.43E+01 | 3.55E-01 | 6.35E-03 | 0.00E+00 | 4.35E-02 | 1.10E-01 | 8.19E-02 | -6.26E-01 |
| HT-cancer | Human toxicity, cancer | CTUh | 1.21E-07 | 7.18E-12 | 2.37E-13 | 0.00E+00 | 8.80E-13 | 3.98E-12 | 1.86E-12 | -1.66E-09 |
| HT-non cancer | Human toxicity, non-cancer | CTUh | 9.44E-08 | 3.22E-10 | 1.08E-11 | 0.00E+00 | 3.95E-11 | 6.67E-11 | 1.25E-10 | -2.29E-09 |
| LU | Land use | Pt | 1.85E+01 | 2.36E-01 | 2.85E-03 | 0.00E+00 | 2.88E-02 | 8.74E-02 | 7.04E-03 | 1.41E+00 |

**All use phase stages have been considered and only those with non-zero values have been reported*

Results shown below were calculated using EN 15804+A2 (EF 3.1) Methodology.

**Additional Mandatory Impact Assessment**

| Manufacturing Country | Electricity Source | GWP-GHG | Unit |
|---|---|---|---|
| Finland | FI: Residual grid mix Sphera | 2.91E-01 | kg CO2-Eq./kWh |

Results below contain the resource use throughout the life cycle of the product.

| Resource Use | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **Parameter** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C2** | **C3** | **C4** | **D** |
| PERE | Renewable primary energy as energy carrier | MJ | 3.12E+01 | 4.12E-02 | 4.61E-02 | 0.00E+00 | 5.05E-03 | 1.28E-01 | 6.87E-03 | 6.14E-01 |
| PERM | Renewable primary energy resources as material utilization | MJ | 3.61E-01 | 0.00E+00 | -3.61E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | Total renewable primary energy resources | MJ | 3.16E+01 | 4.12E-02 | -3.15E-01 | 0.00E+00 | 5.05E-03 | 1.28E-01 | 6.87E-03 | 6.14E-01 |
| PENRE | Nonrenewable primary energy as energy carrier | MJ | 7.93E+01 | 4.79E-01 | 1.15E-02 | 0.00E+00 | 5.86E-02 | 2.49E-01 | 6.74E-02 | -4.85E+00 |
| PENRM | Nonrenewable primary energy as material utilization | MJ | 8.20E-02 | 0.00E+00 | -1.97E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -8.00E-02 | 0.00E+00 |
| PENRT | Total non-renewable primary energy | MJ | 7.94E+01 | 4.79E-01 | 9.48E-03 | 0.00E+00 | 5.86E-02 | 2.49E-01 | -1.26E-02 | -4.85E+00 |
| SM | Use of secondary material | kg | 3.93E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | Use of renewable secondary fuels | 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 |
| NRSF | Use of nonrenewable secondary fuels | 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 |
| FW | Use of net fresh water | $m^3$ | 8.93E-02 | 4.60E-05 | 1.96E-05 | 0.00E+00 | 5.63E-06 | 1.06E-04 | 9.75E-06 | -1.18E-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 | | | | | | | | | |

**All use phase stages have been considered and only those with non-zero values have been reported*

Results below contain the output flows and wastes throughout the life cycle of the product.

| Output Flows and Waste Categories | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **Parameter** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C2** | **C3** | **C4** | **D** |
| HWD | Hazardous waste disposed | kg | 1.04E-04 | 1.83E-11 | 8.70E-12 | 0.00E+00 | 2.24E-12 | 2.59E-10 | 1.17E-11 | 8.27E-09 |
| NHWD | Non-hazardous waste disposed | kg | 1.54E+00 | 7.82E-05 | 3.23E-03 | 0.00E+00 | 9.57E-06 | 1.50E-04 | 6.86E-02 | -8.26E-02 |
| HLRW | High-level radioactive waste | kg or $m^3$ | 3.39E-03 | 8.72E-07 | 5.11E-07 | 0.00E+00 | 1.07E-07 | 2.77E-05 | 8.17E-07 | 2.10E-04 |
| ILLRW | Intermediate- and low-level radioactive waste | kg or $m^3$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| CRU | 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 |
| MR | Materials for recycling | kg | 0.00E+00 | 0.00E+00 | 1.25E-02 | 0.00E+00 | 0.00E+00 | 9.15E-01 | 0.00E+00 | 0.00E+00 |
| MER | Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 4.19E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| EE | Recovered energy exported from system | MJ | 0.00E+00 | 0.00E+00 | 4.38E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

**All use phase stages have been considered and only those with non-zero values have been reported*

Results below contain direct greenhouse gas emissions and removals throughout the life cycle of the product.

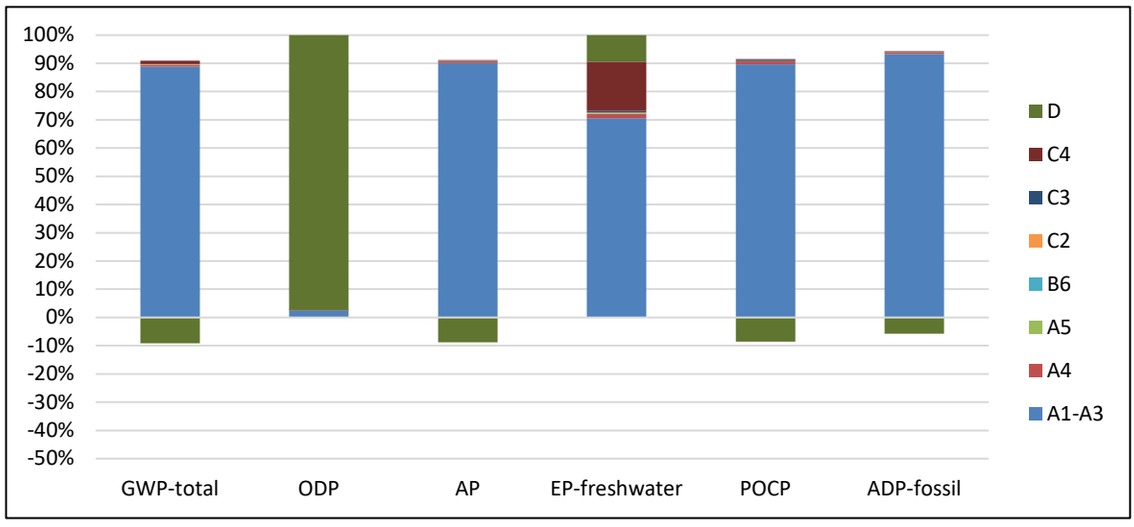
**Resource Use**

| Parameter | Parameter | Unit | A1-A3 | A4 | A5 | B6 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|
| BCRP | Biogenic Carbon Removal from Product | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| BCEP | Biogenic Carbon Emissions from Product | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| BCRK | Biogenic Carbon Removal from Packaging | kg $CO_2$ | 2.57E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| BCEK | Biogenic Carbon Emissions from Packaging | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 2.57E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| BCEW | Biogenic Carbon Emissions from Combustion of Waste from Renewable Sources Used in Production Process | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| CCE | Calcination Carbon Emissions | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| CCR | Carbonation Carbon Removal | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| CWNR | Carbon Emissions from Combustion of Waste from Non-renewable Sources Used in Production Process | kg $CO_2$ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

**All use phase stages have been considered and only those with non-zero values have been reported*

## LCA Interpretation

The raw materials, raw material transportation, and production (A1-A3) phases were the most impactful stages in the cradle-to-grave impacts. These results were influenced by the energy and resources needed to create the raw materials (primarily metals), electricity during manufacturing, and fuel processing from natural gas, diesel, and gasoline. Benefits were achieved in Module D from the recycling of metals and electronic components.



## Additional Environmental Information

Environmental and Health During Manufacturing:

ASSA ABLOY is committed to producing and distributing opening solutions with minimal environmental impact, where health & safety is the primary focus for all employees and associates.

• Environmental operations, GHG, energy, water, waste, VOC, surface treatment, and H&S are being routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met and environment management program effectiveness is evaluated.

• Code of Conduct covers human rights, labor practices and decent work. Management of ASSA ABLOY is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability, and recognizing outstanding performance.

• Any waste metals during machining are separated and recycled. Where applicable, the waste from the water-based painting process is delivered to waste treatment plant.

Environmental and Health During Installation:

There is no harmful emissive potential. No damage to health or impairment is expected under normal use corresponding to the intended use of the product.

Environmental Activities and Certifications:

ASSA ABLOY works hard to minimize the environmental impacts of its business activities through various corporate-wide sustainability initiatives. To learn more, please visit: https://www.assaabloy.com/sv/com/sustainability/sustainability-report/

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