

PEP ecopassport®

Product Environmental Profile



| | | | |
|---|---|--------------------------------------|-------------------------------------|
| Registration number: | ABBG-00935-V01.01-EN | Drafting rules: | PCR-ed4-EN-2021 09 06 |
| Contact information: | oscar.sarmiento-penuela@ch.abb.com | Supplemented by: | PSR-0003-ed2.1-EN-2023 12 08 |
| Verifier accreditation number: | VH44 | Information and reference documents: | www.pep-ecopassport.org |
| Date of issue: | August-25 | Validity period: | 5 years |
| Independent verification of the declaration and data in compliance with ISO 14025: 2006 | | | |
| Internal: | <input type="checkbox"/> | External: | <input checked="" type="checkbox"/> |
| The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain) | | | |
| PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500:2022 The components of the present PEP may not be compared with components from any other program. | | | |
| Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations" | | | |





ABB Purpose & Embedding Sustainability

ABB is committed to perform the Life Cycle Assessment (LCA) of most of its products in order to obtain the PEP certification.

LCA evaluates the environmental performances and potential environmental impacts throughout a product's life cycle, from raw material to end of life, including manufacturing, transportation, distribution, and use.

It helps to identify opportunities to improve the environmental performance of products, establish strategic plans and priorities and create Environmental Product Declarations.

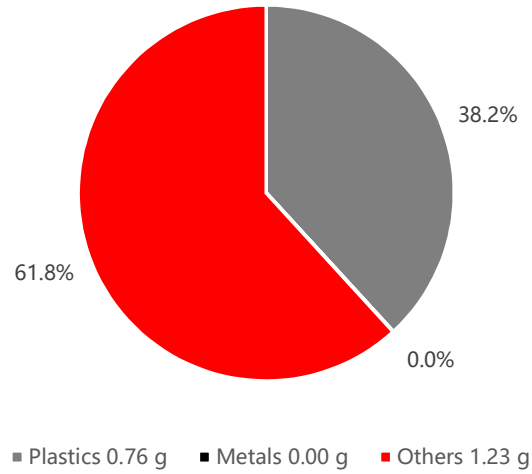


General information

| | |
|----------------------------|--|
| Reference product | TC5344A |
| Description of the product | Ty-Rap® mounting bases are supports used to fix firmly other cable accessories as Ty-Rap® cable tie. Mounting bases ramped cable tie entries, for easier insertion of the cable tie. |
| Functional unit | The reference product of the Ty-Rap® mounting bases is TC5344A. The functional unit for TC5344A is to mount a cable or a tube at a point with a collar with a clamping capacity of the cable tie between 3 mm and 102 mm, for a reference lifetime of 20 years. The declared unit is referred to one piece of product. |
| Other products covered | List of the other products covered in this PEP is presented in the paragraph which concerned the extrapolation rules |
| Manufacturing address | Cabo Caribe Industrial Park Lot 32-34 Vega Baja PR 00693 www.new.abb.com/us |



Constituent Materials



Total weight of reference product and packaging

2.0

g

| Plastics as % of weight | | Metals as % of weight | | Others as % of weight | |
|-------------------------|---------|-----------------------|---------|-----------------------|---------|
| Name and CAS number | Weight% | Name and CAS number | Weight% | Name and CAS number | Weight% |
| PA66 | 27.4 | | | Wood | 50.4 |
| Synthetic rubber | 5.4 | | | Cardboard | 11.4 |
| LDPE | 5.4 | | | | |

The total mass of the reference product is 0.652 g , with an additional 1.335 g associated with packaging materials



Additional Information

| | |
|---|--|
| Manufacturing | The manufacturing stage includes the production of the product and its packaging, as well as transportation to the manufacturer's final logistics platform. Manufacturing processes are conducted at ABB's facility in Vega Bja, PR |
| Distribution | Transportation from ABB's manufacturing facility in Vega Bja, PR to distribution warehouses in Byhalia, Bromont, Phoenix, and NEDC is included. Distribution from warehouses to end users is based on product-specific transport data for the reference year. The reference product is distributed globally. |
| Installation | This phase includes the disposal of the product's packaging. |
| Use | No material or energy consumption occurs during the use phase. The product does not require maintenance. |
| End of life | The default end-of-life scenario specified in PSR-0003-ed2.1-EN-2023-12-08 has been adopted, assuming 100% incineration without energy recovery. |
| Benefits and loads beyond the system boundaries | Net benefits and loads beyond the system boundaries are modeled according to PCR-ed4-EN-2021 09 06 and EN 50693 standards |



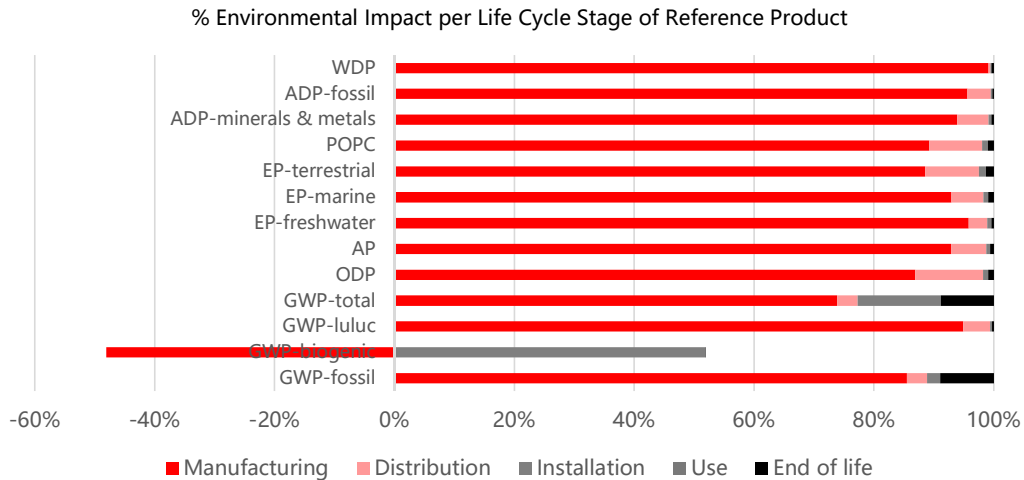
Environmental Impacts

| | |
|----------------------------------|--|
| Reference lifetime | 20 years |
| Product category | Category: "Other cable management products" Subcategory: "Electronical installation mounting systems" |
| Installation elements | No additional elements needed during installation |
| Use scenario | No material or energy consumption occurs during the use phase. The product does not require maintenance. |
| Geographical representativeness | Global, 2022 |
| Technological representativeness | Technological representativeness for primary data refers to the specific production processes. The technological coverage for each secondary process is specified in the metadata section of the ecoinvent database. |
| Software and database used | SimaPro 10.2 and ecoinvent 3.10 |

Energy model used

| | |
|---------------|--|
| Manufacturing | Manufacturing & storage US: 100% hydroelectric as reported in the Renewable Energy Certificate. The energy-related processes used are those included in the datasets selected. |
| Installation | The energy-related processes used for the inputs and end of life are t |
| Use | No energy consumption occurs during the use stage |
| End of life | The energy-related processes used for the inputs are those included in the datasets selected. |

Common base of mandatory indicators



Environmental impact indicators

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of life | Benefits | |
|-----------|-------------------|------------|---------------|--------------|--------------|----------|-------------|----------|----------|
| GWP | Total | kg CO2 eq. | 1.76E-02 | 1.30E-02 | 5.98E-04 | 2.44E-03 | 0.00E+00 | 1.56E-03 | 0.00E+00 |
| | Fossil | kg CO2 eq. | 1.75E-02 | 1.49E-02 | 5.98E-04 | 3.77E-04 | 0.00E+00 | 1.56E-03 | 0.00E+00 |
| | Biogenic | kg CO2 eq. | 1.54E-04 | -1.91E-03 | 5.95E-09 | 2.07E-03 | 0.00E+00 | 1.06E-07 | 0.00E+00 |
| | Luluc | kg CO2 eq. | 5.53E-06 | 5.25E-06 | 2.49E-07 | 1.70E-08 | 0.00E+00 | 1.51E-08 | 0.00E+00 |
| ODP | kg CFC-11 eq. | 8.19E-11 | 7.12E-11 | 9.26E-12 | 7.08E-13 | 0.00E+00 | 7.61E-13 | 0.00E+00 | |
| AP | H+ eq. | 6.43E-05 | 5.97E-05 | 3.80E-06 | 3.74E-07 | 0.00E+00 | 4.07E-07 | 0.00E+00 | |
| EP | Freshwater | kg P eq. | 1.45E-06 | 1.38E-06 | 4.46E-08 | 1.01E-08 | 0.00E+00 | 5.87E-09 | 0.00E+00 |
| | Marine | kg N eq. | 2.28E-05 | 2.12E-05 | 1.21E-06 | 1.78E-07 | 0.00E+00 | 2.21E-07 | 0.00E+00 |
| | Terrestrial | mol N eq. | 1.47E-04 | 1.30E-04 | 1.32E-05 | 1.75E-06 | 0.00E+00 | 1.93E-06 | 0.00E+00 |
| POCP | kg NMVOC eq. | 5.03E-05 | 4.48E-05 | 4.44E-06 | 4.82E-07 | 0.00E+00 | 5.04E-07 | 0.00E+00 | |
| ADP | Minerals & metals | kg SB eq. | 2.94E-08 | 2.76E-08 | 1.55E-09 | 1.31E-10 | 0.00E+00 | 1.19E-10 | 0.00E+00 |
| | Fossil | MJ | 2.20E-01 | 2.10E-01 | 8.60E-03 | 5.89E-04 | 0.00E+00 | 4.82E-04 | 0.00E+00 |
| WDP | m³ eq. depr. | 1.28E-02 | 1.27E-02 | 4.24E-05 | 1.76E-05 | 0.00E+00 | 5.06E-05 | 0.00E+00 | |

Resource use indicators

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of life | Benefits |
|-----------|------|----------|---------------|--------------|--------------|----------|-------------|----------|
| PERE | MJ | 3.21E-02 | 3.20E-02 | 1.06E-04 | 1.07E-05 | 0.00E+00 | 1.37E-05 | 0.00E+00 |
| PERM | MJ | 1.95E-02 | 1.95E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 5.16E-02 | 5.15E-02 | 1.06E-04 | 1.07E-05 | 0.00E+00 | 1.37E-05 | 0.00E+00 |
| PENRE | MJ | 1.70E-01 | 1.60E-01 | 8.60E-03 | 5.89E-04 | 0.00E+00 | 4.82E-04 | 0.00E+00 |
| PENRM | MJ | 4.98E-02 | 4.98E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | MJ | 2.20E-01 | 2.10E-01 | 8.60E-03 | 5.89E-04 | 0.00E+00 | 4.82E-04 | 0.00E+00 |

Common base of mandatory indicators

Use of secondary materials, water, and energy resources

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of life | Benefits |
|-----------|----------------|----------|---------------|--------------|--------------|----------|-------------|----------|
| SM | kg | 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 |
| NRSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | m ³ | 3.03E-04 | 2.99E-04 | 1.25E-06 | 5.77E-07 | 0.00E+00 | 1.78E-06 | 0.00E+00 |

Waste category indicators

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of life | Benefits |
|-----------|------|----------|---------------|--------------|--------------|----------|-------------|----------|
| HWD | kg | 6.24E-07 | 5.58E-07 | 5.69E-08 | 4.48E-09 | 0.00E+00 | 4.90E-09 | 0.00E+00 |
| N-HWD | kg | 1.71E-03 | 9.76E-04 | 6.79E-04 | 3.10E-05 | 0.00E+00 | 2.38E-05 | 0.00E+00 |
| RWD | kg | 4.32E-08 | 4.11E-08 | 1.79E-09 | 1.48E-10 | 0.00E+00 | 1.76E-10 | 0.00E+00 |

Output flow indicators

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of life | Benefits |
|-----------|------|----------|---------------|--------------|--------------|----------|-------------|----------|
| CfRu | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MfR | kg | 3.84E-04 | 3.84E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MfER | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| EE | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

Other indicators

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life | Benefits |
|----------------------|---------|----------|---------------|--------------|--------------|----------|-------------|----------|
| Biogenic C-product | kg of C | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Biogenic C-packaging | kg of C | 6.29E-04 | 6.29E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

Optional indicators

| Indicator | Unit | Total | Manufacturing | Distribution | Installation | Use | End of life | Benefits |
|-----------|--------------|----------|---------------|--------------|--------------|----------|-------------|----------|
| Tot PE | MJ | 2.71E-01 | 2.62E-01 | 8.71E-03 | 6.00E-04 | 0.00E+00 | 4.95E-04 | 0.00E+00 |
| Efp | Dise inc | 7.60E-10 | 6.95E-10 | 5.74E-11 | 4.63E-12 | 0.00E+00 | 2.86E-12 | 0.00E+00 |
| IrHH | kBq U-235 eq | 1.75E-04 | 1.66E-04 | 7.32E-06 | 5.99E-07 | 0.00E+00 | 7.00E-07 | 0.00E+00 |
| ETX FW | CTUe | 4.46E-02 | 3.87E-02 | 2.03E-03 | 7.62E-04 | 0.00E+00 | 3.17E-03 | 0.00E+00 |
| HTX CE | CTUh | 3.24E-11 | 2.85E-11 | 2.95E-12 | 5.41E-13 | 0.00E+00 | 4.22E-13 | 0.00E+00 |
| HTX N-CE | CTUh | 6.50E-11 | 5.15E-11 | 5.28E-12 | 3.39E-12 | 0.00E+00 | 4.75E-12 | 0.00E+00 |
| IrLS | Pt | 2.85E-01 | 2.77E-01 | 8.07E-03 | 2.82E-04 | 0.00E+00 | 1.92E-04 | 0.00E+00 |

Glossary

Environmental impact Indicators

| | |
|----------------|---|
| GWP-total | Global Warming Potential total (Climate change) |
| GWP-fossil | Global Warming Potential fossil |
| 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 |
| EP-freshwater | Eutrophication potential - freshwater compartment |
| EP-marine | Eutrophication potential - fraction of nutrients reachin marine end compartment |
| EP-terrestrial | Eutrophication potential - Accumulated Exceedance |
| POCP | Tropospheric ozone creation potential |
| ADP-m&m | Abiotic Depletion for non-fossil resources potential |
| ADP-fossil | Abiotic Depletion for fossil resources potential |
| WDP | Water deprivation potential |

Resource indicators

| | |
|-------|---|
| PENRE | Use of non-renewable primary energy excluding renewable primary energy resources used as raw material |
| PENRM | Use of non-renewable primary energy resources used as raw material |
| PENRT | Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) |
| PERE | Use of renewable primary energy excluding non-renewable primary energy resources used as raw material. |
| PERM | Use of renewable primary energy resources used as raw material |
| PERT | Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) |

| Secondary materials, water and energy resources | | Waste category indicators | |
|---|--------------------------------------|---------------------------|------------------------------|
| SM | Use of secondary materials | HWD | Hazardous waste disposed |
| RSF | Use of renewable secondary fuels | N-HWD | Non-hazardous waste disposed |
| NRSF | Use of non-renewable secondary fuels | RWD | Radioactive waste disposed |
| FW | Net use of fresh water | | |

| Output flow indicators | | Optional indicators | |
|------------------------|-------------------------------|---------------------|---|
| CfRu | Components for re-use | Tot PE | Total use of primary energy during the life cycle |
| MfR | Materials for recycling | Efp | Emissions of Fine particles |
| MfER | Materials for energy recovery | IrHH | Ionizing radiation, human health |
| EE | Exported Energy | ETX FW | Ecotoxicity, freshwater |
| | | HTX CE | Human toxicity, carcinogenic effects |
| | | HTX N-CE | Human toxicity, non-carcinogenic effects |
| | | IrLS | Impact related to Land use / soil quality |

Approach for extrapolation rules applied to a homogeneous environmental family

The PEP can cover products belonging to a homogeneous environmental family, even though they differ from the reference product. Therefore, the group of products must satisfy the following characteristics:

- same function;
- same product standard;
- similar manufacturing technology: the same type of materials and same manufacturing processes.

The product family satisfies these conditions, so extrapolation rules are applied following the PCR guidelines to assess the environmental impact of the products belonging to the family. The extrapolation rules are defined by the following steps:

- Analyse the products covered by the PEP belonging to the same homogenous family;
- Perform the LCA of a representative product of the homogeneous family;
- Identify and quantify the product parameters that vary between the various products of the homogeneous environmental family (i.e. dimensions, the weight of parts, materials, energy consumption, etc.).

Lastly, a sensitivity analysis was performed for each life cycle stage to identify which parameters of the ones selected are sensitive to environmental impacts to create extrapolation rules.

The parameters identified are listed below:

- product weight;
- packaging weight;
- packaging composition.

The representative product considered for the calculation of the extrapolation rules is TC5344A. This product is most representative for the sales.

The result of the sensitivity analysis show that product weight parameter, packaging weight parameter, packaging composition parameter are sensitive.

The products included in the product family and considered for the application of the extrapolation rules are presented in the following table.

Ty-Rap® Fastening solutions – Mounting bases

| SKU name | Weight of Product (kg) | Weight of Packaging (kg) | Weight of Pallet(kg) | Weight of Cardboard(kg) |
|-----------------|-------------------------------|---------------------------------|-----------------------------|--------------------------------|
| TC5344A | 6.52E-04 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC5342A | 3.31E-03 | 9.10E-04 | 3.18E-04 | 3.72E-04 |
| TC368 | 4.12E-03 | 7.93E-04 | 4.23E-04 | 2.36E-04 |
| TC150X150A-L | 2.79E-03 | 1.79E-03 | 7.94E-04 | 5.81E-04 |
| TC5347A | 1.82E-03 | 9.10E-04 | 3.18E-04 | 3.72E-04 |
| TC050X050A | 3.10E-04 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC050X050A-C | 3.10E-04 | 7.79E-04 | 5.01E-04 | 1.13E-04 |
| TC347 | 1.82E-03 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC347A | 1.82E-03 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC342 | 1.82E-03 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC342A | 1.82E-03 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC150X150 | 2.79E-03 | 7.93E-04 | 4.23E-04 | 2.36E-04 |
| TC150X150A | 2.79E-03 | 7.93E-04 | 4.23E-04 | 2.36E-04 |
| TC200X200A | 4.12E-03 | 7.93E-04 | 4.23E-04 | 2.36E-04 |
| TC200X200A-L | 4.12E-03 | 1.79E-03 | 7.94E-04 | 5.81E-04 |
| TC344 | 6.52E-04 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC344A | 6.52E-04 | 1.34E-03 | 1.00E-03 | 2.27E-04 |
| TC368A | 4.12E-03 | 7.93E-04 | 4.23E-04 | 2.36E-04 |
| TC5344 | 6.52E-04 | 1.34E-03 | 1.00E-03 | 2.27E-04 |

Extrapolation rules

The extrapolation rules are calculated based on the LCIA results of all the 6 products (reference product + variants), and the sensitivity analysis carried out for the extrapolation rules.

The influential parameters for calculating the LCIA impacts of the variants are product weight, packaging weight and pallet weight for the manufacturing stage. For the distribution stage the influential parameters are packaging and product weight; for installation stage, the influential parameters are pallet weight and cardboard weight; for end of life stage the influential parameter is product weight.

A multiple linear correlation between the LCIA impacts of the representative product and its variants is identified using these parameters. The most suitable equation is determined by considering the SimaPro impact results and the weights of several variables. These equations estimate the impacts for each SKU analyzed, with an average error error of <8% per impact category. To derive the best-fit equation, data were processed using Excel and the Python programming language. Each environmental indicator value is calculated using the following formulas.

- Manufacturing stage:

$$y = ax_1 + bx_2 + cx_3 + d$$

where x1 = product weight
x2 = packaging weight
x3 = pallet weight

- Distribution stage:

$$y = ax_1 + b$$

where x1 = product and packaging weight

- Installation stage:

$$y = ax_1 + bx_2 + c$$

where x1 = pallet weight
x2 = cardboard weight

- End of life stage:

$$y = ax_1 + b$$

where x1 = product weight

The table above can be referenced for the components' weights and all their variants.

The coefficients' calculation for the use stage is not performed because this stage is not present in the Life cycle of the product and so there aren't impacts related to this phase.

The following tables report the linear coefficients (a, b, c, etc.) for each life cycle stage.

| MANUFACTURING STAGE | | | | |
|---------------------------|----------|-----------|-----------|-----------|
| Impact category indicator | a | b | c | d |
| GWP-total | 1.28E+01 | -1.75E+01 | 1.18E+01 | 1.57E-02 |
| GWP-fossil | 1.25E+01 | -1.64E+01 | 1.22E+01 | 1.58E-02 |
| GWP-biogenic | 2.29E-01 | -1.13E+00 | -4.80E-01 | -6.81E-05 |
| GWP-luluc | 1.38E-03 | 5.27E-03 | -3.81E-03 | 1.04E-06 |
| ODP | 2.37E-08 | 9.47E-08 | -7.12E-08 | -2.31E-12 |
| AP | 5.49E-02 | -5.59E-02 | 4.20E-02 | 5.43E-05 |
| EP-freshwater | 9.22E-04 | 2.90E-04 | -2.45E-04 | 5.97E-07 |
| EP-marine | 2.07E-02 | -2.39E-02 | 1.77E-02 | 2.12E-05 |
| EP-terrestrial | 1.20E-01 | -1.04E-01 | 7.96E-02 | 1.07E-04 |
| POCP | 3.77E-02 | -2.37E-02 | 1.88E-02 | 3.16E-05 |
| ADP-minerals & metals | 1.40E-05 | 1.76E-05 | -9.35E-06 | 2.80E-09 |
| ADP-fossil | 1.81E+02 | -1.77E+02 | 1.30E+02 | 1.90E-01 |
| WDP | 1.25E+01 | -1.76E+01 | 1.29E+01 | 1.46E-02 |
| Efp | 5.88E-07 | -4.97E-07 | 4.06E-07 | 5.44E-10 |
| IrHH | 4.87E-02 | 2.23E-01 | -1.58E-01 | -1.28E-05 |
| ETX FW | 2.56E+01 | -2.41E+00 | 4.83E+00 | 1.89E-02 |
| HTX CE | 2.12E-08 | 9.81E-09 | -1.57E-10 | 1.27E-12 |
| HTX N-CE | 3.37E-08 | 1.60E-08 | -1.12E-08 | 1.77E-11 |
| IrLS | 1.51E+01 | 1.12E+02 | 1.05E+02 | 1.11E-02 |
| PERE | 2.57E+01 | 8.69E+00 | 7.10E-01 | 2.75E-03 |
| PERM | 5.67E-01 | 7.65E+00 | 7.96E+00 | 8.76E-04 |
| PERT | 2.63E+01 | 1.63E+01 | 8.67E+00 | 3.62E-03 |
| PENRE | 1.42E+02 | -1.47E+02 | 1.11E+02 | 1.47E-01 |
| PENRM | 3.95E+01 | -2.96E+01 | 1.90E+01 | 4.24E-02 |
| PENRT | 1.81E+02 | -1.77E+02 | 1.30E+02 | 1.90E-01 |
| SM | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | 2.93E-01 | -4.11E-01 | 3.02E-01 | 3.42E-04 |
| HWD | 1.36E-04 | 1.09E-03 | -8.90E-04 | -1.13E-07 |
| N-HWD | 9.83E-01 | 1.95E-01 | -8.23E-02 | 1.43E-04 |
| RWD | 1.22E-05 | 5.46E-05 | -3.85E-05 | -3.16E-09 |
| CfRU | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MfR | 5.90E-01 | -6.98E-10 | 1.53E-09 | -7.36E-13 |
| MfER | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| EE | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Tot PE | 2.07E+02 | -1.61E+02 | 1.39E+02 | 1.93E-01 |
| Biogenic Carbon-product | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Biogenic Carbon-packaging | 1.84E-02 | 2.53E-01 | 2.50E-01 | 2.90E-05 |

DISTRIBUTION STAGE

| Impact category indicator | a | b |
|---------------------------|----------|-----------|
| GWP-total | 3.01E-01 | 4.47E-14 |
| GWP-fossil | 3.01E-01 | -3.74E-13 |
| GWP-biogenic | 3.00E-06 | 5.44E-14 |
| GWP-luluc | 1.25E-04 | -2.69E-13 |
| ODP | 4.66E-09 | -2.77E-21 |
| AP | 1.91E-03 | 4.96E-13 |
| EP-freshwater | 2.24E-05 | -4.01E-14 |
| EP-marine | 6.08E-04 | 4.25E-13 |
| EP-terrestrial | 6.66E-03 | -5.44E-13 |
| POCP | 2.24E-03 | -5.03E-13 |
| ADP-minerals & metals | 7.78E-07 | -4.04E-19 |
| ADP-fossil | 4.33E+00 | 1.09E-12 |
| WDP | 2.13E-02 | 3.18E-13 |
| Efp | 2.89E-08 | 9.51E-22 |
| IrHH | 3.69E-03 | 2.15E-13 |
| ETX FW | 1.02E+00 | -1.62E-14 |
| HTX CE | 1.48E-09 | -2.24E-22 |
| HTX N-CE | 2.66E-09 | -2.85E-22 |
| IrLS | 4.06E+00 | -1.03E-12 |
| PERE | 5.31E-02 | -2.40E-13 |
| PERM | 0.00E+00 | 0.00E+00 |
| PERT | 5.31E-02 | -2.40E-13 |
| PENRE | 4.33E+00 | -1.11E-12 |
| PENRM | 0.00E+00 | 0.00E+00 |
| PENRT | 4.33E+00 | -1.11E-12 |
| SM | 0.00E+00 | 0.00E+00 |
| RSF | 0.00E+00 | 0.00E+00 |
| NRSF | 0.00E+00 | 0.00E+00 |
| FW | 6.31E-04 | -1.94E-13 |
| HWD | 2.86E-05 | 2.91E-13 |
| N-HWD | 3.42E-01 | 1.88E-13 |
| RWD | 9.02E-07 | -1.41E-19 |
| CfRU | 0.00E+00 | 0.00E+00 |
| MfR | 0.00E+00 | 0.00E+00 |
| MfER | 0.00E+00 | 0.00E+00 |
| EE | 0.00E+00 | 0.00E+00 |
| Tot PE | 4.38E+00 | -2.31E-12 |
| Biogenic Carbon-product | 0.00E+00 | 0.00E+00 |
| Biogenic Carbon-packaging | 0.00E+00 | 0.00E+00 |

| INSTALLATION STAGE | | | |
|---------------------------|----------|----------|-----------|
| Impact category indicator | a | b | c |
| GWP-total | 1.69E+00 | 4.63E+00 | -2.78E-04 |
| GWP-fossil | 6.74E-02 | 2.69E+00 | -2.78E-04 |
| GWP-biogenic | 1.62E+00 | 1.94E+00 | -5.34E-09 |
| GWP-luluc | 1.18E-05 | 2.95E-05 | -1.39E-09 |
| ODP | 4.71E-10 | 1.34E-09 | -6.30E-14 |
| AP | 2.47E-04 | 7.58E-04 | -4.23E-08 |
| EP-freshwater | 8.32E-06 | 1.03E-05 | -4.98E-10 |
| EP-marine | 1.17E-04 | 3.59E-04 | -1.97E-08 |
| EP-terrestrial | 1.17E-03 | 3.55E-03 | -2.09E-07 |
| POCP | 3.25E-04 | 9.47E-04 | -5.47E-08 |
| ADP-minerals & metals | 9.08E-08 | 2.31E-07 | -1.12E-11 |
| ADP-fossil | 4.18E-01 | 9.96E-01 | -5.10E-05 |
| WDP | 7.96E-03 | 5.02E-02 | -1.64E-06 |
| Efp | 3.42E-09 | 6.70E-09 | -2.95E-13 |
| IrHH | 3.90E-04 | 1.16E-03 | -4.96E-08 |
| ETX FW | 2.62E-01 | 2.52E+00 | -6.67E-05 |
| HTX CE | 3.88E-10 | 8.80E-10 | -4.40E-14 |
| HTX N-CE | 2.17E-09 | 7.31E-09 | -4.08E-13 |
| IrLS | 2.05E-01 | 4.39E-01 | -2.15E-05 |
| PERE | 6.83E-03 | 2.11E-02 | -8.94E-07 |
| PERM | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | 6.83E-03 | 2.11E-02 | -8.94E-07 |
| PENRE | 4.18E-01 | 9.96E-01 | -5.10E-05 |
| PENRM | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | 4.18E-01 | 9.96E-01 | -5.10E-05 |
| SM | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | 2.48E-04 | 1.71E-03 | -5.32E-08 |
| HWD | 2.81E-06 | 1.01E-05 | -5.84E-10 |
| N-HWD | 2.19E-02 | 5.26E-02 | -2.70E-06 |
| RWD | 9.61E-08 | 2.89E-07 | -1.23E-11 |
| CfRU | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MfR | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MfER | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| EE | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Tot PE | 4.24E-01 | 1.02E+00 | -5.19E-05 |
| Biogenic Carbon-product | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Biogenic Carbon-packaging | 0.00E+00 | 0.00E+00 | 0.00E+00 |

END OF LIFE STAGE

| Impact category indicator | a | b |
|---------------------------|----------|-----------|
| GWP-total | 2.40E+00 | 1.27E-13 |
| GWP-fossil | 2.40E+00 | 3.50E-13 |
| GWP-biogenic | 1.62E-04 | 1.64E-13 |
| GWP-luluc | 2.32E-05 | -2.11E-13 |
| ODP | 1.17E-09 | 3.96E-23 |
| AP | 6.24E-04 | 2.12E-13 |
| EP-freshwater | 9.01E-06 | -6.29E-14 |
| EP-marine | 3.38E-04 | 1.77E-13 |
| EP-terrestrial | 2.95E-03 | -3.98E-13 |
| POCP | 7.73E-04 | 4.47E-13 |
| ADP-minerals & metals | 1.82E-07 | -5.70E-21 |
| ADP-fossil | 7.39E-01 | 2.93E-14 |
| WDP | 7.76E-02 | -1.56E-13 |
| Efp | 4.38E-09 | 2.29E-22 |
| IrHH | 1.07E-03 | 2.55E-13 |
| ETX FW | 4.85E+00 | -3.49E-13 |
| HTX CE | 6.47E-10 | 2.80E-23 |
| HTX N-CE | 7.28E-09 | 4.93E-22 |
| IrLS | 2.94E-01 | -2.56E-13 |
| PERE | 2.10E-02 | -6.91E-14 |
| PERM | 0.00E+00 | 0.00E+00 |
| PERT | 2.10E-02 | -6.91E-14 |
| PENRE | 7.39E-01 | 2.36E-13 |
| PENRM | 0.00E+00 | 0.00E+00 |
| PENRT | 7.39E-01 | 2.36E-13 |
| SM | 0.00E+00 | 0.00E+00 |
| RSF | 0.00E+00 | 0.00E+00 |
| NRSF | 0.00E+00 | 0.00E+00 |
| FW | 2.73E-03 | -1.23E-13 |
| HWD | 7.51E-06 | -1.35E-13 |
| N-HWD | 3.66E-02 | -1.79E-13 |
| RWD | 2.71E-07 | 2.42E-20 |
| CfRU | 0.00E+00 | 0.00E+00 |
| MfR | 0.00E+00 | 0.00E+00 |
| MfER | 0.00E+00 | 0.00E+00 |
| EE | 0.00E+00 | 0.00E+00 |
| Tot PE | 7.60E-01 | -6.59E-14 |
| Biogenic Carbon-product | 0.00E+00 | 0.00E+00 |
| Biogenic Carbon-packaging | 0.00E+00 | 0.00E+00 |

Comparability

EPDs published within the same product category, though originating from different programs, may not be comparable. Full conformance with a PCR allows PEP comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible.

Applicable product standards

Product technical and Certification specifications can be found in the product catalogue on ABB's website.

References

- [1] PCR "PEP-PCR-ed4-EN-2021_09_06" - Product Category Rules for Electrical, Electronic and HVAC-R Products

- [2] PSR-0003-ed2.1-EN-2023 12 08 - Specific rules for Cable management solutions.

- [3] EN 50693:2019 - Product category rules for life cycle assessments of electronic and electrical products and systems

- [4] ISO 14040:2006 - Environmental management -Life cycle assessment - Principles and framework

- [5] ISO 14044:2006 - Environmental management - Life cycle assessment - Requirements and guidelines

- [6] ecoinvent v3.10 (2023). ecoinvent database version 3.10 - (<https://ecoinvent.org/>)

- [7] SimaPro Software version 10.2 PRé Sustainability

- [8] UNI EN 15804:2012+A2:2019: Sustainability of constructions - Environmental product declarations (September 2019)

- [9] 2B S.r.l, 2025, "Report LCA ABB_Mounting bases"