

COVER PLATE (RECYCLED THERMOPLASTIC)

PEP ecopassport®

Environmental Product Declaration



Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION			CONTACT INFORMATION			
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Freisenbergstraße 2, 58513 Lüdenscheid, Germany			https://www.busch-jaeger.de/online-katalog/detail/2CKA001710A4162			
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ABB Purpose & Embedding Sustainability

ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow. With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.



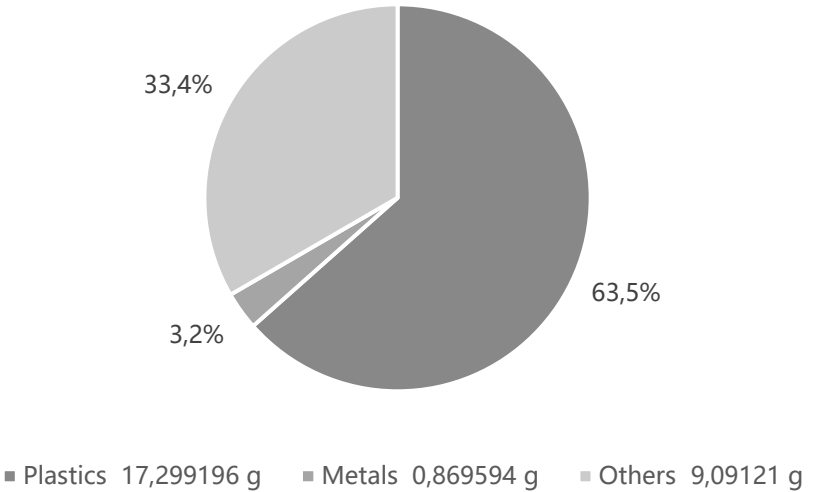
General Information

Reference product	Cover plate TAE (2CKA001710A4162)
Description of the product	The product family covered in this study is called Cover Plate (Recycled Thermoplastic). It is used as an aesthetical cover plate for universal data connection boxes which protects persons from direct contact. The product is a white square (69,5x69,5x10,5 mm), which is mainly made of recycled polycarbonate (cover plate) and steel (screws). It is designed for the indoor application and is mounted onto the outlet using a screwdriver.
Functional unit	Protect users during 20 years against direct contact with live parts, with a protection class IP and IK.
Other products covered	Variant 1: Cover plate UAE 2-gang (2CKA001710A4227); Variant 2: Cover plate TAE (2CKA001710A4162); Variant 3: Cover plate Antenna 2/3 gang (2CKA001724A4432)

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Constituent Materials



Total weight of Reference product

27,26g

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%
Recycled polycarbonate	36,7	Steel	1,8	Board box	33,4
Polycarbonate	18,4	Galvanized steel	1,4	–	–
Glass fiber	1,7	–	–	–	–
LDPE	6,7	–	–	–	–

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Additional Environmental Information

Manufacturing	The Cover plate is produced at and delivered from two internal BJE sites in Germany. One site is in Lüdenscheid and the other one in Bad Berleburg/Aue. The thermoplast molding, assembly and packaging is performed in Bad Berleburg/Aue, while the storage and distribution happens in and from Lüdenscheid. The screws and packaging materials are procured from an external supplier. 93% of the polycarbonate (cover plate) is recycled content. All components are transported by lorry from the supplier to these two manufacturing sites. The manufacturing waste for all materials is included. The values are as follows, based on BJE expert knowledge: 2,9% for metal, 2% for paper and cardboard, 2% for metal, and 30% for all remaining materials (based on chapter 3.1.5.1.2 of PSR-0005-ed3). The electricity mix on both manufacturing sites is largely renewable from Scandinavian hydropower and rooftop solar power on the Lüdenscheid site (together 82% in Bad Berleburg/Aue and 81% in Lüdenscheid). Instead of hydropower, a German electricity market mix was modelled to avoid double counting of renewable energy. The remaining power and heating demand is met by combustion of natural gas, for which all CO₂ emissions are compensated through ClimatePartner. Nevertheless, this compensation is not accounted for in the model of this EPD. Production waste is assumed to be transported by lorry (1000 km by default in the PCR) and treated by incineration (without energy recovery). Specific one-year data from 2022 on manufacturing site level was collected and allocated to the product by economic partitioning following the requirements of ISO 14044.
Distribution	The transport scenario is estimated based on the distance to the capital city of the countries it is sold to, according to the sales data for 2022.
Installation	Installation is done manually with the help of a screwdriver, without using energy or other auxiliary materials. Treatment of packaging waste is included in this stage, assuming an incineration scenario.
Use	No power is consumed during the use stage, as the Cover plate is solely an aesthetic protective cover with no energy use itself.
End of life	The standard scenario set in the PCR is considered.
Benefits and loads beyond the system boundaries	Steel has a recovery rate of 80% according to the PCR. The Module D formula from the PCR was used to calculate the benefits of steel. The impacts of the manufacturing of the recycled polycarbonate are taken into account (only) in this step, as indicated in the PCR. Other materials were not included here, due to a material recovery rate of 0 or lack of recycling in real life scenarios.

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Environmental Impacts

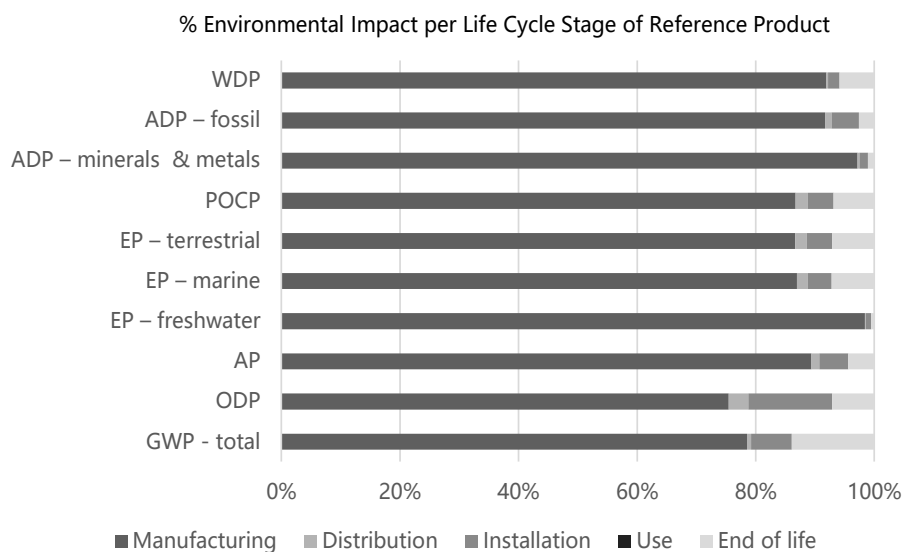
Reference lifetime	20 years
Product category	3.13 "Other equipment"
Installation elements	Not applicable
Use scenario	Not applicable
Geographical representativeness	Production site data is for Germany, power consumption during the use stage is related to the country it is sold to, all other data has a European scope.
Technological representativeness	Materials and process data are specific for the production of the Cover Plate.
Software and database used	SimaPro 9.4.0.2., ecoinvent 3.8, PEF 3.0

Energy model used

Manufacturing	Electricity, high voltage {DE} market for Cut-off, U Electricity, low voltage {DE} electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted Cut-off, U Natural gas, high pressure {DE} market for Cut-off, S
Installation	Not applicable
Use	Not applicable
End of life	A market for electricity from all European countries except Switzerland and Austria is included in the dataset used to model the End of Life of steel ("Steel, low-alloyed {Europe without Switzerland and Austria} steel production, electric, low-alloyed Cut-off, U")

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Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Benefits
GWP-total	kg CO ₂ eq.	2,28E-01	1,79E-01	1,53E-03	1,57E-02	0,00E+00	3,17E-02	8,45E-02
GWP-fossil	kg CO ₂ eq.	2,08E-01	1,60E-01	1,52E-03	1,51E-02	0,00E+00	3,17E-02	8,44E-02
GWP-biogenic	kg CO ₂ eq.	1,93E-02	1,87E-02	1,48E-06	5,28E-04	0,00E+00	3,80E-05	1,44E-04
GWP-luluc	kg CO ₂ eq.	1,39E-04	1,35E-04	5,48E-07	1,76E-06	0,00E+00	1,80E-06	-5,62E-07
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	kg CFC-11 eq.	1,10E-08	8,32E-09	3,64E-10	1,56E-09	0,00E+00	7,83E-10	-2,30E-11
ODP = Depletion potential of the stratospheric ozone layer								
AP	H ⁺ eq.	4,85E-04	0,00E+00	6,36E-06	2,38E-05	0,00E+00	2,12E-05	2,89E-04
AP = Acidification potential, Accumulated Exceedance								
EP-freshwater	kg P eq.	9,47E-06	1,35E-04	1,04E-08	8,57E-08	0,00E+00	5,15E-08	1,00E-06
EP-marine	kg N eq.	1,05E-04	9,11E-05	1,92E-06	4,19E-06	0,00E+00	7,56E-06	4,59E-05
EP-terrestrial	mol N eq.	1,10E-03	9,50E-04	2,12E-05	4,68E-05	0,00E+00	7,80E-05	5,01E-04
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	kg NMVOCeq.	3,29E-04	2,85E-04	6,82E-06	1,43E-05	0,00E+00	2,26E-05	1,78E-04
POCP = Formation potential of tropo-spheric ozone								
ADP-minerals & metals	kg Sb eq.	1,11E-06	1,07E-06	3,49E-09	1,56E-09	0,00E+00	1,21E-08	-5,59E-09
ADP-fossil	MJ	2,18E+00	2,00E+00	2,37E-02	1,01E-01	0,00E+00	5,62E-02	9,70E-01
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential								
WDP	m³ e depr.	2,89E-02	2,66E-02	8,17E-05	5,68E-04	0,00E+00	1,69E-03	2,23E-02
WDP = Water Deprivation potential								

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Common base of mandatory indicators

Inventory flows indicator – Resource use indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
PERE	MJ	1,71E-01	1,69E-01	3,03E-04	1,05E-03	0,00E+00	1,53E-03	3,39E-03
PERM	MJ	7,59E-02	7,59E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,47E-01	2,45E-01	3,03E-04	1,05E-03	0,00E+00	1,53E-03	3,39E-03
PENRE	MJ	1,50E+00	1,32E+00	2,37E-02	1,01E-01	0,00E+00	5,62E-02	9,70E-01
PENRM	MJ	6,78E-01	6,78E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,18E+00	2,00E+00	2,37E-02	1,01E-01	0,00E+00	5,62E-02	9,70E-01
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)								

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy re-sources

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
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	m³	9,96E-04	9,23E-04	2,82E-06	1,70E-05	0,00E+00	5,35E-05	5,18E-04
SM = Use of secondary material								
RSF = Use of renewable secondary fuels								
NRSF = Use of non-renewable secondary fuels								
FW = Use of net fresh water								

Inventory flows indicator – Waste category indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
Hazardous waste disposed	kg	3,88E-04	3,88E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste	kg	5,06E-02	2,33E-02	0,00E+00	1,09E-02	0,00E+00	1,64E-02	0,00E+00
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
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
Materials for recycling	kg	6,97E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,97E-04	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
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Inventory flow indicator – other indicators

Indicator	Unit	
Biogenic carbon content of the product	kg of C	0,00E+00
Biogenic carbon content of the associated packaging	kg of C	4,18E-03

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Optional indicators

Environmental indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
Total use of primary energy during the life cycle	MJ	2,43E+00	2,43E+00	2,25E+00	2,40E-02	1,02E-01	5,78E-02	9,73E-01
Emissions of fine particles	incidence of diseases	7,46E-09	7,46E-09	6,43E-09	1,79E-10	1,98E-10	6,58E-10	8,12E-09
Ionizing radiation, human health	kBq U235 eq.	4,26E-03	4,26E-03	3,49E-03	1,03E-04	4,27E-04	2,43E-04	-1,69E-05
Ecotoxicity (fresh water)	CTUe	3,34E+00	3,34E+00	1,91E+00	1,85E-02	1,24E+00	1,73E-01	1,71E+00
Human toxicity, car- cinogenic effects	CTUh	1,03E-10	1,03E-10	5,65E-11	5,13E-13	1,88E-11	2,73E-11	7,32E-12
Human toxicity, non- carcinogenic effects	incidence of diseases	2,42E-09	2,42E-09	2,10E-09	2,03E-11	1,41E-10	1,61E-10	1,53E-09
Impact related to land use/soil quality		6,73E-01	6,73E-01	5,74E-01	2,72E-02	2,02E-02	5,15E-02	-3,57E-03

Other indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
Environmental Cost Indicator	€	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Extrapolation Factors

For other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

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Environmental Impact Indicator Glossary

Impact indicators

Indicator	Description	Distribution
Global warming potential (GWP) - total	Indicator of potential global warming caused by emissions to air contributing to the greenhouse effect. The total global warming potential (GWP-total) is the sum of three sub-categories of climate change. GWP-total = GWP-fossil + GWP-biogenic + GWP- land use and land use change	kg CO ₂ eq.
Ozone depletion (ODP)	Emissions to air that contribute to the destruction of the stratospheric ozone layer	kg CFC-11 eq.
Acidification of soil and water (A)	Acidification of soils and water caused by the release of certain gases to the atmosphere, such as nitrogen oxides and sulphur oxides	H+ eq.
Eutrophication (E)	Indicator of the contribution to eutrophication of water by the enrichment of the aquatic ecosystem with nutritional elements, e.g. industrial or domestic effluents, agriculture, etc. This indicator is divided to three: freshwater, marine and terrestrial.	kg P eq., kg N eq., mole N eq.
Photochemical ozone creation (POCP)	Indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) because of the rays of the sun.	kg NMVOC eq.
Depletion of abiotic resources – elements (ADPe)	Indicator of the depletion of natural non-fossil resources	kg Sb eq.
Depletion of abiotic resources – fossil fuels (ADPf)	The use of non-renewable fossil resources in an unsustainable way (e.g. from material to waste)	MJ (lower heating value)
Water Deprivation potential (WDP)	Deprivation-weighted water consumption. Assesses the potential of water deprivation, to either humans or ecosystems, building on the assumption that the less water remaining available per area, the more likely another user will be deprived.	m ³ e depr.

Resource use indicators

Indicator	Description	Distribution
Total use of primary energy	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) + Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)

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Verifier accreditation number:	Information and reference documents:	
VH32	www.pep-ecopassport.org	
Date of issue:	11/23	Validity period: 5 years
Internal ☐ External ☒		
Independent verification of the declaration and data, in compliance with ISO 14025: 2006		
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)		
PEP are compliant with XP C08-100-1 :2016 or EN 50693:2019 The elements of the present PEP cannot be compared with elements from another program		
Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"		



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