

FURSE® BARE COPPER TAPE

PEP ecopassport®

Product Environmental Profile



Product Environmental Profile - PEP Ecopassport.
Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"

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STATUS	SECURITY LEVEL	REGISTRATION NUMBER	REV.	LANG.	PAGE
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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.



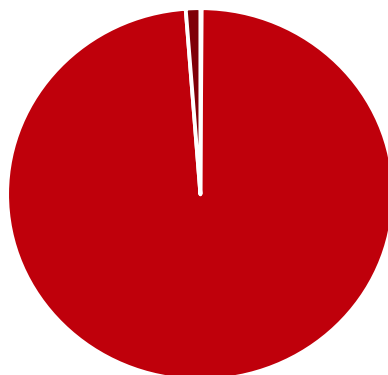
General Information

Reference product	TC030
Description of the product	Bare copper tapes provide electrical connection between air terminal rods to down conductor which interfaces with ground or earth through an electrode, engineered to protect the structure from lightning strikes.
Functional unit	To provide an electrical connection between ground rods and a down conductor over a length of 1 meter for a Reference Service Life of the product of 20 years. The furse bare copper tape with cross-section 75 mm ² includes the pro-file and accessories that are representative of standard use.
Other products covered	Furse bare copper tapes with different dimensions.

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Constituent Materials



■ Plastics 0,68 g ■ Metals 666,78 g ■ Others 8,11 g

Total weight of Reference product with packaging

675,56

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%
PE	0,1	copper	98,7	–	–
–	x	–	x	wood	1,2

RoHS and REACH compatibility and other information about the products materials (i.e. halogen free, recyclability)

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Additional Environmental Information

Manufacturing	The manufacturing stage includes the production of furse bare copper tape and its packaging. The production occurs at the ABB factory located in Nottingham, UK, which serves as manufacturer's last logistic platform.
Distribution	The transport distance is considered as a weighted average distance from ABB factory in Nottigham to global customers, which is an average of 914 km by lorry and 6375 km by ship. Packaging includes plastic foil and 100% recycled wood pallets.
Installation	During installation, the disposal of packaging was considered.
Use	No energy consumption, no maintenance operations needed.
End of life	The default end of life scenario was applied, in accordance with PEP guidelines.
Benefits and loads beyond the system boundaries	Benefits and loads beyond the system boundaries (Module D) have been considered.

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Environmental Impacts

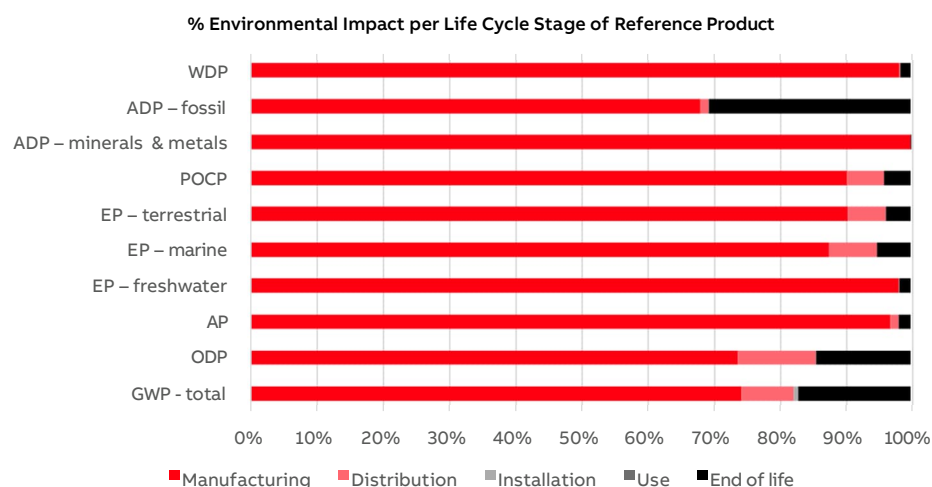
Reference lifetime	20 years
Product category	Electrical, Electronic and Heating Ventilation Air Conditioning-Refrigeration (HVAC-R) products.
Installation elements	No installation materials are required in the life cycle of the product.
Use scenario	No material and energy consumption occur during the use stage. No maintenance phase is planned for the bare copper tape.
Geographical representativeness	Global
Technological representativeness	Technological representativeness is of excellent quality, using primary data of energy consumption from manufacturing location.
Software and database used	SimaPro 9.6.0.1 and ecoinvent 3.10

Energy model used

Manufacturing	Electricity, medium voltage {GB} market for electricity, medium voltage Cut-off, U
Installation	No energy consumption occur during the installation stage.
Use	No energy consumption occur during the use stage.
End of life	No energy consumption during the end of life stage.

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Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Benefi- ts
GWP-total	kg CO ₂ eq.	1,61E+00	1,20E+00	1,29E-01	1,14E-02	0,00E+00	2,74E-01	2,72E-01
GWP-fossil	kg CO ₂ eq.	1,59E+00	1,19E+00	1,28E-01	2,43E-04	0,00E+00	2,69E-01	2,73E-01
GWP-biogenic	kg CO ₂ eq.	1,91E-02	3,42E-03	1,58E-05	1,12E-02	0,00E+00	4,46E-03	-1,64E-03
GWP-luluc	kg CO ₂ eq.	8,57E-04	4,41E-04	5,66E-05	1,83E-07	0,00E+00	3,59E-04	5,20E-04
<small>GWP-fossil = Global Warming Potential fossil fuels GWP-biogenic = Global Warming Potential biogenic GWP-luluc = Global Warming Potential land use and land use change</small>								
ODP	kg CFC-11 eq.	1,83E-08	1,35E-08	2,17E-09	3,33E-12	0,00E+00	2,64E-09	9,32E-10
<small>ODP = Depletion potential of the stratospheric ozone layer</small>								
AP	H+ eq.	1,69E-01	1,64E-01	2,13E-03	1,50E-06	0,00E+00	3,03E-03	4,46E-02
<small>AP = Acidification potential, Accumulated Exceedance</small>								
EP-freshwater	kg P eq.	8,66E-03	8,50E-03	6,19E-06	6,55E-08	0,00E+00	1,48E-04	2,14E-03
EP-marine	kg N eq.	7,32E-03	6,41E-03	5,32E-04	1,09E-06	0,00E+00	3,73E-04	1,52E-03
EP-terrestrial	mol N eq.	1,02E-01	9,21E-02	5,90E-03	6,78E-06	0,00E+00	3,83E-03	2,18E-02
<small>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</small>								
POCP	kg NMVOC eq.	3,04E-02	2,75E-02	1,73E-03	1,99E-06	0,00E+00	1,22E-03	6,76E-03
<small>POCP = Formation potential of tropospheric ozone</small>								
ADP-minerals & metals	kg Sb eq.	2,66E-03	2,66E-03	2,26E-07	4,47E-10	0,00E+00	2,83E-08	6,49E-04
ADP-fossil	MJ	8,47E+00	5,76E+00	1,08E-01	4,84E-04	0,00E+00	2,59E+00	2,41E+00
<small>ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential</small>								
WDP	m ³ eq. depr.	3,15E+00	3,10E+00	6,05E-03	1,44E-04	0,00E+00	4,91E-02	7,07E-01
<small>WDP = Water Deprivation potential</small>								

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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	1,66E+01	1,58E+01	1,92E-02	6,72E-05	0,00E+00	7,61E-01	1,26E+00
PERM	MJ	1,43E-02	1,43E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,24E-01
PERT	MJ	1,66E+01	1,58E+01	1,92E-02	6,72E-05	0,00E+00	7,61E-01	1,39E+00
PENRE	MJ	1,91E+01	1,34E+01	1,69E+00	2,99E-03	0,00E+00	4,03E+00	3,54E+00
PENRM	MJ	7,27E-03	7,27E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,91E+01	1,34E+01	1,69E+00	2,99E-03	0,00E+00	4,03E+00	3,54E+00

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 resources

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy resources

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
SM	kg	8,30E-03	8,30E-03	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	4,43E-02	4,11E-02	1,90E-04	-2,94E-06	0,00E+00	3,01E-03	1,56E-02

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	7,55E-05	5,81E-05	9,92E-06	1,88E-08	0,00E+00	7,52E-06	1,15E-05
Non- hazardous waste disposed	kg	7,64E-01	1,06E-02	7,49E-02	1,37E-03	0,00E+00	6,77E-01	2,78E-02
Radioactive waste disposed	kg	2,28E-05	5,15E-06	3,51E-07	1,22E-09	0,00E+00	1,73E-05	1,51E-05

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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	4,00E-01	8,33E-05	0,00E+00	0,00E+00	0,00E+00	4,00E-01	0,00E+00
Materials for energy recovery	kg	4,89E-04	4,89E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,15E-03
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	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
Biogenic carbon content of the 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 carbon content of the associated packaging	kg of C	4,34E-03	4,34E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,92E-03

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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 extrapolation factors provided in the tables below, with the following formulas:

Environmental indicator	Extrapolation factor (a)	Extrapolation variable (x)
GWP-total	1.50E+00	product mass
GWP-fossil	1.50E+00	product mass
GWP-biogenic	1.32E+02	packaging mass
GWP-luluc	1.50E+00	product mass
ODP	1.50E+00	product mass
AP	1.50E+00	product mass
EP-freshwater	1.50E+00	product mass
EP-marine	1.50E+00	product mass
EP-terrestrial	1.50E+00	product mass
POCP	1.50E+00	product mass
ADP-minerals & metals	1.50E+00	product mass
ADP-fossil	1.50E+00	product mass
WDP	1.50E+00	product mass
PERE	1.50E+00	product mass
PERM	1.54E+02	packaging mass
PERT	1.50E+00	product mass
PENRE	1.50E+00	product mass
PENRM	1.54E+02	packaging mass
PENRT	1.50E+00	product mass
SM	1.54E+02	packaging mass
RSF	1.50E+00	product mass
NRSF	1.50E+00	product mass
FW	1.50E+00	product mass
HWD	1.50E+00	product mass
NHWD	1.54E+02	packaging mass
RWD	1.53E+02	packaging mass
CRU	1.50E+02	product mass
MFR	1.50E+00	product mass
MFE	1.50E+00	product mass
EE	1.50E+00	product mass
Emissions of Fine particles	1.50E+00	product mass
Ionizing radiation, human health	1.50E+00	product mass
Ecotoxicity, freshwater	1.53E+02	packaging mass
Human toxicity, carcinogenic effects	1.50E+00	product mass
Human toxicity, non-carcinogenic effects	1.50E+00	product mass
Impact related to Land use /soil quality	1.32E+02	packaging mass
Biogenic C	1.50E+00	product mass

Manufacturing Stage

$$y = a * r_0 * x$$

Where:

- y is the selected impact category;
- a is the extrapolation factor from the table
- r_0 is the environmental indicator of the reference product
- x is the extrapolation variable, and is defined as either m (product mass), p (packaging mass), or t (total mass = m+p)

All other stages

The extrapolation equations are the same across all impact categories, and r_0 is the environmental indicator of the reference product

Stage	Extrapolation equation
Distribution	$y = 1.01 * r_0 * (m + p)$
Installation	$y = 115.62 * r_0 * p$
End of Life	$y = 1.49 * r_0 * m$
Net benefits and loads	$y = 2.15 * r_0 * p$

In cases where the value of an indicator for the reference product is 0, the extrapolation factor has also been set to 0.

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Extrapolation Factors

The complete list of products covered by this EPD and the relevant variables for extrapolation are shown in the table below.

Product code	Product mass (kg/m)	Packaging mass (kg/m)	Product code	Product mass (kg/m)	Packaging mass (kg/m)
TC005	1.67E-01	2.88E-03	TC066/015ALCO	1.42E+00	2.86E-02
TC005N	1.67E-01	2.88E-03	TC066/015NP-A	1.42E+00	2.86E-02
TC010	3.33E-01	4.53E-03	TC066/020	1.42E+00	1.44E-02
TC015	2.70E-01	2.88E-03	TC066-SSE	1.42E+00	1.28E-02
TC020	5.30E-01	5.77E-03	TC066-UKPN	1.42E+00	1.28E-02
TC025	3.33E-01	2.88E-03	TC066WPD	1.42E+00	1.28E-02
TC026	4.50E-01	5.77E-03	TC067	1.06E+00	9.61E-03
TC029/50	6.67E-01	5.77E-03	TC067/25	1.06E+00	2.31E-02
TC030*	6.67E-01	8.57E-03	TC067SSE-PD-A	1.06E+00	9.61E-03
TC030/50	6.67E-01	5.77E-03	TC068	2.16E+00	1.54E-02
TC030/50-SSE	6.67E-01	5.77E-03	TC068-UKPN	2.16E+00	1.54E-02
TC030/50-SSEN	6.67E-01	5.77E-03	TC069	2.24E+00	1.54E-02
TC030BEST	6.67E-01	5.77E-03	TC069/023UNNAMED	2.24E+00	1.67E-02
TC030KING	6.67E-01	5.77E-03	TC070	1.33E+00	1.44E-02
TC030KING/025	6.67E-01	8.57E-03	TC071	1.78E+00	2.31E-02
TC030M	6.67E-01	8.57E-03	TC074/018UN	2.84E+00	3.17E-02
TC030NGRID	6.67E-01	1.15E-02	TC075	1.78E+00	1.92E-02
TC030S	6.67E-01	8.57E-03	TC075/015	1.78E+00	3.86E-02
TC030UKPN	6.67E-01	1.15E-02	TC075/015NGRID	1.78E+00	2.86E-02
TC030-UL	6.67E-01	5.77E-03	TC075/030-O-HPC	1.78E+00	1.93E-02
TC030WPD	6.67E-01	8.57E-03	TC075/WPD	1.78E+00	1.92E-02
TC031	6.67E-01	8.57E-03	TC075NGRID	1.78E+00	1.92E-02
TC032	6.67E-01	9.61E-03	TC075-SSE	1.78E+00	1.92E-02
TC035	8.90E-01	9.07E-03	TC075SSE-PD-A	1.78E+00	1.92E-02
TC035/025NPG-F	8.90E-01	1.15E-02	TC078	2.22E+00	1.92E-02
TC035/30	8.90E-01	1.51E-02	TC080	2.68E+00	2.88E-02
TC035-SSE	8.90E-01	9.07E-03	TC080/010NGRID	2.68E+00	4.28E-02
TC036/UN/45	1.11E+00	1.01E-02	TC080/010-SSE	2.68E+00	5.77E-02
TC039/1900	5.30E-01	1.01E-02	TC080/010WPD-A X2	2.68E+00	4.28E-02
TC039-ABB	5.30E-01	2.33E-02	TC080/10	2.68E+00	4.28E-02
TC040	1.33E+00	1.13E-02	TC080NGRID	2.68E+00	2.88E-02
TC040/020	1.33E+00	1.51E-02	TC080-SSEN	2.68E+00	2.88E-02
TC040/UN/038	1.33E+00	2.45E-02	TC080-SSE-PD-A	2.68E+00	2.88E-02
TC043-FU	1.33E+00	1.13E-02	TC080-UKPN	2.68E+00	2.88E-02
TC044	1.07E+00	1.13E-02	TC081	2.68E+00	2.88E-02
TC048	1.12E+00	7.21E-03	TC082/018UNNAMED	2.80E+00	3.20E-02
TC050	1.65E+00	2.01E-02	TC090	3.08E+00	4.28E-02
TC060-FU	1.69E+00	1.28E-02	TC090NGRID	3.08E+00	4.28E-02
TC065	2.02E+00	1.54E-02	TC090-SSE	3.08E+00	4.28E-02
TC066	1.42E+00	1.28E-02	TC093	4.00E+00	5.77E-02
TC066/015	1.42E+00	2.86E-02	TC093/WPD	4.00E+00	5.77E-02
			TC094	4.44E+00	5.77E-02

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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	3,57E+01	2,92E+01	1,71E+00	3,06E-03	0,00E+00	4,79E+00	4,93E+00
Emissions of fine particles	incidence of diseases	3,30E-07	3,05E-07	7,59E-09	2,49E-11	0,00E+00	1,69E-08	7,96E-08
Ionizing radiation, human health	kBq U235 eq.	9,03E-02	2,11E-02	1,42E-03	4,92E-06	0,00E+00	6,77E-02	5,96E-02
Ecotoxicity (fresh water)	CTUe	3,89E+01	3,57E+01	4,42E-01	2,28E-03	0,00E+00	2,77E+00	2,02E+01
Human toxicity, carcinogenic effects	CTUh	2,60E-08	2,45E-08	6,52E-10	2,27E-12	0,00E+00	7,93E-10	6,29E-09
Human toxicity, non-carcinogenic effects	CTUh	2,19E-06	2,12E-06	9,89E-10	1,53E-11	0,00E+00	6,15E-08	5,49E-07
Impact related to land use/soil quality		6,09E+01	5,85E+01	9,29E-01	2,30E-03	0,00E+00	1,52E+00	1,40E+01

Other indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
No Other indicators used								

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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 eq. 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 re-sources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)

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Registration number: ABBG-00685-V01.01-EN	Drafting Rules: "PCR-ed4-EN-2021 09 06"
	Supplemented by: n/a
Verifier accreditation number: VH44	Information and reference documents: www.pep-ecopassport.org
Date of issue: 12-2024	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025: 2006	
Internal: <input type="radio"/>	External: <input checked="" type="radio"/>
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 or NE E38-500 :2022 The components of the present PEP may not be compared with elements from any other program.	
Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"	
	

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