



ENVIRONMENTAL PRODUCT DECLARATION IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

EPD HUB, EPD number HUB-3467

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KU / RT / LSF
Katko Oy

MANUFACTURER AND SITE

Manufacturer	Katko Oy
Address	Ruosilantie 2, 00390, Helsinki, FI
Contact details	customerservice@katko.com
Website	www.katko.com
Place of production	Helsinki, Finland
Place(s) of raw material origin	Finland, EU
Place(s) of installation and use	-
Period for data	Calendar year 2024

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2 and ISO 14025
PCR	EPD Hub Core PCR version 1.1, 5 Dec 2023
Sector	Electrical product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Anssi Lehtimäki, Noel Bothas, Katko Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Abderazak Guiz, as an authorized verifier acting for EPD Hub Limited.



PRODUCT SPECIFICATION

Product name	KU 340
Product number	25771
Product description	KU change-over switches with 1-4 poles and 16-40 A. RT switches with 3 poles and 16-40 A, which are specifically designed for door-mounting applications.
GTIN (Global Trade Item Number)	6419410257715

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit
Declared unit mass, kg	0,1242
Mass of packaging, kg	0,035
Reference service life (years)	30
GWP-total, A1-A3 (kg CO ₂ e)	8,26E-01
GWP-fossil, A1-A3 (kg CO ₂ e)	8,75E-01
Secondary material, inputs (%)	29
Secondary material, outputs (%)	31
Total energy use, A1-A3 (kWh)	3,4
Net freshwater use, A1-A3 (m ³)	1,84E-02

This EPD is intended for business-to-business and/or business-to-consumer communication.

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

LIFE CYCLE ASSESSMENT

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Beyond the system boundaries	D	X	Reuse, Recovery, Recycling
End of life stage	C4	X	Disposal
	C3	X	Waste processing
	C2	X	Transport
	C1	X	Deconstr./demo.
Use stage	B7	ND	Operational water use
	B6	ND	Operational energy use
	B5	ND	Refurbishment
	B4	ND	Replacement
	B3	ND	Repair
	B2	ND	Maintenance
	B1	ND	Use
Assembly stage	A5	X	Assembly
	A4	X	Transport
	A3	X	Manufacturing
	A2	X	Transport
Product stage	A1	X	Raw materials

Modules not declared = ND.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. There is no neglected unit process more than 1% of total mass or energy flows. The module-specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	Allocated by mass
Manufacturing energy and waste	Allocated by mass

AVERAGES AND VARIABILITY

This EPD is product and factory-specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

The LCA and EPD have been prepared according to the reference standards, EN 50693, and ISO 14040/14044. Ecoinvent v3.10.1 and One Click LCA databases were used as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, cut-off, EN 15804+A2'.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	41,7	Finland, EU
Minerals	0	-
Fossil materials	58,3	Finland, EU
Bio-based materials	0	-
Electronic parts	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0,0086

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE CYCLE

MANUFACTURING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production. The material losses occurring during the manufacturing processes are treated as per the waste handling practices in the factory, while scenario assumptions are made in the absence of exact data. The study also considers the fuels used by machines as well as losses during electricity transmission.

The product is made of metals, plastics, and electronic components. All components are transported to the production facility, where the main manufacturing processes are associated with assembly of different parts and components. The finished product is packaged with polyethylene, cardboard, and/or paper as packaging material before being sent to customers.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation distances from manufacturing sites to customer locations are based on sales volume-based weighted averages. In the absence of exact data, conservative assumptions are made (A4). Environmental impacts from installation include waste packaging materials (A5). The impacts of energy consumption and the used ancillary materials during installation are considered negligible.

PRODUCT USE AND MAINTENANCE (B1-B7)

Module not declared due to relevance. The product is designed for long-term use without maintenance or refurbishment under normal operating conditions.

PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in demolition process is assumed to be negligible. It is assumed that the waste is collected separately and transported to the waste treatment centre. The transport distance is 150 km while the transportation method is assumed to be lorry (C2). According to EN 50693:2019, the sequence of treatment operations occurring to the product shall include de-pollution, fractions separation and preparation (dismantling, crushing, shredding, sorting), recycling, other material recovery, energy recovery and disposal. In this study, the default values from table G.4 of EN 50693 is used for treating materials in different waste treatment methods. Due to the material and energy recovery potential of parts in the lighting system, the end-of-life product is converted into recycled raw materials, while the energy recovered from incineration displaces electricity and heat production (D). The benefits and loads of incineration and recycling are included in Module D.

ENVIRONMENTAL IMPACT DATA, RESULTS PER DECLARED UNIT

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	7,98E-01	8,59E-03	1,96E-02	8,26E-01	1,97E-03	1,01E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,64E-03	8,71E-02	4,50E-02	-1,37E-01
GWP – fossil	kg CO ₂ e	7,97E-01	8,58E-03	7,00E-02	8,75E-01	1,96E-03	1,93E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,63E-03	8,71E-02	4,50E-02	-1,40E-01
GWP – biogenic	kg CO ₂ e	2,27E-04	1,94E-06	-5,26E-02	-5,24E-02	4,02E-07	9,91E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,93E-07	-8,22E-06	-3,95E-06	2,71E-03
GWP – LULUC	kg CO ₂ e	4,32E-04	3,84E-06	2,18E-03	2,62E-03	9,11E-07	1,02E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,61E-06	1,90E-06	8,38E-07	-3,03E-04
Ozone depletion pot.	kg CFC ₁₁ e	7,21E-09	1,27E-10	1,64E-09	8,98E-09	2,76E-11	2,05E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,08E-11	4,30E-11	2,56E-11	-9,86E-10
Acidification potential	mol H ⁺ e	1,29E-02	2,99E-05	2,91E-04	1,32E-02	1,76E-05	7,46E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,21E-05	3,08E-05	1,29E-05	-4,64E-03
EP-freshwater ²⁾	kg Pe	8,39E-04	6,67E-07	2,86E-05	8,68E-04	1,33E-07	2,88E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,83E-07	8,35E-07	2,79E-07	-2,69E-04
EP-marine	kg Ne	1,33E-03	9,78E-06	1,13E-04	1,45E-03	4,77E-06	6,84E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,92E-06	1,36E-05	4,42E-05	-2,59E-04
EP-terrestrial	mol Ne	1,36E-02	1,06E-04	8,68E-04	1,45E-02	5,26E-05	2,37E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,27E-05	1,23E-04	5,97E-05	-3,36E-03
POCP (“smog”) ³⁾	kg NMVOCe	3,83E-03	4,36E-05	2,38E-04	4,12E-03	1,65E-05	9,49E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,69E-05	3,22E-05	1,64E-05	-9,96E-04
ADP-minerals & metals ⁴⁾	kg Sbe	1,42E-04	2,39E-08	3,52E-07	1,42E-04	5,47E-09	1,04E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,19E-08	6,79E-08	4,86E-09	-6,95E-05
ADP-fossil resources	MJ	1,10E+01	1,24E-01	2,12E+00	1,33E+01	2,68E-02	2,10E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,10E-02	2,91E-02	1,71E-02	-1,69E+00
Water use ⁵⁾	m ³ e depr.	6,53E-01	6,14E-04	6,44E-02	7,18E-01	1,15E-04	4,65E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,36E-04	5,86E-03	2,91E-03	-5,45E-02

1) GWP = Global Warming Potential. 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e. 3) POCP = Photochemical ozone formation. 4) ADP = Abiotic depletion potential. 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	6,46E-08	8,57E-10	2,72E-09	6,81E-08	1,35E-10	1,23E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,88E-10	2,57E-10	1,19E-10	-1,36E-08
Ionizing radiation ⁶⁾	kBq U235e	3,03E-02	1,08E-04	9,69E-02	1,27E-01	1,98E-05	8,07E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,12E-05	7,46E-05	2,50E-05	-1,55E-02
Ecotoxicity (freshwater)	CTUe	1,89E+01	1,76E-02	4,21E-01	1,93E+01	3,80E-03	1,48E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,06E-03	1,76E-01	1,50E-01	-4,80E+00
Human toxicity, cancer	CTUh	1,55E-09	1,42E-12	2,15E-11	1,58E-09	3,52E-13	9,77E-13	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,18E-13	8,18E-12	5,04E-12	-5,93E-10
Human tox. non-cancer	CTUh	1,07E-07	8,05E-11	6,99E-10	1,08E-07	1,48E-11	5,29E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,19E-11	3,11E-10	2,25E-10	-5,84E-08
SQP ⁷⁾	-	4,76E+00	1,25E-01	1,90E+00	6,78E+00	1,33E-02	1,41E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,04E-02	2,81E-02	1,93E-02	-1,79E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on the 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. 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	8,10E-01	1,71E-03	3,96E-01	1,21E+00	3,36E-04	-5,68E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,99E-04	2,61E-03	5,20E-04	-2,71E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	4,49E-01	4,49E-01	0,00E+00	-4,49E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	8,10E-01	1,71E-03	8,45E-01	1,66E+00	3,36E-04	-1,02E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,99E-04	2,61E-03	5,20E-04	-2,71E-01
Non-re. PER as energy	MJ	8,76E+00	1,24E-01	2,13E+00	1,10E+01	2,68E-02	2,10E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,10E-02	-1,29E+00	-1,30E+00	-1,69E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	1,47E-03	1,47E-03	0,00E+00	-1,47E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	8,76E+00	1,24E-01	2,13E+00	1,10E+01	2,68E-02	1,96E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,10E-02	-1,29E+00	-1,30E+00	-1,69E+00
Secondary materials	kg	3,60E-02	0,00E+00	0,00E+00	3,60E-02	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renew. secondary fuels	MJ	3,40E-03	6,72E-07	3,25E-03	6,65E-03	1,29E-07	1,71E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,92E-07	1,15E-06	3,44E-07	-2,57E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	1,64E-02	1,84E-05	1,89E-03	1,84E-02	3,21E-06	-3,11E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,75E-06	1,03E-04	-1,45E-05	-2,87E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	9,99E-02	2,11E-04	7,25E-03	1,07E-01	4,45E-05	1,60E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,89E-05	1,58E-03	4,46E-03	-3,36E-02
Non-hazardous waste	kg	3,37E+00	3,90E-03	1,08E-01	3,48E+00	7,99E-04	2,25E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,67E-03	4,28E-02	1,22E-01	-1,38E+00
Radioactive waste	kg	8,72E-06	2,65E-08	2,10E-05	2,97E-05	4,85E-09	2,05E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,01E-08	1,86E-08	6,29E-09	-3,90E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,15E-02	1,15E-02	0,00E+00	2,87E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,85E-02	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	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	1,61E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,12E-01	0,00E+00	0,00E+00
Exported energy: Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,80E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,74E-01	0,00E+00	0,00E+00
Exported energy: Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,50E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,39E-01	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	7,90E-01	8,54E-03	7,26E-02	8,71E-01	1,95E-03	6,40E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,61E-03	8,71E-02	4,50E-02	-1,39E-01
Ozone depletion Pot.	kg CFC ₁₁ e	6,42E-09	1,01E-10	1,38E-09	7,90E-09	2,20E-11	1,68E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,06E-11	3,76E-11	2,19E-11	-8,41E-10
Acidification	kg SO ₂ e	1,11E-02	2,29E-05	2,19E-04	1,13E-02	1,39E-05	5,75E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,28E-06	2,29E-05	9,26E-06	-4,08E-03
Eutrophication	kg PO ₄ ³ e	1,10E-03	5,50E-06	8,40E-05	1,18E-03	2,05E-06	5,23E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,26E-06	6,26E-06	4,79E-06	-1,78E-04
POCP ("smog")	kg C ₂ H ₄ e	5,33E-04	2,02E-06	1,78E-05	5,53E-04	8,46E-07	1,51E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,31E-07	1,45E-06	8,97E-07	-1,81E-04
ADP-elements	kg Sbe	1,41E-04	2,33E-08	3,55E-07	1,42E-04	5,34E-09	1,01E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,16E-08	6,58E-08	3,60E-09	-6,95E-05
ADP-fossil	MJ	9,98E+00	1,23E-01	7,41E-01	1,08E+01	2,65E-02	1,97E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,03E-02	2,79E-02	1,67E-02	-1,45E+00

REFERENCE TABLE

Reference	Description	GWP total per life cycle (kg CO ₂ e)			
		Manufacturing	Distribution	Installation	End of Life
		A1-A3 Cradle-to-gate	A4	A5	C1-C4
KU 116 / KU 125 / KU 132 / KU 140 / LSF 116UL / LSF 125UL / LSF 132UL / LSF 140UL	Load break switch 1-pole 16/25/32/40 A	6,57E-01	1,60E-03	1,01E-01	1,34E-01
KU 216 / KU 225 / KU 232 / KU 240 / LSF 216UL / LSF 225UL / LSF 232UL / LSF 240UL	Load break switch 2-pole 16/25/32/40 A	7,40E-01	1,78E-03	1,01E-01	1,35E-01
KU 316 / KU 325 / KU 332 / KU 340 / LSF 316UL / LSF 325UL / LSF 332UL / LSF 340UL	Load break switch 3-pole 16/25/32/40 A	8,26E-01	1,97E-03	1,01E-01	1,36E-01
KU 316NO / KU 325NO / KU 332NO / KU 340NO / LSF 316NOUL / LSF 325NOUL / LSF 332NOUL / LSF 340NOUL	Load break switch 3-pole 16/25/32/40 A + NO aux contact	1,04E+00	2,36E-03	1,01E-01	1,68E-01
KU 416 / KU 425 / KU 432 / KU 440 / LSF 416UL / LSF 425UL / LSF 432UL / LSF 440UL	Load break switch 4-pole 16/25/32/40 A	1,04E+00	2,35E-03	1,01E-01	1,67E-01
RT 316 L42AD11 / RT 325 L42AD11 / RT 332 L42AD11 / RT 340 L42AD11	Door-mounted Load break switch rotary 3-pole 16/25/32/40 A	8,61E-01	1,99E-03	1,01E-01	1,43E-01

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation – A3 (Energy data source)

1. Energy supply, electricity transformation and distribution, distribution of medium, Market for electricity, medium voltage, Finland, ecoinvent 3.10.1, 0.15 kgCO₂e/kWh

Transport scenario documentation - A4

1. Market for transport, freight, sea, container ship, 260,78 km
2. Market for transport, freight, lorry 16-32 metric ton, EURO5, 49,5 km

Installation scenario documentation - A5 (Energy data source)

Installation scenario documentation - A5 (Waste materials data source)

1. Corrugated board box production, 0.035, kg

Use stages scenario documentation - B4 (Installation data source)

Use stages scenario documentation - B6-B7 (Energy data source)

TRANSPORT SCENARIO DOCUMENTATION - A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50 %
Bulk density of transported products / kg/m ³	0,00E+00
Volume capacity utilization factor (factor: =1 or <1 or ≥1 for compressed or nested packaged products)	1

INSTALLATION SCENARIO DOCUMENTATION - A5

Scenario parameter	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m ³	0

Other resource use / kg	0
Direct emissions to ambient air, soil and water / kg	0

USE STAGES SCENARIO DOCUMENTATION - B4 REPLACEMENT

Scenario information	Value
Replacement cycle / Number per RSL or year	-

USE STAGES SCENARIO DOCUMENTATION - B6-B7 USE OF ENERGY AND WATER

Scenario information	Value
Ancillary materials specified by material / kg or units as appropriate	Not applicable
Net fresh water consumption / m ³	0
Power output of equipment / kW	-
Characteristic performance, e.g., energy efficiency, emissions, variation of performance with capacity utilization, etc. / Units as appropriate	-
Further assumptions for scenario development, e.g., frequency and period of use, number of occupants / Units as appropriate	-

END OF LIFE SCENARIO DOCUMENTATION

Scenario information	Value
Collection process – kg collected separately	0,1242
Collection process – kg collected with mixed waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	3,85E-02
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	4,93E-02
Scenario assumptions e.g. transportation	Lorry, 16-32 metric ton, EURO5; 150 km

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier and has been generated using an end-to-end verified tool. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations, by the Environmental Product Declaration and by its project report from the requirements outlined in the corresponding product category regulations based on EN 15804+A2.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification. EPD Hub confirms that it possesses sufficient knowledge and experience in construction products and the relevant standards to carry the verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency; the manufacturer(s) or group of manufacturers are responsible for its factual integrity.

EPD Hub has performed a detailed examination of the end-to-end verified tool and underlying data to ensure that there are no deviations in the studied Environmental Product Declaration (EPD), its Life Cycle Assessment (LCA), and project report. The tool is implemented according to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules version 1.1 and General Program Instructions version 1.2.

Tool verifier: Hai Ha Nguyen

Tool verification validity: 11 July 2024 - 11 July 2027

Program Assistant: Xinyuan Zhang

Abderazak Guiz, as an authorized verifier acting for EPD Hub Limited.
15.06.2025

