Environmental Product Declaration

THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

EPD of multiple products, based on the average results of the product group

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

KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL
KIMA GG10 / ÖS GG-10 10W VARMEKABEL
KIMA GREEN / ÖS30-21/L VARMEKABEL
KIMA ALU 8 / ÖS ALU-8 VARMEKABEL

from

KIMA Heating Cable AB

Programme:	The International EPD® System, www.environdec.com
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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 Box 210 60 SE-100 31 Stockholm Sweden
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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): CONSTRUCTION PRODUCTS PCR 2019:14 VERSION 1.3.4 c-PCR-019 Electrical cables and wires (for construction sector) NPCR 027 version 2.0
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: *Alexander Kyriakidis, Ilmari Hieta, AFRY*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Martyna Mikusinska Sweco Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

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: KIMA Heating Cable AB, Dragarevägen 5 Box 2024 281 02 Hässleholm, Tel 0451-38 30 60
Contact: Jan Anders Nilsson
Description of the organisation: Producer of heating cables and heating elements for domestic and commercial applications and as well for the appliance industry.
Product-related or management system-related certifications: Certified according to ISO 9001, ISO 14001 and ISO 45000.
Name and location of production site(s): KIMA Heating Cable AB, Hässleholm, Sweden

Product information

Product name: Heating cable, (KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL, KIMA GG10 / ÖS GG-10 10W VARMEKABEL, KIMA GREEN / ÖS30-21/L VARMEKABEL, KIMA ALU 8 / ÖS ALU-8 VARMEKABEL).

Product description: The heating cable has various applications, including floor heating, frost protection water pipes, snow and ice melting in roads and ramps and on roofs. The heating cable consists of metals and insulation. The product in the study is an *average product* based on all of the variations shown below and weighted by production volumes. It contains metals such as nickel, stainless steel, and copper to create varying resistances in the heating cable and thereby adjust the heat it emits. The product has an outer sheath of PVC (Polyvinyl chloride). The total weight of 1 meter of average cable is 43.6g

The cables included differences in material composition and this EPD presents results for an average heating cable. To investigate which cables can be included in this EPD, different product cases provided by KIMA were modelled and compared.

KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL
To be used in thin floor construction on top of an existing concrete floor construction in wet and dry areas. Ordinary concrete constructions in wet and dry areas. Snow and ice melting roof and gutters, road and ramps etc.

KIMA GG10 / ÖS GG-10 10W VARMEKABEL
To be used in thin floor construction in wet and dry areas. Ordinary concrete constructions in wet and dry rooms. Drainheater in cold rooms and freezer rooms.

KIMA GREEN / ÖS30-21/L VARMEKABEL
To be used in thin floor construction in wet and dry areas. Under floor heating under wooden floor (parquet, laminated, solid wood) in combination with KIMA/ÖS Lamiflex on top of an existing thermal insulated floor construction in dry rooms. Frost protection water pipes. Approved to be installed in and on the water pipe. Perma frost protection of freezer rooms floor. Drainheater heatpumps.

KIMA ALU 8 / ÖS ALU-8 VARMEKABEL
To be used in under floor heating construction under wooden floor (parquet, laminated, solid wood) in combination with KIMA/ÖS Lamiflex on top of an existing thermal insulated floor construction in dry rooms.

In order to achieve the right performance and save energy it is important that the heating cables are connected to an appropriate control unit, for underfloor heating an electronic thermostat with floor sensor, for frost protection electronic thermostat and for snow and ice melting an electronic snow and ice control units with a temperature and moisture sensor.

The heating cables have a 100 % efficiency. No energy is lost in the transformation from electricity to heat, as the cables contain no powered components. Heat energy lost from spaces during operation depends on the installation of cables and the presence of thermal insulation.

Article number	EL number	Product Name	Volt	Watt	Length (m)	D (mm)
E8987625	1037200	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	110	7	5.50
E8987626	1037201	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	160	10	5.50
E8987627	1037202	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	220	14	5.50
E8987628	1037203	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	300	19	5.50
E8987629	1037204	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	400	24	5.50
E8987630	1037205	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	500	31	5.50
11100380	1036360	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	600	38	5.50
E8987631	---	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	650	41	5.50
11100440	1036361	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	700	44	5.50
E8987637	1037207	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	800	50	5.50
E8987632	1037208	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	900	55	5.50
E8987638	1037232	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	1000	64	5.50
E8987633	1037209	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	1150	72	5.50
E8987639	1037213	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	1300	82	5.50
E8987634	1037210	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	1500	92	5.50
E8987635	1037211	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	1800	112	5.50
E8987640	1037214	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	2000	126	5.50
E8987636	1037212	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	2300	144	5.50
11001550	1036362	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	2550	155	5.50
11001750	1036363	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	2800	175	5.50
11001880	1036364	KIMA TURQUISE / ÖS 30-21 16W VARMEKABEL	230	3000	188	5.50
11120015	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	15	1.5	5.50
11120020	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	20	2	5.50
11120025	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	25	2.5	5.50
11120030	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	30	3	5.50
11120040	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	40	4	5.50
11120050	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	50	5	5.50
11120060	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	60	6	5.50
11120070	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	70	7	5.50
11120080	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	80	8	5.50
11120090	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	90	9	5.50
11120100	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	100	10	5.50
11120110	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	110	11	5.50
11120120	---	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	120	12	5.50
E8987701	1036732	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	130	13	5.50
E8987702	1036733	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	220	22	5.50
E8987703	1036734	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	300	30	5.50
11120390	1036750	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	370	37	5.50
E8987704	1036735	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	430	43	5.50
E8997705	1036736	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	520	52	5.50
E8987706	1036737	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	630	63	5.50
E8987707	1036738	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	700	70	5.50
E8987708	1036739	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	800	80	5.50
E8987709	1036742	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	910	91	5.50
E8987710	1036743	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	1000	100	5.50
E8987712	1036744	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	1170	117	5.50
E8987713	1036755	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	1300	130	5.50

Article number	EL number	Product Name	Volt	Watt	Length (m)	D (mm)
E8987714	1036745	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	1420	142	5.50
E8987716	1036756	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	1600	160	5.50
E8987718	1036746	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	1820	182	5.50
11122000	1036753	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	2000	200	5.50
11122200	1036754	KIMA GG10 / ÖS GG-10 10W VARMEKABEL	230	2200	220	5.50
E8987601	1017748	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	15	2	5.50
E8987602	1017749	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	23	3	5.50
E8987603	1017750	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	30	4	5.50
E8987604	1037215	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	44	6	5.50
E8987605	1037216	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	60	8	5.50
E8987606	1037217	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	75	10	5.50
E8987607	1037218	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	110	15	5.50
E8987608	1037219	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	150	20	5.50
E8987609	1037220	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	190	25	5.50
E8987610	1037221	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	225	30	5.50
E8987611	1037222	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	260	35	5.50
E8987612	1037223	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	300	40	5.50
E8987613	1037224	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	340	45	5.50
E8987614	1037225	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	375	50	5.50
E8987615	1037226	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	450	60	5.50
11110700	1036365	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	525	70	5.50
E8987616	1037227	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	600	80	5.50
11110900	1036366	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	675	90	5.50
E8987617	1037228	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	790	105	5.50
11111200	1036367	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	900	120	5.50
E8987618	1037229	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	1015	135	5.50
11111550	1036368	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	1165	155	5.50
11111850	1036369	KIMA GREEN / ÖS30-21/L VARMEKABEL	230	1390	185	5.50
11120200	1009173	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	150	20	5.50
11120270	1009174	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	200	27	5.50
11120340	1009175	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	250	34	5.50
11120400	1009176	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	300	40	5.50
11122047	1009170	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	350	47	5.50
11120530	1009177	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	400	53	5.50
11120670	1009178	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	500	67	5.50
11120800	1009179	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	600	80	5.50
11120930	1009180	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	700	93	5.50
11121070	1009181	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	800	107	5.50
11121200	1009182	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	900	120	5.50
11121330	1009183	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	1000	133	5.50
11121470	1009184	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	1100	147	5.50
11121600	1009185	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	1200	160	5.50
11121800	1009186	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	1350	180	5.50
11122000	1009187	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	1500	200	5.50
11122200	1009188	KIMA ALU 8 / ÖS ALU-8 VARMEKABEL	230	1650	220	5.50

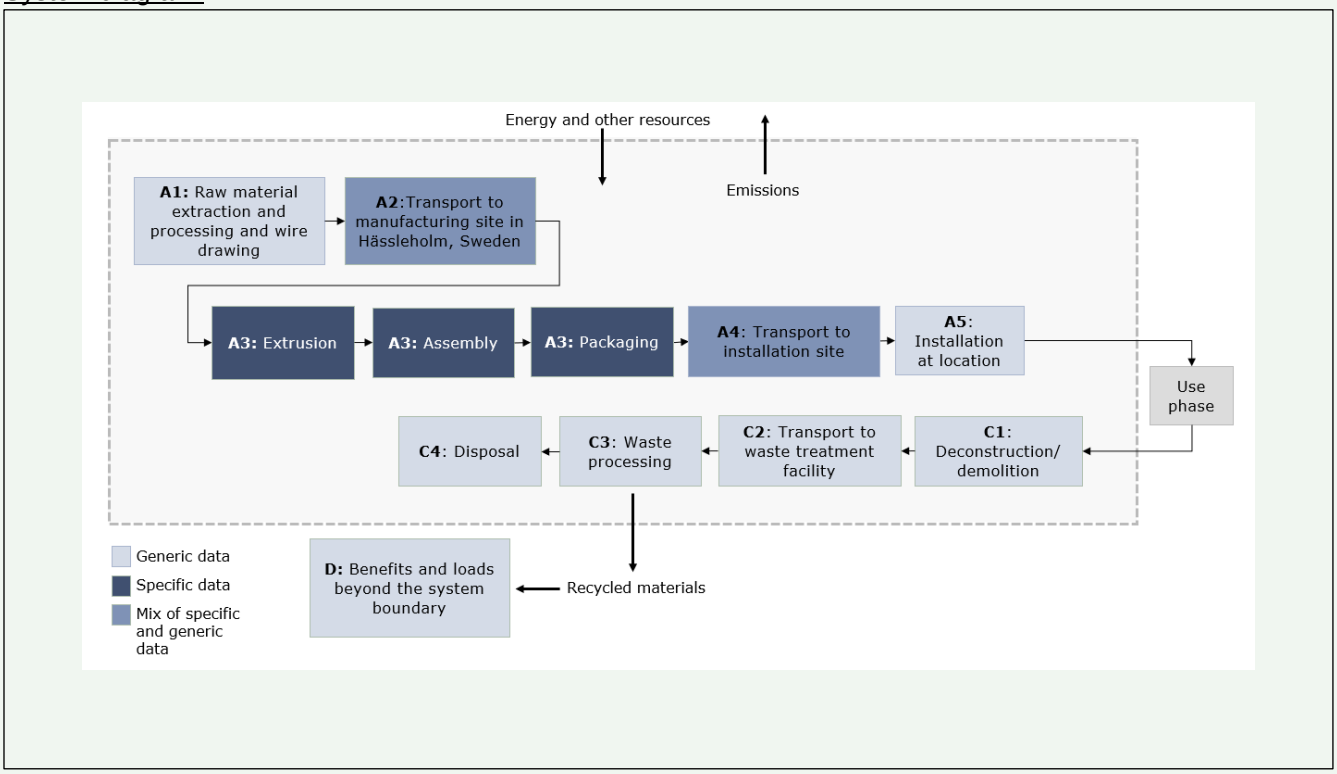
UN CPC code: 46340, Other electric conductors, for a voltage not exceeding 1000 V

Geographical scope: Global, Europe, Sweden and Norway (modules A1-A5). Norway, end-of-life (module C). Europe, end-of-life (module D).

LCA information

Declared unit: 1 m of installed cable, including waste treatment and end of life according to PCR.
Time representativeness: 2023
Database(s) and LCA software used: Ecoinvent data base (3.10), SimaPro software (v.9.3.0.3).
LCIAM: EF 3.1 (EN 15804)
Description of system boundaries:
a) Cradle to gate with modules A4-A5, modules C1-C4 and module D.

System diagram:



More information:

Modules assessed:

A1: Raw Material

This stage includes raw material extraction and production of bought components.

A2: Transport

This stage includes the transportation of raw materials to production sites and of components to final site of assembly.

A3: Manufacturing

This stage includes resource use in the manufacturing facility in Hässleholm such as the use of energy. It also includes the treatment of waste generated from the manufacturing processes. The manufacturing includes casting, assembling, and packing. Data from the full year of 2023 has been used in the calculations.

The electricity is modelled as a specific electricity mix (100% nuclear) by a contractual instrument. The climate impact of the electricity is 12 gCO_2e/kWh.

C1: Deconstruction

This stage includes impacts from energy use related to the deconstruction of the heating cable. No impacts are included for the de-construction of the product. As only human labour is used when installing the thermostat, human labour is expected to be used in the deconstruction.

C2: Waste Transport
Includes the transportation of the discarded product to a waste treatment facility. 100 km transportation is assumed.
C3: Waste Processing
This stage includes sorting of waste. It is not known how the customer handles the heating cable at end-of-life. To model the waste processing step, the product has been assumed to be sorted in a designated sorting station. This allowed for the precise allocation of waste materials and a better assessment of the environmental impact associated with the sorting process. pre-processing before recycling is declared in C3.
C4: Waste disposal
This stage includes waste disposal processes, such as landfill or incineration. Incineration is assumed for plastics.
D: Benefits and loads outside the system boundary
This stage includes benefits and burdens associated with recovery/recycling that affect future life cycles. For this product, it includes benefits from the recycling of the metals, as well as energy recovery from waste incineration

Cut-off criteria
The full LCI input was provided by KIMA (Inventory EPD KIMA.xlsx).
The intent was to follow the cut-off criteria presented in EN 15804 and PCR 2019:14. All inputs and outputs have been included in the calculations when data is available. Drawing oil (0.041g/m) and braider oil (0.014ml/m) are not included since they are considered neglectable.

Key relevant assumptions for the study are:

- Manufacturing of equipment and infrastructure were not included.
- The scenarios and assumptions applied in this study for all the life cycle stages included are based on data provided by KIMA and correspond to the most likely scenario.
- For the production of electricity used in the core process (A3), a 100% nuclear is since the company purchases a specific electricity mix.
- The assumptions related to Modules C and D, end-of-life treatment scenarios and potential credits, represent the most likely scenario based on current practices and technologies available.

Allocation
To model the A3 module, primary data from KIMA related to the studied facility and product was provided. Co-product allocation has been avoided whenever possible by increasing the level of detail of the production process and by collecting the environmental data related to these sub-processes. The quantities of material and energy flow for example, including ancillary material consumption, energy use and waste generation required were provided per specific product minimizing the need for allocation.

In processes where product-specific data could not be obtained allocation was based on mass. No allocation has been based on production time.
Electricity consumption at the production facility was also based on specific measurements taken at different machines and production stages where product-specific data were collected. In cases where allocation was needed the electricity demand was allocated to the product based on its mass in respective machine.
All direct and indirect energy consumption was included in the analysis.
The "polluter pays principle" has been used to allocate recycled materials in accordance with the standards used. The recycling of materials does not imply benefits for the system, and the effects of using recycled materials do not have a negative impact on the results, but rather an environmental gain.

In accordance with the PCR, activities such as manufacturing of equipment, buildings and other capital goods are excluded for upstream (A1-A2), core (A3) and downstream processes (B-C) as well as business travel and travel to and from work by personnel.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage							Construction process stage		Use stage				End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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
Geography	GLO/EUR	GLO/EUR	SE	NO	NO								NO	NO	NO	NO		EUR
Specific data used	9% of the total GWP-GHG impact stems from specific data					-	-	-	-	-	-	-	-	-	-	-		-
Variation – products	22%					-	-	-	-	-	-	-	-	-	-	-		-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-		-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
FeCr alloys	2.30E-04	0	0
CuNi alloys*	1.01E-02	0	0
Copper	7.90E-03	0	0
Galvanized steel	1.00E-02	0	0
Aluminium	2.00E-06	0	0
Polyvinylchloride	1.00E-02	0	0
Polyethylene	5.10E-03	0	0
Brass	2.00E-06	0	0
Polyethylene terephthalate	7.00E-04	0	0
TOTAL	4.84E-02	0	0
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	
Plastic PE	0.1E-5	0	
Cardboard	0.1E-3	1	
Pallet	14.0E-3	30	
TOTAL	0.1E-3	1	

*Different type of nickel-copper alloys, from 1% nickel to 44% nickel. All data sets are from Ecoinvent, unless noted in the table.

No dangerous substances from the candidate list of SVHC for Authorisation are used in the production or the final product.

Results of the environmental performance indicators

The results in the tables below are presented per the declared unit – 1 meter of installed cable.

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.

The results pertaining to modules A-A3 (A1-A5 for services) should not be used without considering the results of module C.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B 1**	**B 2**	**B 3**	**B 4**	**B 5**	**B 6**	**B 7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,84E-01	5.91E-03	7.72 E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.28E-04	6.22E-02	1.69E-06	-3.44 E-02
GWP-biogenic	kg CO_2 eq.	-1,01E-02	0.00E+00	2.43 E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.40 E-04
GWP-luluc	kg CO_2 eq.	2,13E-04	1.96E-06	2.34 E-07	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.75E-07	6.32E-06	4.00E-10	-6.15 E-05
GWP-total	kg CO_2 eq.	1,75E-01	5.92E-03	1.95 E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.29E-04	6.41E-02	1.72E-06	-3.47 E-02

Indicator	Unit	A1-A3	A4	A5	B 1	B 2	B 3	B 4	B 5	B 6	B 7	C1	C2	C3	C4	D
ODP	kg CFC 11 eq.	2,92E-08	1.18E-10	1.56 E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.65E-11	5.40E-11	1.01E-14	-3.50 E-10
AP	mol H^+ eq.	6,31E-03	1.23E-05	5.65 E-06	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.72E-06	3.14E-05	4.31E-09	-2.11 E-03
EP-freshwater	kg P eq.	4,27E-04	4.01E-07	7.40 E-07	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.61E-08	7.62E-07	8.26E-09	-4.16 E-05
EP-marine	kg N eq.	3,42E-04	2.96E-06	4.10 E-06	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.14E-07	1.47E-05	1.36E-09	-5.95 E-05
EP-terrestrial	mol N eq.	4,45E-03	3.19E-05	2.58 E-05	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.47E-06	1.28E-04	1.46E-08	-7.07 E-04
POCP	kg NMVOC eq.	1,47E-03	2.05E-05	7.92 E-06	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.87E-06	3.65E-05	4.48E-09	-3.16 E-04
ADP-minerals& metals*	kg Sb eq.	6,63E-05	1.93E-08	1.98 E-09	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.69E-09	2.56E-08	2.12E-12	-9.39 E-06
ADP-fossil*	MJ	2,65E+00	6.92E-03	1.18 E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	9.68E-04	9.58E-03	3.11E-06	-2.37 E-01
WDP*	m^3	1,27E-01	3.45E-04	9.21 E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.83E-05	2.18E-03	2.19E-07	-6.45 E-02
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															

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	1.85E-01	5.92E-03	7.72E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.28E-04	6.22E-02	1.69E-06	-3.44E-02

Resource use indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B 1	B 2	B 3	B 4	B 5	B 6	B 7	C1	C2	C3	C4	D
PERE	MJ	7.48E-01	1,43E-03	2,52E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.00E-04	1.93E-03	5.42E-07	-3.91E-01
PERM	MJ	1.04E-01	0,00E+00	-1,04E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	8.51E-01	1,43E-03	-1,03E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.00E-04	1.93E-03	5.42E-07	-3.91E-01
PENRE	MJ	2.70E+00	7,22E-03	1,23E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.01E-03	1.01E-02	3.24E-06	-2.47E-01

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PENRM	MJ	1.14E+00	0,00E+00	-1,14E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.85E+00	7,22E-03	-1,14E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.01E-03	1.01E-02	3.24E-06	-2.47E-01
SM	kg	1.33E-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
RSF	MJ	0.00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.71E-02	0.00E+00	0.00E+00
NRSF	MJ	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
FW	m^3	4.41E-03	1,23E-05	2,25E-05	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.72E-06	1.08E-04	1.11E-08	-4.86E-04
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															

Waste indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Haz. waste disposed	kg	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
Non-haz. waste disposed	kg	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
Radioactive waste disposed	kg	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

Output flow indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	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
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0,00E+00	1,71E-02	0.00E+00	0.00E+00
Materials for energy recovery	kg	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 electr.	MJ	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 therm.	MJ	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0,00E+00	2,91E-01	0.00E+00	0.00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	6.62E-3

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Other environmental performance indicators

The following table presents the variation between the different products assessed in this study for all indicators. The variations are indicated as number of % variation from the average product.

Indicator	Variation (A1-A3)
Climate change - Fossil	22%
Climate change - Biogenic	46%
Climate change - Land use and LU change	32%
Climate change	24%
Ozone depletion	39%
Acidification	56%
Eutrophication, freshwater	49%
Eutrophication, marine	41%
Eutrophication, terrestrial	43%
Photochemical ozone formation	42%
Resource use, minerals and metals	52%
Resource use, fossils	11%
Water use	62%
Particulate matter	41%
Ionising radiation	67%
Ecotoxicity, freshwater	48%

Indicator	Variation (A1-A3)
Human toxicity, cancer	34%
Human toxicity, non-cancer	51%
Land use	24%
GWP-GHG	22%

According to the PCR, variations exceeding 10% shall be justified. The justification of variations exceeding 10% in this EPD refers to the fact that the environmental impact of the cables is highest in the use phase, and thus the variation in phases A1-A3 would not cause significant differences in the full life cycle impacts. In addition, the cables have similar materials and are produced and used similarly.

Additional environmental information

During the work with the EPD, no factors have been identified that would prevent meeting the requirements of BASTA, Sunda Hus, and the Byggvarubedömningen. For example, no dangerous substances from the candidate list of SVHC for Authorisation are used in the production or the final product. However, to achieve certification according to these assessments, further review and safety data sheets are required.

The calculations for climate data in this EPD are aligned with BREEAM. Regarding the product's lifespan, it is recommended to follow the specifications in the BREEAM manual. The product is not expected to be subject to emissions assessments. No occurrence of phase-out substances has been found during the implementation of the EPD, but further review is required if the product is to be used under a BREEAM certificate.

Svanen currently has no criteria for this product group.

References

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