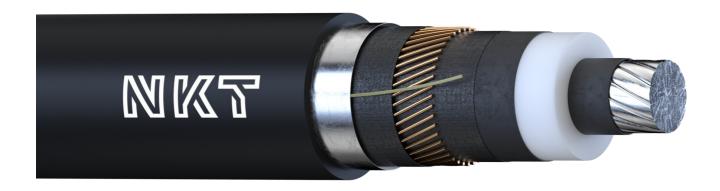




Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

AXALJ-TT 6/10(12) kV 1x300/35EQV





The Norwegian EPD Foundation

Owner of the declaration:

NKT A/S

Product:

AXALJ-TT 6/10(12) kV 1x300/35EQV

Declared unit:

1 m

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core

PCR

NPCR 027:2020 Part B for Electrical cables and wires

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-6108-5374-EN

Registration number:

NEPD-6108-5374-EN

Issue date: 15.02.2024

Valid to: 15.02.2029

EPD software:

LCAno EPD generator ID: 230550



General information

Product

AXALJ-TT 6/10(12) kV 1x300/35EQV

Program operator:

Post Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian EPD Foundation Phone: +47 23 08 80 00 web: post@epd-norge.no

Declaration number:

NEPD-6108-5374-EN

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 027:2020 Part B for Electrical cables and wires

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:

1 m AXALJ-TT 6/10(12) kV 1x300/35EQV

Declared unit with option:

A1,A2,A3,A4,A5,B1,B2,B3,B4,B5,B6,B7,C1,C2,C3,C4,D

Functional unit:

1 m of AXALJ-TT 6/10(12) kV 1x300/35EQV installed electrical cable used to transmit a reference electric current of 1A over 40 years, including waste treatment at end-of-life.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools. Approval number: NEPDT32.

Third party verifier:

Vito D'Incognito, Take Care International

(no signature required)

Owner of the declaration:

NKT A/S

Contact person: Matheo Roehr

Phone:

e-mail: matheo.roehr@nkt.com

Manufacturer:

NKT (Sweden) AB Källviksvägen 18 SE-791 29 Falun, Sweden

Place of production:

NKT production site Falun (Sweden) Källviksvägen 18 SE-791 29 Falun, Sweden

Management system:

ISO 9001, ISO 14001, ISO 45001

Organisation no:

957 338 690

Issue date: 15.02.2024

Valid to: 15.02.2029

Year of study:

2021

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway. Approval number: NEPDT32

Developer of EPD: Marek Kincl

Reviewer of company-specific input data and EPD: Matheo Roehr

Approved:

Håkon Hauan

Managing Director of EPD-Norway



Product

Product description:

Cable for fixed installation in soil, water and pipes. Extra durable multilayer sheath. User-friendly at low temperatures. Made of material for easy recycling.

Product specification

- 1. Aluminium, compacted stranded, longitudinally watertight.
- 2. Extruded semi conducting conductor screen.
- 3. XLPE, dry vulcanized, peroxide crosslinked.
- 4. Extruded, bonded or strippable semi-conducting insulation screen, depending on dimension
- 5. Concentric copper wire screen where both copper wire and aluminum foil are used to achieve equivalent max. screen resistance
- 6. Swellable tape screening wires, achieving longitudinal water tightness
- 7. PE laminated aluminium foil bonded to the sheath. Aluminium foil also serves as part of the metallic screen.
- 8. Black PE sheath, meter marked. Equipped with rip cord for easier opening.

Materials	kg	%
Aluminium foil, with plastic	0,07	4,30
Metal - Aluminium	0,77	49,48
Metal - Copper	0,17	11,01
Plastic - Polyethylene	0,51	32,95
Tape	0,04	2,26
Total	1,56	

Technical data:

Norm (standard): SS 424 14 16 / HD 620 10-M

Rated voltage: 6/10(12)kV Test voltage: 30 kV

Maximal short-circuit temperature: 250°C Operating cond. temperature max.: 90 °C

Min. temperature for laying and manipulation: -20°C

Minimum bending radius: 10D

CPR class: Fca RoHS: Yes REACH: Yes CE Conformity: No

Market:

North Europe

Reference service life, product

40 years. As defined in appendix 1 of the PEP Ecopassport PSR.

Reference service life, building or construction works

40 years.

LCA: Calculation rules

Declared unit:

1 m AXALJ-TT 6/10(12) kV 1x300/35EQV

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.



Materials	Source	Data quality	Year
Aluminium foil, with plastic	ecoinvent 3.6	Database	2019
Metal - Aluminium	ecoinvent 3.6	Database	2019
Metal - Copper	ecoinvent 3.6	Database	2019
Plastic - Polyethylene	ecoinvent 3.6	Database	2019
Tape	ecoinvent 3.6	Database	2019

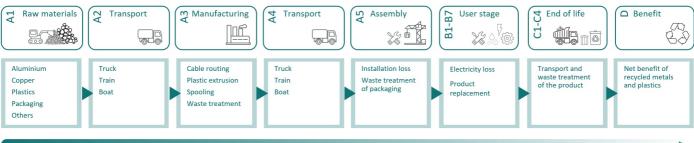


System boundaries (X=included, MND=module not declared, MNR=module not relevant)

	Р	roduct stag	je		uction on stage	Use stage End of life stage				Beyond the system boundaries							
	Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
ı	A1	A2	A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
	Х	Χ	Χ	Χ	Χ	Χ	X	Χ	Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ	X

System boundary:

The flowchart below illustrates the system boundaries of the analysis:



Cradle Gate

(B)

Grave

Additional technical information:

The reference product AXALJ-TT 6/10(12) kV 1x300/35EQV represents the entire product family based on the highest material consumption. Please contact us for a specific EPD of another cable in the product family:

AXALJ-TT 6/10(12) kV 1x95/25EQV AXALJ-TT-CL 6/10(12) kV 1x95/25EQV AXALJ-TT 6/10(12) kV 1x150/25EQV AXALJ-TT 6/10(12) kV 1x240/35EQV AXALJ-TT-CL 6/10(12) kV 1x240/35EQV AXALJ-TT 6/10(12) kV 1x300/35EQV



LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Module A4 = An average distance between the factory and the market is considered.

Modules A5 = 2 % product losses during installation are estimated by the company. No energy use for installation has been quantified since this operation is assumed to be done with other products and should be assessed at a construction works level. Cable drums are reused and assumed under the cut-off criterion of 1%.

Modules B1, B2, B3, B4, B5, and B7 = Company data shows that no significant activities have been reported for use, maintenance, repair, replacement, refurbishment, and water use. This reflects an absence of impacts during the reference service life of the cable in these modules.

Module B6 = The operational energy use of the cable is calculated based on the methodology described in PEP Ecopassport, Product Specific Rules (PSR) for wires, cables and accessories, reference PSR-0001-ed3-EN-2015 10 16. The following parameters are used to calculate the electricity loss of the cable:

- Reference service life = 40 years (according to appendix 1 of the PSR)
- Number of conductors = 1 units
- Use rate = 100 % percent (according to appendix 1 of the PSR)
- Linear conductor resistivity = 0,0001 Ohm per meter
- Current intensity = 1 Ampere

Module C1 = For both buildings and construction works, cables will be taken out as part of a larger demolition. The energy use for cable removal compared to other heavier materials is assumed to be low. This module can therefore be included with zero impact.

Module C2 = An average distance between the market and the waste treatment facility is considered.

Modules C3 and C4 = Waste treatment of the product follows the default values provided in EN 50693, Product Category Rules for life cycle assessments of electronic and electrical products and systems, table G.4. This table specified how different types of raw materials used in A1 will likely be treated during the end-of-life of the product. Waste treatments in C3 include material recycling and incineration with and without energy recovery and fly ash extraction. Disposal in C4 consist of landfilling of different waste fractions and of ashes.

Module D = The recyclability of metals and plastics allows the producers a credit for the net scrap that is produced at the end of a product's life. The benefits from recycling of net scrap are described in formula from EN 15804:2012+A2:2019. Substitution of heat and electricity generated by the incineration with energy recovery of plastic insulation and other parts is also calculated in module D.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	700	0,043	l/tkm	30,10
Assembly (A5)	Unit	Value			
Product loss during installation (percentage of cable)	Units/DU	0,02			
Operational energy (B6)	Unit	Value			
Electricity, Nordic (kWh)	kWh/DU	0,04			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	300	0,043	l/tkm	12,90
Waste processing (C3)	Unit	Value			
Aluminium to recycling (kg)	kg	0,58			
Copper to recycling (kg)	kg	0,10			
Waste treatment of plastic mixture, incineration with energy recovery and fly ash extraction (kg)	kg	0,02			
Waste treatment of polyethylene (PE), incineration with energy recovery and fly ash extraction (kg)	kg	0,26			
Disposal (C4)	Unit	Value			
Landfilling of aluminium (kg)	kg	0,25			
Landfilling of ashes from incineration of Plastic mixture, process per kg ashes and residues (kg)	kg	0,00			
Landfilling of ashes from incineration of Polyethylene (PE), process per kg ashes and residues (kg)	kg	0,01			
Landfilling of copper (kg)	kg	0,07			
Landfilling of plastic mixture (kg)	kg	0,28			



Benefits and loads beyond the system boundaries (D)	Unit	Value		
Substitution of electricity (MJ)	MJ	0,53		
Substitution of primary aluminium with net scrap (kg)	kg	0,45		
Substitution of primary copper with net scrap (kg)	kg	0,07		
Substitution of thermal energy, district heating (MJ)	MJ	8,01		



LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Envir	onmental impact											
	Indicator			Unit	A1	A2	А3	A4	A5	B1	B2	В3
	GWP-total		kg	CO ₂ -eq	1,43E+01	3,00E-01	2,59E-01	1,78E-01	3,18E-01	0	0	0
	GWP-fossil		kg	CO ₂ -eq	1,40E+01	3,00E-01	1,79E-01	1,78E-01	3,11E-01	0	0	0
	GWP-biogenio	3	kg	CO ₂ -eq	1,40E-01	1,10E-04	3,10E-02	7,37E-05	3,43E-03	0	0	0
	GWP-luluc		kg	CO ₂ -eq	1,50E-01	1,31E-04	4,87E-02	6,33E-05	3,99E-03	0	0	0
٧	ODP		kg (CFC11 -eq	1,00E-06	6,57E-08	4,27E-08	4,03E-08	2,30E-08	0	0	0
Œ.	AP		mol H+ -eq		2,30E-01	3,59E-03	5,51E-04	5,11E-04	4,70E-03	0	0	0
	EP-FreshWate	r	k	g P -eq	1,97E-03	2,01E-06	4,86E-06	1,42E-06	3,95E-05	0	0	0
4	EP-Marine		k	g N -eq	1,61E-02	8,62E-04	1,92E-04	1,01E-04	3,47E-04	0	0	0
	EP-Terrestial		m	ol N -eq	1,93E-01	9,59E-03	1,93E-03	1,13E-03	4,13E-03	0	0	0
	POCP		kg N	MVOC -eq	6,27E-02	2,65E-03	4,83E-04	4,34E-04	1,33E-03	0	0	0
	ADP-minerals&metals ¹		k	g Sb-eq	6,75E-04	6,37E-06	9,10E-07	4,92E-06	1,38E-05	0	0	0
	ADP-fossil ¹			MJ	1,97E+02	4,32E+00	9,49E+00	2,69E+00	4,27E+00	0	0	0
%	WDP ¹			m^3	4,62E+03	3,27E+00	1,45E+03	2,60E+00	1,22E+02	0	0	0
	Indicator	Uni	it	B4	B5	В6	В7	C1	C2	C3	C4	D
	GWP-total	kg CO ₂	₂ -eq	0	0	5,10E-03	0	0	7,63E-02	8,23E-01	3,67E-02	-4,31E+00
	GWP-fossil											
	GAAL-102211	kg CO ₂	₂ -eq	0	0	4,75E-03	0	0	7,63E-02	8,23E-01	3,67E-02	-4,21E+00
	GWP-biogenic	kg CO ₂		0	0	4,75E-03 8,68E-05	0	0	7,63E-02 3,16E-05	8,23E-01 7,33E-06	3,67E-02 3,09E-06	-4,21E+00 -1,92E-02
			₂ -eq									
	GWP-biogenic	kg CO ₂	₂ -eq ₂ -eq	0	0	8,68E-05	0	0	3,16E-05	7,33E-06	3,09E-06	-1,92E-02
	GWP-biogenic GWP-luluc	kg CO ₂	₂ -eq ₂ -eq 11 -eq	0	0	8,68E-05 2,60E-04	0	0	3,16E-05 2,71E-05	7,33E-06 1,12E-06	3,09E-06 2,47E-06	-1,92E-02 -7,78E-02
	GWP-biogenic GWP-luluc ODP	kg CO ₂	2 -eq 2 -eq 11 -eq + -eq	0 0	0 0	8,68E-05 2,60E-04 5,14E-10	0 0	0 0	3,16E-05 2,71E-05 1,73E-08	7,33E-06 1,12E-06 7,01E-10	3,09E-06 2,47E-06 2,19E-09	-1,92E-02 -7,78E-02 -3,38E-03
	GWP-biogenic GWP-luluc ODP AP	kg CO ₂ kg CFC1 mol H+	2 -eq 2 -eq 11 -eq + -eq	0 0 0	0 0 0	8,68E-05 2,60E-04 5,14E-10 2,19E-05	0 0 0	0 0 0	3,16E-05 2,71E-05 1,73E-08 2,19E-04	7,33E-06 1,12E-06 7,01E-10 1,08E-04	3,09E-06 2,47E-06 2,19E-09 5,86E-05	-1,92E-02 -7,78E-02 -3,38E-03 -5,43E-02
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater	kg CO ₂ kg CFC1 mol H+	2 -eq 2 -eq 11 -eq + -eq -eq	0 0 0 0	0 0 0 0	8,68E-05 2,60E-04 5,14E-10 2,19E-05 3,14E-07	0 0 0 0	0 0 0 0	3,16E-05 2,71E-05 1,73E-08 2,19E-04 6,09E-07	7,33E-06 1,12E-06 7,01E-10 1,08E-04 6,89E-08	3,09E-06 2,47E-06 2,19E-09 5,86E-05 1,18E-07	-1,92E-02 -7,78E-02 -3,38E-03 -5,43E-02 -3,40E-04
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine	kg CO ₂ kg CO ₂ kg CFC1 mol H+ kg P-	2 -eq 2 -eq 11 -eq + -eq -eq -eq	0 0 0 0 0	0 0 0 0 0	8,68E-05 2,60E-04 5,14E-10 2,19E-05 3,14E-07 3,46E-06	0 0 0 0 0	0 0 0 0 0	3,16E-05 2,71E-05 1,73E-08 2,19E-04 6,09E-07 4,34E-05	7,33E-06 1,12E-06 7,01E-10 1,08E-04 6,89E-08 5,17E-05	3,09E-06 2,47E-06 2,19E-09 5,86E-05 1,18E-07 5,39E-05	-1,92E-02 -7,78E-02 -3,38E-03 -5,43E-02 -3,40E-04 -4,65E-03
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial	kg CO ₂ kg CFC1 mol H+ kg P- kg N mol N	2 -eq 11 -eq + -eq -eq -eq -eq -eq	0 0 0 0 0 0	0 0 0 0 0	8,68E-05 2,60E-04 5,14E-10 2,19E-05 3,14E-07 3,46E-06 4,65E-05	0 0 0 0 0	0 0 0 0 0	3,16E-05 2,71E-05 1,73E-08 2,19E-04 6,09E-07 4,34E-05 4,85E-04	7,33E-06 1,12E-06 7,01E-10 1,08E-04 6,89E-08 5,17E-05 5,56E-04	3,09E-06 2,47E-06 2,19E-09 5,86E-05 1,18E-07 5,39E-05 2,34E-04	-1,92E-02 -7,78E-02 -3,38E-03 -5,43E-02 -3,40E-04 -4,65E-03 -5,61E-02
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial POCP	kg CO ₂ kg CO ₂ kg CFC1 mol H+ kg P- kg N- mol N	-eq -eq -eq -eq -eq -eq -eq -eq	0 0 0 0 0 0	0 0 0 0 0 0	8,68E-05 2,60E-04 5,14E-10 2,19E-05 3,14E-07 3,46E-06 4,65E-05 1,09E-05	0 0 0 0 0 0	0 0 0 0 0 0	3,16E-05 2,71E-05 1,73E-08 2,19E-04 6,09E-07 4,34E-05 4,85E-04 1,86E-04	7,33E-06 1,12E-06 7,01E-10 1,08E-04 6,89E-08 5,17E-05 5,56E-04 1,33E-04	3,09E-06 2,47E-06 2,19E-09 5,86E-05 1,18E-07 5,39E-05 2,34E-04 7,32E-05	-1,92E-02 -7,78E-02 -3,38E-03 -5,43E-02 -3,40E-04 -4,65E-03 -5,61E-02 -1,77E-02

GWP-total = Global Warming Potential total; 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

Remarks to environmental impacts

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"

^{*}INA Indicator Not Assessed

^{1.} The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator



Addi	Additional environmental impact indicators Indicator Unit A1 A2 A3 A4 A5 B1 B2 B3													
	Indicator		Unit		A1	A2	A3	A4	A5	B1	B2	В3		
	F	М	Disease inci	dence	1,05E-06	1,52E-08	8,92E-09	1,09E-08	2,18E-08	0	0	0		
([101])	<u>₽</u> IF	P ²	kgBq U23	kgBq U235 -eq		1,88E-02	3,15E-01	1,18E-02	1,96E-02	0	0	0		
4	ETF	ETP-fw ¹ CTUe		CTUe		3,00E+00	4,13E+00	1,99E+00	3,16E+01	0	0	0		
<u>4</u>		HTP-c ¹ CTUh		l	5,09E-08	0,00E+00	1,19E-10	0,00E+00	1,02E-09	0	0	0		
46	₽ НТЕ	HTP-nc ¹ CTUh		ı	2,77E-06	3,35E-09	2,72E-09	2,18E-09	5,55E-08	0	0	0		
*	SC)P ¹	dimension	nless	3,90E+01	2,35E+00	3,83E+00	1,88E+00	9,49E-01	0	0	0		
	Indicator		Unit	B4	B5	В6	В7	C1	C2	C3	C4	D		
) PM	D	Disease incidence	0	0	1,16E-10	0	0	4,67E-09	4,27E-10	1,07E-09	-3,56E-07		
(non)	IRP ²		kgBq U235 -eq	0	0	2,93E-03	0	0	5,04E-03	1,03E-04	1,03E-03	-2,27E-01		
40	ETP-fw ¹	fw ¹ CTUe		0	0	1,61E-01	0	0	8,55E-01	2,56E-01	1,97E+02	-3,11E+02		
40 x			CTUh	0	0	4,00E-12	0	0	0,00E+00	2,00E-11	1,10E-11	-1,37E-08		
98° E	HTP-nc		CTUh	0	0	9,90E-11	0	0	9,34E-10	7,79E-10	2,23E-10	-4,20E-07		

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

9,68E-02

8,07E-01

7,38E-03

4,36E-01

-8,01E+00

dimensionless

SOP¹

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"

^{*}INA Indicator Not Assessed

^{1.} The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

^{2.} This impact category deals mainly with the eventual impact of low dose ionizing radiation on 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.



Resource us	e										
	Indicator		Unit	A1	A2	A3	A4	A5	B1	B2	В3
	PERE		MJ	4,27E+01	5,24E-02	5,16E+00	3,85E-02	9,60E-01	0	0	0
	PERM	I	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0	0	0
°₽°3	PERT		MJ	4,27E+01	5,24E-02	5,16E+00	3,85E-02	9,60E-01	0	0	0
	PENRE		MJ	1,75E+02	4,32E+00	9,51E+00	2,69E+00	3,84E+00	0	0	0
.An	PENRN	Л	MJ	2,38E+01	0,00E+00	0,00E+00	0,00E+00	2,26E-02	0	0	0
IA	PENRT		MJ	1,99E+02	4,32E+00	9,82E+00	2,69E+00	3,87E+00	0	0	0
<u> </u>	SM		kg	1,91E-01	0,00E+00	0,00E+00	0,00E+00	3,85E-03	0	0	0
2			MJ	2,49E-01	1,80E-03	1,76E-02	1,38E-03	5,40E-03	0	0	0
	NRSF		MJ	6,93E-02	5,86E-03	-2,60E-02	4,93E-03	1,10E-03	0	0	0
&	⊗ FW		m ³	2,65E-01	3,93E-04	1,25E-02	2,88E-04	5,57E-03	0	0	0
	licator	Unit	B4	B5	В6	В7	C1	C2	C3	C4	D
T E	PERE	MJ	0	0	1,26E-01	0	0	1,65E-02	1,87E-03	1,79E-02	-2,31E+01
	PERM	MJ	0	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
° ≓ s	PERT	MJ	0	0	1,26E-01	0	0	1,65E-02	1,87E-03	1,79E-02	-2,31E+01
	PENRE	МЈ	0	0	1,30E-01	0	0	1,15E+00	5,74E-02	1,73E-01	-5,30E+01
Å	PENRM	МЈ	0	0	0,00E+00	0	0	0,00E+00	-2,26E+01	0,00E+00	0,00E+00
IX	PENRT	MJ	0	0	1,30E-01	0	0	1,15E+00	-2,26E+01	1,73E-01	-5,30E+01
	SM	kg	0	0	0,00E+00	0	0	0,00E+00	0,00E+00	1,62E-03	4,68E-02
2	RSF	MJ	0	0	1,28E-03	0	0	5,91E-04	5,01E-05	3,73E-04	-3,79E-03
	NRSF		0	0	0,00E+00	0	0	2,11E-03	0,00E+00	1,02E-03	-2,06E-01
<u>\$</u>	FW	m ³	0	0	5,74E-04	0	0	1,23E-04	2,01E-04	2,21E-04	-1,09E-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 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; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed



End of life -	Waste										
	Indicator		Unit	A1	A2	A3	A4	A5	B1	B2	В3
	A HWD		kg	1,09E-01	2,10E-04	3,87E-02	1,39E-04	3,35E-03	0	0	0
Ū	Ñ NHWD		kg	3,33E+00	1,56E-01	8,21E-02	1,31E-01	8,61E-02	0	0	0
	® RWD		kg	6,01E-04	2,96E-05	1,40E-04	1,83E-05	1,58E-05	0	0	0
Ind	licator	Unit	B4	B5	В6	В7	C1	C2	C3	C4	D
Ā	HWD	kg	0	0	1,20E-05	0	0	5,95E-05	0,00E+00	1,96E-02	1,50E-02
Ū	NHWD	kg	0	0	7,97E-04	0	0	5,61E-02	0,00E+00	6,04E-01	-1,26E+00
RWD RWD		kg	0	0	1,35E-06	0	0	7,85E-06	0,00E+00	1,18E-06	-2,13E-04

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed

End of life - O	utput flow										
Ir	ndicator		Unit	A1	A2	A3	A4	A5	B1	B2	В3
⊗	CF	RU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0	0	0
\$\	⇔ MFR		kg	0,00E+00	0,00E+00	1,69E-03	0,00E+00	1,37E-02	0	0	0
DF	⊳ ₩ MER		kg	0,00E+00	0,00E+00	1,56E-01	0,00E+00	8,66E-03	0	0	0
50	E	E	MJ	0,00E+00	0,00E+00	9,13E-02	0,00E+00	1,24E-02	0	0	0
DØ.	E	ΕT	MJ	0,00E+00	0,00E+00	1,38E+00	0,00E+00	1,88E-01	0	0	0
Indica	tor	Unit	B4	B5	В6	В7	C1	C2	C3	C4	D
@ D	CRU	kg	0	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
\$\	MFR	kg	0	0	0,00E+00	0	0	0,00E+00	6,84E-01	2,78E-05	-1,83E-03
DF	MER	kg	0	0	0,00E+00	0	0	0,00E+00	2,77E-01	4,07E-05	-2,41E-04
50			0	0	0,00E+00	0	0	0,00E+00	5,29E-01	3,96E-04	-5,91E-04
DØ.			0	0	0,00E+00	0	0	0,00E+00	8,01E+00	5,99E-03	-8,94E-03

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed

Biogenic Carbon Content									
Indicator	Unit	At the factory gate							
Biogenic carbon content in product	kg C	0,00E+00							
Biogenic carbon content in accompanying packaging	kg C	0,00E+00							

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2



Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Electricity, renewable with guarantee of origin, low voltage, Sweden (kWh) - NKT	ecoinvent 3.6	114,84	g CO2-eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products											
Indicator	Unit		A1	A2	A3	A4	A5	B1	B2	В3	
GWPIOBC	kg CO ₂	-eq	1,42E+01	3,00E-01	2,51E-01	1,78E-01	3,17E-01	0	0	0	
Indicator	Unit	B4	B5	В6	В7	C1	C2	C3	C4	D	
GWPIOBC	kg CO ₂ -eq	0	0	6,91E-03	0	0	7,63E-02	8,23E-01	3,77E-02	-4,03E+00	

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.



Bibliography

ISO 14025:2010. Environmental labels and declarations - Type III environmental declarations - Principles and procedures. International Organization for Standardization.

ISO 14044:2006. Environmental management - Life cycle assessment - Requirements and guidelines. International Organization for Standardization.

EN 15804:2012+A2:2019. Environmental product declaration - Core rules for the product category of construction products. European Committee for Standardization.

ISO 21930:2017. Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products. International Organization for Standardization.

EN 50693:2019. Product category rules for life cycle assessments of electronic and electrical products and systems. European Committee for Standardization.

Ecoinvent v3, 2019. Allocation, cut-off by classification. Swiss Centre of Life Cycle Inventories.

Iversen et al., (2021). eEPD v2021.09, background information for EPD generator tool system verification, LCA.no. Report number: 07.21. System verification report.

Philis et al., (2022). EPD generator for NPCR 027 part B for electrical wires and cables, background information for EPD generator application and LCA data, LCA.no Report number: 03.22. PCR verification report.

EPD Norway (2022). NPCR Part A: Construction products and services. The Norwegian EPD foundation. Version 2.0 published 24.03.2021.

EPD Norway (2022). NPCR 027 Part B for electrical cables and wires. The Norwagian EPD foundation. Version 2.0 published 01.03.2022.

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