epd-norge
Global program operatør

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## NKT instal YDYpzo 450/750 5x10




NKT

The Norwegian EPD Foundation

**Owner of the declaration:**
NKT A/S

**Product:**
NKT instal YDYpzo 450/750 5x10

**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:**

**Registration number:**

**Issue date:**

**Valid to:**

**EPD software:**
LCAno EPD generator ID: 221463

## General information

**Product**

NKT instal YDYpzo 450/750 5x10

**Owner of the declaration:**

NKT A/S
Contact person: Matheo Roehr
Phone:
e-mail: matheo.roehr@nkt.com

**Program operator:**

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

**Manufacturer:**

NKT S.A.
ul. Gajowa No. 3
PL-43-254 Warszowice, Poland

**Declaration number:**

**Place of production:**

NKT production site Warszowice (Poland)
ul. Gajowa No. 3
PL-43-254 Warszowice, Poland

**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

**Management system:**

ISO 9001, ISO 14001, ISO 45001

**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.

**Organisation no:**

957 338 690

**Declared unit:**

1 m NKT instal YDYpzo 450/750 5x10

**Issue date:**

**Declared unit with option:**

A1,A2,A3,A4,A5,C1,C2,C3,C4,D

**Valid to:**

**Year of study:**

2021

**Functional unit:**

1 m of NKT instal YDYpzo 450/750 5x10 installed electrical cables, including waste treatment at end-of-life.

**Comparability:**

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

**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

**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: Kasjana Klosko

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

**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.

**Approved:**

Third party verifier:

Vito D'Incognito, Take Care International

(no signature required)

## Product

### Product description:

Cables are designed for fixed installation, indoors, in air, in and under plaster.
Installation of the product should only be carried out by personnel trained and qualified for electrical works. The product is designed according to recognized standards. Applicable rules of installation must be applied at all times.

### Product specification

1. Copper conductor class 1
2. PVC insulation
3. PVC sheath

| Materials | kg | % |
|---|---|---|
| Metal - Copper | 0,42 | 59,94 |
| Plastic - Polyvinyl chloride (PVC) | 0,28 | 40,06 |
| Total | 0,70 | |

### Technical data:

Number of group of product: 72153
Norm (standard): PN-E-90068
Rated voltage Uo/U: 0,45/0,75 kV
Test voltage: 2,5 kV
Maximal short-circuit temperature: 160 °C
Maximal operating conductor temperature: 70 °C
Temperature range: -40 - +70 °C
Minimal temperature for laying and manipulation: -5 °C
Minimal storage temperature: -40 °C
Self-extinguishing of one cable: PN-EN 60332-1-2
CPR-Classification: Eca
UV stability: NO
Maximal permitted pulling force: 50 N/mm2
Minimal radius of bend: 4xD mm
Production site: NKT Warszowice
Certificate: BBJ
RoHS: yes
REACH: yes
CE Conformity: YES
LVD Conformity: YES

### Market:

Poland

### Reference service life, product

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

### Reference service life, building or construction works

30 years.

## LCA: Calculation rules

### Declared unit:

1 m NKT instal YDYpzo 450/750 5x10

### 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.

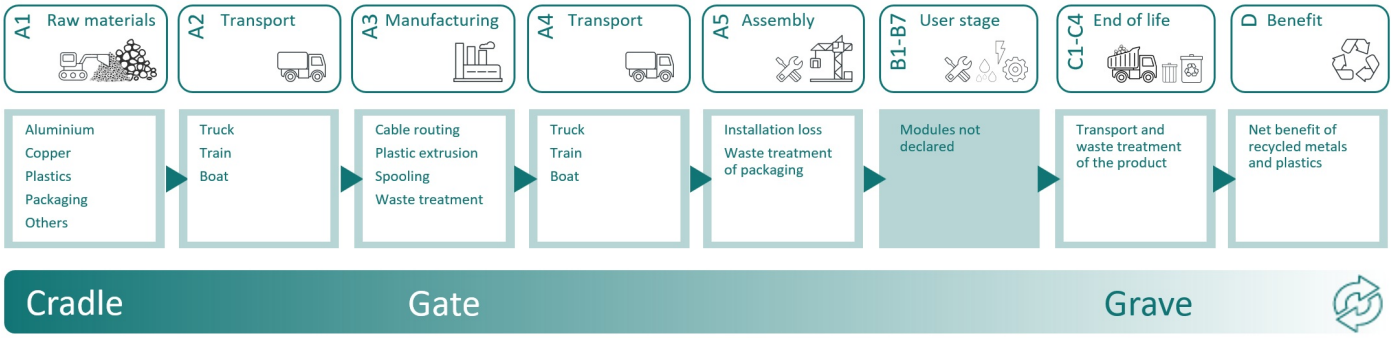
| Materials | Source | Data quality | Year |
|---|---|---|---|
| Metal - Copper | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polyvinyl chloride (PVC) | ecoinvent 3.6 | Database | 2019 |

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

| Product stage | | | Construction installation 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 |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | X | MND | MND | MND | MND | MND | MND | MND | X | X | X | X | X |

### System boundary:

The flowchart below illustrates the system boundaries of the analysis:




### Additional technical information:

The reference product NKT instal YDYpzo 450/750 5x10 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:

NKT instal YDYp 450/750 2x1
NKT instal YDYp 450/750 2x1,5
NKT instal YDYp 450/750 2x2,5
NKT instal YDYp 450/750 2x4
NKT instal YDYp 450/750 2x6
NKT instal YDYp 450/750 2x10
NKT instal YDYp 450/750 3x1,5 (AG,AW,AV)
NKT instal YDYp 450/750 3x1,5 (AT,AW,AG)
NKT instal YDYp 450/750 4x4

NKT instal YDYpzo 450/750 3x1
NKT instal YDYpzo 450/750 3x1,5
NKT instal YDYpzo 450/750 3x2,5
NKT instal YDYpzo 450/750 3x4
NKT instal YDYpzo 450/750 3x6
NKT instal YDYpzo 450/750 4x1
NKT instal YDYpzo 450/750 4x1,5
NKT instal lumen YDYpzo 450/750 4x1,5
NKT instal YDYpzo 450/750 4x2,5
NKT instal YDYpzo 450/750 5x1
NKT instal YDYpzo 450/750 5x1,5
NKT instal YDYpzo 450/750 5x2,5
NKT instal YDYpzo 450/750 5x4
NKT instal YDYpzo 450/750 5x6
NKT instal YDYpzo 450/750 5x10

## 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%.

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 % | 320 | 0,043 | l/tkm | 13,76 |

| Assembly (A5) | Unit | Value | | | |
|---|---|---|---|---|---|
| Product loss during installation (percentage of cable) | Units/DU | 0,02 | | | |

| 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 | | | |
|---|---|---|---|---|---|
| Copper to recycling (kg) | kg | 0,25 | | | |
| Waste treatment of polyvinylchloride (PVC), incineration with energy recovery and fly ash extraction (kg) | kg | 0,14 | | | |

| Disposal (C4) | Unit | Value | | | |
|---|---|---|---|---|---|
| Landfilling of ashes from incineration of Polyvinylchloride (PVC), process per kg ashes and residues (kg) | kg | 0,02 | | | |
| Landfilling of copper (kg) | kg | 0,17 | | | |
| Landfilling of plastic mixture (kg) | kg | 0,14 | | | |

| Benefits and loads beyond the system boundaries (D) | Unit | Value | | | |
|---|---|---|---|---|---|
| Substitution of electricity (MJ) | MJ | 0,14 | | | |
| Substitution of primary copper with net scrap (kg) | kg | 0,16 | | | |
| Substitution of thermal energy, district heating (MJ) | MJ | 2,18 | | | |

## LCA: Results

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

| Environmental impact | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Indicator** | **Unit** | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| | GWP-total | kg $CO_2$ -eq | 4,14E+00 | 5,19E-02 | 2,90E-02 | 3,68E-02 | 9,12E-02 | 0 | 3,45E-02 | 2,82E-01 | 2,38E-02 | -4,08E-01 |
| | GWP-fossil | kg $CO_2$ -eq | 4,06E+00 | 5,19E-02 | 2,64E-02 | 3,67E-02 | 8,96E-02 | 0 | 3,44E-02 | 2,82E-01 | 2,38E-02 | -4,06E-01 |
| | GWP-biogenic | kg $CO_2$ -eq | 7,69E-02 | 2,06E-05 | 2,40E-03 | 1,52E-05 | 1,59E-03 | 0 | 1,43E-05 | 1,15E-04 | 4,01E-06 | -1,85E-03 |
| | GWP-luluc | kg $CO_2$ -eq | 3,35E-03 | 2,16E-05 | 1,76E-04 | 1,31E-05 | 7,17E-05 | 0 | 1,23E-05 | 2,20E-05 | 1,90E-06 | -8,50E-04 |
| | ODP | kg CFC11 -eq | 5,35E-07 | 1,20E-08 | 5,16E-09 | 8,32E-09 | 1,14E-08 | 0 | 7,80E-09 | 9,27E-09 | 1,46E-09 | -9,20E-04 |
| | AP | mol H+ -eq | 3,62E-01 | 3,52E-04 | 5,16E-04 | 1,06E-04 | 7,25E-03 | 0 | 9,89E-05 | 1,63E-04 | 4,44E-05 | -6,61E-02 |
| | EP-FreshWater | kg P -eq | 3,56E-03 | 3,87E-07 | 1,59E-06 | 2,93E-07 | 7,12E-05 | 0 | 2,75E-07 | 8,30E-07 | 1,34E-07 | -4,46E-04 |
| | EP-Marine | kg N -eq | 1,21E-02 | 7,74E-05 | 1,56E-04 | 2,09E-05 | 2,49E-04 | 0 | 1,96E-05 | 3,98E-05 | 3,16E-05 | -2,74E-03 |
| | EP-Terrestial | mol N -eq | 1,73E-01 | 8,63E-04 | 2,47E-03 | 2,34E-04 | 3,54E-03 | 0 | 2,19E-04 | 4,27E-04 | 1,68E-04 | -4,24E-02 |
| | POCP | kg NMVOC -eq | 5,46E-02 | 2,61E-04 | 4,43E-04 | 8,95E-05 | 1,11E-03 | 0 | 8,39E-05 | 1,21E-04 | 5,04E-05 | -1,15E-02 |
| | ADP-minerals&metals[1] | kg Sb-eq | 1,00E-03 | 1,29E-06 | 2,38E-07 | 1,01E-06 | 2,01E-05 | 0 | 9,51E-07 | 5,94E-07 | 4,58E-08 | -3,70E-04 |
| | ADP-fossil[1] | MJ | 5,38E+01 | 7,67E-01 | 2,43E-01 | 5,55E-01 | 1,12E+00 | 0 | 5,21E-01 | 3,71E-01 | 1,21E-01 | -3,69E+00 |
| | WDP[1] | $m^3$ | 1,20E+01 | 6,68E-01 | 1,94E-01 | 5,37E-01 | 4,65E-01 | 0 | 5,04E-01 | 7,57E+00 | 2,28E+00 | 1,93E+01 |

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

"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

### Remarks to environmental impacts

## Additional environmental impact indicators

| Indicator | | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PM | Disease incidence | 6,51E-07 | 2,71E-09 | 7,12E-09 | 2,25E-09 | 1,33E-08 | 0 | 2,11E-09 | 1,06E-09 | 6,82E-10 | -1,38E-07 |
|  | IRP[2] | kgBq U235 -eq | 1,00E-01 | 3,34E-03 | 8,94E-04 | 2,43E-03 | 2,19E-03 | 0 | 2,28E-03 | 1,80E-03 | 7,05E-04 | -5,51E-03 |
|  | ETP-fw[1] | CTUe | 2,70E+03 | 5,54E-01 | 4,67E+00 | 4,12E-01 | 5,66E+01 | 0 | 3,86E-01 | 1,78E+01 | 1,04E+02 | -6,08E+02 |
|  | HTP-c[1] | CTUh | 6,61E-08 | 0,00E+00 | 5,70E-11 | 0,00E+00 | 1,32E-09 | 0 | 0,00E+00 | 4,00E-11 | 1,00E-11 | -8,58E-09 |
|  | HTP-nc[1] | CTUh | 5,87E-06 | 5,42E-10 | 1,59E-09 | 4,50E-10 | 1,18E-07 | 0 | 4,22E-10 | 4,19E-09 | 2,92E-10 | -7,35E-07 |
|  | SQP[1] | dimensionless | 3,59E+01 | 4,82E-01 | 1,89E+01 | 3,88E-01 | 1,12E+00 | 0 | 3,64E-01 | 1,35E-01 | 3,26E-01 | -8,91E+00 |

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)

"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 use | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| | PERE | MJ | 6,00E+00 | 1,03E-02 | 3,95E+00 | 7,95E-03 | 2,00E-01 | 0 | 7,45E-03 | 4,74E-02 | 1,22E-02 | -2,52E+00 |
| | PERM | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | PERT | MJ | 6,00E+00 | 1,03E-02 | 3,95E+00 | 7,95E-03 | 2,00E-01 | 0 | 7,45E-03 | 4,73E-02 | 1,22E-02 | -2,52E+00 |
| | PENRE | MJ | 4,75E+01 | 7,67E-01 | 2,44E-01 | 5,55E-01 | 9,91E-01 | 0 | 5,21E-01 | 3,71E-01 | 1,21E-01 | -3,69E+00 |
| | PENRM | MJ | 6,36E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 6,05E-03 | 0 | 0,00E+00 | -6,05E+00 | 0,00E+00 | 0,00E+00 |
| | PENRT | MJ | 5,38E+01 | 7,67E-01 | 2,44E-01 | 5,55E-01 | 9,97E-01 | 0 | 5,21E-01 | -5,68E+00 | 1,21E-01 | -3,69E+00 |
| | SM | kg | 9,62E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,94E-03 | 0 | 0,00E+00 | 0,00E+00 | 8,57E-04 | 1,15E-01 |
| | RSF | MJ | 3,67E-02 | 3,60E-04 | 1,47E-04 | 2,84E-04 | 7,73E-04 | 0 | 2,67E-04 | 8,56E-04 | 2,65E-04 | 1,07E-02 |
| | NRSF | MJ | 6,45E-02 | 1,46E-03 | 8,45E-04 | 1,02E-03 | 1,37E-03 | 0 | 9,53E-04 | 0,00E+00 | 5,31E-04 | -4,25E-02 |
| | FW | $m^3$ | 6,70E-02 | 7,70E-05 | 1,25E-04 | 5,94E-05 | 1,53E-03 | 0 | 5,57E-05 | 8,88E-03 | 1,44E-04 | -1,10E-02 |

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; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"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 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HWD | kg | 3,47E-02 | 3,89E-05 | 3,80E-03 | 2,86E-05 | 9,38E-04 | 0 | 2,68E-05 | 0,00E+00 | 8,34E-03 | -4,46E-03 |
| | NHWD | kg | 1,13E+00 | 3,28E-02 | 1,02E-02 | 2,70E-02 | 3,07E-02 | 0 | 2,53E-02 | 0,00E+00 | 3,32E-01 | -1,94E-01 |
| | RWD | kg | 9,92E-05 | 5,23E-06 | 1,37E-06 | 3,78E-06 | 2,21E-06 | 0 | 3,55E-06 | 0,00E+00 | 6,79E-07 | -4,89E-06 |

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 - Output flow

| Indicator | | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CRU | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | MFR | kg | 0,00E+00 | 0,00E+00 | 8,67E-05 | 0,00E+00 | 5,06E-03 | 0 | 0,00E+00 | 2,53E-01 | 1,42E-05 | -4,50E-03 |
| | MER | kg | 0,00E+00 | 0,00E+00 | 1,40E-02 | 0,00E+00 | 3,10E-03 | 0 | 0,00E+00 | 1,41E-01 | 2,16E-05 | -5,92E-04 |
| | EEE | MJ | 0,00E+00 | 0,00E+00 | 8,27E-03 | 0,00E+00 | 3,05E-03 | 0 | 0,00E+00 | 1,44E-01 | 2,09E-04 | -1,45E-03 |
| | EET | MJ | 0,00E+00 | 0,00E+00 | 1,25E-01 | 0,00E+00 | 4,61E-02 | 0 | 0,00E+00 | 2,18E+00 | 3,16E-03 | -2,20E-02 |

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, Poland (kWh) - NKT | ecoinvent 3.6 | 71,22 | 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 | C1 | C2 | C3 | C4 | D |
| GWPIOBC | kg $CO_2$ -eq | 4,13E+00 | 5,19E-02 | 2,87E-02 | 3,68E-02 | 9,12E-02 | 0 | 3,45E-02 | 2,83E-01 | 2,46E-02 | -1,99E-01 |

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

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|---|---|---|
| | **Program operator and publisher**<br>The Norwegian EPD Foundation<br>Post Box 5250 Majorstuen, 0303 Oslo, Norway | Phone: +47 23 08 80 00<br>e-mail: post@epd-norge.no<br>web: www.epd-norge.no |
| | **Owner of the declaration:**<br>NKT A/S<br>Vibeholms Allé 20, 2605 Brøndby | Phone:<br>e-mail: matheo.roehr@nkt.com<br>web: nkt.com |
| | **Author of the Life Cycle Assessment**<br>LCA.no AS<br>Dokka 6B, 1671 | Phone: +47 916 50 916<br>e-mail: post@lca.no<br>web: www.lca.no |
| | **Developer of EPD generator**<br>LCA.no AS<br>Dokka 6B,1671 Kråkerøy | Phone: +47 916 50 916<br>e-mail: post@lca.no<br>web: www.lca.no |
| | ECO Platform<br>ECO Portal | web: www.eco-platform.org<br>web: ECO Portal |