

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Lobus BI



The Norwegian EPD Foundation

Owner of the declaration:

Norlux AS

Product:

Lobus BI

Declared unit:

1 pcs

This declaration is based on Product Category Rules:

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

IBU PCR - Part B for luminaires, lamps, and components for luminaires

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-12068-12061

Registration number:

NEPD-12068-12061

Issue date:

19.08.2025

Valid to:

19.08.2030

EPD software:

LCAno EPD generator ID: 1165803

General information

Product

Lobus BI

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Declaration number:

NEPD-12068-12061

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
IBU PCR - Part B for luminaires, lamps, and components for luminaires

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 pcs Lobus BI

Declared unit with option:

A1, A2, A3, A4, A5, B6, C1, C2, C3, C4, D

Functional unit:

Lobus BI luminaire manufactured and installed, used according to a specific lighting regime over 5 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: NEPDT41.

Third party verifier:

Vito D'Incognito, Take Care International

(no signature required)

Owner of the declaration:

Norlux AS
Contact person: Mette Andersen
Phone: +47 902 24 135
e-mail: mette.andersen@norlux.com

Manufacturer:

Norlux AS
Borgeskogen
32 3160 Stokke, Norway

Place of production:

Norlux - Production site Türkiye

Istanbul, Turkey

Management system:

Organisation no:

963116217

Issue date:

19.08.2025

Valid to:

19.08.2030

Year of study:

2024

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 EPD2021.09, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway. NEPDT041

Developer of EPD: Jacob Flaates

Reviewer of company-specific input data and EPD: Mette Andersen

Approved:



Håkon Hauan, CEO EPD-Norge

Product

Product description:

Lobus BI is a small and elegant spotlight for use in track lighting systems. This spotlight has very high lumen output per watt and this puts it in the top segment. Lobus BI is very flexible, offering numerous adjustment possibilities making it easy to achieve the perfect light design in stores. Lobus BI is available with three different reflectors and comes in three different colors.

Product specification

IP rating

IP20

Length [mm]

228

Width [mm]

97

Height [mm]

180

Weight [kg]

0.841

Material

Aluminum

Lifetime [h]

L80B10: 100,000

Operating temperature [°C]

0 - 35

Materials	kg	%
Coatings	0,021	2,50
Electronics	0,142	16,88
Glass	0,043	5,11
Metal	0,009	1,07
Metal - Aluminium	0,606	72,06
Plastic	0,02	2,38
Total	0,841	100,00

Packaging	kg	%
Packaging	0,20	100,00
Total incl. packaging	1,04	100,00

Technical data:

Please visit the product page on our website for additional information, www.norlux.com

Market:

Norway

Reference service life, product

5 years lifetime for the installation according to the used scenario.

Reference service life, building or construction works

Reference service life of the building should be stated as 60 years, in line with the PCR Part A from EPD Norway.

LCA: Calculation rules

Declared unit:

1 pcs Lobus BI

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%) can be excluded. 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
Coatings	S-P-04077	EPD	2020
Electronics	Ecoinvent 3.6	Database + Supplier Information	2019
Electronics	Product composition + ecoinvent 3.6	Supplier data + database	2019
Electronics	Scholand et al. (2012) + Ecoinvent 3.6	Scientific literature + database	2017
Glass	Ecoinvent 3.6	Database	2019
Metal	Modified ecoinvent 3.6	Database	2019
Metal - Aluminium	ecoinvent 3.6	Database	2019
Packaging	ecoinvent 3.6	Database	2019
Packaging	Modified ecoinvent 3.6	Database	2019
Plastic	ecoinvent 3.6	Database	2019
Plastic	Product composition + ecoinvent 3.6	Supplier data + 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	X	MND	X	X	X	X	X

System boundary:

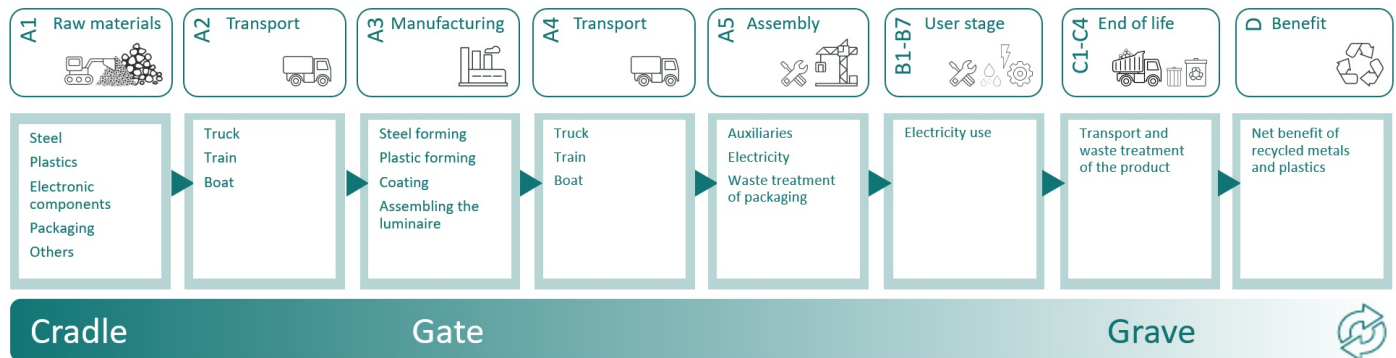
The analysis is a cradle-to-grave study of one luminaire manufactured and installed, used according to a specific lighting regime over a specific lifetime, including waste treatment at end-of-life.

A1-A5 includes the extraction and production of raw materials, transportation to the production site, the production process itself, transport to the market and assembly.

B6 is the operational energy use stage of the luminaire based on a scenario.

C1-C4 includes de-installation of the luminaire, average transport between building site and waste treatment facility, waste processing and disposal. Waste treatment of the product follows the default values provided in EN 50693.

D shows the recyclability of metals and plastics and 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.



Additional technical information:

LCA: Scenarios and additional technical information

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

Scenario = Retail

Module A4 = Transportation from production site is 3 700 km. Transportation to end-user is on average 260 km. for the Norwegian market.

Module A5 = Installation is performed in the Norwegian Market and done by manual labor, with the use of electrical machines, that fall under the cut-off criteria of 1% and is therefore neglected. Packaging of the final product consists of a corrugated board box.

Module B6 = The operational energy use of the luminaire is calculated based on the methodology provided in IBU PCR Part B for luminaires, lamps, and components for luminaires. The energy consumption model for luminaire used in the PCR follows the application scenarios developed in EN 15193:2007. To calculate the electricity use of the luminaire, the following scenario parameters have been applied:

Active power of the luminaire (Pa) = 30 watt

Passive power of the luminaire (Pp) = 0,00 watt

Daylight time usage (tD) = 3000 hours

Non-daylight time usage (tN) = 2000 hours

Standard year time (ty) = 8760 hours

The occupancy dependency factor (FO) = 1,00

The daylight dependency factor (FD) = 1,00

The product specific constant illuminance factor (FCP) = 1,00

The non-daylight dimming factor (FN) = 1,00

The application specific empiric lifetime of the luminaire in years (a) = 5 years (corresponding to the reference service life of the product)

Module C1 = Disassembly of the luminaire is done by manual labor, with the help of electrical machines. The use of portable electrical devices (e.g., drill) usually have low energy requirements, falling under the cut-off-criterion of 1% and is therefore neglected.

Module C2 = Average transport to EE recycling facility is 85 km.

Module 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 specifies 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 consists of landfilling of different waste fractions and of ashes.

Module D = The recyclability of metals, plastics, and electronic components 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 5 (km) - Europe	36,7 %	40	0,044	l/tkm	1,76
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	260	0,043	l/tkm	11,18
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	3700	0,043	l/tkm	159,10
Assembly (A5)	Unit	Value			
Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg) - A5 including transport (kg)	kg	0,195			
Waste, packaging, paper printed, to average treatment (kg) - A5 including transport	kg	0,006			
Operational energy (B6)	Unit	Value			
Electricity, Norway (kWh)	kWh	750,00			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 7.5-16 tonnes, EURO 6 (km) - Europe	35,4 %	85	0,056	l/tkm	4,76
Waste processing (C3)	Unit	Value			
Copper to recycling (kg)	kg	0,00153			
Waste treatment per kg used PWB, shredding and separation - C3 (kg)	kg	0,09131			
Steel to recycling (kg)	kg	0,0072			
Waste treatment of polyvinylchloride (PVC), incineration with energy recovery and fly ash extraction (kg)	kg	0,001225			
Aluminium to recycling (kg)	kg	0,4242			
Glass to recycling (kg) - C3	kg	0,0258			
Waste treatment per kg used electronic components, manual separation (kg)	kg	0,135			
Waste treatment of hazardous waste, incineration with fly ash extraction (kg)	kg	0,021			
Waste treatment of plastic mixture, incineration with energy recovery and fly ash extraction (kg)	kg	0,03285			
Waste treatment per kg electronics scrap from PWB, with components, recycling of metals C3 (kg)	kg	0,04565			

Disposal (C4)	Unit	Value			
Landfilling of plastic mixture (kg)	kg	0,03407			
Landfilling of ashes from incineration of Plastic mixture, process per kg ashes and residues (kg)	kg	0,001149			
Landfilling of aluminium (kg)	kg	0,1818			
Landfilling of glass (kg) - C4	kg	0,0172			
Landfilling of steel (kg)	kg	0,0018			
Landfilling of ashes from incineration of Hazardous waste, process per kg ashes and residues - C4 (kg)	kg	0,003969			
Landfilling of hazardous waste (kg)	kg	0,04565			
Landfilling of copper (kg)	kg	0,00102			
Landfilling of ashes from incineration of Polyvinylchloride (PVC), process per kg ashes and residues (kg)	kg	0,0001952			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of primary metals with net scrap from PWB, with components (kg)	kg	0,01342			
Substitution of primary steel with net scrap (kg)	kg	0,0072			
Substitution of primary copper with net scrap (kg)	kg	0,00153			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	0,9564			
Substitution of electricity in Norway (MJ)	MJ	0,06322			
Substitution of primary aluminium with net scrap (kg)	kg	-0,1333			
Substitution of primary glass with net scrap (kg)	kg	0,0258			

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	
 GWP-total	kg CO ₂ -eq	1,33E+01	7,40E-02	3,00E+00	6,81E-01	3,34E-01	
 GWP-fossil	kg CO ₂ -eq	1,35E+01	7,39E-02	2,93E+00	6,81E-01	3,25E-03	
 GWP-biogenic	kg CO ₂ -eq	-3,02E-01	3,13E-05	4,11E-02	2,82E-04	3,21E-01	
 GWP-luluc	kg CO ₂ -eq	3,17E-02	2,64E-05	3,09E-02	2,42E-04	1,08E-06	
 ODP	kg CFC11 -eq	7,46E-07	1,68E-08	1,91E-08	1,54E-07	6,86E-10	
 AP	mol H ⁺ -eq	9,41E-02	3,96E-04	2,02E-02	1,97E-03	1,54E-05	
 EP-FreshWater	kg P -eq	1,60E-03	6,01E-07	3,01E-03	5,44E-06	2,67E-08	
 EP-Marine	kg N -eq	1,65E-02	1,34E-04	3,41E-03	3,92E-04	5,09E-06	
 EP-Terrestrial	mol N -eq	1,85E-01	1,47E-03	3,16E-02	4,38E-03	5,51E-05	
 POCP	kg NMVOC -eq	5,86E-02	4,27E-04	9,37E-03	1,67E-03	1,58E-05	
 ADP-minerals&metals ¹	kg Sb-eq	3,07E-03	1,95E-06	2,14E-05	1,88E-05	7,91E-08	
 ADP-fossil ¹	MJ	1,62E+02	1,13E+00	3,25E+01	1,03E+01	4,55E-02	
 WDP ¹	m ³	1,08E+03	1,07E+00	1,28E+00	9,96E+00	5,76E-02	

Indicator	Unit	B6	C1	C2	C3	C4	D
 GWP-total	kg CO ₂ -eq	1,82E+01	0,00E+00	1,90E-02	1,71E-01	1,82E-02	4,09E-01
 GWP-fossil	kg CO ₂ -eq	1,77E+01	0,00E+00	1,90E-02	1,70E-01	1,81E-02	3,85E-01
 GWP-biogenic	kg CO ₂ -eq	4,89E-01	0,00E+00	8,77E-06	1,93E-04	9,65E-06	3,04E-03
 GWP-luluc	kg CO ₂ -eq	7,30E-02	0,00E+00	8,20E-06	1,02E-04	8,73E-05	2,12E-02
 ODP	kg CFC11 -eq	1,21E-06	0,00E+00	4,16E-09	8,33E-09	1,46E-09	-4,04E-04
 AP	mol H ⁺ -eq	1,38E-01	0,00E+00	5,45E-05	2,50E-04	7,30E-05	-4,10E-02
 EP-FreshWater	kg P -eq	1,27E-03	0,00E+00	1,74E-07	2,36E-06	5,04E-07	-2,23E-04
 EP-Marine	kg N -eq	1,52E-02	0,00E+00	1,03E-05	5,24E-05	2,27E-05	-1,52E-03
 EP-Terrestrial	mol N -eq	1,98E-01	0,00E+00	1,16E-04	5,83E-04	2,06E-04	-2,36E-02
 POCP	kg NMVOC -eq	5,32E-02	0,00E+00	4,42E-05	1,62E-04	7,94E-05	-6,13E-03
 ADP-minerals&metals ¹	kg Sb-eq	1,32E-03	0,00E+00	6,84E-07	5,21E-07	8,26E-08	-1,15E-03
 ADP-fossil ¹	MJ	2,41E+02	0,00E+00	2,83E-01	6,13E-01	1,87E-01	4,67E+00
 WDP ¹	m ³	9,41E+02	0,00E+00	3,39E-01	5,20E+00	1,94E+00	6,55E+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

"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
 PM	Disease incidence	8,22E-07	6,22E-09	8,87E-08	4,18E-08	2,28E-10
 IRP ²	kgBq U235 -eq	4,97E-01	4,93E-03	2,71E-02	4,50E-02	1,95E-04
 ETP-fw ¹	CTUe	9,00E+02	8,39E-01	9,08E+00	7,63E+00	6,07E-02
 HTP-c ¹	CTUh	1,25E-08	0,00E+00	6,61E-10	0,00E+00	2,00E-12
 HTP-nc ¹	CTUh	4,40E-07	1,05E-09	3,49E-08	8,34E-09	7,50E-11
 SQP ¹	dimensionless	7,49E+01	9,00E-01	4,55E+00	7,20E+00	3,05E-02

Indicator	Unit	B6	C1	C2	C3	C4	D
 PM	Disease incidence	9,91E-07	0,00E+00	1,06E-09	2,25E-09	1,28E-09	-1,93E-08
 IRP ²	kgBq U235 -eq	4,38E+00	0,00E+00	1,24E-03	3,03E-03	6,62E-04	2,75E-02
 ETP-fw ¹	CTUe	1,10E+03	0,00E+00	2,21E-01	2,02E+00	1,15E+02	-3,29E+02
 HTP-c ¹	CTUh	5,25E-08	0,00E+00	0,00E+00	8,21E-10	4,90E-11	1,32E-09
 HTP-nc ¹	CTUh	1,24E-06	0,00E+00	2,66E-10	4,59E-08	4,51E-10	-7,98E-08
 SQP ¹	dimensionless	1,22E+02	0,00E+00	1,68E-01	1,87E-01	4,40E-01	-7,83E+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
	PERE	MJ	2,25E+01	1,61E-02	1,48E+01	1,47E-01	7,49E-04
	PERM	MJ	3,19E+00	0,00E+00	0,00E+00	0,00E+00	-3,19E+00
	PERT	MJ	2,56E+01	1,61E-02	1,48E+01	1,47E-01	-3,19E+00
	PENRE	MJ	1,60E+02	1,13E+00	3,25E+01	1,03E+01	4,55E-02
	PENRM	MJ	2,28E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	1,63E+02	1,13E+00	3,25E+01	1,03E+01	4,55E-02
	SM	kg	5,85E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	3,07E-01	5,75E-04	6,60E-05	5,27E-03	2,48E-05
	NRSF	MJ	2,90E-02	2,04E-03	0,00E+00	1,89E-02	1,02E-04
	FW	m ³	1,25E-01	1,25E-04	2,97E-02	1,10E-03	2,15E-05

Indicator		Unit	B6	C1	C2	C3	C4	D
	PERE	MJ	3,13E+03	0,00E+00	4,82E-03	9,27E-02	4,76E-02	4,02E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	3,13E+03	0,00E+00	4,82E-03	9,27E-02	4,76E-02	4,02E+00
	PENRE	MJ	2,42E+02	0,00E+00	2,83E-01	6,13E-01	1,87E-01	4,67E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	-2,27E+00	0,00E+00	0,00E+00
	PENRT	MJ	2,42E+02	0,00E+00	2,83E-01	-1,66E+00	1,87E-01	4,67E+00
	SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,86E-04	1,07E-03
	RSF	MJ	2,46E+00	0,00E+00	1,74E-04	1,69E-03	2,84E-04	2,53E-03
	NRSF	MJ	6,12E+00	0,00E+00	6,32E-04	-4,62E-05	8,73E-03	-2,85E-02
	FW	m ³	2,34E+01	0,00E+00	3,37E-05	6,27E-04	1,65E-04	2,18E-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
 HWD	kg	6,43E-02	5,98E-05	2,26E-01	5,31E-04	0,00E+00
 NHWD	kg	1,55E+00	6,43E-02	1,45E+01	5,01E-01	2,01E-01
 RWD	kg	3,91E-04	7,67E-06	6,43E-06	7,01E-05	0,00E+00

Indicator	Unit	B6	C1	C2	C3	C4	D
 HWD	kg	1,55E-01	0,00E+00	1,57E-05	2,28E-05	5,26E-02	-7,86E-03
 NHWD	kg	1,86E+01	0,00E+00	1,12E-02	5,18E-02	2,43E-01	2,10E-01
 RWD	kg	2,16E-03	0,00E+00	1,91E-06	1,13E-06	4,80E-07	2,85E-05

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
 CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
 MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,87E-01
 MER	kg	0,00E+00	0,00E+00	6,30E-04	0,00E+00	4,20E-04
 EEE	MJ	0,00E+00	0,00E+00	6,24E-07	0,00E+00	1,15E-02
 EET	MJ	0,00E+00	0,00E+00	9,44E-06	0,00E+00	1,74E-01

Indicator	Unit	B6	C1	C2	C3	C4	D
 CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
 MFR	kg	0,00E+00	0,00E+00	0,00E+00	4,59E-01	3,06E-06	-4,19E-05
 MER	kg	0,00E+00	0,00E+00	0,00E+00	5,51E-02	7,47E-08	-5,51E-06
 EEE	MJ	0,00E+00	0,00E+00	0,00E+00	5,17E-02	4,85E-06	-1,35E-05
 EET	MJ	0,00E+00	0,00E+00	0,00E+00	7,83E-01	7,34E-05	-2,04E-04

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	9,31E-02

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	Source	Amount	Unit
Electricity, Turkey (kWh)	ecoinvent 3.10.1	599,59	g CO ₂ -eq/kWh

Dangerous substances

The product contains no substances on the REACH Candidate list at or above 100 ppm, 0,01 % by weight.

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products							
Indicator	Unit	A1	A2	A3	A4	A5	
GWPIOBC	kg CO ₂ -eq	1,36E+01	7,40E-02	2,97E+00	6,81E-01	3,25E-03	
Indicator	Unit	B6	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	1,82E+01	0,00E+00	1,90E-02	1,71E-01	1,82E-02	3,56E-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.

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 epd-norge Global program operator	Program operator and publisher The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo, Norway	Phone: +47 977 22 020 e-mail: post@epd-norge.no web: www.epd-norge.no
	Owner of the declaration: Norlux AS Borgeskogen, 32 3160 Stokke, Norway	Phone: +47 902 24 135 e-mail: mette.andersen@norlux.com web: https://norlux.com/
	Author of the Life Cycle Assessment LCA.no AS Dokka 6A, 1671 Kråkerøy, Norway	Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no
	Developer of EPD generator LCA.no AS Dokka 6A, 1671 Kråkerøy, Norway	Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no
	ECO Platform ECO Portal	web: www.eco-platform.org web: ECO Portal