

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Motus Table - With Inductive Base





**Owner of the declaration:** Glamox AS

Product: Motus Table - With Inductive Base

**Declared unit:** 1 pcs

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**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-6016-5290-EN

**Registration number:** 

NEPD-6016-5290-EN

Issue date: 08.02.2024

Valid to: 08.02.2029

EPD software: LCAno EPD generator ID: 74307





## **General information**

Product

Motus Table - With Inductive Base

#### 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-6016-5290-EN

#### 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 Motus Table - With Inductive Base

Declared unit with option:

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

#### **Functional unit:**

Motus Table luminaire manufactured in Glamox Kirkenær. Transport to customer and used according to a specific lighting regime over 15years lifetime. 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:

#### Owner of the declaration:

Glamox AS Contact person: Birger Holo Phone: +47 97551574 e-mail: birger.holo@glamox.com

#### Manufacturer:

Glamox AS Birger Hatlebakks veg 15 6415 Molde, Norway

#### **Place of production:**

Glamox production site Kirkenær (Norway Bruksvegen 7 2260 Kirkenær, Norway

#### Management system:

ISO 9001, ISO 14001; Molde: ATEX, ISO 80079-34 (IECEx ISO45001; Kirkenær: ISO 13485; Keila: ISO 45001, ISO 50001; Dobczyce: ATEX, ISO 80079-34 (IECEx Module D 2014/90/EU

#### **Organisation no:**

912007782

Issue date: 08.02.2024

Valid to: 08.02.2029

#### Year of study:

2022

#### 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. NEPDT42

Developer of EPD: Jan Arvidson

Reviewer of company-specific input data and EPD: Björn Lind

#### Approved:

Håkon Hauan Managing Director of EPD-Norway

Vito D'Incognito, Take Care International

(no signature required)



## Product

#### **Product description:**

Motus Table

The ingenious 3-way movement lets your hand seamlessly set the head of Motus Table in the place best suited for yourself without any interruptions.

This versatile task light has a fixed arm with one joint in the base and one in the head.

Motus Table has a symmetric light output with a dim-to-warm functionality which gives an excellent work light or relaxing warm light when dimmed down. The design will make this task light stand out on any table or work desk.

This EPD applies to all colors.

MOT028500 - Motus Table BL 800 940-927 D2W EU MOT028501 - Motus Table WH 800 940-927 D2W EU MOT028502 - Motus Table Estate Green 800 940-927 D2W EU MOT028505 - Motus Table Mild Citrus 800 940-927 D2W EU MOT028503 - Motus Table Pleasant Green 800 940-927 D2W EU MOT028504 - Motus Table Silk Teal 800 940-927 D2W EU

#### **Product specification**

Fixed arm with joints in bottom and head, total arm length 57cm. head Ø9,6cm Pitch, Yaw & Roll\* movement in head for effortless placement of head/light without any stop in motion \*Pitch (up-and-down) Yaw (side-to-side) Roll (side-up-side-down) With a Motus inductive base you have a charging place easy accessible at the base of your task light. Easy to place and grab your phone without any cables to plug in.

Materials	kg	%
Coating materials	0,05	1,43
Electronic - Cable	0,04	0,99
Electronic - LED chip	0,00	0,05
Electronic - LED plate	0,01	0,22
Electronic - Power supply	0,14	3,81
Electronic - Printed wiring board	0,04	1,20
Glass fibre	0,00	0,00
Metal - Aluminium	0,31	8,50
Metal - Stainless steel	0,01	0,19
Metal - Steel	0,01	0,29
Metal - Steel low alloy	0,19	5,07
Metal - Zinc	2,80	76,29
Plastic - Polyamide	0,00	0,01
Plastic - Polycarbonate (PC)	0,06	1,56
Plastic - Polyethylene terephthalate (PET	) 0,00	0,01
Plastic - Polyoxymethylene (POM)	0,00	0,11
Thermoplastic elastomers (TPE)	0,01	0,28
Total	3,67	
Packaging	kg	%

0,57	96,13
0,02	3,40
0,00	0,48
4,26	
	0,02 0,00

#### Technical data:

Please visit the product page on our website for more technical information.

#### Market:

Nordic

#### **Reference service life, product**

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

#### Reference service life, building or construction works

60 years. Standard service life for buildings according to PCR Part A of EPD Norway.

## LCA: Calculation rules

**Declared unit:** 1 pcs Motus Table - With Inductive Base

#### 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
Coating materials	Ecoinvent 3.6	Database	2019
Electronic - Cable	Product composition + ecoinvent 3.6	Supplier data + database	2019
Electronic - LED chip	Scholand et al. (2012) + Ecoinvent 3.6	Scientific literature + database	2017
Electronic - LED plate	ecoinvent 3.6	Database	2019
Electronic - Power supply	Product composition + ecoinvent 3.6	Supplier data + database	2019
Electronic - Printed wiring board	ecoinvent 3.6	Database	2019
Glass fibre	ecoinvent 3.6	Database	2019
Metal - Aluminium	Modified ecoinvent 3.6	Database	2019
Metal - Aluminium	S-P-07358	EPD	2021
Metal - Stainless steel	ecoinvent 3.6	Database	2019
Metal - Steel	ecoinvent 3.6	Database	2019
Metal - Steel low alloy	ecoinvent 3.6	Database	2019
Metal - Steel low alloy	Modified ecoinvent 3.6	Database	2019
Metal - Zinc	Modified ecoinvent 3.6	Database	2019
Packaging - Cardboard	ecoinvent 3.6	Database	2019
Packaging - Paper	ecoinvent 3.6	Database	2019
Plastic - Polyamide	ecoinvent 3.6	Database	2019
Plastic - Polycarbonate (PC)	ecoinvent 3.6	Database	2019
Plastic - Polyethylene (LDPE)	ecoinvent 3.6	Database	2019
Plastic - Polyethylene terephthalate (PET)	ecoinvent 3.6	Database	2019
Plastic - Polyoxymethylene (POM)	ecoinvent 3.6	Database	2019
Thermoplastic elastomers (TPE)	ecoinvent 3.6	Database	2019



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

	Product stag	ge		uction on stage	Use stage						End of I	ife 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	Β7	C1	C2	C3	C4	D
Х	Х	Х	Х	Х	MND	MND	MND	MND	MND	Х	MND	Х	Х	Х	Х	Х

#### System boundary:

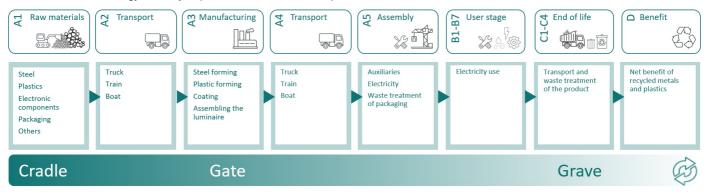
The analysis is a cradle-to-grave study of one luminaire manufactured and installed, used according to a specific lighting regime over a specific lifetime, including waste treatment at end-of-life.

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:

Please visit our website www.glamox.com for more technical information.



### LCA: Scenarios and additional technical information

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

Module A4: Transport from manufacturing location in Kirkenær to warehouse in Oslo (130 km) + average distribution into the Nordic market (500 km).

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:

- User scenario = Office
- Active power of the luminaire (Pa) = 14,7 watt at 100% use of charger
- Passive power of the luminaire (Pp) = 0,3 watt
- Daylight time usage (tD) = 2250 hours
- Non-daylight time usage (tN) = 250 hours
- Standard year time (ty) = 8760 hours
- The occupancy depency factor (FO) = 1 (factor, no unit)
- The daylight dependency factor (FD) = 0,9 (factor, no unit)
- The product specific constant illuminance factor (FCP) = 1 (factor, no unit)
- The non-daylight dimming factor (FN) = 1 (factor, no unit)
- The application specific empiric lifetime of the luminaire in years (a) = 15 years (corresponding to the reference service life of the product)

Module C2: Average transport to Nordic waste treatment facilities (300km).

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, 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 %	630	0,044	l/tkm	27,72
Assembly (A5)	Unit	Value			
Waste, cardboard and paper, to average treatment - A5 including transport (kg)	kg	0,57			
Waste, plastic, mixture, to average treatment - A5 including transport (kg)	kg	0,00			
Operational energy (B6)	Unit	Value			
Electricity, Nordic (kWh)	kWh/DU	541,06			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 5 (km) - Europe	53,3 %	300	0,023	l/tkm	6,90
Waste processing (C3)	Unit	Value			
Aluminium to recycling (kg)	kg	0,22			
Copper to recycling (kg)	kg	0,03			
Steel to recycling (kg)	kg	0,16			
Waste treatment of hazardous waste, incineration with fly ash extraction (kg)	kg	0,05			
Waste treatment of plastic mixture, incineration with energy recovery and fly ash extraction (kg)	kg	0,08			
Waste treatment per kg electronics scrap from LED plate, without components, recycling of copper - C3 (kg)	kg	0,00			
Waste treatment per kg electronics scrap from PWB, with components, recycling of metals - C3 (kg)	kg	0,03			
Waste treatment per kg used electronic components, manual seperation (kg)	kg	0,18			
Waste treatment per kg used PWB, shredding and separation - C3 (kg)	kg	0,07			
Zinc to recycling (kg)	kg	1,68			



Disposal (C4)	Unit	Value	
Landfilling of aluminium (kg)	kg	0,09	
Landfilling of ashes from incineration of Hazardous waste, process per kg ashes and residues - C4 (kg)	kg	0,01	
Landfilling of ashes from incineration of Plastic mixture, process per kg ashes and residues (kg)	kg	0,00	
Landfilling of copper (kg)	kg	0,02	
Landfilling of hazardous waste (kg)	kg	0,04	
Landfilling of non-hazardous waste (kg)	kg	0,02	
Landfilling of plastic mixture (kg)	kg	0,08	
Landfilling of steel (kg)	kg	0,04	
Landfilling of zinc (kg)	kg	1,12	

Benefits and loads beyond the system boundaries (D)	Unit	Value		
Substitution of copper with net scrap from PWB, without components (kg)	kg	0,00		
Substitution of electricity, in Norway (MJ)	MJ	0,13		
Substitution of primary aluminium with net scrap (kg)	kg	0,00		
Substitution of primary copper with net scrap (kg)	kg	0,03		
Substitution of primary metals with net scrap from PWB, with components (kg)	kg	0,01		
Substitution of primary steel with net scrap (kg)	kg	0,12		
Substitution of primary zinc with net scrap (kg)	kg	1,26		
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	1,95		



## LCA: Results

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

Environm	ental impact							
<i>.</i>	Indicator	Un		A1	A2	A3	A4	A5
F	GWP-total	kg CO	<sub>2</sub> -eq	3,82E+01	3,18E-01	3,09E+00	4,48E-01	1,00E+00
P	GWP-fossil	kg CO	<sub>2</sub> -eq	3,87E+01	3,17E-01	2,51E+00	4,47E-01	9,38E-03
F	GWP-biogenic	kg CO	<sub>2</sub> -eq	-7,71E-01	1,25E-04	5,57E-01	1,82E-04	9,95E-01
(f)	GWP-luluc	kg CO	<sub>2</sub> -eq	2,79E-01	1,23E-04	2,04E-02	1,56E-04	3,05E-06
Ò	ODP	kg CFC	11 -eq	3,27E-06	7,18E-08	1,59E-07	1,02E-07	1,95E-09
(Fr	АР	mol H	+ -eq	4,20E-01	2,31E-03	1,16E-02	1,83E-03	4,36E-05
	EP-FreshWater	kg P	-eq	6,42E-03	2,36E-06	1,08E-04	3,51E-06	7,56E-08
	EP-Marine	kg N	-eq	4,95E-02	6,25E-04	2,79E-03	5,42E-04	1,46E-05
	EP-Terrestial	mol N	l -eq	5,76E-01	6,94E-03	2,80E-02	6,00E-03	1,56E-04
	РОСР	kg NMV	OC -eq	1,60E-01	1,98E-03	7,77E-03	1,84E-03	4,49E-05
s de la companya de	ADP-minerals&metals <sup>1</sup>	kg Sb	e-eq	4,04E-01	7,90E-06	6,70E-05	1,21E-05	2,24E-07
Ð	ADP-fossil <sup>1</sup>	М	J	5,35E+02	4,70E+00	2,08E+01	6,74E+00	1,29E-01
<b>%</b>	WDP <sup>1</sup>	m	m <sup>3</sup>		4,14E+00	1,96E+03	6,43E+00	1,66E-01
	Indicator	Unit	B6	C1	C2	C3	C4	D
P	GWP-total	kg CO <sub>2</sub> -eq	7,88E+01	0,00E+00	1,16E-01	3,50E-01	5,54E-02	-4,56E+00
P	GWP-fossil	kg CO <sub>2</sub> -eq	7,35E+01	0,00E+00	1,16E-01	3,50E-01	4,05E-02	-4,50E+00
P	GWP-biogenic	kg CO <sub>2</sub> -eq	1,34E+00	0,00E+00	4,77E-05	3,78E-04	1,49E-02	-3,86E-02
P	GWP-luluc	kg CO <sub>2</sub> -eq	4,02E+00	0,00E+00	3,39E-05	1,13E-04	7,38E-05	-1,45E-02
Ò	ODP	kg CFC11 -eq	7,95E-06	0,00E+00	2,68E-08	1,60E-08	6,02E-09	-8,24E-04
Ê	АР	mol H+ -eq	3,39E-01	0,00E+00	4,88E-04	3,77E-04	1,95E-04	-8,14E-02
æ	EP-FreshWater	kg P -eq	4,86E-03	0,00E+00	8,85E-07	4,26E-06	8,13E-07	-6,97E-04
æ	EP-Marine	kg N -eq	5,35E-02	0,00E+00	1,47E-04	8,47E-05	9,69E-05	-1,05E-02
<del></del>	EP-Terrestial	mol N -eq	7,19E-01	0,00E+00	1,62E-03	9,35E-04	7,08E-04	-1,24E-01
	РОСР	kg NMVOC -eq	1,68E-01	0,00E+00	5,22E-04	2,54E-04	2,22E-04	-3,24E-02
<b>(</b>	POCP ADP-minerals&metals <sup>1</sup>	kg NMVOC -eq kg Sb-eq	1,68E-01 1,14E-03	0,00E+00 0,00E+00	5,22E-04 1,98E-06	2,54E-04 6,85E-07	2,22E-04 1,98E-07	-3,24E-02 -9,82E-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** 



dditional environmental impact indicators											
	Indicator	Unit		A1	A2	A3	A4	A5			
	PM	Disease incidence		1,87E-06	2,03E-08	3,05E-07	3,22E-08	6,45E-10			
(ioi) E	IRP <sup>2</sup>	kgBq U235 -eq		2,66E+00	2,05E-02	2,50E-01	2,95E-02	5,52E-04			
	ETP-fw <sup>1</sup>	CTUe		3,26E+03	3,39E+00	9,68E+01	4,97E+00	1,72E-01			
444 * *****	HTP-c <sup>1</sup>	CTUh		1,13E-07	0,00E+00	3,66E-09	0,00E+00	5,00E-12			
4 <u>8</u>	HTP-nc <sup>1</sup>	CTUh		3,22E-06	3,38E-09	1,04E-07	5,37E-09	2,16E-10			
è	SQP <sup>1</sup>	dimensionless		1,80E+02	2,99E+00	5,47E+01	4,65E+00	8,75E-02			
I	Indicator Unit		B6	C1	C2	C3	C4	D			
	PM	Disease incidence	1,80E-06	0,00E+00	1,02E-08	3,95E-09	3,31E-09	-2,52E-07			
()~() Q	IRP <sup>2</sup>	kgBq U235 -eq	4,53E+01	0,00E+00	7,89E-03	4,32E-03	3,19E-03	-4,41E-01			
	ETP-fw <sup>1</sup>	CTUe	2,49E+03	0,00E+00	1,32E+00	3,47E+00	7,89E+02	-5,36E+02			
40.* ***	HTP-c <sup>1</sup>	CTUh	5,79E-08	0,00E+00	0,00E+00	6,21E-10	7,40E-11	-2,51E-08			
48 E	HTP-nc <sup>1</sup>	CTUh	1,52E-06	0,00E+00	1,28E-09	3,04E-08	1,01E-09	-8,28E-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)

"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
i S	PERE		MJ		6,30E-02	1,81E+02	9,52E-02	2,13E-03
THE AND	PERM		MJ		0,00E+00	0,00E+00	0,00E+00	-5,41E+00
° <b>₽</b> ₽	PERT		MJ		6,30E-02	1,81E+02	9,52E-02	-5,40E+00
B	PENRE		MJ	5,31E+02	4,70E+00	2,08E+01	6,74E+00	1,29E-01
.Åa	PENRM		MJ	4,78E+00	0,00E+00	0,00E+00	0,00E+00	-1,19E-01
IA	PENRT		MJ	5,34E+02	4,70E+00	5,09E+01	6,74E+00	1,01E-02
	SM		kg	9,87E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
2	RSF		MJ	2,04E+00	2,22E-03	1,21E-01	3,41E-03	7,05E-05
J.	NRSF		MJ	2,28E-02	8,70E-03	2,85E+00	1,22E-02	2,90E-04
96	FW		m <sup>3</sup>	8,63E-01	4,71E-04	1,09E+00	7,10E-04	6,09E-05
	ndicator	Unit	B6	C1	C2	C3	C4	D
in the second se	PERE	MJ	1,95E+03	0,00E+00	2,27E-02	1,44E-01	9,19E-02	-9,56E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
°≓s	PERT	MJ	1,95E+03	0,00E+00	2,27E-02	1,44E-01	9,19E-02	-9,56E+00
B	PENRE	MJ	2,02E+03	0,00E+00	1,81E+00	9,26E-01	5,49E-01	-6,47E+01
Åa	PENRM							0,00E+00
<u> </u>	PEINRM	MJ	0,00E+00	0,00E+00	0,00E+00	-4,82E+00	0,00E+00	0,00E+00
<b>A</b>	PENRM	M)	0,00E+00 2,02E+03	0,00E+00 0,00E+00	0,00E+00 1,81E+00	-4,82E+00 -3,90E+00	0,00E+00 5,49E-01	-6,47E+01
IA	PENRT	MJ	2,02E+03	0,00E+00	1,81E+00	-3,90E+00	5,49E-01	-6,47E+01
	PENRT SM	МJ kg	2,02E+03 0,00E+00	0,00E+00 0,00E+00	1,81E+00 0,00E+00	-3,90E+00 0,00E+00	5,49E-01 7,13E-03	-6,47E+01 2,14E-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 resources used as raw materials; PERT = Total use of renewable primary energy resources; Secondary resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; Rest = Use of non renewable primary energy resources; SM = Use of secondary materials; Rest = Use of renewable primary energy resources; SM = Use of non-renewable primary energy resources; SM = Use of secondary materials; Rest = Use of renewable secondary fuels; NRSF = Use of non-renewable primary energy resources; SM = Use of secondary fuels; Rest = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; NRSF = Use of non-renewable primary energy resources; SM = Use of secondary fuels; Rest = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; NRSF = Use of non-renewable primary energy resources; SM = Use of secondary fuels; Rest = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; NRSF =

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



End of life - Waste	nd of life - Waste												
	Indicator		Unit			A2	A3	A4	A5				
à	HWD	HWD		kg		2,36E-04	5,56E-01	3,44E-04	0,00E+00				
Ī	NHWD		k	g	4,36E+00	2,04E-01	4,21E+00	3,22E-01	5,69E-01				
æ	RWD	kg		g	2,44E-03	3,21E-05	1,45E-04	4,60E-05	0,00E+00				
In	dicator	I	Unit	B6	C1	C2	C3	C4	D				
A	HWD		kg	1,86E-01	0,00E+00	9,89E-05	1,46E-05	8,29E-02	-5,50E-02				
Ū	NHWD	NHWD		1,23E+01	0,00E+00	1,57E-01	7,22E-02	1,40E+00	-7,25E-01				
2	RWD		kg	2,08E-02	0,00E+00	1,23E-05	7,29E-07	3,11E-06	-3,15E-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 - Output flow	End of life - Output flow													
Indi	cator	U	nit	A1	A2	A3	A4	A5						
$\langle \hat{\varphi} \rangle$	CRU	k	g	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
\$\$ <b>\</b>	MFR	k	g	1,68E-01	0,00E+00	3,80E+00	0,00E+00	5,28E-01						
DF3	MER	kg		3,40E-03	0,00E+00	4,13E-05	0,00E+00	3,96E-02						
FD	EEE	Ν	MJ		0,00E+00	1,42E+00	0,00E+00	3,24E-02						
	EET	Ν	MJ		0,00E+00	2,15E+01	0,00E+00	4,90E-01						
Indicato	r	Unit	B6	C1	C2	C3	C4	D						
$\otimes$	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	2,09E+00	1,92E-05	-8,39E-04						
DF	MER	kg	0,00E+00	0,00E+00	0,00E+00	1,34E-01	1,61E-04	-1,10E-04						
50	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	1,26E-01	1,44E-03	-2,71E-04						
	EET	MJ	0,00E+00	0,00E+00	0,00E+00	1,90E+00	2,18E-02	-4,09E-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	2,71E-01				

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, Norway (kWh)	ecoinvent 3.6	24,33	g CO2-eq/kWh

#### Dangerous substances

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

#### Indoor environment

Not relevant

#### **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 <sub>2</sub> -eq		3,91E+01	3,18E-01	1,34E+00	4,48E-01	9,38E-03
Indicator	Unit	B6	C1	C2	C3	C4	D
GWPIOBC	kg CO <sub>2</sub> -eq	1,07E+02	0,00E+00	1,16E-01	3,50E-01	5,93E-02	-4,58E+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.



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