Environmental Product Declaration (EPD)
According to ISO 14025 and EN 15804+A2:2019

EPD 4 Lighting series: ABOX, ALULINE, COMPACT 200|300, INTEGRA ALULINE, SMARTLINE 200|300, VARIOLINE 170|200|300 (CB)

Calculation number:	ReTHiNK-141346
Issue date:	
Valid until:	
Declaration owner:	Muster GmbH
Publisher:	Kiwa-Ecobility Experts
Programme operator:	Kiwa-Ecobility Experts
Status:	in-progress

1 General information

1.1 PRODUCT

EPD 4 Lighting series: ABOX, ALULINE, COMPACT 200|300, INTEGRA ALULINE, SMARTLINE 200|300, VARIOLINE 170|200|300 (CB)

1.2 REGISTRATION NUMBER

1.3 VALIDITY

Issue date:

Valid until:

1.4 PROGRAMME OPERATOR

Kiwa-Ecobility Experts
Wattstraße 11-13
13355 Berlin
DE

1.5 OWNER OF THE DECLARATION

Declaration owner: Muster GmbH

Address: Musterstraße 1, 12345 Musterstadt

E-mail: info@muster-gmbh.de

Website: https://www.muster-gmbh.de

Production location: Muster GmbH

Address production location: Musterstraße 1, 12345 Musterstadt

1.6 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804+A2:2019 serves as the core PCR.

☐ Internal ☐ External

1.7 STATEMENTS

The owner of this EPD shall be liable for the underlying information and evidence. The programme operator Kiwa-Ecobility Experts shall not be liable with respect to manufacturer data, life cycle assessment data and evidence.

1.8 PRODUCT CATEGORY RULES

Kiwa-EE GPI R.3.0
Kiwa-Ecobility Experts, General Programme Instructions “Product Level”, SOP EE 1203_R. 3.0 (27.02.2025)

Kiwa-EE GPI R.3.0 Annex B1
Kiwa-Ecobility Experts, General Programme Instructions “Product Level” – Annex B1 Environmental Information Programme according to EN 15804 / ISO 21930, SOP EE 1203_R. 3.0 (27.02.2025)

PCR B
Institut Bauen und Umwelt e.V. - Part B: Requirements on the EPD for Luminaires, light sources and control gears - v12 (30.09.2024)

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804+A2:2019. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPD program operators may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2:2019 and ISO 14025.

1 General information

1.10 CALCULATION BASIS

LCA method R<THINK: Ecobility Experts | EN15804+A2

LCA software*: Simapro 9.6

Characterization method: RETHINK characterization method (see references for more details)

LCA database profiles: ecoinvent (for version see references)

Version database: v3.20e (2026-03-29)

** Simapro is used for calculating the characterized results of the Environmental profiles within R<THINK.*

1.11 LCA BACKGROUND REPORT

This EPD is generated on the basis of the LCA background report 'EPD 4 Lighting series: ABOX, ALULINE, COMPACT 200|300, INTEGRA ALULINE, SMARTLINE 200|300, VARIOLINE 170|200|300 (CB)' with the calculation identifier ReTHiNK-141346.

2 Product

2.1 PRODUCT DESCRIPTION

This Worst-Case EPD refers to exit luminaire manufactured by Muster GmbH in compliance with EN IEC 60598-1:2021+A11:2022+prEN IEC:2023+prAA:2023 and EN 1838:2024, made of anodized aluminum for wall, ceiling and bracket mounting. For wall mounting, installation is via the rear panel of the luminaire, for ceiling and bracket mounting via an adapter supplied with the luminaire. In addition, the luminaire has light emission windows facing downwards.

The luminaire includes one ceiling adapter, one rear panel and one pictogram set - arrow left/right/down/up/blind (visibility distance 40 m) and is equipped with a 2x 2 Watt LED-bar.

This declaration refers to the product ABOX 400 product, which indicates the highest environmental impacts within the declared products. Through the standardized specifications and requirements for product use, the manufacturing processes and primary materials in the product group are comparable. The total weight of the Worst-Case product ABOX 400 product with packagings, is 2.61 kg. The dimension of the product is CM 265 x 167 x 80 mm, WM 265 x 148 x 81 mm, BM 286 x 148 x 80 mm (W x H x D).

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration EN IEC 60598-2-22:2022, Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting and the CE-marking.

For the application and use the respective national provisions apply.

ABOX 400 is sold in cardboard box. The composition of the product is listed in the following table:

Component	Value	Substance	Weight in % of component	CAS-no.
Aluminum	34.1 %	Al	100.000 %	7429-90-5
Polyvinylfluoride	30.6 %	PVF	100.000 %	24981-14-4
Polycarbonate	27.9 %	PC	100.000 %	25037-45-0
Printed wiring board	2.1 %	PC	45.000 %	25037-45-0
		Cu	20.000 %	7440-50-8
		EP	10.000 %	25068-38-6
		GF	7.000 %	65997-17-3
		MnZn-Ferrite	7.000 %	68186-85-6
		Al	5.000 %	7429-90-5
		$BaTiO_3$	3.000 %	12047-27-7
		Sn	1.300 %	7440-31-5
		Ni	0.900 %	7440-02-0
		ZnO	0.800 %	1314-13-2
Polyethylene	1.3 %	PE	100.000%	9002-88-4
LED	1.3 %	MgO	10.090 %	1309-48-4
		Al2O3	10.080 %	1344-28-1
		C2H4N4	9.440 %	461-58-5
		AlPO4	9.310 %	7784-30-7
		CaO	8.550 %	1305-78-8
		C21H25ClO5	7.380 %	1675-54-3
		SiO2	7.110 %	60676-86-0
		(C6H6O)n	7.050 %	9003-35-4
		C21H24O4	5.800 %	25068-38-6
		C15H12Br4O2	4.870 %	79-94-7
		Cu	2.660 %	7440-50-8
		Si	2.340 %	7440-21-3
		Sn	2.170 %	7440-31-5
		GaN	1.800 %	25617-97-4
		InxGa1-xN	1.580 %	722874-66-6
		P	1.500 %	7723-14-0
		Y3Al5O12	1.170 %	12036-10-1
		Au	1.050 %	7440-57-5
		(C5O2H8)n	1.040 %	9011-14-7
		Ni	1.040 %	7440-02-0
		(C2H6OSi)n	0.880 %	63148-62-9

2 Product

		(C16H14O3)n	0.820 %	25037-45-0
		Ag	0.610 %	7440-22-4
		Y2O3	0.470 %	7440-65-5
		Al	0.390 %	7429-90-5
		C2H6O2	0.370 %	107-21-1
		NiCr	0.300 %	12604-53-4
		BaTiO3	0.160 %	12047-27-7
Electricity cables	0.8 %	Cu	60.000 %	7440-50-8
		PVC (C2H3Cl)n	25.000 %	9002-86-2
		DEHP C24H38O4	7.000 %	117-81-7
		Ca/Zn Mixed oxides	2.000 %	8011-18-1
		CaCO3	5.000 %	471-34-1
		Al(OH)3	1.000 %	21645-51-2
Synthetic rubber	0.7 %	SR	100.000%	64706-29-2
Stainless Steel	0.5 %	Fe	68.745 %	7439-89-6
		Cr	19.000 %	7440-47-3
		Ni	9.000 %	7440-02-0
		Mn	2.000 %	7439-96-5
		Si	1.000 %	7440-21-3
		C	0.080 %	7440-44-0
		N_2	0.100 %	7727-37-9
		P	0.045 %	7723-14-0
		S	0.030 %	7704-34-9
Steel, galvanized	0.5 %	Fe	98.635 %	7439-89-6
		C	0.120 %	7440-44-0
		Si	0.500 %	7440-21-3
		Mn	0.600 %	7439-96-5
		P	0.100 %	7723-14-0
		S	0.045 %	7704-34-9

Other components	2.8 %

Products covered by this EPD also include:

ABOX luminaires for central battery systems
ALULINE luminaires for central battery systems
COMPACT 200 luminaires for central battery systems
COMPACT 300 luminaires for central battery systems
INTEGRA ALULINE luminaires for central battery systems
SMARTLINE 200 luminaires for central battery systems
SMARTLINE 300 luminaires for central battery systems
VARIOLINE 170 luminaires for central battery systems
VARIOLINE 200 luminaires for central battery systems
VARIOLINE 300 luminaires for central battery systems

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The product can be used in all kinds of buildings. In case of an emergency situation the product will guide people to leave the building.

2 Product

2.3 REFERENCE SERVICE LIFE

RSL PRODUCT

Based on the PCR, the reference service life (RSL) is 5 years.

Module B6 - Energy consumption during the use stage:

Energy consumption during operation is the only module of the use phase with input data in this EPD. To calculate the energy consumption of luminares (Emergency), the formula specified in the PCR was used, which is shown follows:

Energy consumption [kWh] = {Pa × FCP × FO × (FD × tD + FN × tN) + Pp × ty} × 1/1000 × a

where:

P [W] = Nominal power, manufaturer data

Pc [W] = Controls passive power, manufaturer data

Pem [W] = Emergency module passive power, manufaturer data

Pp [W] = Passive power

Pa [W] = Active power

FCP = Product constant light illuminance factor, according to scenario

FO = Occupancy dependency factor, according to scenario

FD = Daylight dependency factor, according to scenario

tD [h] = Daylight operating hours per year, according to scenario

FN = Non-daylight dimming factor, according to scenario

tN [h] = Non-daylight operating hours per year, according to scenario

ty [h] = standard year time in hours (8,760)

a = reference service lifetime of installation in years, according to scenario

P (W)	Pc (W)	Pem (W)	Pp (W)	Pa (W)	FCP (o. E.)	FO (o. E.)	FD (o. E.)	tD (h)	FN (o. E.)	tN (h)	ty (h)	a (a)
9.0	0.0	0.5	0.5	8.5	1	1	1	4380	1	4380	8760	5

USED RSL (YR) IN THIS LCA CALCULATION:

5

RSL PARTS

There is no deviation from the RSL for any of the raw materials/components.

2.4 TECHNICAL DATA

The technical specifications for the product SBOX V2A 300 WM are listed below.

Name	Value	Unit
Width x height x depth	CM 265 x 167 x 80, WM 265 x 148 x 81, BM 286 x 148 x 80	mm
Luminous energy	960	lm s
Luminous flux	960	lm
Luminous intensity	580	cd
Luminance	580	cd/ m2
Luminous efficiency	240	lm/W
Light distribution	580	cd

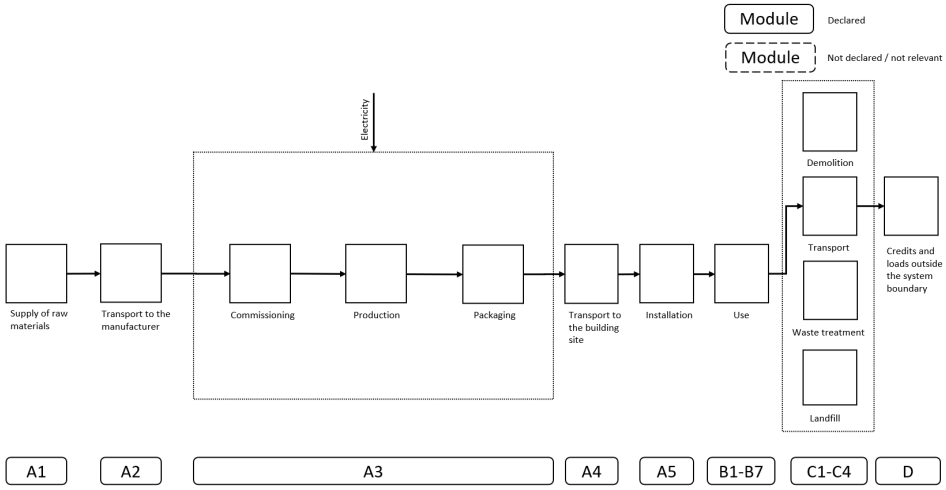
2.5 SUBSTANCES OF VERY HIGH CONCERN

The product does not contain any substances from the candidate list of substances of very high concern for authorisation (SVHC).

2.6 DESCRIPTION PRODUCTION PROCESS

Final assembly of the product components uses electrical energy. Apart from electrical energy, no other energy is used in the production process. No waste or scrap is generated during the production process.

2 Product



2.7 CONSTRUCTION DESCRIPTION

The product is installed manually.

3 Calculation rules

3.1 FUNCTIONAL UNIT

One luminaire for central battery systems

According to the PCR, the declared unit is one system involving a luminaire, a lamp or a component for a luminaire.

Reference unit: piece (p)

3.2 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	p
Weight per reference unit	2.392	kg
Conversion factor to 1 kg	0.417990	p

3.3 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to grave EPD. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

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

The modules of the EN 15804 contain the following:

Module A1 = Raw material supply	Module B5 = Refurbishment
Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport
Module B1 = Use	Module C3 = Waste Processing
Module B2 = Maintenance	Module C4 = Disposal
Module B3 = Repair	Module D = Benefits and loads beyond the product system boundaries
Module B4 = Replacement	

3.4 REPRESENTATIVENESS

This EPD is representative for EPD 4 Lighting series: ABOX, ALULINE, COMPACT 200|300, INTEGRA ALULINE, SMARTLINE 200|300, VARIOLINE 170|200|300 (CB), a product of Muster GmbH. The results of this EPD are representative for European Union.

3.5 CUT-OFF CRITERIA

Product stage (A1-A3)
All input flows (e.g. raw materials, transportation, energy use, packaging, etc.) and output flows (e.g. production waste) are considered in this LCA. For each unit process, the cut-off criteria of 1% of the renewable and non-renewable use of primary energy and 1% of the total mass of this unit process are complied with. The total neglected input flows do not exceed the limit of 5 % of energy use and mass.

3 Calculation rules

Construction process stage (A4-A5)
All input flows (e.g. transportation to the construction site, additional raw material use for construction, installation energy (use)of energy use for assembly , etc.) and output flows (e.g. construction waste, packaging waste, etc.) are considered in this LCA. For each unit process, the cut-off criteria of 1% of the renewable and non-renewable use of primary energy and 1% of the total mass of this unit process are complied with. The total neglected input flows do not exceed the limit of 5 % of energy use and mass.

Use stage (B1-B7)
All (known) input flows (e.g. raw materials, transportation, energy use, packaging, etc.) and output flows (e.g. emissions to soil, air and water, construction waste, packaging waste, end-of-life waste, etc.) related to the use stage are considered in this LCA. For each unit process, the cut-off criteria of 1% of the renewable and non-renewable use of primary energy and 1% of the total mass of this unit process are complied with. The total neglected input flows do not exceed the limit of 5 % of energy use and mass.

End of life stage (C1-C4)
All input flows (e.g. energy use for demolition or disassembly, transport to waste processing, etc.) and output flows (e.g. end-of-life waste processing of the product, etc.) are considered in this LCA. For each unit process, the cut-off criteria of 1% of the renewable and non-renewable use of primary energy and 1% of the total mass of this unit process are complied with. The total neglected input flows do not exceed the limit of 5 % of energy use and mass.

Benefits and loads beyond the system boundary (Module D)
All benefits and loads beyond the system boundary resulting from reusable products, recyclable materials and/or useful energy carriers leaving the product system are considered in this LCA.

The following processes are excluded:

- Water and electricity consumption of the building, if not relevant to production
- Manufacturing of equipment used in production, buildings or any other capital asset
- Transportation of personnel to the plant
- The transportation of personnel within the plant
- Research and development activities
- Long-term emissions

3.6 ALLOCATION

The energy consumption is calculated based on the total consumption at the production site in 2025 (for all products manufactured) and converted to the quantity used for the production of a single product. The amount of energy is stated per product manufactured.

No allocation is performed with regard to the use of secondary materials or fuels, co-products, plant-specific production processes or multi-input systems. The polluter pays principle applies to the use of waste as a substitute for primary fuels or materials.

3.7 DATA COLLECTION & REFERENCE PERIOD

All process-specific data are collected for the reference year 2025 (01.01.2025 - 31.12.2025).

3.8 ESTIMATES AND ASSUMPTIONS

For all raw materials used (raw materials, operating materials, packaging), the transportation distance is recorded. A payload factor of 50% is used for all truck transports (suppliers, disposal transports and internal transports), which corresponds to a full delivery and empty return journey.

Excluded are the manufacturing of capital equipment, construction undertakings, and infrastructure development, along with the maintenance and operation of capital equipment. Additionally, activities related to personnel, as well as energy and water consumption associated with company management and sales, are also excluded.

For module A4 (Transportation from the production gate to the construction site), the average transport distance is calculated as 315.02 km based on the distribution across the different salesregions.

At the end of its life cycle, the product can be almost completely broken down into its individual components and recycled.

The scenarios included are currently in use and are representative for one of the most likely scenario alternatives.

3 Calculation rules

3.9 DATA QUALITY

The data are based on the annual average. Generic datasets from the ecoinvent database V3.9.1 are used for the secondary data, which refers to reference year 2022. This database is regularly maintained and meets the requirements of EN 15804:2012+A2:2019+AC:2021 (background data not older than 10 years). All consistent datasets contained in the ecoinvent database are documented and can be viewed in the online ecoinvent documentation. In the operating data survey all relevant process-specific data could be collected. The quality of the data can be thus considered as good.

The primary data are collected and provided by Muster GmbH**.** and most of the datasets selected in the LCA for raw materials refer to **Rest-of-the-World** as the geographical reference, repesenting the average global production.

Aspect	Data quality assessment
Time-related coverage	The primary data represent the current situation of the date of study (2025) or as close as possible (<5 years). The secondary data are updated within last 10 years.
Geographical coverage	Most of the datasets selected for the LCA refer to Rest-of-the-World as the geographical reference, repesenting the average global production.
Technology coverage	The data are representative of the technology used in production processes.
Completeness	Specific data are benchmarked with literature data. Simple validation checks (e.g. mass or energy balances) are performed.
Representativeness	The data fulfill the defined time-related, geographical, and technological scope.
Precision	The data used are as representative as possible. The data are derived from credible sources, and references are provided.
Reproducibility	Information about the method and data (reference source) are provided.
Sources of the data	The data are derived from credible sources, and references are provided.

3.10 POWER MIX

In 2025, a photovoltaic system (PV system) was installed on-site. 36.09% of the annual electricity demand is covered by on-site generation. The share of green electricity with certificates of origin refers exclusively to the remaining purchased electricity and amounts to 50.9% of the total purchased electricity volume. The remaining purchased electricity is modeled based on the German residual electricity mix. The GWP-total of the electricity is calculated at 0.3138 kg CO2 equivalent/kWh.

4 Scenarios and additional technical information

4.1 TRANSPORT TO CONSTRUCTION SITE (A4)

For the transport from production place to assembly/user, the following scenario is assumed for module A4 of this EPD.

	Value and unit
Vehicle type used for transport	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)
Fuel type and consumption of vehicle	not available
Distance	315 km
Capacity utilisation (including empty returns)	50 % (loaded up and return empty)
Bulk density of transported products	inapplicable
Volume capacity utilisation factor	1

4.2 ASSEMBLY (A5)

The following information describes the scenarios for flows entering the system and flows leaving the system at module A5.

FLOWS ENTERING THE SYSTEM

There are no significant environment impacts as a result of materials or energy used in the construction stage (A5).

FLOWS LEAVING THE SYSTEM

The following output flows leaving the system at module A5 are assumed.

Description	Value	Unit
Output materials as result of loss during construction	0	%
Output materials as result of waste processing of materials used for installation/assembly at the building site	0.000	kg
Output materials as result of waste processing of used packaging	0.221	kg

4.3 USE STAGE (B1)

No significant environment impact in the use stage modules, because there is no (significant) emission to air, soil or water.

4.4 MAINTENANCE (B2)

For maintenance no input or output flows are modelled.

4 Scenarios and additional technical information

4.5 REPAIR (B3)

Repairs are not applicable within the functional unit and to achieve the reference service life.

4.6 OPERATIONAL ENERGY USE (B6)

Description	Service cycle (yr)	Number of cycles (n)	Amount per cycle	Total Amount	Unit
Electricity consumption during operation	5	1.00	394.2	394.20	kWh

4.7 OPERATIONAL WATER USE (B7)

Description	Service cycle (yr)	Number of cycles (n)	Amount per cycle	Total Amount	Unit

4.8 DE-CONSTRUCTION, DEMOLITION (C1)

No inputs are needed for the product at the de-construction / demolition phase

4.9 TRANSPORT END-OF-LIFE (C2)

The following distances and transport conveyance are assumed for transportation during end of life for the different types of waste processing.

Waste Scenario	Transport conveyance	Not removed (stays in work) [km]	Landfill [km]	Incineration [km]	Recycling [km]	Re-use [km]
(ei3.9.1) polyolefines (i.a. pe,pp) (i.a. pipes, foils) (NMD ID 57)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) plastics, via residue (NMD ID 43)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) copper (i.a. sheets, pipes) (NMD ID 41)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) Steel, light (NMD ID 73)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50

4 Scenarios and additional technical information

Waste Scenario	Transport conveyance	Not removed (stays in work) [km]	Landfill [km]	Incineration [km]	Recycling [km]	Re-use [km]
(ei3.9.1) aluminium (GLO), cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) elastomeres (i.a. epdm) (i.a. roofing, foils) (NMD ID 20)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) copper, mixed (electricity cables) (NMD ID 42)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) Metals, others (i.a. fasteners, fittings) (NMD ID 50)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50
(ei3.9.1) plastics, other (i.a. profiles, sheets, pipes) (NMD ID 45)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50

The transport conveyance(s) used in the scenario(s) for transport during end of life has the following characteristics.

	Value and unit
Vehicle type used for transport	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)
Fuel type and consumption of vehicle	not available
Capacity utilisation (including empty returns)	50 % (loaded up and return empty)
Bulk density of transported products	inapplicable
Volume capacity utilisation factor	1

4.10 END OF LIFE (C3, C4)

The scenario(s) assumed for end of life of the product are given in the following tables.
First the assumed percentages per type of waste processing are displayed, followed by the assumed amounts.

Waste Scenario	Region	Not removed (stays in work) [%]	Landfill [%]	Incineration [%]	Recycling [%]	Re-use [%]
(ei3.9.1) polyolefines (i.a. pe,pp) (i.a. pipes, foils) (NMD ID 57)	NL	0	10	85	5	0

4 Scenarios and additional technical information

Waste Scenario	Region	Not removed (stays in work) [%]	Landfill [%]	Incineration [%]	Recycling [%]	Re-use [%]
(ei3.9.1) plastics, via residue (NMD ID 43)	NL	0	20	80	0	0
(ei3.9.1) copper (i.a. sheets, pipes) (NMD ID 41)	NL	0	5	0	95	0
(ei3.9.1) Steel, light (NMD ID 73)	NL	0	1	0	87	12
(ei3.9.1) aluminium (GLO), cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	NL	0	3	3	94	0
(ei3.9.1) elastomeres (i.a. epdm) (i.a. roofing, foils) (NMD ID 20)	NL	0	10	85	5	0
(ei3.9.1) copper, mixed (electricity cables) (NMD ID 42)	NL	0	10	5	85	0
(ei3.9.1) Metals, others (i.a. fasteners, fittings) (NMD ID 50)	NL	0	5	5	90	0
(ei3.9.1) plastics, other (i.a. profiles, sheets, pipes) (NMD ID 45)	NL	0	0	90	10	0

Waste Scenario	Not removed (stays in work) [kg]	Landfill [kg]	Incineration [kg]	Recycling [kg]	Re-use [kg]
(ei3.9.1) polyolefines (i.a. pe,pp) (i.a. pipes, foils) (NMD ID 57)	0.000	0.009	0.072	0.004	0.000
(ei3.9.1) plastics, via residue (NMD ID 43)	0.000	0.280	1.119	0.000	0.000
(ei3.9.1) copper (i.a. sheets, pipes) (NMD ID 41)	0.000	0.000	0.000	0.002	0.000
(ei3.9.1) Steel, light (NMD ID 73)	0.000	0.000	0.000	0.011	0.002
(ei3.9.1) aluminium (GLO), cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	0.000	0.024	0.024	0.766	0.000
(ei3.9.1) elastomeres (i.a. epdm) (i.a. roofing, foils) (NMD ID 20)	0.000	0.002	0.014	0.001	0.000
(ei3.9.1) copper, mixed (electricity cables) (NMD ID 42)	0.000	0.005	0.002	0.042	0.000
(ei3.9.1) Metals, others (i.a. fasteners, fittings) (NMD ID 50)	0.000	0.001	0.001	0.012	0.000
(ei3.9.1) plastics, other (i.a. profiles, sheets, pipes) (NMD ID 45)	0.000	0.000	0.001	0.000	0.000
Total	**0.000**	**0.320**	**1.233**	**0.838**	**0.002**

4.11 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D)

The presented Benefits and loads beyond the system boundary in this EPD are based on the following calculated Net output flows in kilograms and Energy recovery displayed in MJ Lower Heating Value.

4 Scenarios and additional technical information

Waste Scenario	Net output flow [kg]	Energy recovery [MJ]
(ei3.9.1) polyolefines (i.a. pe,pp) (i.a. pipes, foils) (NMD ID 57)	0.004	1.175
(ei3.9.1) plastics, via residue (NMD ID 43)	0.000	29.616
(ei3.9.1) copper (i.a. sheets, pipes) (NMD ID 41)	0.002	0.000
(ei3.9.1) Steel, light (NMD ID 73)	0.011	0.000
(ei3.9.1) aluminium (GLO), cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	0.164	0.000
(ei3.9.1) elastomeres (i.a. epdm) (i.a. roofing, foils) (NMD ID 20)	0.001	0.370
(ei3.9.1) copper, mixed (electricity cables) (NMD ID 42)	0.042	0.040
(ei3.9.1) Metals, others (i.a. fasteners, fittings) (NMD ID 50)	0.006	0.000
(ei3.9.1) plastics, other (i.a. profiles, sheets, pipes) (NMD ID 45)	0.000	0.000
Total	**0.230**	**31.201**

5 Results

For the impact assessment long-term emissions (>100 years) are not considered. The results of the impact assessment are only relative statements that do not make any statements about end-points of the impact categories, exceedance of threshold values, safety margins or risks. The following tables show the results of the indicators of the impact assessment, of the use of resources as well as of waste and other output flows.

5.1 ENVIRONMENTAL IMPACT INDICATORS PER PIECE

CORE ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	3.51E+1	8.28E-1	-5.28E-2	3.59E+1	1.23E-1	3.62E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.43E+2	0.00E+0	0.00E+0	3.86E-2	3.44E+0	3.33E-2	-4.17E+0
GWP-f	kg CO_2 eq.	3.50E+1	8.26E-1	2.73E-1	3.61E+1	1.22E-1	1.39E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.42E+2	0.00E+0	0.00E+0	3.84E-2	3.44E+0	3.32E-2	-4.17E+0
GWP-b	kg CO_2 eq.	5.93E-2	1.94E-4	-3.29E-1	-2.69E-1	3.98E-5	3.48E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.76E-1	0.00E+0	0.00E+0	1.25E-5	1.41E-3	1.97E-5	-4.22E-5
GWP-luluc	kg CO_2 eq.	5.57E-2	1.30E-3	2.62E-3	5.96E-2	4.36E-4	1.29E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.54E-1	0.00E+0	0.00E+0	1.37E-4	5.06E-4	3.71E-6	-9.18E-3
ODP	kg CFC 11 eq.	7.57E-7	1.31E-8	9.72E-9	7.79E-7	2.17E-9	4.87E-10	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.70E-6	0.00E+0	0.00E+0	6.84E-10	8.92E-8	9.32E-11	-9.49E-8
AP	mol H+ eq.	2.12E-1	1.85E-2	1.48E-3	2.32E-1	5.85E-4	7.99E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.12E-1	0.00E+0	0.00E+0	1.84E-4	2.26E-3	3.17E-5	-5.25E-2
EP-fw	kg P eq.	2.08E-3	4.69E-6	1.89E-5	2.10E-3	1.22E-6	1.91E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.40E-2	0.00E+0	0.00E+0	3.82E-7	1.36E-5	8.51E-8	-1.72E-4
EP-m	kg N eq.	3.56E-2	4.77E-3	5.82E-4	4.10E-2	2.22E-4	3.20E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.02E-1	0.00E+0	0.00E+0	6.99E-5	5.37E-4	2.36E-5	-4.15E-3
EP-T	mol N eq.	3.94E-1	5.26E-2	4.09E-3	4.51E-1	2.37E-3	3.41E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.19E+0	0.00E+0	0.00E+0	7.46E-4	6.04E-3	1.17E-4	-5.00E-2

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

5 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
POCP	kg NMVOC eq.	1.30E-1	1.46E-2	1.29E-3	1.46E-1	8.10E-4	1.15E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.82E-1	0.00E+0	0.00E+0	2.55E-4	1.80E-3	4.74E-5	-1.64E-2
ADP-mm	kg Sb-eq.	1.35E-3	1.31E-6	1.15E-6	1.35E-3	3.83E-7	5.43E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.69E-3	0.00E+0	0.00E+0	1.20E-7	6.61E-6	9.42E-9	-4.12E-4
ADP-f	MJ	4.31E+2	1.06E+1	3.69E+0	4.45E+2	1.75E+0	1.51E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.21E+3	0.00E+0	0.00E+0	5.50E-1	3.91E+0	8.98E-2	-4.78E+1
WDP	m3 world eq.	1.05E+1	3.48E-2	1.05E-1	1.06E+1	9.56E-3	1.47E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.62E+1	0.00E+0	0.00E+0	3.01E-3	1.63E-1	3.49E-3	-2.89E-1

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	disease incidence	1.79E-6	4.07E-8	2.92E-8	1.86E-6	1.21E-8	1.39E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.58E-6	0.00E+0	0.00E+0	3.79E-9	2.65E-8	6.29E-10	-3.03E-7
IR	kBq U235 eq.	1.01E+0	2.83E-3	8.04E-3	1.02E+0	6.83E-4	1.82E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.86E+1	0.00E+0	0.00E+0	2.15E-4	1.24E-2	6.71E-5	-1.37E-2
ETP-fw	CTUe	3.70E+2	6.08E+0	2.15E+0	3.78E+2	1.29E+0	2.04E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.39E+2	0.00E+0	0.00E+0	4.06E-1	3.79E+1	4.97E-1	-1.79E+1
HTP-c	CTUh	2.48E-8	3.79E-10	2.26E-10	2.54E-8	6.47E-11	2.66E-11	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.62E-8	0.00E+0	0.00E+0	2.04E-11	7.12E-10	3.04E-12	-8.82E-9
HTP-nc	CTUh	7.23E-7	4.87E-9	5.85E-9	7.34E-7	1.41E-9	1.88E-10	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.63E-6	0.00E+0	0.00E+0	4.42E-10	1.19E-8	9.14E-11	-5.43E-7

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality index (SQP)

5 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
SQP	Pt	9.05E+1	3.23E+0	1.70E+1	1.11E+2	1.38E+0	5.82E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.27E+2	0.00E+0	0.00E+0	4.34E-1	2.18E+0	1.88E-1	-2.38E+1

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality index (SQP)

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

Disclaimer 1 – 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.

Disclaimer 2 – 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.

5 Results

5.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	3.85E+1	9.91E-2	6.34E-1	3.92E+1	2.47E-2	5.51E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.01E+2	0.00E+0	0.00E+0	7.78E-3	4.55E-1	2.43E-3	-5.74E+0
PERM	MJ	0.00E+0	0.00E+0	2.73E+0	2.73E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ	3.85E+1	9.91E-2	3.36E+0	4.20E+1	2.47E-2	5.51E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.01E+2	0.00E+0	0.00E+0	7.78E-3	4.55E-1	2.43E-3	-5.74E+0
PENRE	MJ	4.29E+2	1.06E+1	3.70E+0	4.43E+2	1.75E+0	1.52E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.21E+3	0.00E+0	0.00E+0	5.51E-1	3.91E+0	8.98E-2	-4.77E+1
PENRM	MJ	1.82E+0	0.00E+0	0.00E+0	1.82E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.46E-1
PENRT	MJ	4.31E+2	1.06E+1	3.70E+0	4.45E+2	1.75E+0	1.52E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.21E+3	0.00E+0	0.00E+0	5.51E-1	3.91E+0	8.98E-2	-4.78E+1
SM	Kg	6.08E-1	0.00E+0	0.00E+0	6.08E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-8.70E-3
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m³	3.25E-1	1.40E-3	3.35E-3	3.29E-1	4.23E-4	7.33E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.54E+0	0.00E+0	0.00E+0	1.33E-4	5.29E-3	8.85E-5	-1.21E-2

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 material | **RSF**=Use of renewable secondary fuels | **NRSF**=Use of non-renewable secondary fuels | **FW**=Net use of fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	Kg	3.40E-3	5.77E-5	1.51E-5	3.47E-3	1.12E-5	9.23E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.64E-3	0.00E+0	0.00E+0	3.51E-6	5.07E-3	4.20E-7	5.63E-3
NHWD	Kg	3.72E+0	2.44E-1	5.40E-2	4.02E+0	1.16E-1	5.85E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.28E+1	0.00E+0	0.00E+0	3.64E-2	1.35E+0	3.21E-1	-6.46E-1
RWD	Kg	6.63E-4	1.57E-6	5.82E-6	6.71E-4	4.00E-7	1.34E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.30E-2	0.00E+0	0.00E+0	1.26E-7	8.98E-6	4.14E-8	-8.50E-6

HWD=Hazardous waste disposed | **NHWD**=Non-hazardous waste disposed | **RWD**=Radioactive waste disposed

5 Results

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.04E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.52E-3	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.67E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.38E-1	0.00E+0	0.00E+0
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.88E+0
EEE	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.74E+0

CRU=Components for re-use | **MFR**=Materials for recycling | **MER**=Materials for energy recovery | **EET**=Exported Energy, Thermic | **EEE**=Exported Energy, Electric

5 Results

5.3 INFORMATION ON BIOGENIC CARBON CONTENT PER PIECE

BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per piece:

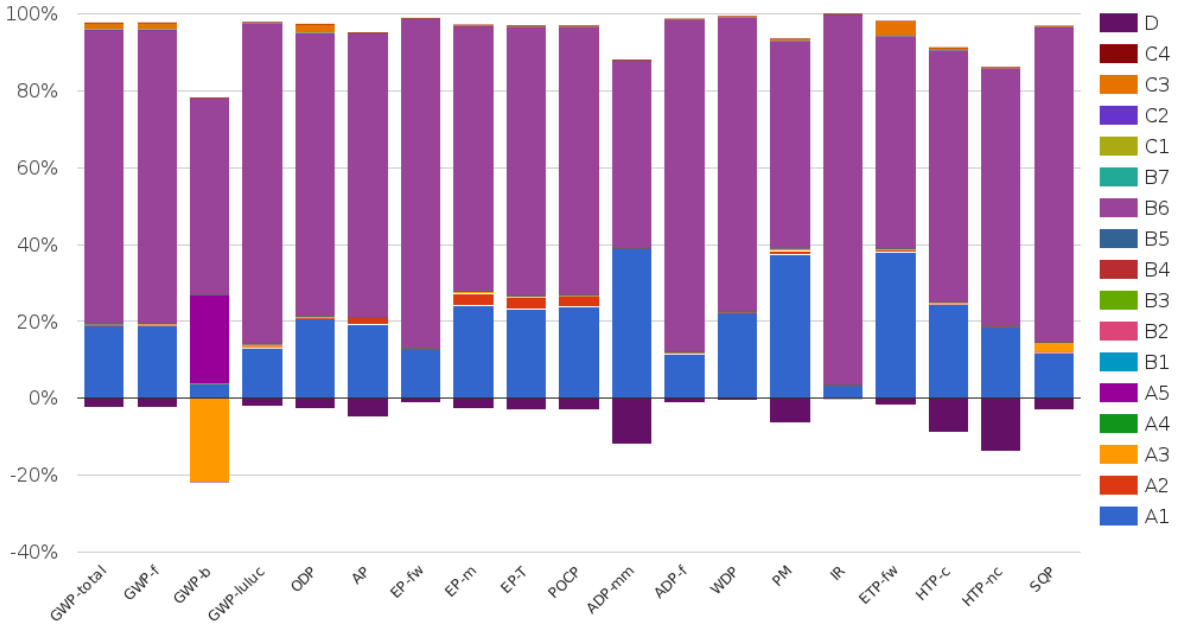
Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	0.09636	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of carbon dioxide uptake is taken into account. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results. One kilogram of biogenic Carbon content is equivalent to 44/12 kg of biogenic carbon dioxide uptake.

Uptake Biogenic Carbon dioxide	Amount	Unit
Packaging	0.3533	kg CO2 (biogenic)

6 Interpretation of results



In most impact categories, the environmental impact of the ABOX 400 is primarily determined by energy consumption during operation (module B6) and raw material extraction and processing (module A1). In the GWP-Total impact category, energy consumption during operation (module B6) contributes 80.0 % to the overall result of all modules, followed by raw material extraction and processing (module A1) with 19.7 %. Within module A1, the LED module of the electronics has the largest environmental impact with regard to GWP-Total, at 42.7 %.

7 References

ISO 14040
ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006

ISO 14044
ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14044:2006

ISO 14025
ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804+A2
EN 15804:2012+A2:2019/AC:2021, Sustainability of Buildings - Environmental Product Declarations - Framework Development Rules by Product Category

Kiwa-EE GPI R.3.0
Kiwa-Ecobility Experts, General Programme Instructions “Product Level”, SOP EE 1203_R. 3.0 (27.02.2025)

Kiwa-EE GPI R.3.0 Annex B1
Kiwa-Ecobility Experts, General Programme Instructions “Product Level” – Annex B1 Environmental Information Programme according to EN 15804 / ISO 21930, SOP EE 1203_R. 3.0 (27.02.2025)

PCR B
Institut Bauen und Umwelt e.V. - Part B: Requirements on the EPD for Luminaires, light sources and control gears - v12 (30.09.2024)

Ecoinvent
ecoinvent Version 3.9.1 (December 2022)

R<THINK characterization method
ecoinvent 3.9.1: EN 15804+A2 indicators (EF 3.1)

EN 60598-2-22:2020-12
EN 60598-2-22:2020-12, Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting (IEC 60598-2-22:2014 + COR1:2015 + COR2:2016 + Amd.1:2017); German version EN 60598-2-22:2014 + AC:2016-05 + AC:2016-09 + A1:2020

EN 1838:2025-03
EN 1838:2025-03, Lighting applications - Emergency lighting for buildings; German version EN 1838:2024

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Kiwa-Ecobility Experts is established member of the ECO PLATFORM