



WESTAL®

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

EPD HUB, HUB-4586

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Athena

Westal Aktiebolag



This EPD is intended for business-to-business communication. Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

MANUFACTURER AND SITE

Manufacturer	Westal Aktiebolag
Address	Fabriksvägen 5, 564 35 Bankeryd, Sweden
Contact details	info@westal.se
Website	www.westal.se
Place of production	Shenzhen, China
Place(s) of raw material origin	China
Place(s) of installation and use	Sweden
Period for data	Calendar year 2023

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR version 1.2, 24 Mar 2025
Sector	Electrical product
Category of EPD	Third party verified EPD
Parent EPD number	
Scope of the EPD	Cradle to gate with options, A4-A5, B6, and modules C1-C4, D
EPD author	Timmy Kantola
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Yazan Badour as an authorized verifier for EPD Hub

PRODUCT SPECIFICATION

Product name	18W
Product number / reference	7502065
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	11,8

PRODUCT CLASSIFICATION

Declared operating voltage, Volt	230
Light source color temperature, Kelvin	3000
Protection index for water and dust (IP)	54
Impact resistance index (IK)	10
Luminous flux, Lumen	1530
Electrical power, Watt	18

Luminous efficiency, Lm/W	85
Additional characteristics	

PRODUCT DESCRIPTION

Eros is a surface-mounted ceiling and wall luminaire for indoor residential areas such as kitchens, halls, and wardrobes. It comprises a white polycarbonate housing, opal diffuser, and replaceable LED light source.

ABOUT THE MANUFACTURER

Westal is a Swedish lighting manufacturer founded in 1947. The company develops, manufactures, and markets luminaires and lighting solutions for indoor, outdoor, and industrial applications. Production takes place primarily in Sweden, with the company's head office, factory, and warehouse located in Bankeryd.

Westal focuses on functional design, product quality, energy efficiency, and solutions adapted to Nordic conditions. Its manufacturing capabilities support customer-specific modifications and special production, while its lighting-planning services include calculations, product selection, placement, and visualisation. The company supplies the professional market mainly through electrical wholesalers and aims to reduce the environmental impact of its products and operations through energy-efficient technologies and sustainable product development.

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit
Declared unit mass, kg	1,056
Mass of packaging, kg	0,3
Functional unit	Provide lighting that delivers an outgoing artificial luminous flux of 1530 lumens during a reference lifetime of 100000 hours
Reference service life (years)	20
Assigned lifetime (hours)	100000
GWP-total, A1-A3 (kg CO ₂ e)	17,2
GWP-fossil, A1-A3 (kg CO ₂ e)	17,6
Secondary material, inputs (%)	7,7
Secondary material, outputs (%)	18,5
Total energy use, A1-A3 (kWh)	72,9
Net freshwater use, A1-A3 (m ³)	1,50E-01

LIFE CYCLE ASSESSMENT

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage			Use stage							End of life stage				Beyond the system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	X	X	ND	ND	ND	ND	ND	X	ND	X	X	X	X	X	X
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demo.	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling	

Not declared = ND.

CUT-OFF CRITERIA

No mandatory modules or processes specified in the reference standard or the applied Product Category Rules (PCR) have been omitted. Furthermore, the assessment does not exclude any hazardous materials or substances.

In accordance with standard EPD regulations, the cut-off criteria are strictly applied: no single neglected unit process exceeds 1% of the total mass or energy flows. Cumulatively, the total neglected input and output flows per individual module do not exceed 5% of the aggregate mass or energy usage.

The production, maintenance and operation of capital equipment and infrastructure, and construction activities are excluded from the assessment unless considered in the background database. Personnel-related activities as well as energy and water use related to company management and sales activities are also excluded from this EPD.

VALIDATION OF DATA

Primary data collection for manufacturing, transport, and packaging was conducted using time- and site-specific information, as specified in the "Manufacturer and Site" section of this document. Upstream background processes rely on generic datasets referenced in the Bibliography. For the core

manufacturing stage, a combination of manufacturer-provided specific data and secondary generic data was utilized.

The Life Cycle Assessment (LCA) was performed using the One Click LCA Luminaire EPD Generator. In compliance with regulatory requirements, the "Cut-Off, EN 15804+A2" allocation method was applied. Characterization factors were modeled in strict accordance with EN 15804:2012+A2:2019/AC:2021, EN 50693:2019 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	Physical Properties
Manufacturing energy and waste	Physical Properties

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	

This EPD is product and factory specific.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	9,3	China
Minerals	0	China
Fossil materials	62,2	China
Bio-based materials	0	
Electronic parts	28,5	China

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	1,584

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA Luminaire EPD Generator v2.2.9. The LCA and EPD have been prepared according to the reference standards, EN 50693, and ISO 14040/14044. Ecoinvent v3.10.1 and One Click LCA databases were used as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, cut-off, EN 15804+A2'.

- EPD Hub Core Product Category Rules version 1.2, March 2025
- EPD Hub General Program Instructions version 1.3, March 2025
- EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- EN 50693:2020 Product category rules for life cycle assessments of electronic and electrical products and systems
- EN 15941:2024 Sustainability of construction works - Data quality for environmental assessment of products and construction work - Selection and use of data
- EN 15942:2011 Sustainability of construction works - Environmental product declarations - Communication format business-to-business
- ISO 14025:2006 Environmental statements and programmes for products - Principles and general requirements
- ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines
- Paper and cardboard packaging waste treatment: EUROSTAT, https://ec.europa.eu/eurostat/data-browser/view/env_waspac__custom_8519259/default/table?lang=en
- Plastic packaging waste treatment: EUROSTAT, https://ec.europa.eu/eurostat/data-browser/view/env_waspac_custom_8519242/default/table?lang=en
- ecoinvent 3.10.1
- One Click LCA database

PRODUCT LIFE CYCLE

MANUFACTURING (A1-A3)

The product is made of metals, plastics, and electronic components. The environmental impacts assessed in the product stage (modules A1-A3) include the extraction and processing of raw materials, as well as the manufacturing of the luminaire, packaging, and ancillary materials. All components are transported to the manufacturing facility where the product is assembled. Transport distances are calculated based on actual supplier locations, or conservative assumptions where exact data is hard to find.

The manufacturing process consists of component fabrication, finishing, and final assembly. Housing and structural components are shaped and processed from raw materials, undergoing surface treatment or finishing processes where applicable. Electronic sub-assemblies, including LED modules, drivers, and controls, are integrated into the housing alongside the optical components. Final assembly brings these mechanical, electrical, and optical elements together, followed by rigorous quality control and electrical safety testing. Completed luminaires are then packaged using protective packaging materials (polyethylene, cardboard and/or paper) prior to distribution.

This stage also accounts for energy and fuel consumption by manufacturing machinery, the management and treatment of production-derived waste, and material losses incurred during the manufacturing process. A market-based approach is used in modelling the electricity mix utilized in the factory. Upstream grid transmission and distribution losses for electricity are included in the assessment.

Manufacturing waste treatment is modelled using default scenarios from EN 50693, Annex G, Table G.4.

Co-product allocation is neglected as the difference in revenues of co-products is very low. Hence, the waste undergoes a conservative waste treatment as per the default end-of-life values of EN 50693.

TRANSPORT AND INSTALLATION (A4-A5)

The transport scenario (A4) considered in this EPD considers weighted average distances from manufacturing site to customer locations. Transport modes and distances are based on annual sales

records. In the absence of exact data, conservative assumptions are made.

Environmental impacts from installation of the product (A5) include treatment of waste packaging materials. Packaging waste generated during installation is modelled using EUROSTAT waste treatment data. The end-of-life treatment of paper and cardboard packaging is assumed to be 83% recycling, 8% incineration, and 9% landfill. A transport distance of 50 km between the installation site and waste treatment facilities is assumed

The installation of the luminaire is primarily a manual process requiring negligible energy input; any minor electricity or fuel consumed by hand tools or localized lifting equipment contributes insignificantly to the product's total life cycle impact (below the standard 1% cut-off criteria). Ancillary installation materials (if needed at all) represent less than 1% of the total product system mass and do not involve materials with high environmental toxicity or scarcity. No losses are expected to occur during the installation of the product.

PRODUCT USE AND MAINTENANCE (B1-B7)

During the operational use stage, the luminaire operates without direct environmental emissions or structural interventions, rendering modules B1, B2, B3, and B5 negligible. The product requires no water consumption (B7), so B7 is also excluded from the system boundary. The life cycle impacts for this stage are driven primarily by operational energy consumption (B6) for the duration of the RSL (XX years).

The total operational energy consumption over the entire RSL is calculated based on the luminaire nominal power consumption (W) and the annual operating profile. Impacts due to electricity production include direct emissions to air, transformation, and transmission losses.

PRODUCT END OF LIFE (C1-C4, D)

Environmental impacts associated with the deconstruction and demolition process (module C1) are considered negligible, as the energy and natural resource consumption required for dismantling the luminaire is minimal. At end-of-life, the product is assumed to be collected separately as electronic waste and transported over an average distance of 150 km via a freight lorry, 16-32 tons, EURO 5 to a dedicated waste treatment center (module C2). This modelled scenario represents current, established market

practices and constitutes one of the most likely downstream pathways for commercial lighting equipment.

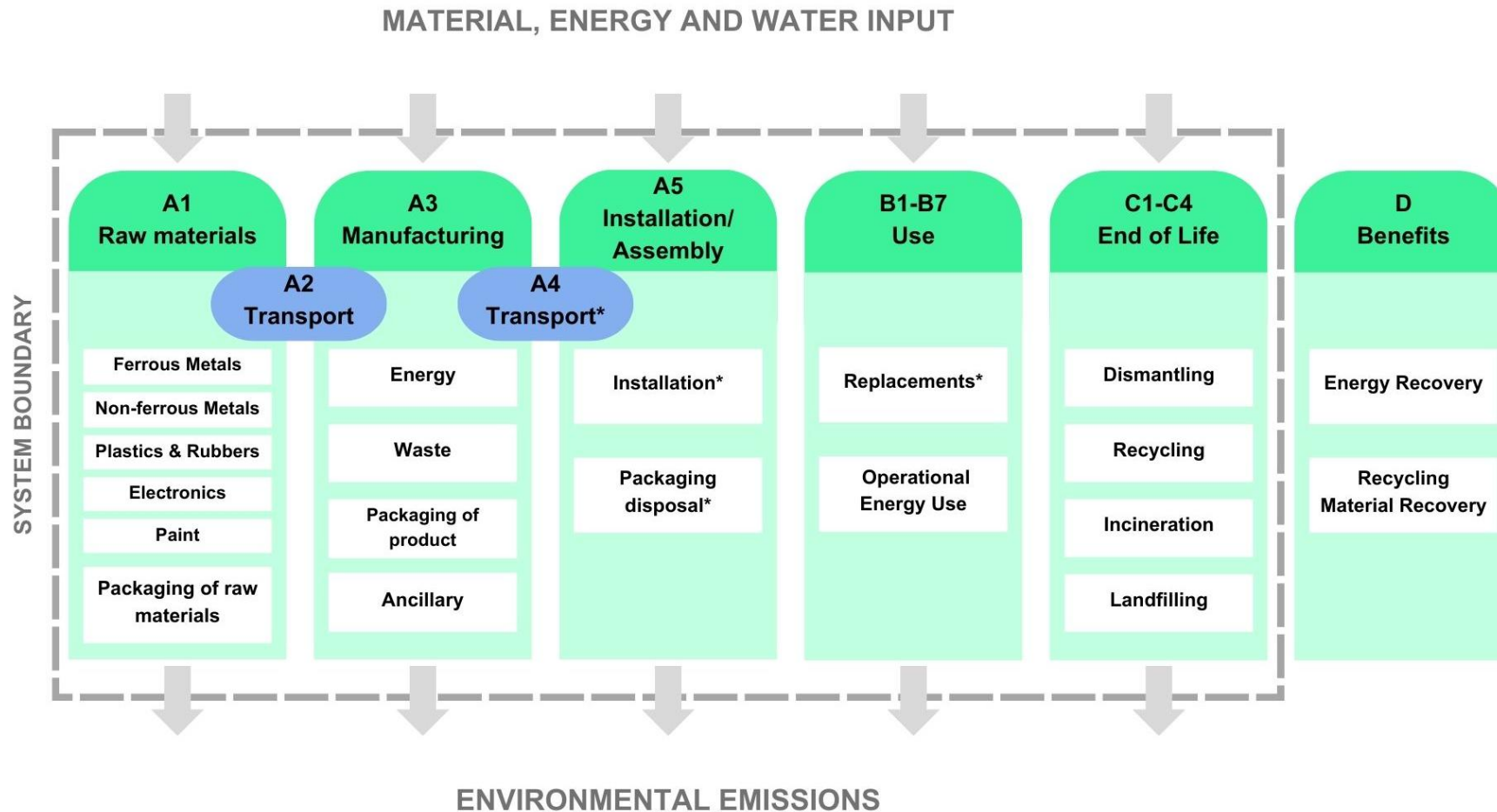
In accordance with EN 50693:2019, the waste treatment sequence encompasses de-pollution, fraction separation, and preparation (including dismantling, crushing, shredding, and sorting), followed by material recycling, alternative recovery, energy recovery, and final disposal (modules C3 and C4). To model these downstream processes, default material allocation values are derived from Table G.4 of EN 50693.

Due to the material and energy recovery potential of the luminaire components, secondary raw materials are generated through recycling, while the thermal energy recovered from incineration processes displaces conventional grid electricity and heat production. The net environmental benefits and loads resulting from these processes are declared beyond the system boundary in Module D, assuming substitution of regional energy grid mixes. The modelling of these benefits and loads is done in a way that aligns data representativeness with the declared modules in the EPD.

Furthermore, module D fully accounts for the net benefits and loads arising from the recycling and energy recovery of packaging materials originally discarded during the installation stage (module A5).

The system boundary for module D is rigorously defined to include only net outputs that have crossed the end-of-waste state, preventing any double-counting of environmental benefits. Any recycled or secondary material inputs utilized during the production stage are excluded from the calculation of net benefits and loads declared in module D.

LIFE CYCLE FLOW DIAGRAM



*If module declared as per scope of the EPD

ENVIRONMENTAL IMPACT DATA, RESULTS PER DECLARED UNIT

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	1,52E+01	4,27E-01	1,58E+00	1,72E+01	4,36E-02	4,12E-01	ND	ND	ND	ND	ND	1,31E+03	ND	0,00E+00	3,05E-02	8,13E-01	4,15E-01	-2,88E+00
GWP – fossil	kg CO ₂ e	1,52E+01	4,27E-01	1,99E+00	1,76E+01	4,36E-02	1,65E-02	ND	ND	ND	ND	ND	1,31E+03	ND	0,00E+00	3,05E-02	8,13E-01	4,15E-01	-2,83E+00
GWP – biogenic	kg CO ₂ e	0,00E+00	8,23E-05	-4,30E-01	-4,30E-01	9,71E-06	3,95E-01	ND	ND	ND	ND	ND	1,97E+00	ND	0,00E+00	6,66E-06	-9,22E-05	-3,77E-05	-4,31E-02
GWP – LULUC	kg CO ₂ e	2,05E-02	2,30E-04	1,14E-02	3,21E-02	1,97E-05	8,71E-06	ND	ND	ND	ND	ND	2,60E+00	ND	0,00E+00	1,35E-05	4,28E-05	8,75E-06	-2,07E-03
Ozone depletion pot.	kg CFC ₁₁ e	4,45E-07	6,09E-09	1,94E-08	4,71E-07	6,46E-10	1,76E-10	ND	ND	ND	ND	ND	9,07E-06	ND	0,00E+00	4,26E-10	4,46E-10	2,52E-10	-1,42E-08
Acidification potential	mol H ⁺ e	1,48E-01	8,55E-03	1,22E-02	1,68E-01	9,97E-05	6,40E-05	ND	ND	ND	ND	ND	6,78E+00	ND	0,00E+00	1,02E-04	3,12E-04	1,23E-04	-4,79E-02
EP-freshwater ²⁾	kg Pe	1,60E-02	2,22E-05	9,26E-04	1,69E-02	3,42E-06	2,47E-06	ND	ND	ND	ND	ND	5,93E-01	ND	0,00E+00	2,37E-06	1,21E-05	1,98E-06	-2,75E-03
EP-marine	kg Ne	2,12E-02	2,11E-03	2,98E-03	2,62E-02	2,31E-05	5,86E-05	ND	ND	ND	ND	ND	1,29E+00	ND	0,00E+00	3,29E-05	1,28E-04	4,09E-04	-3,97E-03
EP-terrestrial	mol Ne	2,38E-01	2,35E-02	2,71E-02	2,88E-01	2,50E-04	2,03E-04	ND	ND	ND	ND	ND	1,30E+01	ND	0,00E+00	3,58E-04	1,16E-03	5,74E-04	-4,52E-02
POCP (“smog”) ³⁾	kg NMVOCe	9,22E-02	6,58E-03	7,96E-03	1,07E-01	1,40E-04	8,13E-05	ND	ND	ND	ND	ND	3,88E+00	ND	0,00E+00	1,42E-04	3,01E-04	1,58E-04	-1,35E-02
ADP-minerals & metals ⁴⁾	kg Sbe	5,21E-03	9,13E-07	1,02E-05	5,22E-03	1,46E-07	8,90E-08	ND	ND	ND	ND	ND	7,47E-03	ND	0,00E+00	1,00E-07	4,28E-07	4,04E-08	-4,51E-04
ADP-fossil resources	MJ	2,22E+02	5,43E+00	2,55E+01	2,53E+02	6,13E-01	1,80E-01	ND	ND	ND	ND	ND	1,69E+04	ND	0,00E+00	4,28E-01	4,12E-01	1,70E-01	-3,21E+01
Water use ⁵⁾	m ³ e depr.	8,26E+00	1,99E-02	5,28E-01	8,81E+00	2,87E-03	3,98E-03	ND	ND	ND	ND	ND	3,30E+02	ND	0,00E+00	1,98E-03	5,70E-02	2,69E-02	-5,42E-01

1) GWP = Global Warming Potential. 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e. 3) POCP = Photochemical ozone formation. 4) ADP = Abiotic depletion potential. 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	9,38E-07	1,64E-08	1,04E-07	1,06E-06	3,25E-09	1,05E-09	ND	ND	ND	ND	ND	5,81E-05	ND	0,00E+00	2,42E-09	2,33E-09	1,19E-09	-1,97E-07
Ionizing radiation ⁶⁾	kBq U235e	1,29E+00	3,46E-03	2,28E-01	1,52E+00	5,01E-04	6,92E-04	ND	ND	ND	ND	ND	1,78E+02	ND	0,00E+00	3,46E-04	2,60E-03	2,47E-04	-2,66E-01
Ecotoxicity (freshwater)	CTUe	7,00E+02	6,68E-01	6,18E+00	7,07E+02	9,73E-02	1,27E+00	ND	ND	ND	ND	ND	3,48E+03	ND	0,00E+00	6,77E-02	1,64E+00	6,78E+00	-2,96E+01
Human toxicity, cancer	CTUh	1,52E-08	8,53E-11	5,01E-10	1,58E-08	7,29E-12	8,37E-12	ND	ND	ND	ND	ND	2,32E-07	ND	0,00E+00	5,18E-12	7,64E-11	4,73E-11	-4,39E-09
Human tox. non-cancer	CTUh	6,93E-07	2,05E-09	2,01E-08	7,15E-07	3,86E-10	4,53E-10	ND	ND	ND	ND	ND	1,26E-05	ND	0,00E+00	2,68E-10	3,08E-09	2,11E-09	-4,09E-07
SQP ⁷⁾	-	9,79E+01	1,11E+00	3,43E+01	1,33E+02	3,71E-01	1,21E-01	ND	ND	ND	ND	ND	3,05E+03	ND	0,00E+00	2,55E-01	1,93E-01	2,02E-01	-2,38E+01

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on the 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. 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	2,01E+01	6,14E-02	4,70E+00	2,48E+01	8,52E-03	-4,87E+00	ND	ND	ND	ND	ND	2,56E+03	ND	0,00E+00	5,87E-03	4,36E-02	4,89E-03	-3,42E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,89E+00	3,89E+00	0,00E+00	-3,89E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,01E+01	6,14E-02	8,59E+00	2,87E+01	8,52E-03	-8,76E+00	ND	ND	ND	ND	ND	2,56E+03	ND	0,00E+00	5,87E-03	4,36E-02	4,89E-03	-3,42E+00
Non-re. PER as energy	MJ	2,07E+02	5,43E+00	2,50E+01	2,38E+02	6,13E-01	1,80E-01	ND	ND	ND	ND	ND	1,69E+04	ND	0,00E+00	4,28E-01	-1,17E+01	-1,19E+01	-3,21E+01
Non-re. PER as material	MJ	2,01E+01	0,00E+00	-4,14E-01	1,97E+01	0,00E+00	-2,93E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	-9,85E+00	-9,85E+00	0,00E+00
Total use of non-re. PER	MJ	2,27E+02	5,43E+00	2,46E+01	2,57E+02	6,13E-01	1,51E-01	ND	ND	ND	ND	ND	1,69E+04	ND	0,00E+00	4,28E-01	-2,15E+01	-2,18E+01	-3,21E+01
Secondary materials	kg	8,13E-02	0,00E+00	0,00E+00	8,13E-02	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renew. secondary fuels	MJ	1,23E-03	1,73E-05	2,74E-02	2,87E-02	3,56E-06	1,46E-06	ND	ND	ND	ND	ND	1,53E-02	ND	0,00E+00	2,45E-06	1,64E-05	3,32E-06	-2,85E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	1,35E-01	5,22E-04	1,39E-02	1,50E-01	8,38E-05	-2,67E-05	ND	ND	ND	ND	ND	9,24E+00	ND	0,00E+00	5,67E-05	1,03E-03	-2,53E-04	-2,36E-02

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,55E+00	8,63E-03	1,60E-01	1,71E+00	1,08E-03	1,37E-03	ND	ND	ND	ND	ND	1,14E+02	ND	0,00E+00	7,46E-04	1,55E-02	3,40E-02	-5,05E-01
Non-hazardous waste	kg	7,10E+01	1,41E-01	4,02E+00	7,52E+01	2,02E-02	1,93E-01	ND	ND	ND	ND	ND	2,87E+03	ND	0,00E+00	1,40E-02	4,15E-01	1,31E+00	-1,40E+01
Radioactive waste	kg	3,36E-04	8,46E-07	5,57E-05	3,93E-04	1,23E-07	1,76E-07	ND	ND	ND	ND	ND	4,36E-02	ND	0,00E+00	8,48E-08	6,38E-07	6,17E-08	-6,56E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,46E-01	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	1,95E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	8,55E-02	8,55E-02	0,00E+00	1,38E-01	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	3,80E+00	0,00E+00	0,00E+00
Exported energy: Electricity	MJ	0,00E+00	0,00E+00	3,60E-02	3,60E-02	0,00E+00	5,83E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	1,60E+00	0,00E+00	0,00E+00
Exported energy: Heat	MJ	0,00E+00	0,00E+00	4,95E-02	4,95E-02	0,00E+00	7,29E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	2,20E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	1,51E+01	4,25E-01	2,03E+00	1,75E+01	4,34E-02	5,48E-02	ND	ND	ND	ND	ND	1,30E+03	ND	0,00E+00	3,03E-02	8,13E-01	4,14E-01	-2,82E+00
Ozone depletion Pot.	kg CFC ₁₁ e	4,23E-07	4,85E-09	1,81E-08	4,46E-07	5,16E-10	1,44E-10	ND	ND	ND	ND	ND	7,74E-06	ND	0,00E+00	3,41E-10	3,90E-10	2,15E-10	-1,24E-08
Acidification	kg SO ₂ e	1,23E-01	6,83E-03	9,78E-03	1,40E-01	8,05E-05	4,93E-05	ND	ND	ND	ND	ND	5,64E+00	ND	0,00E+00	7,78E-05	2,36E-04	8,84E-05	-4,17E-02
Eutrophication	kg PO ₄ ³ e	4,55E-02	7,87E-04	1,88E-03	4,82E-02	1,92E-05	4,48E-05	ND	ND	ND	ND	ND	6,59E-01	ND	0,00E+00	1,89E-05	6,06E-05	4,67E-05	-2,32E-03
POCP (“smog”)	kg C ₂ H ₄ e	1,58E-02	3,51E-04	5,98E-04	1,68E-02	7,81E-06	1,30E-05	ND	ND	ND	ND	ND	3,09E-01	ND	0,00E+00	6,97E-06	1,46E-05	8,51E-06	-2,03E-03

ADP-elements	kg Sbe	5,21E-03	8,92E-07	1,01E-05	5,22E-03	1,42E-07	8,70E-08	ND	ND	ND	ND	ND	7,43E-03	ND	0,00E+00	9,78E-08	4,09E-07	3,12E-08	-4,50E-04
ADP-fossil	MJ	2,06E+02	5,38E+00	2,19E+01	2,34E+02	6,05E-01	1,69E-01	ND	ND	ND	ND	ND	1,41E+04	ND	0,00E+00	4,22E-01	3,70E-01	1,66E-01	-2,78E+01

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	1,52E+01	4,27E-01	2,01E+00	1,76E+01	4,36E-02	1,65E-02	ND	ND	ND	ND	ND	1,31E+03	ND	0,00E+00	3,05E-02	8,13E-01	4,15E-01	-2,83E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

E-number	Product Name	Weight	GWP-total A1-A3 (kg CO2e)	GWP-fossil A1-A3 (kg CO2e)
7502064	Plafond Athena 12W LED 3000K	0,7	1.20E+01	1.23E+01
7502065	Plafond Athena 18W LED 3000K	1	1.72E+01	1.76E+01
7502070	Plafond Athena 25W LED 3000K	1,3	2.24E+01	2.29E+01
7502134	Plafond Athena Flex 18W LED	1	1.72E+01	1.76E+01
7502253	Plafond Athena HF 16W	1	1.72E+01	1.76E+01
7502254	Plafond Athena HF 22W	1,3	2.24E+01	2.29E+01
7503175	Plafond Athena reko 25W LED	1,3	2.24E+01	2.29E+01
7504638	Plafond Athena 35W LED	1,4	2.41E+01	2.46E+01
7506234	Plafond Athena smart 18W	1	1.72E+01	1.76E+01
7508117	Takarmatur Athena multi 12W	0,7	1.20E+01	1.23E+01
7508118	Takarmatur Athena multi 18W	1	1.72E+01	1.76E+01
7510860	Athena Multi Flex PIR	1	1.72E+01	1.76E+01

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation – A3 (Energy data source)

1. Energy supply, electricity transformation and distribution, distribution low voltage, Market group for electricity, low voltage, World, ecoinvent 3.10.1, 0.73 kgCO₂e/kWh

Transport scenario documentation - A4

1. Market for transport, freight, lorry 16-32 metric ton, EURO6, 168 km

Installation scenario documentation - A5 (Energy data source)

Installation scenario documentation - A5 (Waste materials data source)

1. Corrugated board box production, 0.25 kg
2. Kraft paper production, 0.05 kg

Use stages scenario documentation - B6-B7 (Energy data source)

1. Energy supply, electricity transformation and distribution, distribution low voltage, Market group for electricity, low voltage, World, 1800.0 kWh

TRANSPORT SCENARIO DOCUMENTATION - A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50 %
Bulk density of transported products / kg/m ³	452
Volume capacity utilization factor (factor: =1 or <1 or ≥1 for compressed or nested packaged products)	1

USE STAGES SCENARIO DOCUMENTATION - B6-B7 USE OF ENERGY AND WATER

Scenario information	Value
Ancillary materials specified by material / kg or units as appropriate	Not applicable
Net fresh water consumption / m ³	0
Power output of equipment / W	18
Characteristic performance, e.g., energy efficiency, emissions, variation of performance with capacity utilization, etc. / Units as appropriate	
Further assumptions for scenario development, e.g., frequency and period of use, number of occupants / Units as appropriate	

END OF LIFE SCENARIO DOCUMENTATION

Scenario information	Value
Collection process – kg collected separately	1,056
Collection process – kg collected with mixed construction waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	0,2
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	0,51
Scenario assumptions e.g. transportation	Lorry, 16-32 metric ton, EURO5; 150 km

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.



Program assistant: Xinyuan Zhang



The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

[Verified tools](#)

Tool verifier: Hai Ha Nguyen

Tool verification validity: 28 March 2025 - 27 March 2028