



WESTAL®

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

EPD HUB, HUB-3468

Published on 27.07.2025, last updated on 27.07.2025, valid until 26.07.2030

18W HF

Westal Aktiebolag



MANUFACTURER AND SITE

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

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2 and ISO 14025
PCR	EPD Hub Core PCR version 1.1, 5 Dec 2023
Sector	Electrical product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-B7, 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	Abderazak Guiz, as an authorized verifier acting for EPD Hub Limited

PRODUCT SPECIFICATION

Product name	18W HF
Product number / reference	7502813
Product description	Thin ceiling and wall-mounted fixture made of polycarbonate with opal glare protection, equipped with an LED unit. The luminaire is controlled by a built-in microwave sensor that can be adjusted as needed using DIP switches on the driver. Functions such as sensitivity, base light duration, and whether the fixture should activate in daylight can be configured. The maximum detection range is approximately 5 meters. Comes with a quick-connect terminal block and dual knockouts for surface-mounted cables and daisy-chaining. Well-suited for stairwells, hallways, and garages.
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-

PRODUCT CLASSIFICATION

Declared operating voltage, Volt	230
Light source color temperature, Kelvin	3000
Protection index for water and dust (IP)	44
Impact resistance index (IK)	10

This EPD is intended for business-to-business and/or business-to-consumer communication.

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) 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.

Luminous flux, Lumen	1609
Electrical power, Watt	18
Luminous efficiency, Lm/W	89
Additional characteristic	-

ABOUT THE MANUFACTURER

Company who sales and produce lighting fixture for the professional market

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit
Declared unit mass, kg	0,715
Mass of packaging, kg	0,3
Functional unit	Provide lighting that delivers an outgoing artificial luminous flux of 1609 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)	1,14E+01
GWP-fossil, A1-A3 (kg CO ₂ e)	1,18E+01
Secondary material, inputs (%)	5,25
Secondary material, outputs (%)	12,1
Total energy use, A1-A3 (kWh)	49
Net freshwater use, A1-A3 (m ³)	9,81E-02

LIFE CYCLE ASSESSMENT

SYSTEM BOUNDARY

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

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

Modules not declared = MND.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. There is no neglected unit process more than 1% of total mass or energy flows. The module-specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC2021 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

Allocated by mass

Manufacturing energy and waste

Allocated by mass

AVERAGES AND VARIABILITY

This EPD is product and factory-specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

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'.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	11,3	China
Minerals	1,7	China
Fossil materials	58,7	China
Bio-based materials	0	
Electronic parts	28,3	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	0

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT LIFE CYCLE

MANUFACTURING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production. The material losses occurring during the manufacturing processes are treated as per the waste handling practices in the factory, while scenario assumptions are made in the absence of exact data. The study also considers the fuels used by machines as well as losses during electricity transmission.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

The product is made of metals, plastics, and electronic components. All components are transported to the production facility, where the main manufacturing processes are associated with assembly of different parts and components. The finished product is packaged with polyethylene, cardboard, and/or paper as packaging material before being sent to customers.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation distances from manufacturing sites to customer locations are based on sales volume-based weighted averages. In the absence of exact data, conservative assumptions are made (A4). Environmental impacts from installation include waste packaging materials (A5). The impacts of energy consumption and the used ancillary materials during installation are considered negligible.

PRODUCT USE AND MAINTENANCE (B1-B7)

During the use phase, the product consumes electricity (B6). Impacts due to electricity production include direct emissions to air, transformation, and transmission losses.

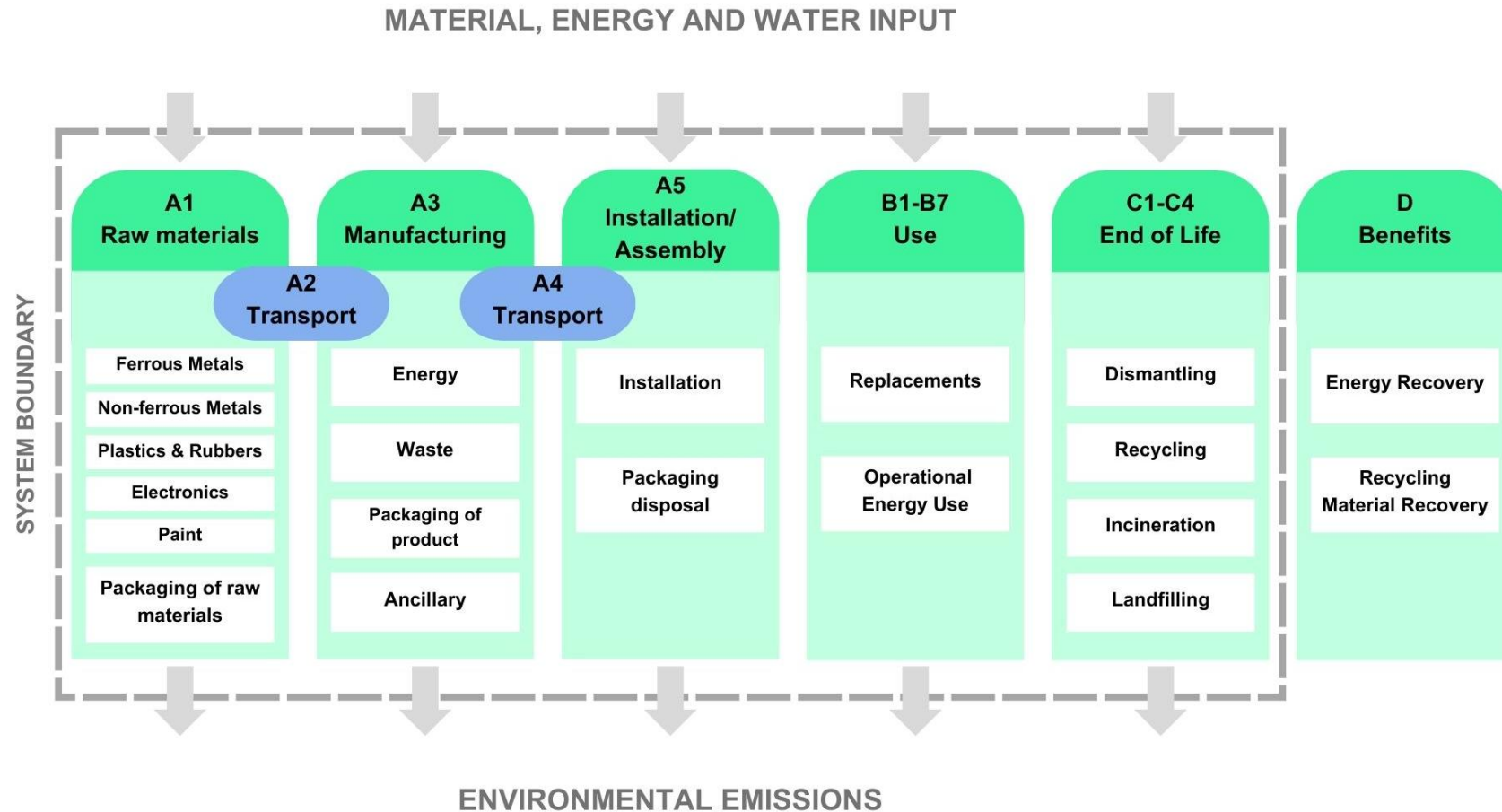
PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in demolition process is assumed to be negligible. It is assumed that the waste is collected separately and transported to the waste treatment centre. The transport distance is 150 km while the transportation method is assumed to be lorry (C2). According to EN 50693:2019, the sequence of treatment operations occurring to the product shall include de-pollution, fractions separation and preparation (dismantling, crushing, shredding, sorting), recycling, other material recovery, energy recovery and disposal. In this study, the default values from table G.4 of EN 50693 is used for treating materials in different waste treatment methods. Due to the material and energy recovery potential of parts in the lighting system,

the end-of-life product is converted into recycled raw materials, while the energy recovered from incineration displaces electricity and heat production (D). The benefits and loads of incineration and recycling are included in Module D.

Environmental impact data, results per declared unit

LIFE CYCLE FLOW DIAGRAM



Environmental impact data, results per declared unit



E-number	Product Name	Weight	GWP-total A1-A3 (kg CO2e)	GWP-fossil A1-A3 (kg CO2e)
70 269 53	Plafond Athena II dim flex 25W	1	1,60E+01	1,65E+01
70 269 66	Plafond Athena II HF flex 25W	1	1,60E+01	1,65E+01
75 031 76	Plafond Athena II HF LED 25W	1	1,60E+01	1,65E+01
75 041 18	Plafond Athena II On/Off 25W	1	1,60E+01	1,65E+01
75 046 41	Plafond Athena II PIR 25W	1	1,60E+01	1,65E+01
75 062 38	Plafond Athena II FS 25W	1	1,60E+01	1,65E+01
75 065 93	Plafond Athena II DALI 25W LED	1	1,60E+01	1,65E+01
75 065 94	Plafond Athena II HF 25W 4K	1	1,60E+01	1,65E+01
75 069 88	Plafond Athena II 25W Dali	1	1,60E+01	1,65E+01
75 069 89	Plafond Athena II HF 25W 4000K	1	1,60E+01	1,65E+01
75 070 15	Plafond Athena II 25W BA	1	1,60E+01	1,65E+01
75 076 06	Plafond Athena II 25W 4K	1	1,60E+01	1,65E+01
75 076 10	Plafond Athena II master 25W	1	1,60E+01	1,65E+01
75 097 87	Plafond Athena II PIR 25W 4K	1	1,60E+01	1,65E+01
75 097 90	Plafond Athena II DALI 25W 4K	1	1,60E+01	1,65E+01
75 097 93	Plafond Athena II MAST 25W 4K	1	1,60E+01	1,65E+01
70 269 52	Plafond Athena II dim flex 18W	0,715	1,14E+01	1,18E+01
70 269 65	Plafond Athena II HF flex 18W	0,715	1,14E+01	1,18E+01
75 028 13	Plafond Athena II HF LED 18W	0,715	1,14E+01	1,18E+01
75 041 00	Plafond Athena II On/Off 18W	0,715	1,14E+01	1,18E+01
75 041 02	Plafond Athena II Dali 18W	0,715	1,14E+01	1,18E+01
75 046 40	Plafond Athena II PIR 18W	0,715	1,14E+01	1,18E+01
75 055 73	Plafond Athena II HF 18W 4000K	0,715	1,14E+01	1,18E+01
75 055 75	Plafond Athena II 18W master	0,715	1,14E+01	1,18E+01

E-number	Product Name	Weight	GWP-total A1-A3 (kg CO2e)	GWP-fossil A1-A3 (kg CO2e)
75 062 37	Plafond Athena II FS 18W	0,715	1,14E+01	1,18E+01
75 076 05	Plafond Athena II 18W 4K	0,715	1,14E+01	1,18E+01
75 076 13	Plafond Athena II BA 18W	0,715	1,14E+01	1,18E+01
75 079 34	Plafond Athena II HF 18W 6pack	0,715	1,14E+01	1,18E+01
75 079 35	Plafond Athena II 18W 6pack	0,715	1,14E+01	1,18E+01
75 097 86	Plafond Athena II PIR 18W 4K	0,715	1,14E+01	1,18E+01
75 097 89	Plafond Athena II DALI 18W 4K	0,715	1,14E+01	1,18E+01
75 097 92	Plafond Athena II MAST 18W 4K	0,715	1,14E+01	1,18E+01
70 269 45	Plafond Athena II dim flex 12W	0,5	1,94E+01	2,01E+01
70 269 54	Plafond Athena II HF flex 12W	0,5	1,94E+01	2,01E+01
75 028 12	Plafond Athena II HF LED 12W	0,5	1,94E+01	2,01E+01
75 040 99	Plafond Athena II On/Off 12W	0,5	1,94E+01	2,01E+01
75 041 01	Plafond Athena II Dali 12W	0,5	1,94E+01	2,01E+01
75 046 39	Plafond Athena II PIR 12W	0,5	1,94E+01	2,01E+01
75 055 72	Plafond Athena II HF 12W 4000K	0,5	1,94E+01	2,01E+01
75 055 74	Plafond Athena II 12W master	0,5	1,94E+01	2,01E+01
75 062 36	Plafond Athena II FS 12W	0,5	1,94E+01	2,01E+01
75 076 04	Plafond Athena II 12W 4K	0,5	1,94E+01	2,01E+01
75 097 85	Plafond Athena II PIR 12W 4K	0,5	1,94E+01	2,01E+01
75 097 88	Plafond Athena II DALI 12W 4K	0,5	1,94E+01	2,01E+01
75 097 91	Plafond Athena II MAST 12W 4K	0,5	1,94E+01	2,01E+01
75 076 07	Plafond Athena II On/Off 8W 3K	0,5	1,94E+01	2,01E+01
75 076 08	Plafond Athena II On/Off 8W 4K	0,5	1,94E+01	2,01E+01
75 076 09	Plafond Athena II PIR 8W 3000K	0,5	1,94E+01	2,01E+01

ENVIRONMENTAL IMPACT DATA, RESULTS PER DECLARED UNIT

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

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	9,51E+00	2,87E-01	1,58E+00	1,14E+01	3,26E-02	8,48E-01	MNR	MNR	MNR	0,00E+00	MNR	1,31E+03	MNR	0,00E+00	2,05E-02	6,09E-01	3,11E-01	-2,12E+00
GWP – fossil	kg CO ₂ e	9,50E+00	2,87E-01	1,99E+00	1,18E+01	3,26E-02	1,65E-02	MNR	MNR	MNR	0,00E+00	MNR	1,31E+03	MNR	0,00E+00	2,05E-02	6,09E-01	3,11E-01	-2,23E+00
GWP – biogenic	kg CO ₂ e	0,00E+00	5,53E-05	-4,30E-01	-4,30E-01	7,27E-06	8,31E-01	MNR	MNR	MNR	0,00E+00	MNR	1,97E+00	MNR	0,00E+00	4,48E-06	3,91E-04	-2,85E-05	1,17E-01
GWP – LULUC	kg CO ₂ e	1,21E-02	1,55E-04	1,14E-02	2,37E-02	1,48E-05	8,71E-06	MNR	MNR	MNR	0,00E+00	MNR	2,60E+00	MNR	0,00E+00	9,08E-06	3,04E-05	6,47E-06	-1,46E-03
Ozone depletion pot.	kg CFC ₁₁ e	2,93E-07	4,09E-09	1,94E-08	3,16E-07	4,84E-10	1,76E-10	MNR	MNR	MNR	0,00E+00	MNR	9,07E-06	MNR	0,00E+00	2,87E-10	3,16E-10	1,86E-10	-1,06E-08
Acidification potential	mol H ⁺ e	9,33E-02	5,75E-03	1,22E-02	1,11E-01	7,47E-05	6,40E-05	MNR	MNR	MNR	0,00E+00	MNR	6,78E+00	MNR	0,00E+00	6,84E-05	2,15E-04	9,21E-05	-2,27E-02
EP-freshwater ²⁾	kg Pe	9,00E-03	1,49E-05	9,26E-04	9,94E-03	2,56E-06	2,47E-06	MNR	MNR	MNR	0,00E+00	MNR	5,93E-01	MNR	0,00E+00	1,59E-06	8,21E-06	1,40E-06	-1,34E-03
EP-marine	kg Ne	1,28E-02	1,42E-03	2,98E-03	1,72E-02	1,73E-05	5,86E-05	MNR	MNR	MNR	0,00E+00	MNR	1,29E+00	MNR	0,00E+00	2,21E-05	9,22E-05	3,07E-04	-2,71E-03
EP-terrestrial	mol Ne	1,44E-01	1,58E-02	2,71E-02	1,87E-01	1,87E-04	2,03E-04	MNR	MNR	MNR	0,00E+00	MNR	1,30E+01	MNR	0,00E+00	2,41E-04	8,21E-04	4,29E-04	-2,85E-02
POCP (“smog”) ³⁾	kg NMVOCe	5,60E-02	4,42E-03	7,96E-03	6,84E-02	1,05E-04	8,13E-05	MNR	MNR	MNR	0,00E+00	MNR	3,88E+00	MNR	0,00E+00	9,52E-05	2,11E-04	1,18E-04	-8,54E-03
ADP-minerals & metals ⁴⁾	kg Sbe	3,04E-03	6,14E-07	1,02E-05	3,05E-03	1,09E-07	8,90E-08	MNR	MNR	MNR	0,00E+00	MNR	7,47E-03	MNR	0,00E+00	6,73E-08	2,11E-07	3,01E-08	-8,41E-05
ADP-fossil resources	MJ	1,41E+02	3,65E+00	2,55E+01	1,70E+02	4,59E-01	1,80E-01	MNR	MNR	MNR	0,00E+00	MNR	1,69E+04	MNR	0,00E+00	2,88E-01	2,90E-01	1,25E-01	-2,50E+01
Water use ⁵⁾	m ³ e depr.	6,23E+00	1,34E-02	5,28E-01	6,77E+00	2,15E-03	3,98E-03	MNR	MNR	MNR	0,00E+00	MNR	3,30E+02	MNR	0,00E+00	1,33E-03	4,25E-02	2,02E-02	-3,54E-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

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	5,69E-07	1,11E-08	1,04E-07	6,84E-07	2,43E-09	1,05E-09	MNR	MNR	MNR	0,00E+00	MNR	5,81E-05	MNR	0,00E+00	1,63E-09	1,47E-09	8,64E-10	-1,32E-07
Ionizing radiation ⁶⁾	kBq U235e	7,80E-01	2,33E-03	2,28E-01	1,01E+00	3,75E-04	6,92E-04	MNR	MNR	MNR	0,00E+00	MNR	1,78E+02	MNR	0,00E+00	2,33E-04	1,91E-03	1,87E-04	-2,07E-01
Ecotoxicity (freshwater)	CTUe	4,88E+02	4,50E-01	6,18E+00	4,94E+02	7,29E-02	1,27E+00	MNR	MNR	MNR	0,00E+00	MNR	3,48E+03	MNR	0,00E+00	4,55E-02	1,22E+00	6,17E+00	-8,89E+00
Human toxicity, cancer	CTUh	1,05E-08	5,74E-11	5,01E-10	1,11E-08	5,46E-12	8,37E-12	MNR	MNR	MNR	0,00E+00	MNR	2,32E-07	MNR	0,00E+00	3,49E-12	5,59E-11	3,34E-11	-1,21E-09
Human tox. non-cancer	CTUh	4,93E-07	1,38E-09	2,01E-08	5,15E-07	2,89E-10	4,53E-10	MNR	MNR	MNR	0,00E+00	MNR	1,26E-05	MNR	0,00E+00	1,80E-10	2,22E-09	1,53E-09	-8,35E-08
SQP ⁷⁾	-	5,84E+01	7,48E-01	3,43E+01	9,34E+01	2,78E-01	1,21E-01	MNR	MNR	MNR	0,00E+00	MNR	3,05E+03	MNR	0,00E+00	1,72E-01	1,03E-01	1,45E-01	-1,44E+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	1,22E+01	4,13E-02	4,70E+00	1,70E+01	6,37E-03	-4,87E+00	MNR	MNR	MNR	0,00E+00	MNR	2,56E+03	MNR	0,00E+00	3,94E-03	2,98E-02	3,68E-03	-2,17E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,89E+00	3,89E+00	0,00E+00	-3,89E+00	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,22E+01	4,13E-02	8,59E+00	2,09E+01	6,37E-03	-8,76E+00	MNR	MNR	MNR	0,00E+00	MNR	2,56E+03	MNR	0,00E+00	3,94E-03	2,98E-02	3,68E-03	-2,17E+00
Non-re. PER as energy	MJ	1,31E+02	3,65E+00	2,50E+01	1,60E+02	4,59E-01	1,80E-01	MNR	MNR	MNR	0,00E+00	MNR	1,69E+04	MNR	0,00E+00	2,88E-01	-8,80E+00	-8,96E+00	-2,50E+01
Non-re. PER as material	MJ	1,52E+01	0,00E+00	-4,14E-01	1,48E+01	0,00E+00	-2,93E-02	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	-7,39E+00	-7,39E+00	0,00E+00
Total use of non-re. PER	MJ	1,46E+02	3,65E+00	2,46E+01	1,74E+02	4,59E-01	1,51E-01	MNR	MNR	MNR	0,00E+00	MNR	1,69E+04	MNR	0,00E+00	2,88E-01	-1,62E+01	-1,64E+01	-2,50E+01
Secondary materials	kg	3,75E-02	0,00E+00	0,00E+00	3,75E-02	0,00E+00	0,00E+00	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renew. secondary fuels	MJ	7,30E-04	1,17E-05	2,74E-02	2,82E-02	2,67E-06	1,46E-06	MNR	MNR	MNR	0,00E+00	MNR	1,53E-02	MNR	0,00E+00	1,65E-06	1,13E-05	2,44E-06	-1,68E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m³	8,38E-02	3,51E-04	1,39E-02	9,81E-02	6,27E-05	-2,67E-05	MNR	MNR	MNR	0,00E+00	MNR	9,24E+00	MNR	0,00E+00	3,81E-05	7,65E-04	-2,18E-04	-1,22E-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	9,00E-01	5,80E-03	1,60E-01	1,07E+00	8,05E-04	1,37E-03	MNR	MNR	MNR	0,00E+00	MNR	1,14E+02	MNR	0,00E+00	5,02E-04	1,15E-02	2,01E-02	-3,45E-01
Non-hazardous waste	kg	4,28E+01	9,48E-02	4,02E+00	4,69E+01	1,51E-02	1,93E-01	MNR	MNR	MNR	0,00E+00	MNR	2,87E+03	MNR	0,00E+00	9,40E-03	3,08E-01	1,00E+00	-5,90E+00
Radioactive waste	kg	2,10E-04	5,69E-07	5,57E-05	2,66E-04	9,19E-08	1,76E-07	MNR	MNR	MNR	0,00E+00	MNR	4,36E-02	MNR	0,00E+00	5,70E-08	4,68E-07	4,67E-08	-5,08E-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	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	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	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	8,67E-02	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	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	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	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	2,85E+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	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	1,20E+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	MNR	MNR	MNR	0,00E+00	MNR	0,00E+00	MNR	0,00E+00	0,00E+00	1,65E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

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	9,44E+00	2,86E-01	2,03E+00	1,18E+01	3,25E-02	5,48E-02	MNR	MNR	MNR	0,00E+00	MNR	1,30E+03	MNR	0,00E+00	2,04E-02	6,08E-01	3,11E-01	-2,22E+00
Ozone depletion Pot.	kg CFC ₁₁ e	2,75E-07	3,26E-09	1,81E-08	2,96E-07	3,86E-10	1,44E-10	MNR	MNR	MNR	0,00E+00	MNR	7,74E-06	MNR	0,00E+00	2,29E-10	2,78E-10	1,59E-10	-9,31E-09
Acidification	kg SO ₂ e	7,81E-02	4,59E-03	9,78E-03	9,24E-02	6,02E-05	4,93E-05	MNR	MNR	MNR	0,00E+00	MNR	5,64E+00	MNR	0,00E+00	5,24E-05	1,62E-04	6,60E-05	-1,95E-02
Eutrophication	kg PO ₄ ³ e	3,06E-02	5,29E-04	1,88E-03	3,30E-02	1,44E-05	4,48E-05	MNR	MNR	MNR	0,00E+00	MNR	6,59E-01	MNR	0,00E+00	1,27E-05	4,34E-05	3,51E-05	-1,43E-03
POCP ("smog")	kg C ₂ H ₄ e	9,38E-03	2,36E-04	5,98E-04	1,02E-02	5,84E-06	1,30E-05	MNR	MNR	MNR	0,00E+00	MNR	3,09E-01	MNR	0,00E+00	4,69E-06	1,00E-05	6,32E-06	-1,07E-03
ADP-elements	kg Sbe	3,04E-03	6,00E-07	1,01E-05	3,05E-03	1,07E-07	8,70E-08	MNR	MNR	MNR	0,00E+00	MNR	7,43E-03	MNR	0,00E+00	6,57E-08	1,97E-07	2,33E-08	-8,39E-05
ADP-fossil	MJ	1,33E+02	3,61E+00	2,19E+01	1,59E+02	4,53E-01	1,69E-01	MNR	MNR	MNR	0,00E+00	MNR	1,41E+04	MNR	0,00E+00	2,84E-01	2,60E-01	1,22E-01	-2,17E+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 - B4 (Installation data source)

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	0,00E+00
Volume capacity utilization factor (factor: =1 or <1 or ≥1 for compressed or nested packaged products)	1

INSTALLATION SCENARIO DOCUMENTATION - A5

Scenario parameter	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m ³	0

Other resource use / kg	0
Direct emissions to ambient air, soil and water / kg	0

USE STAGES SCENARIO DOCUMENTATION - B4 REPLACEMENT

Scenario information	Value
Replacement cycle / Number per RSL or year	

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 / kW	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	0,715
Collection process – kg collected with mixed waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	8,67E-02
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	3,62E-01
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 and has been generated using an end-to-end verified tool. 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, by the Environmental Product Declaration and by its project report from the requirements outlined in the corresponding product category regulations based on EN 15804+A2.

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. EPD Hub confirms that it possesses sufficient knowledge and experience in construction products and the relevant standards to carry the verification.

EPD Hub has performed a detailed examination of the end-to-end verified tool and underlying data to ensure that there are no deviations in the studied Environmental Product Declaration (EPD), its Life Cycle Assessment (LCA), and project report. The tool is implemented according to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules version 1.1 and General Program Instructions version 1.2.

Tool verifier: Hai Ha Nguyen

Tool verification validity: 11 July 2024 - 11 July 2027

Program Assistant: Xinyuan Zhang



Abderazak Guiz, as an authorized verifier acting for EPD Hub Limited

27.07.2025

