



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Universal luminaire Monix Slim  
Legrand Finland Oy



## EPD HUB, HUB-3168

Published on 11.04.2025, last updated on 11.04.2025, valid until 10.04.2030

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.

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	Legrand Finland Oy
Address	Linnoitustie 11, 02600 Espoo, Finland
Contact details	legrand.finland@legrand.com
Website	www.legrand.fi

### EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Electrical product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4, A5, B6, and modules C1-C4, D
EPD author	Lili Karjalainen, Legrand Finland Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Sarah Curpen, as an authorized verifier acting for EPD Hub Limited.

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.

### PRODUCT

Product name	Universal luminaire Monix Slim
Additional labels	-
Product reference	AMSL12045 IP44 LED 38W/840
Place of production	Paide, Estonia
Period for data	1-12/2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	- 46 - + 42

### ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of AMSL12045
Declared unit mass	3,166 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	2,00E+01
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	2,00E+01
Secondary material, inputs (%)	23,3
Secondary material, outputs (%)	47,7
Total energy use, A1-A3 (kWh)	82,9
Net freshwater use, A1-A3 (m <sup>3</sup> )	0,21

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

Legrand is a global leader in electronic and digital building infrastructures. Our goal is to improve people's quality of life by transforming the spaces where we live, work and meet.

## PRODUCT DESCRIPTION

Monix Slim is an IP44 LED luminaire for wet premises. Monix Slim is available in four lengths; 600, 900, 1200, and 1500 mm. Thin multi-purpose luminaire has wide range of applications; from industry to warehouses, parking garages and general areas both in residential and non-residential buildings.

Further information can be found at [www.legrand.fi](http://www.legrand.fi).

## PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	78,5	Mainly EU
Minerals	0	World
Fossil materials	21,5	Mainly EU
Bio-based materials	0	Not applicable

## 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	0,26

## FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of AMSL12045
Mass per declared unit	3,166 kg
Functional unit	4470 lumens over 100,000 h (L70B50)
Reference service life	20

## 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

## 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	MND	MND	MND	MND	MND	X	MND	X	X	X	X	X		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

## MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. The study also takes into account material losses occurred during the manufacture of self-designed metal and plastic parts. The product is made of metals, plastics and electronic components. The materials are transported to Legrand Nordic’s production facility in Paide, Estonia, where the main manufacturing processes primarily are associated with assembly. The factory's electricity, heat and water consumption are excluded from the study, due to the difficulty of allocating them to a particular reference flow in assembly-type production. Ancillary materials needed within the manufacturing and assembly process are considered neglected. The product is packed in a cardboard box and shipped to the installation site on a wooden pallet wrapped in plastic film.

## TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Transportation impacts occurred from final products delivery to construction site or distributor (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The transportation distance from production facility to the distributor or installation site is based on intracontinental transport: 3,500 km by lorry (worst case scenario). The environmental impacts of the installation include packaging waste (A5). The impacts of energy consumption (only hand tools are required) and auxiliary materials during installation are considered negligible.

## PRODUCT USE AND MAINTENANCE (B1-B7)

The product consumes electricity during the use phase and the scenario for this study is based on the Finnish electricity grid distribution (B6). The impacts of electricity production include direct emissions to air, transformation and transmission losses. The product is used in several indoor lighting applications. According to the indoor

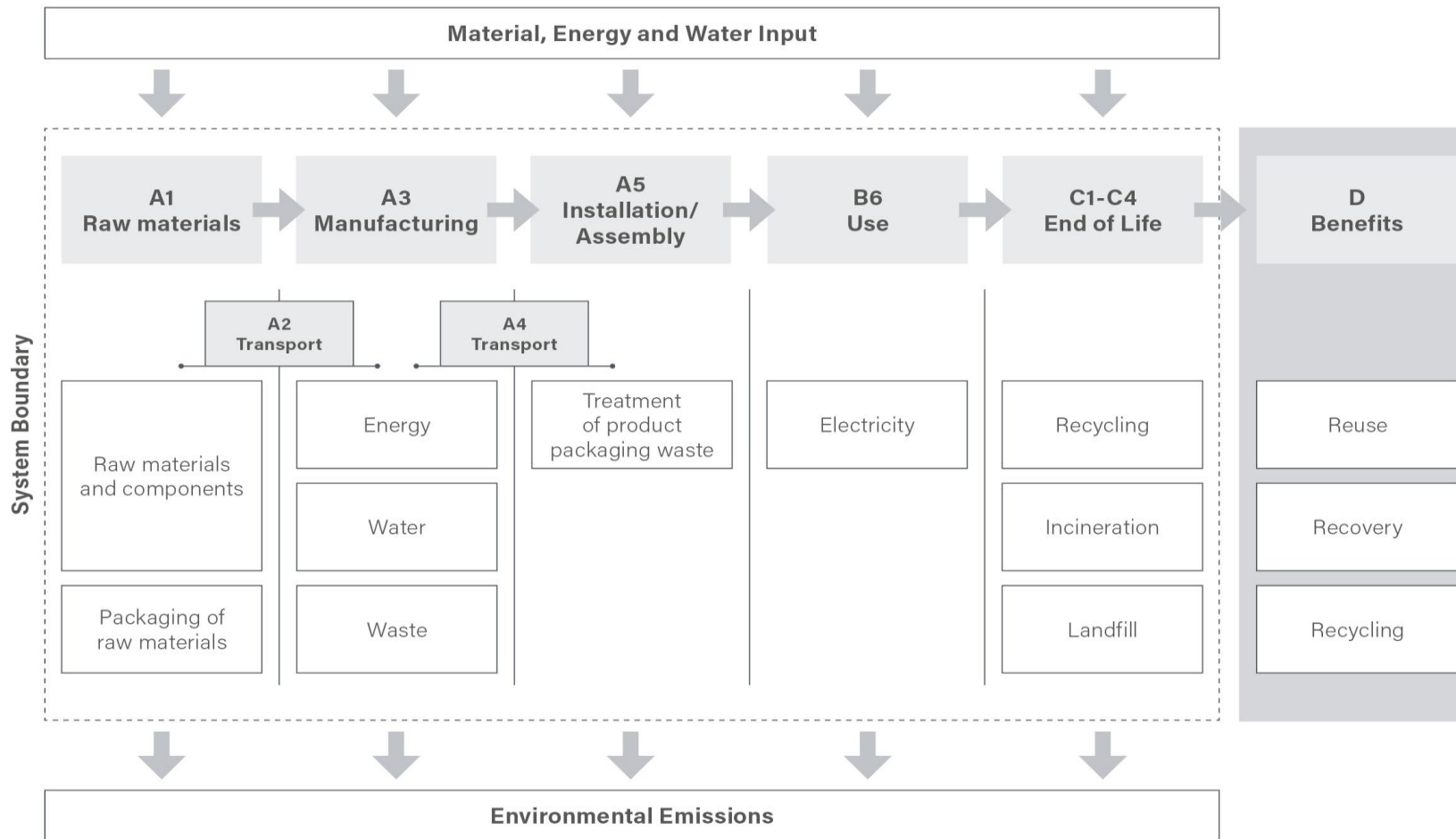
standard EN 15193-1:2017, the average annual operating hours are assumed to be 3275 hours. The reference service life is assumed to be 20 years.

Air, soil, and water impacts during the use phase have not been studied.

### 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. Transportation distance to treatment is assumed as 100 km and 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. In modules C3 - C4 only incineration without energy recovery is taken into account (worst case scenario). Due to the material potential of parts in the lighting system, the end-of-life product is converted into recycled raw materials. The benefits and loads of recycling are included in Module D.

# MANUFACTURING PROCESS



# LIFE-CYCLE ASSESSMENT

## 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. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. 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.

## ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. 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 material	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	No allocation

## AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3 (%)	- 46 - + 42

This is an average EPD including four models of the product family Monix Slim from the manufacturer Legrand Finland Oy. Monix Slim product family consist of four different lengths, which are 600 mm, 900 mm, 1200 mm and 1500 mm. The application area for the models is the same, as well as the reference service life time. Choice of the representative product is based on the most sold article, assumed to be an average. The worst case is represented by the article with the largest mass and luminaire integrated sensor and the best case is represented by an article with lowest mass. The difference between average case and worst case is +42 % in GWP fossil for A1-A3. The difference between average case and best case is -46 % in GWP fossil for A1-A3.

## LCA SOFTWARE AND BIBLIOGRAPHY

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

# ENVIRONMENTAL IMPACT DATA

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,86E+01	1,19E+00	1,88E-01	2,00E+01	1,19E+00	1,14E+00	MND	MND	MND	MND	MND	6,27E+02	MND	0,00E+00	2,77E-02	4,02E-02	1,14E+00	-1,16E+00
GWP – fossil	kg CO <sub>2</sub> e	1,84E+01	1,19E+00	4,34E-01	2,00E+01	1,19E+00	2,78E-02	MND	MND	MND	MND	MND	6,26E+02	MND	0,00E+00	2,77E-02	4,02E-02	1,14E+00	-1,16E+00
GWP – biogenic	kg CO <sub>2</sub> e	-1,27E-01	2,70E-04	-2,55E-01	-3,81E-01	2,70E-04	1,12E+00	MND	MND	MND	MND	MND	3,02E-01	MND	0,00E+00	6,28E-06	-5,79E-06	3,64E-04	8,51E-04
GWP – LULUC	kg CO <sub>2</sub> e	3,05E-01	5,34E-04	8,50E-03	3,14E-01	5,34E-04	2,29E-05	MND	MND	MND	MND	MND	7,62E-01	MND	0,00E+00	1,24E-05	5,38E-05	1,70E-05	-4,54E-04
Ozone depletion pot.	kg CFC-11e	2,92E-07	1,76E-08	1,22E-08	3,22E-07	1,76E-08	2,84E-10	MND	MND	MND	MND	MND	3,18E-05	MND	0,00E+00	4,09E-10	4,98E-10	5,08E-10	-5,69E-09
Acidification potential	mol H <sup>+</sup> e	4,95E-01	4,07E-03	1,93E-03	5,01E-01	4,07E-03	1,01E-04	MND	MND	MND	MND	MND	1,69E+00	MND	0,00E+00	9,45E-05	4,38E-04	2,69E-04	-2,80E-02
EP-freshwater <sup>2)</sup>	kg Pe	1,01E-02	9,29E-05	1,27E-04	1,03E-02	9,29E-05	5,09E-06	MND	MND	MND	MND	MND	6,03E-02	MND	0,00E+00	2,16E-06	2,46E-05	6,16E-06	-1,72E-03
EP-marine	kg Ne	3,05E-02	1,34E-03	5,89E-04	3,24E-02	1,34E-03	1,26E-04	MND	MND	MND	MND	MND	4,73E-01	MND	0,00E+00	3,10E-05	9,72E-05	5,53E-04	-1,52E-03
EP-terrestrial	mol Ne	1,79E+00	1,45E-02	5,37E-03	1,81E+00	1,45E-02	3,80E-04	MND	MND	MND	MND	MND	5,42E+00	MND	0,00E+00	3,38E-04	1,08E-03	1,27E-03	-2,33E-02
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	7,42E-02	6,00E-03	2,04E-03	8,23E-02	6,00E-03	1,31E-04	MND	MND	MND	MND	MND	1,49E+00	MND	0,00E+00	1,39E-04	3,19E-04	3,41E-04	-7,10E-03
ADP-minerals & metals <sup>4)</sup>	kg Sbe	1,75E-03	3,33E-06	2,02E-06	1,76E-03	3,33E-06	8,98E-08	MND	MND	MND	MND	MND	1,87E-03	MND	0,00E+00	7,73E-08	2,47E-06	8,92E-08	-4,09E-04
ADP-fossil resources	MJ	2,66E+02	1,73E+01	4,72E+00	2,88E+02	1,73E+01	2,49E-01	MND	MND	MND	MND	MND	1,75E+04	MND	0,00E+00	4,02E-01	5,32E-01	3,31E-01	-1,18E+01
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	8,34E+00	8,55E-02	1,78E-01	8,61E+00	8,55E-02	6,77E-03	MND	MND	MND	MND	MND	1,44E+02	MND	0,00E+00	1,99E-03	9,71E-03	6,26E-02	-2,49E-03

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, PEF

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	4,51E-06	1,19E-07	3,88E-08	4,66E-06	1,19E-07	1,64E-09	MND	MND	MND	MND	MND	1,20E-05	MND	0,00E+00	2,77E-09	5,87E-09	2,46E-09	-1,06E-07
Ionizing radiation <sup>6)</sup>	kBq 11235e	1,74E+00	1,51E-02	2,06E-02	1,78E+00	1,51E-02	9,70E-04	MND	MND	MND	MND	MND	6,25E+02	MND	0,00E+00	3,50E-04	4,61E-03	4,73E-04	-2,03E-02
Ecotoxicity (freshwater)	CTUe	4,49E+02	2,45E+00	2,71E+00	4,54E+02	2,45E+00	3,39E-01	MND	MND	MND	MND	MND	8,65E+02	MND	0,00E+00	5,69E-02	2,90E-01	2,55E+00	-1,55E+01
Human toxicity, cancer	CTUh	2,53E-08	1,97E-10	9,19E-10	2,65E-08	1,97E-10	1,23E-11	MND	MND	MND	MND	MND	1,20E-07	MND	0,00E+00	4,57E-12	3,35E-11	3,62E-10	-3,22E-09
Human tox. non-cancer	CTUh	7,64E-07	1,12E-08	4,18E-09	7,80E-07	1,12E-08	6,55E-10	MND	MND	MND	MND	MND	3,85E-06	MND	0,00E+00	2,60E-10	2,25E-09	4,20E-09	-2,92E-07
SQP <sup>7)</sup>	-	8,24E+01	1,74E+01	8,25E+01	1,82E+02	1,74E+01	2,17E-01	MND	MND	MND	MND	MND	8,93E+03	MND	0,00E+00	4,05E-01	9,18E-01	3,06E-01	-1,30E+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 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 <sup>8)</sup>	MJ	2,46E+01	2,37E-01	4,15E+00	2,90E+01	2,37E-01	-8,47E+00	MND	MND	MND	MND	MND	5,12E+03	MND	0,00E+00	5,51E-03	9,57E-02	1,00E-02	-1,82E+00
Renew. PER as material	MJ	2,01E+00	0,00E+00	3,74E+00	5,74E+00	0,00E+00	-5,74E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	-3,94E-03	0,00E+00
Total use of renew. PER	MJ	2,66E+01	2,37E-01	7,88E+00	3,47E+01	2,37E-01	-1,42E+01	MND	MND	MND	MND	MND	5,12E+03	MND	0,00E+00	5,51E-03	9,57E-02	6,08E-03	-1,82E+00
Non-re. PER as energy	MJ	2,51E+02	1,73E+01	1,53E+00	2,69E+02	1,73E+01	1,01E-02	MND	MND	MND	MND	MND	1,75E+04	MND	0,00E+00	4,02E-01	1,85E-01	-2,13E+01	-1,18E+01
Non-re. PER as material	MJ	1,52E+01	0,00E+00	-1,69E+00	1,35E+01	0,00E+00	-6,05E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	-2,85E-01	-1,26E+01	7,91E-02
Total use of non-re. PER	MJ	2,66E+02	1,73E+01	-1,57E-01	2,83E+02	1,73E+01	-5,95E-01	MND	MND	MND	MND	MND	1,75E+04	MND	0,00E+00	4,02E-01	-9,94E-02	-3,40E+01	-1,18E+01
Secondary materials	kg	7,38E-01	7,37E-03	3,88E-02	7,84E-01	7,37E-03	2,51E-04	MND	MND	MND	MND	MND	2,00E+00	MND	0,00E+00	1,71E-04	6,01E-04	1,04E-03	7,09E-01
Renew. secondary fuels	MJ	5,13E-02	9,36E-05	1,41E-01	1,92E-01	9,36E-05	1,93E-06	MND	MND	MND	MND	MND	6,72E-03	MND	0,00E+00	2,17E-06	2,93E-05	7,25E-06	-2,01E-04
Non-ren. secondary fuels	MJ	2,48E-05	0,00E+00	0,00E+00	2,48E-05	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m <sup>3</sup>	2,02E-01	2,56E-03	3,88E-03	2,09E-01	2,56E-03	-4,81E-04	MND	MND	MND	MND	MND	3,34E+00	MND	0,00E+00	5,94E-05	2,83E-04	3,92E-04	-4,25E-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	3,28E+00	2,93E-02	2,69E-02	3,34E+00	2,93E-02	2,45E-03	MND	MND	MND	MND	MND	2,18E+01	MND	0,00E+00	6,81E-04	3,57E-03	3,38E-02	-6,68E-01
Non-hazardous waste	kg	6,46E+01	5,43E-01	1,11E+00	6,62E+01	5,43E-01	9,18E-01	MND	MND	MND	MND	MND	3,49E+02	MND	0,00E+00	1,26E-02	1,22E-01	1,84E+00	5,50E+00
Radioactive waste	kg	4,48E-04	3,69E-06	5,10E-06	4,57E-04	3,69E-06	2,45E-07	MND	MND	MND	MND	MND	1,36E-01	MND	0,00E+00	8,57E-08	1,17E-06	1,19E-07	-5,85E-06

### 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 re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	9,98E-06	0,00E+00	5,31E-01	5,31E-01	0,00E+00	3,14E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	1,51E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	4,66E-07	0,00E+00	0,00E+00	4,66E-07	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	2,37E-02	0,00E+00	2,12E-01	2,36E-01	0,00E+00	6,88E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	5,60E-02	5,60E-02	0,00E+00	2,88E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	1,56E-01	1,56E-01	0,00E+00	4,00E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+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 <sub>2</sub> e	1,83E+01	1,19E+00	4,58E-01	1,99E+01	1,19E+00	5,92E-02	MND	MND	MND	MND	MND	6,24E+02	MND	0,00E+00	2,76E-02	4,02E-02	1,14E+00	-1,15E+00
Ozone depletion Pot.	kg CFC <sub>11</sub> e	2,56E-07	1,41E-08	8,98E-09	2,79E-07	1,41E-08	2,30E-10	MND	MND	MND	MND	MND	2,59E-05	MND	0,00E+00	3,26E-10	4,11E-10	4,37E-10	-5,47E-09
Acidification	kg SO <sub>2</sub> e	2,95E-01	3,11E-03	1,51E-03	2,99E-01	3,11E-03	7,60E-05	MND	MND	MND	MND	MND	1,28E+00	MND	0,00E+00	7,21E-05	3,53E-04	1,92E-04	-2,45E-02
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	5,89E-02	7,57E-04	4,67E-03	6,43E-02	7,57E-04	5,75E-05	MND	MND	MND	MND	MND	2,61E-01	MND	0,00E+00	1,76E-05	5,12E-05	8,58E-05	-2,56E-04
POCP (“smog”)	kg C <sub>2</sub> H <sub>4</sub> e	7,25E-03	2,77E-04	1,59E-04	7,69E-03	2,77E-04	1,35E-05	MND	MND	MND	MND	MND	1,04E-01	MND	0,00E+00	6,43E-06	2,10E-05	1,65E-05	-1,56E-03
ADP-elements	kg Sbe	1,75E-03	3,25E-06	1,98E-06	1,75E-03	3,25E-06	8,74E-08	MND	MND	MND	MND	MND	1,84E-03	MND	0,00E+00	7,54E-08	2,46E-06	6,71E-08	-4,08E-04

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	2,31E+02	1,71E+01	4,38E+00	2,53E+02	1,71E+01	2,32E-01	MND	MND	MND	MND	MND	9,18E+03	MND	0,00E+00	3,97E-01	4,53E-01	3,24E-01	-1,14E+01

## ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>9)</sup>	kg CO <sub>2</sub> e	1,87E+01	1,19E+00	4,42E-01	2,04E+01	1,19E+00	2,78E-02	MND	MND	MND	MND	MND	6,27E+02	MND	0,00E+00	2,77E-02	4,02E-02	1,14E+00	-1,16E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH<sub>4</sub> fossil, CH<sub>4</sub> biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO<sub>2</sub> is set to zero.

## VERIFICATION STATEMENT

### VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? [Read more online](#)

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

### THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Sarah Curpen, as an authorized verifier acting for EPD Hub Limited.

11.04.2025

