



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Module luminaire Dora
Legrand Finland Oy



EPD HUB, HUB-4519

Published on 23.11.2025, last updated on 23.11.2025, valid until 22.11.2030.

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.



Created with One Click LCA

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GENERAL INFORMATION

MANUFACTURER

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

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	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Lili Karjalainen
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 acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. 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	Module luminaire Dora
Additional labels	-
Product reference	DO6X6MED/940
Place(s) of raw material origin	EU and China
Place of production	Paide, Estonia
Place(s) of installation and use	Finland and Sweden
Period for data	Calendar year 2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-/+ 0%
GTIN (Global Trade Item Number)	6438100486983
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	11,1

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of luminaire
Declared unit mass	2,071 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2,45E+01
GWP-total, A1-A3 (kgCO ₂ e)	2,37E+01
Secondary material, inputs (%)	25,9
Secondary material, outputs (%)	53,1
Total energy use, A1-A3 (kWh)	79,3
Net freshwater use, A1-A3 (m ³)	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

Module luminaire DO6X6M 4390LM 30,0W/940 MP DA

Luminous flux	4390 lm
Connected load	30 W
Luminaire efficacy	146 lm/W
Colour temperature	4000 K

Ensto Dora is an energy-efficient panel luminaire series utilizing modern backlit technology. Dora is an ideal solution for offices, meeting rooms, public spaces, stairwells, and dining areas. Thanks to its IP55 rating, it is also perfectly suited for healthcare facilities and hospitals.

Further information can be found at:
www.legrand.fi/en

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	47,2	EU and China
Minerals	0	Not applicable
Fossil materials	52,8	EU and China
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	0,235

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of luminaire
Mass per declared unit	2,071 kg
Functional unit	4390 lumens over 75 000h (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 product is made of metals, plastics and electronic components. The materials are transported to Legrand Estonia's production facility in Paide,

Estonia, where the main manufacturing processes primarily are associated with assembly. 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.

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.

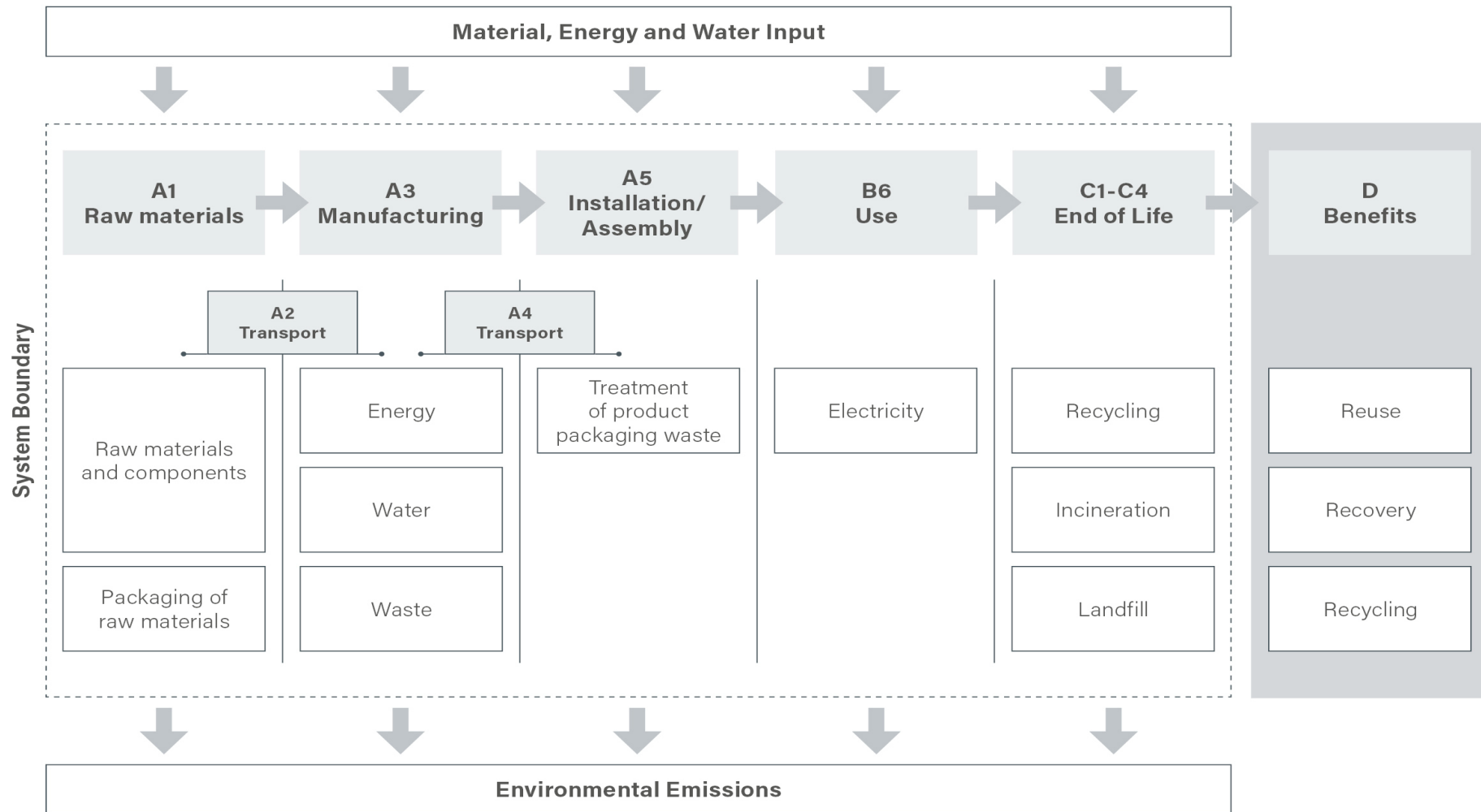
The product is used in several indoor lighting applications. The reference service life is assumed to be 20 years. Annual operating hours 2750h (Based on energy performance of buildings. Energy requirements for lighting, EN 15193-1:2017 / Mixed of building types enclosed). Luminaire system power is 30 W and rated luminous flux 4390 lm.

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 center. 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.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

All industrial processes from raw material acquisition and pre-processing, production, product distribution, installation, use/application of product and end-of-life management are included. For easier modelling and because of lack of accuracy in available modelling resources many constituents under 0,1% of product mass are excluded. These include some additives and fasteners which are present in the product only in very small amounts and have no serious impact on the emissions. The production of capital equipment, construction activities, and infrastructure, personnel-related activities, energy and water use related to company management and sales activities are excluded.

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/AC:2021 and JRC EF 3.1.

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	Allocated by mass or volume

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804-standard. All estimations and assumptions regarding the cut-off criteria and the allocation are declared in the part Background report "Detailed cut-off documentation.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	-/+ 0%

This is an average EPD including four models of the product family Dora from the manufacturer Legrand Finland Oy. The homogenous environmental product family consists of two different sizes; 600x600 mm and 300x1200mm. All these products have the same weight and material composition. The application area for the models is the same, as well as the reference service life time. Choice of the representative product is assumed to be an average. The difference between products in the Dora range comes from rated luminous flux, system power, optics, colour temperature (3000K and 4000K), colour rendering index (CRI 9 and 8). Therefore GWP A1-A3 CO₂ fossil is the same for all products.

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 v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

ENVIRONMENTAL IMPACT DATA

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	2,11E+01	2,01E+00	5,99E-01	2,37E+01	2,01E+00	9,97E-01	MND	MND	MND	MND	MND	2,41E+02	MND	0,00E+00	3,91E-02	3,05E-02	1,22E+00	-4,53E+00
GWP – fossil	kg CO ₂ e	2,12E+01	2,01E+00	1,30E+00	2,45E+01	2,01E+00	5,80E-02	MND	MND	MND	MND	MND	2,35E+02	MND	0,00E+00	3,91E-02	3,21E-02	1,22E+00	-4,52E+00
GWP – biogenic	kg CO ₂ e	-8,18E-02	4,04E-04	-7,19E-01	-8,00E-01	4,04E-04	9,39E-01	MND	MND	MND	MND	MND	8,75E-01	MND	0,00E+00	7,85E-06	-1,58E-03	-7,96E-05	2,09E-03
GWP – LULUC	kg CO ₂ e	2,92E-02	7,22E-04	1,63E-02	4,63E-02	7,22E-04	3,70E-05	MND	MND	MND	MND	MND	4,73E+00	MND	0,00E+00	1,40E-05	4,56E-05	1,65E-05	-1,33E-02
Ozone depletion pot.	kg CFC-11e	8,60E-06	4,00E-08	3,72E-08	8,68E-06	4,00E-08	4,67E-10	MND	MND	MND	MND	MND	4,47E-06	MND	0,00E+00	7,77E-10	3,59E-10	5,34E-10	-2,60E-08
Acidification potential	mol H ⁺ e	3,29E-01	4,18E-03	4,88E-03	3,38E-01	4,18E-03	1,69E-04	MND	MND	MND	MND	MND	8,65E-01	MND	0,00E+00	8,13E-05	3,13E-04	2,93E-04	-3,56E-02
EP-freshwater ²⁾	kg Pe	1,06E-02	1,35E-04	2,44E-04	1,10E-02	1,35E-04	8,45E-06	MND	MND	MND	MND	MND	6,35E-02	MND	0,00E+00	2,63E-06	1,75E-05	5,55E-06	-4,75E-03
EP-marine	kg Ne	2,53E-02	1,00E-03	1,19E-03	2,75E-02	1,00E-03	2,11E-04	MND	MND	MND	MND	MND	1,98E-01	MND	0,00E+00	1,95E-05	8,76E-05	3,32E-04	-4,90E-03
EP-terrestrial	mol Ne	1,06E+00	1,08E-02	1,13E-02	1,08E+00	1,08E-02	6,32E-04	MND	MND	MND	MND	MND	2,06E+00	MND	0,00E+00	2,11E-04	7,92E-04	1,39E-03	-4,69E-02
POCP (“smog”) ³⁾	kg NMVOCe	7,17E-02	6,96E-03	5,30E-03	8,40E-02	6,96E-03	2,17E-04	MND	MND	MND	MND	MND	6,15E-01	MND	0,00E+00	1,35E-04	2,36E-04	3,69E-04	-1,57E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,54E-03	6,69E-06	3,42E-06	1,55E-03	6,69E-06	1,56E-07	MND	MND	MND	MND	MND	1,27E-03	MND	0,00E+00	1,30E-07	1,67E-06	9,56E-08	-2,03E-04
ADP-fossil resources	MJ	2,41E+02	2,83E+01	1,81E+01	2,87E+02	2,83E+01	4,10E-01	MND	MND	MND	MND	MND	1,07E+04	MND	0,00E+00	5,50E-01	3,87E-01	3,34E-01	-4,97E+01
Water use ⁵⁾	m ³ e depr.	8,03E+00	1,41E-01	3,40E-01	8,51E+00	1,41E-01	1,15E-02	MND	MND	MND	MND	MND	2,93E+02	MND	0,00E+00	2,73E-03	7,67E-03	7,23E-02	-1,28E+00

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	3,13E-06	1,48E-07	7,06E-08	3,35E-06	1,48E-07	2,69E-09	MND	MND	MND	MND	MND	7,17E-06	MND	0,00E+00	2,88E-09	4,94E-09	2,33E-09	-2,96E-07
Ionizing radiation ⁶⁾	kBq 11235e	1,18E+00	3,65E-02	1,62E-01	1,38E+00	3,65E-02	1,65E-03	MND	MND	MND	MND	MND	6,16E+02	MND	0,00E+00	7,09E-04	3,04E-03	5,11E-04	-8,38E-02
Ecotoxicity (freshwater)	CTUe	3,27E+02	3,76E+00	5,71E+00	3,37E+02	3,76E+00	5,95E-01	MND	MND	MND	MND	MND	7,14E+02	MND	0,00E+00	7,31E-02	2,50E-01	6,74E+00	-2,86E+01
Human toxicity, cancer	CTUh	2,14E-08	3,37E-10	1,15E-09	2,29E-08	3,37E-10	2,14E-11	MND	MND	MND	MND	MND	6,57E-08	MND	0,00E+00	6,55E-12	3,75E-11	2,70E-10	-5,56E-09
Human tox. non-cancer	CTUh	8,27E-07	1,79E-08	8,60E-09	8,54E-07	1,79E-08	1,13E-09	MND	MND	MND	MND	MND	2,49E-06	MND	0,00E+00	3,48E-10	1,59E-09	4,20E-09	-2,55E-07
SQP ⁷⁾	-	7,99E+01	1,71E+01	8,45E+01	1,82E+02	1,71E+01	3,56E-01	MND	MND	MND	MND	MND	3,44E+03	MND	0,00E+00	3,32E-01	7,01E-01	2,71E-01	-1,24E+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 ⁸⁾	MJ	2,16E+01	4,95E-01	6,74E+00	2,88E+01	4,95E-01	-1,46E+01	MND	MND	MND	MND	MND	3,81E+03	MND	0,00E+00	9,62E-03	6,64E-02	1,09E-02	-4,09E+00
Renew. PER as material	MJ	1,91E+00	0,00E+00	6,42E+00	8,33E+00	0,00E+00	-8,33E+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
Total use of renew. PER	MJ	2,35E+01	4,95E-01	1,32E+01	3,71E+01	4,95E-01	-2,30E+01	MND	MND	MND	MND	MND	3,81E+03	MND	0,00E+00	9,62E-03	6,64E-02	1,09E-02	-4,09E+00
Non-re. PER as energy	MJ	2,15E+02	2,83E+01	1,33E+01	2,56E+02	2,83E+01	-3,80E-01	MND	MND	MND	MND	MND	1,07E+04	MND	0,00E+00	5,50E-01	-4,24E+00	-2,33E+01	-5,08E+01
Non-re. PER as material	MJ	2,63E+01	0,00E+00	-2,08E+00	2,42E+01	0,00E+00	-1,36E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	-4,18E+00	-1,85E+01	1,06E+00
Total use of non-re. PER	MJ	2,41E+02	2,83E+01	1,13E+01	2,80E+02	2,83E+01	-1,74E+00	MND	MND	MND	MND	MND	1,07E+04	MND	0,00E+00	5,50E-01	-8,42E+00	-4,17E+01	-4,97E+01
Secondary materials	kg	5,37E-01	1,31E-02	5,08E-02	6,01E-01	1,31E-02	4,38E-04	MND	MND	MND	MND	MND	1,12E+00	MND	0,00E+00	2,55E-04	7,15E-04	8,38E-04	-2,05E-01
Renew. secondary fuels	MJ	4,80E-02	1,66E-04	2,68E-01	3,16E-01	1,66E-04	3,31E-06	MND	MND	MND	MND	MND	3,79E-03	MND	0,00E+00	3,23E-06	2,13E-05	7,72E-06	-2,75E-04
Non-ren. secondary fuels	MJ	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
Use of net fresh water	m ³	1,97E-01	3,85E-03	8,47E-03	2,09E-01	3,85E-03	-7,53E-04	MND	MND	MND	MND	MND	9,28E+00	MND	0,00E+00	7,49E-05	2,08E-04	5,08E-04	-2,46E-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	2,92E+00	4,11E-02	4,58E-02	3,00E+00	4,11E-02	4,29E-03	MND	MND	MND	MND	MND	1,45E+01	MND	0,00E+00	7,99E-04	3,19E-03	2,76E-02	-1,10E+00
Non-hazardous waste	kg	5,48E+01	8,68E-01	3,70E+00	5,94E+01	8,68E-01	1,47E+00	MND	MND	MND	MND	MND	3,38E+02	MND	0,00E+00	1,69E-02	9,93E-02	1,82E+00	-2,87E+01
Radioactive waste	kg	2,95E-04	9,06E-06	3,64E-05	3,40E-04	9,06E-06	4,16E-07	MND	MND	MND	MND	MND	1,32E-01	MND	0,00E+00	1,76E-07	7,75E-07	1,29E-07	-2,09E-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 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	0,00E+00	0,00E+00	3,68E-01	3,68E-01	0,00E+00	5,38E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	1,10E+00	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	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	0,00E+00	0,00E+00	2,03E-01	2,03E-01	0,00E+00	1,11E+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 – Electricity	MJ	0,00E+00	0,00E+00	5,38E-02	5,38E-02	0,00E+00	4,68E-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	1,49E-01	1,49E-01	0,00E+00	6,46E-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

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	2,12E+01	2,01E+00	1,32E+00	2,45E+01	2,01E+00	5,81E-02	MND	MND	MND	MND	MND	2,40E+02	MND	0,00E+00	3,91E-02	3,21E-02	1,22E+00	-4,53E+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 characterisation factor for biogenic CO₂ is set to zero.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Market for electricity, medium voltage (Reference product: electricity, medium voltage), Estonia
Electricity kg CO ₂ e / kWh	0,36
Heating data source and quality	Heat production, light fuel oil, at boiler 100kW condensing, non-modulating (Reference product: heat, central or small-scale, other than natural gas)
Heating kg CO ₂ e / MJ	0,0953

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	0,19
Average transport distance, km	3500
Capacity utilization (including empty return) %	50
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	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

Installation scenario documentation - A5 (Waste materials data source)

Eur-flat pallet production	0,519 kg
Packaging film production, low density polyethylene	0,008 kg
Paper production, woodfree, uncoated, at integrated mill	0,012 kg
Carton board box production service, with offset printing	0,416 kg

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

Energy supply, electricity transformation and distribution, Market for electricity, medium voltage, Finland, 1650 kWh (20 years*2750 h/year*30 W)

Use stages scenario documentation - B6-B7 Use of energy and use of water

Scenario information	Value
Ancillary materials specified by material / kg or units as appropriate	Not applicable
Net fresh water consumption / m ³	0
Type of energy carrier, e.g., electricity, natural gas, district heating / kWh	1650
Power output of equipment / W	30

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	2,0588
Collection process – kg collected with mixed construction waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	1,09875
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	0,96005
Scenario assumptions e.g. transportation	Transport, freight, lorry 16-32 metric ton, EURO6, 100km

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 is 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.

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: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

Yazan Badour, as an authorized verifier acting for EPD Hub Limited

