ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Fibox ABS enclosures
Fibox

EPD HUB, HUB-5897
Published on 30.03.2026, last updated on 30.03.2026, valid until 29.03.2031

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

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Fibox
Address	Rajasilta 6, Lempäälä, Finland
Contact details	sales@fibox.com
Website	www.fibox.com

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.

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
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Jasper Seiriö, Fibox
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Vera Durão, as an authorised verifier acting for EPD Hub Limited

PRODUCT

Product name	Fibox ABS enclosures
Additional labels	-
Product reference	-
Place(s) of raw material origin	Spain, Korea
Place of production	Lempäälä, Finland
Place(s) of installation and use	Europe
Period for data	01/01/2024-31/12/2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	10
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	42,3

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of product
Declared unit mass	1 kg
Mass of packaging	0,438 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	9,54
GWP-total, A1-A3 ($kgCO_2e$)	9,02
Secondary material, inputs (%)	0,32
Secondary material, outputs (%)	0,6
Total energy use, A1-A3 (kWh)	34,7
Net freshwater use, A1-A3 (m^3)	0,16

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Fibox is a global leader in enclosing solutions, putting design and innovation at the forefront of everything we do. With our Nordic roots and headquartered in Finland since 1966, we create robust and industry-leading products and solutions, protecting power distributions, control systems, and electronic devices from the realities of their harsh surrounding elements and environments.

PRODUCT DESCRIPTION

Fibox ABS enclosures utilize world-class injection molding technology. ABS enclosures are IP and IK-rated and are weatherproof in all circumstances. Waterproof, UV-protected, and still easy to maintain. They can be used in many hazardous environments, and they take a fair amount of hits and abuse without risking the contents. Ideal for industrial control, IoT, and building automation, for instance. Our enclosures and cabinets are corrosion-free and radio-frequency transparent, too.
ABS enclosures fulfil ingress protection rating up to IP67 (EN60529) and impact protection rating up to IK08 (EN62262). They are designed to function in a temperature range of -40oC to +60oC, and fulfil enclosure standards EN/IEC 62208 and EN/IEC 61439-1-4.
Dimensions range from 95*65*60 mm to 600*400*270 mm.
The main material is ABS, other plastics are also used for various smaller parts. Accessory configurations and plastic composition are the contributors to varying environmental impacts within ABS products.

Further information can be found at:
www.fibox.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	1	world
Minerals	1	EU
Fossil materials	98	EU, world
Bio-based materials	0	

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	0,167224

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of product
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

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	ND	ND	ND	ND	ND	ND	ND	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

Not declared = ND.

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.

A market-based approach is used in modelling the electricity mix utilized in the factory.

A1: Plastic raw material is reinforced with glass fiber by the raw material supplier. Different amounts of glass fiber are used based on product requirements and specifications.

A2: Product materials are sourced from around Europe. Plastic raw material is delivered from Spain and Korea. Packaging materials are locally sourced from Finland within 150km. Accessories and other parts come from Finland and various European countries.

A3: The enclosure parts are produced through injection molding. The manufacturing process starts by heating up the raw material granulate. The mold is clamped shut under high pressure before the raw material is injected. As the mold cools down, the plastics solidifies and the part can be extracted from the mold.
Polyurethane gasket is installed by a machine. The two component material is mixed in the machine and injected into the cover.
Extraction and gasketing processes are automated at the factory. Product is packed in cardboard boxes, grouped in pallet with LDPE film.
Production losses for raw materials assumed to be 5%.
Manufacturing waste is sorted and disposed locally within 25km of the manufacturing site.

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.

A4: The average distance from the manufacturing site to the customer in the European market is assumed to be 2000km. Transportation method within Europe is via lorry, and vehicle capacity is assumed to be fully utilized.
A5: Installation of the product can be done by hand or power tools, therefore direct installation impacts are minimal.

Waste packaging material handling, transport and recycling are included. Recycling percentages for plastic, cardboard, and wood packaging are based on EUROSTAT data. The release of biogenic carbon dioxide from the wooden pallets is also considered. Waste material is assumed to be transported 50km by truck for treatment.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

C1-C4: Based on research, glass fiber plastics are not recycled.

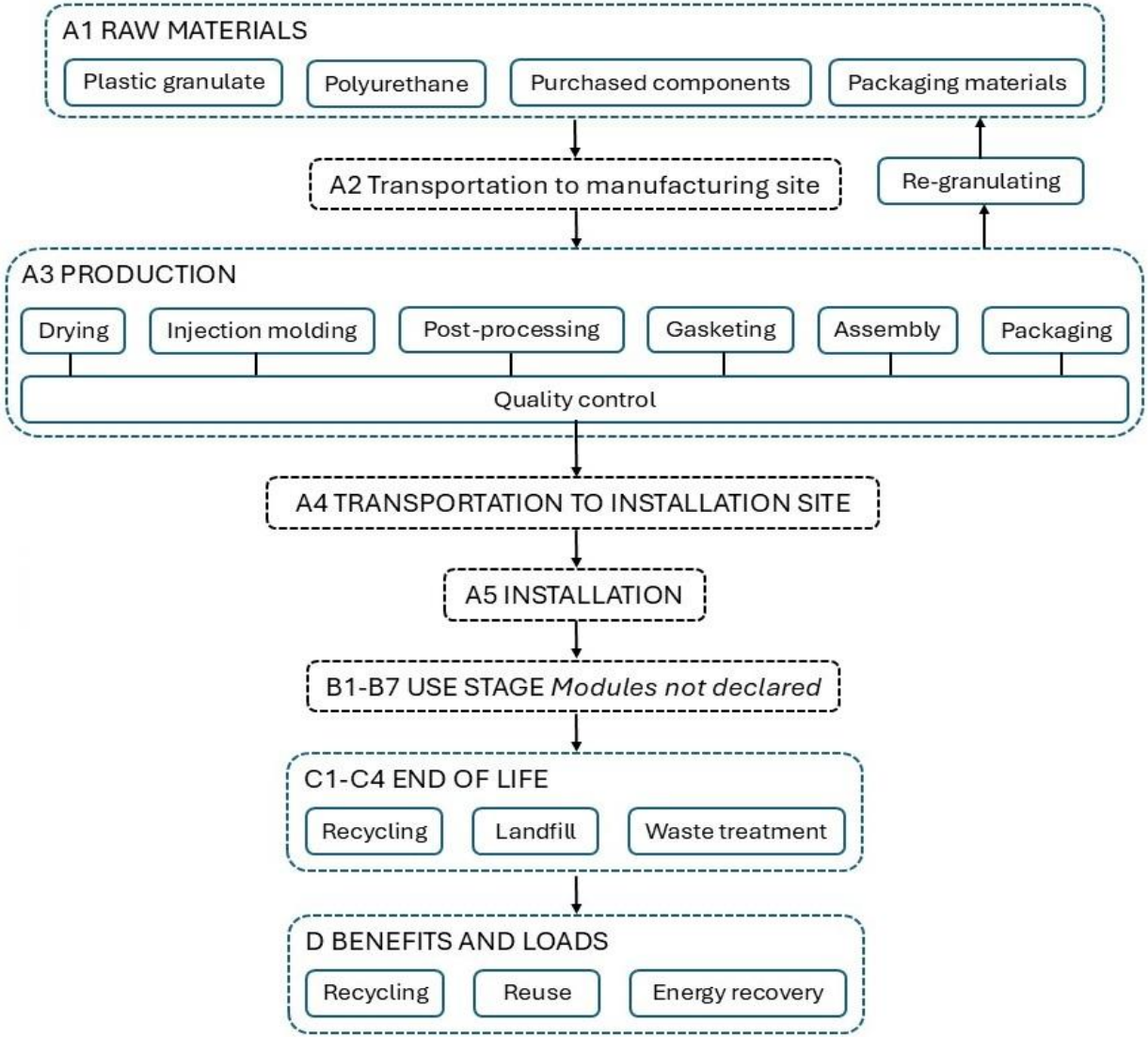
The end of life scenario assumes the treatment of the enclosure as waste once the building is demolished. Plastic and metal waste treatment are considered separately. Plastic waste is assumed to be landfilled. 85% of the steel waste is considered for recycling and 15% for landfill.

The source for this is: https://worldsteel.org/wp-content/uploads/Life-cycle-inventory-LCI-study-2020-data-release.pdf.

Transport distances for waste is assumed to be 50km for landfill and 150km for recycling, transported by truck.

Module D considers the benefits and loads of packaging waste treatment. Wood, plastic and cardboard are treated separately. Loads and benefits from the recycled metal is also considered.

SYSTEM DIAGRAM



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The LCA includes all industrial processes from raw material acquisition to production, distribution, installation and end-of-life stages. The study includes modules A1-A3, A4, A5, C1-C4 and D modules, and does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. For easier modelling and because of lack of accuracy in available modelling resources many constituents under 1% of product mass are excluded. These include some ancillary materials which are all present in the manufacturing only in very small amounts and have no serious impact on the emissions of the product. In this case labels and stickers have been omitted from packaging material inputs based on the total mass being less than 1% of the total packaging mass.

The stage-specific total neglected input and output flows also do not exceed 5% of energy usage or mass. 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, are included in the calculation.

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.

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	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	10

The reference product is a high selling cabinet equipped with only mounting screws. It also fulfils ingress protection rating IP65 and impact protection rating IK07 standards.

Other grouping products have different accessory/mounting plate configurations, which greatly impact the ratio of plastic to metal in the final product. Ingress protection ratings for the compared products fulfil IP66 standards.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

https://worldsteel.org/wp-content/uploads/Life-cycle-inventory-LCI-study-2020-data-release.pdf

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_2e	4,89E+00	2,19E+00	1,95E+00	9,02E+00	3,10E-01	6,07E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,53E-03	1,36E-04	9,25E-02	-3,75E-02
GWP – fossil	kg CO_2e	4,86E+00	2,19E+00	2,50E+00	9,54E+00	3,10E-01	4,80E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,53E-03	1,36E-04	9,26E-02	-7,25E-02
GWP – biogenic	kg CO_2e	2,84E-02	3,24E-04	-5,58E-01	-5,30E-01	7,01E-05	5,59E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,21E-06	0,00E+00	-6,28E-05	3,51E-02
GWP – LULUC	kg CO_2e	4,65E-04	1,06E-03	6,52E-03	8,05E-03	1,38E-04	1,89E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,47E-06	1,67E-07	7,63E-06	-4,32E-05
Ozone depletion pot.	kg CFC_{-11}e	1,22E-08	3,15E-08	3,66E-08	8,03E-08	4,57E-09	2,23E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,15E-11	1,82E-12	2,89E-10	-1,54E-09
Acidification potential	mol H^+e	1,67E-02	6,19E-02	7,63E-03	8,62E-02	1,06E-03	8,05E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,88E-05	1,61E-06	8,41E-05	-3,72E-04
EP-freshwater[2)]	kg Pe	2,97E-04	6,82E-05	8,30E-04	1,20E-03	2,41E-05	3,82E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,30E-07	8,73E-08	1,24E-06	-2,57E-05
EP-marine	kg Ne	2,94E-03	1,56E-02	1,91E-03	2,05E-02	3,47E-04	9,08E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,19E-06	3,57E-07	2,09E-03	-6,01E-05
EP-terrestrial	mol Ne	2,85E-02	1,74E-01	1,85E-02	2,21E-01	3,77E-03	3,14E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,73E-05	4,04E-06	3,37E-04	-6,38E-04
POCP ("smog")[3)]	kg NMVOCe	1,33E-02	4,71E-02	6,41E-03	6,68E-02	1,56E-03	1,04E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,77E-05	1,20E-06	1,34E-04	-2,98E-04
ADP-minerals & metals[4)]	kg Sbe	6,93E-06	2,15E-06	4,56E-06	1,36E-05	8,64E-07	6,13E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,55E-08	9,61E-09	2,54E-08	-3,46E-07
ADP-fossil resources	MJ	9,77E+01	2,70E+01	3,85E+01	1,63E+02	4,49E+00	1,94E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,01E-02	1,82E-03	2,50E-01	-1,35E+00
Water use[5)]	m^3e depr.	2,59E+00	7,36E-02	4,97E-01	3,16E+00	2,22E-02	5,90E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,95E-04	3,27E-05	1,28E-03	-1,36E-02

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	2,46E-07	7,15E-08	4,58E-08	3,64E-07	3,10E-08	1,31E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,50E-10	2,19E-11	1,81E-09	-3,96E-09
Ionizing radiation[6)]	kBq U235e	1,35E-02	1,17E-02	5,20E-01	5,45E-01	3,91E-03	6,72E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,96E-05	1,54E-05	2,67E-04	-5,20E-03
Ecotoxicity (freshwater)	CTUe	5,75E+01	2,03E+00	8,12E+00	6,76E+01	6,35E-01	1,92E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,14E-02	1,06E-03	3,44E+00	-1,43E-01
Human toxicity, cancer	CTUh	9,38E-10	4,46E-10	8,02E-10	2,19E-09	5,11E-11	9,66E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,13E-13	1,21E-13	1,10E-11	-1,41E-11
Human tox. non-cancer	CTUh	7,17E-09	7,07E-09	1,90E-08	3,33E-08	2,91E-09	4,93E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,18E-11	8,23E-12	2,23E-09	-5,74E-10
SQP[7)]	-	9,90E-01	3,58E+00	4,74E+01	5,20E+01	4,52E+00	1,77E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,96E-02	3,54E-03	5,76E-01	-3,75E-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	6,02E-01	1,98E-01	3,98E+00	4,78E+00	6,16E-02	-6,08E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,10E-03	3,39E-04	4,14E-03	8,49E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	5,33E+00	5,33E+00	0,00E+00	-5,33E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	6,02E-01	1,98E-01	9,31E+00	1,01E+01	6,16E-02	-1,14E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,10E-03	3,39E-04	4,14E-03	8,49E-01
Non-re. PER as energy	MJ	6,10E+01	2,70E+01	3,20E+01	1,20E+02	4,49E+00	-9,15E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,01E-02	1,82E-03	-3,58E+01	-1,35E+00
Non-re. PER as material	MJ	3,68E+01	0,00E+00	-2,94E-01	3,65E+01	0,00E+00	-1,46E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	-3,50E+01	0,00E+00
Total use of non-re. PER	MJ	9,78E+01	2,70E+01	3,17E+01	1,57E+02	4,49E+00	-2,37E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,01E-02	1,82E-03	-7,08E+01	-1,35E+00
Secondary materials	kg	3,24E-03	1,18E-02	1,41E-01	1,56E-01	1,91E-03	1,99E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,42E-05	2,22E-06	8,97E-05	1,80E-02
Renew. secondary fuels	MJ	3,05E-05	3,34E-05	1,46E-01	1,46E-01	2,43E-05	1,66E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,34E-07	1,03E-07	1,68E-06	1,10E-05
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	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,18E-01	1,85E-03	4,11E-02	1,61E-01	6,64E-04	-4,00E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,18E-05	9,66E-07	-3,67E-03	-4,85E-04

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	1,19E-01	3,36E-02	2,20E-01	3,72E-01	7,61E-03	1,91E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,36E-04	1,19E-05	4,48E-04	-7,73E-03
Non-hazardous waste	kg	6,75E-01	4,66E-01	5,94E+00	7,08E+00	1,41E-01	7,63E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,52E-03	4,30E-04	4,94E+00	-3,44E-01
Radioactive waste	kg	3,43E-06	2,85E-06	1,21E-04	1,28E-04	9,58E-07	1,69E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,70E-08	3,95E-09	6,54E-08	-1,32E-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	ND	ND	ND	ND	ND	ND	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	1,98E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	6,00E-03	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	ND	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	0,00E+00	0,00E+00	0,00E+00	6,90E-01	ND	ND	ND	ND	ND	ND	ND	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	0,00E+00	0,00E+00	0,00E+00	2,88E-01	ND	ND	ND	ND	ND	ND	ND	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	0,00E+00	0,00E+00	0,00E+00	4,02E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+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_2e	4,82E+00	2,18E+00	2,49E+00	9,49E+00	3,08E-01	6,53E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,50E-03	1,35E-04	8,87E-02	-7,18E-02
Ozone depletion Pot.	kg CFC_{-11}e	1,16E-08	2,50E-08	3,02E-08	6,68E-08	3,65E-09	1,80E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,50E-11	1,50E-12	2,31E-10	-1,27E-09
Acidification	kg SO_2e	1,41E-02	4,93E-02	6,12E-03	6,95E-02	8,06E-04	6,00E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,44E-05	1,30E-06	6,23E-05	-3,12E-04
Eutrophication	kg PO_4^3e	1,84E-03	5,52E-03	7,59E-03	1,50E-02	1,96E-04	3,52E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,51E-06	1,88E-07	1,05E-04	-6,53E-05
POCP (“smog”)	kg C_2H_4e	1,01E-03	2,46E-03	5,24E-04	3,99E-03	7,18E-05	8,94E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,28E-06	7,69E-08	1,79E-05	-2,77E-05
ADP-elements	kg Sbe	5,81E-06	2,12E-06	4,50E-06	1,24E-05	8,42E-07	5,95E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,51E-08	9,58E-09	2,47E-08	-3,43E-07
ADP-fossil	MJ	9,36E+01	2,68E+01	3,04E+01	1,51E+02	4,43E+00	1,83E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,90E-02	1,55E-03	2,45E-01	-1,26E+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_2e	4,86E+00	2,19E+00	2,51E+00	9,55E+00	3,10E-01	4,80E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,53E-03	1,36E-04	9,26E-02	-7,26E-02

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

DATA SOURCES

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, residual mix, Finland, Ecoinvent
Electricity CO2e / kWh	0,66
Diesel data source and quality	Diesel, burned in building machine, World, Ecoinvent
Diesel kgCO2e / MJ	0,10

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	100
Bulk density of transported products	1,44E+02
Volume capacity utilization factor	<1

Installation scenario documentation - A5 (Installation waste)

Scenario parameter	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	-
Water use / m^3	-
Other resource use / kg	-
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	-
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Wood: 0,296 kg Plastic: 0,0274 kg Cardboard: 0,1097 kg
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	Quantities are for recycling, incineration, landfill respectively Wood: 0,096 kg / 0,09 kg / 0,11 kg Plastic: 0,011 kg / 0,01 kg / 0,0064 kg Carboard: 0,091 kg / 0,0088 kg / 0,0099 kg
Exported energies from waste processing / MJ	Electricity: 0,288 Thermal: 0,402
Direct emissions to ambient air, soil and water / kg	-

End of life scenario documentation

Scenario information	Value
End of life waste material processing	Plastic, landfill: 0.992780044kg Metal, recycling: 0,006 kg Metal, landfill: 0,001 kg
Scenario assumptions e.g. transportation	Transported by truck. 50km to landfill, 150km to recycling

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.

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

Vera Durão, as an authorised verifier acting for EPD Hub Limited

30.03.2026

VERIFIED ISO 14025