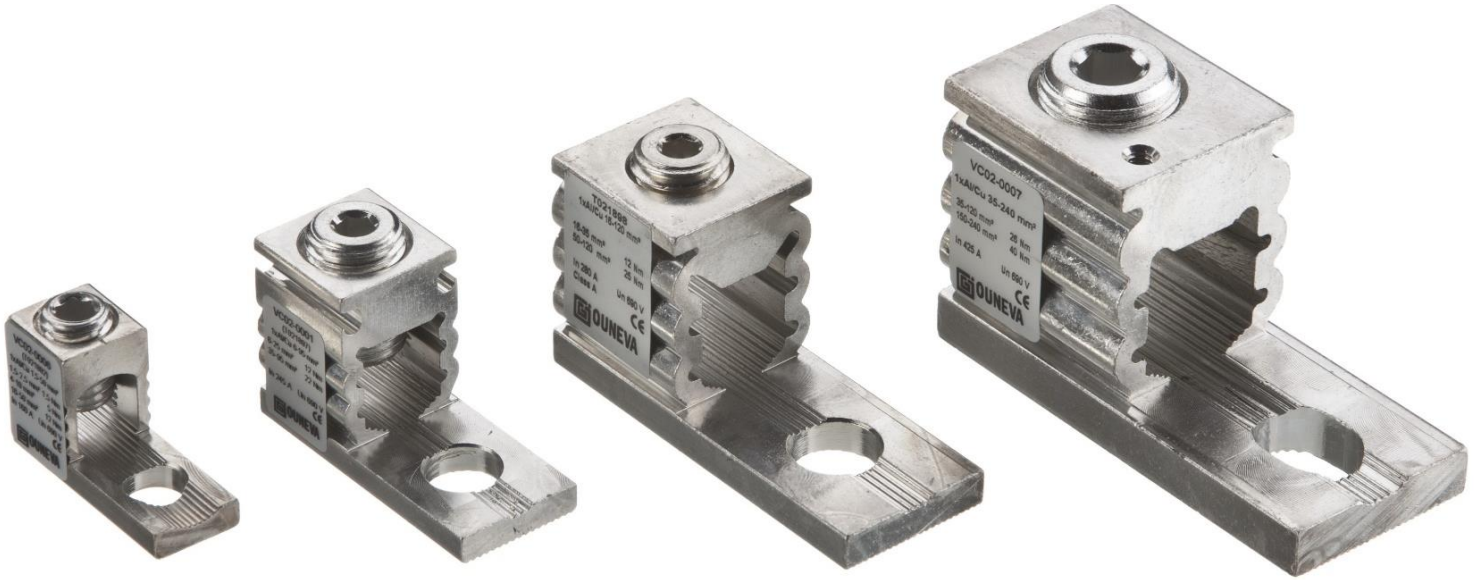
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

OT Universal Connector
Ouneva Oy



EPD HUB, HUB-6367
Published on 23.05.2026, last updated on 23.05.2026, valid until 23.05.2031

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	Ouneva Oy
Address	Teollisuustie 21, 82730, Tuupovaara, FI
Contact details	firstname.lastname@ouneva.fi
Website	https://www.ounevaproducts.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	Manufactured 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	Annika Tuovinen, Ouneva Group
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub

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	OT Universal Connector
Additional labels	see annex 1
Product reference	-
Place(s) of raw material origin	Europe
Place of production	Tuupovaara, Finland
Place(s) of installation and use	Global
Period for data	April 2025 - April 2026
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-9 / +40
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	80,5

ENVIRONMENTAL DATA SUMMARY

Declared unit	0,1 kg of product
Declared unit mass	0,1 kg
Mass of packaging	0,01673 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	0,97
GWP-total, A1-A3 ($kgCO_2e$)	1,01
Secondary material, inputs (%)	267
Total energy use, A1-A3 (kWh)	5,55
Net freshwater use, A1-A3 (m^3)	0,76

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

We are a strong, family-owned Finnish company with over 50 years of experience in manufacturing connectors and meeting the requirements of the electrical industry. We design and manufacture our high-quality products in North Karelia, Finland. We also provide customer-specific connector and power supply solutions. We meet the strict requirements of the industry with our solid design and testing expertise, continuously developing our operations. In addition to our own connector products, we are a contract manufacturer of sheet metal products for the electronics, machinery and electrical industries, to mention a few. Our deliveries scale from single components to complex, demanding system deliveries.

PRODUCT DESCRIPTION

Ouneva OT-connectors are a universal terminal series for connecting Al- and Cu-conductors to equipment. OT-connectors are used in equipment or as a transfer terminal between copper and aluminium. Connectors are made of tin-plated aluminium.

Representative OT-connector VC02-0147 weighs 108 grams and is intended for aluminium and copper cables in the size range of 35 to 240 mm^2. OT products are available in a mass range of 10 to 451 grams for connections from 1,5 to 300 mm^2. OT products serve the same function and are manufactured at Ouneva factory.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	EU
Minerals	-	-
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	0,0069

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	0,1 kg of product
Mass per declared unit	0,1 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.

The connector is made of tin-plated aluminium. Primary packaging materials consist of cardboard, a plastic label and an installation instruction. Additional materials used for transport are a flat pallet and packaging film. For A2, distances and transport modes were estimated based on supplier locations.

Manufacturing processes include metal working, surface treatment, assembly and packing. A residual mix electricity datapoint was used for manufacturing energy use in A3.

Manufacturing losses are sent to local waste recycling and treatment facilities. Recycling rates were considered based on International Aluminium Institute statistics for aluminium (81 %) and International Resource Panel statistics for surface treatment materials (50 %). A 50 km transport distance was considered.

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.

Module A4 transport is based on sales data of OT connectors to customers during April 2025 to April 2026. The module is modeled using sales weighted proportions of the product shipped to multiple locations.

The installation phase A5 does not involve material loss or energy consumption, as the connector can be assumed to be installed manually. The installation phase considers waste treatment of

packaging materials. Based on Eurostat statistics, the recycling rate is 83 % for paper and cardboard, 32 % for wood and 40 % for plastic. The incineration rate is 8 % for paper and cardboard, 30 % for wood and 37 % for plastic.

PRODUCT END OF LIFE (C1-C4, D)

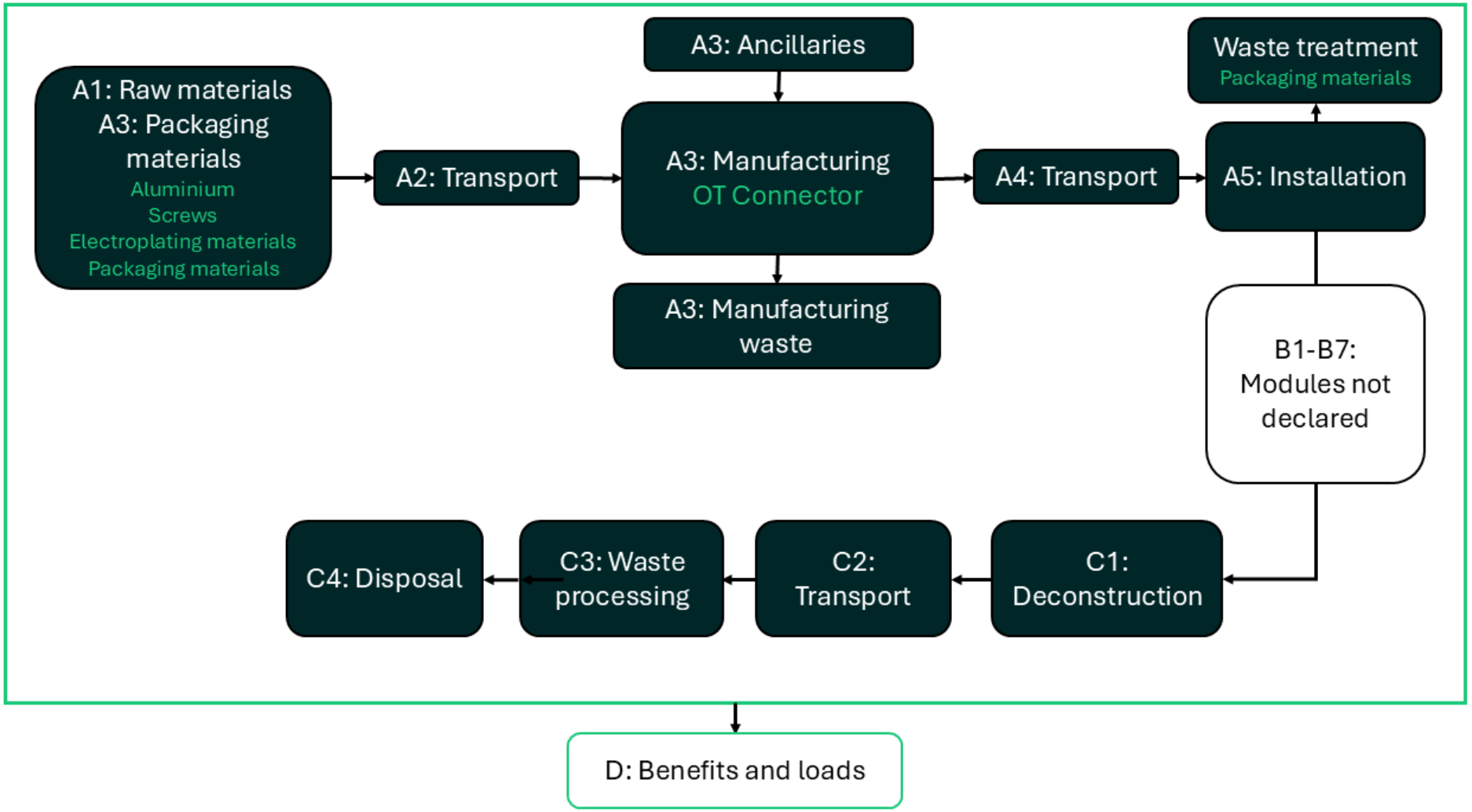
End of Life -scenarios are based on statistics in Europe, where the product is mainly in use.

The connector is assumed to be deinstalled manually. Therefore no energy or material consumption has been considered for module C1. C2-C4 accounts for the processing, disposal and transport of waste. Recycling rates are considered based on International Aluminium Institute for aluminium (81 %) in Europe. Product label was modeled as 50 % incineration with energy recovery using OneClick scenarios with Ecoinvent data. Transport distances were modeled as 50 km for recycling and 250 km for disposal.

Benefits and loads from recycling and recovery are included in module D. Recycling and recovery of aluminium and plastic in C2-C4 and packaging materials in A5 lead to avoided virgin raw material production and energy from primary sources. Benefits and loads from manufacturing waste in A3 are excluded.

Recycled material content in raw and packaging materials has been subtracted from the EoL recycled material mass on Benefits and loads to avoid double counting. Module D was modeled by selecting predefined datasets with generic EU scenarios for each material type. The scenarios included are currently in use and are representative for one of the most likely scenarios.

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.

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	No allocation
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, %	-9 / +40

Representative product VC02-0147 weighs 108 grams and is intended for connections from 35 to 240 mm2. The product acts as a representative for the OT products declared in this EPD. Declared products have a mass of 10 to 451 grams and are intended for connections from 1,5 to 300 mm2.

Results of the representative product are declared in this EPD, and they are applicable for all OT products. Additionally, variance of GWP-fossil within the product group for A1-A3 is declared in this EPD. Product specific results for GWP-fossil and GWP-total are declared in annex 1. The products serve a similar purpose and performance rating and are manufactured using the same core processes in the same factory.

Results for A1-A3 are applicable globally. Modules A4-A5 and the end-of-life are based on statistical data in Europe and are applicable for all products used in Europe. The range of products complies with the allowed averaging and aggregations requirements defined on EPD Hub GPI 2.9 & Annex 1.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. 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‘.

International Aluminium Institute: https://internationalaluminium.org/international-aluminium-institute-publishes-global-recyclingdata

International resource panel, Recycling rates of metals: A status report (https://www.unep.org/resources/report/recycling-rates-metals-statusreport

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	7,50E-01	1,99E-02	2,38E-01	1,01E+00	2,37E-02	2,76E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,28E-03	2,96E-03	9,36E-04	-1,43E-01
GWP – fossil	kg CO_2e	7,09E-01	1,99E-02	2,40E-01	9,69E-01	2,24E-02	2,38E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,28E-03	2,99E-03	9,34E-04	-1,39E-01
GWP – biogenic	kg CO_2e	1,48E-02	5,03E-06	-2,90E-03	1,19E-02	4,07E-04	2,52E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,18E-07	-2,58E-05	1,35E-06	-3,95E-03
GWP – LULUC	kg CO_2e	2,55E-02	9,26E-06	3,35E-04	2,59E-02	8,66E-04	7,11E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,02E-06	2,23E-06	3,54E-07	-3,89E-04
Ozone depletion pot.	kg CFC-$_{11}$e	7,31E-08	2,58E-10	3,99E-09	7,73E-08	8,66E-10	7,95E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,36E-11	2,43E-11	6,81E-12	-1,23E-09
Acidification potential	mol H^+e	5,44E-03	1,66E-04	7,96E-04	6,41E-03	7,94E-05	3,23E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,77E-06	2,17E-05	2,12E-06	-9,23E-04
EP-freshwater[2)]	kg Pe	2,52E-04	1,88E-06	1,71E-04	4,25E-04	1,83E-06	1,57E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,78E-07	1,20E-06	4,74E-08	-4,68E-05
EP-marine	kg Ne	7,08E-04	4,51E-05	1,08E-03	1,83E-03	3,38E-05	3,26E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,55E-06	4,92E-06	1,40E-06	-1,46E-04
EP-terrestrial	mol Ne	7,32E-03	4,97E-04	2,02E-03	9,84E-03	2,90E-04	1,25E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,78E-05	5,51E-05	8,58E-06	-1,59E-03
POCP ("smog")[3)]	kg NMVOCe	7,03E-03	1,58E-04	5,62E-04	7,75E-03	1,09E-04	4,21E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,14E-05	1,63E-05	2,79E-06	-4,97E-04
ADP-minerals & metals[4)]	kg Sbe	5,28E-06	5,76E-08	7,73E-07	6,11E-06	8,67E-08	2,58E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,38E-09	1,27E-07	7,62E-10	-1,95E-06
ADP-fossil resources	MJ	8,42E+00	2,69E-01	4,45E+00	1,31E+01	3,23E-01	7,29E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,31E-02	2,45E-02	6,22E-03	-1,58E+00
Water use[5)]	m^3e depr.	-6,02E-01	1,31E-03	5,85E-02	-5,42E-01	2,37E-03	2,79E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,64E-04	5,53E-04	3,18E-04	-2,95E-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	2,92E-09	1,35E-09	6,06E-09	1,03E-08	2,14E-09	9,11E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,28E-10	2,95E-10	4,17E-11	-2,23E-08
Ionizing radiation[6]	kBq U235e	3,12E-03	2,00E-04	1,21E-01	1,24E-01	2,81E-04	1,95E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,88E-05	2,09E-04	9,20E-06	-1,14E-02
Ecotoxicity (freshwater)	CTUe	8,83E-02	2,61E-01	4,65E+00	5,00E+00	3,88E-01	8,33E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,03E-03	1,22E-01	1,71E+02	-6,75E-01
Human toxicity, cancer	CTUh	1,06E-10	3,51E-12	7,60E-11	1,85E-10	5,17E-12	6,27E-13	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,76E-13	1,69E-12	2,27E-13	-4,37E-11
Human tox. non-cancer	CTUh	1,92E-10	1,49E-10	5,49E-09	5,83E-09	2,47E-10	2,47E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,14E-11	1,13E-10	3,54E-11	3,60E-10
SQP[7]	-	8,38E+00	1,34E-01	2,68E+00	1,12E+01	3,39E-01	6,82E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,32E-02	4,66E-02	1,18E-02	-3,24E-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	3,14E+00	3,44E-03	3,85E-01	3,53E+00	6,94E-03	-2,29E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,53E-04	4,46E-03	1,41E-04	-1,83E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,23E-01	2,23E-01	0,00E+00	-2,23E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,50E-02
Total use of renew. PER	MJ	3,14E+00	3,44E-03	6,08E-01	3,75E+00	6,94E-03	-4,53E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,53E-04	4,46E-03	1,41E-04	-1,38E-01
Non-re. PER as energy	MJ	1,18E+01	2,69E-01	4,37E+00	1,64E+01	3,29E-01	-5,55E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,31E-02	6,33E-03	-1,20E-02	-1,58E+00
Non-re. PER as material	MJ	2,30E-03	0,00E+00	7,57E-02	7,80E-02	0,00E+00	-7,57E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,15E-03	-1,15E-03	2,90E-02
Total use of non-re. PER	MJ	1,18E+01	2,69E-01	4,45E+00	1,65E+01	3,29E-01	-1,31E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,31E-02	5,19E-03	-1,31E-02	-1,55E+00
Secondary materials	kg	2,67E-01	1,20E-04	7,06E-03	2,75E-01	1,52E-04	8,26E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,41E-05	2,98E-05	2,35E-06	1,37E-02
Renew. secondary fuels	MJ	1,96E-03	1,31E-06	5,68E-03	7,64E-03	2,00E-06	6,94E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,79E-07	1,39E-06	4,16E-08	-2,81E-06
Non-ren. secondary fuels	MJ	2,98E-04	0,00E+00	0,00E+00	2,98E-04	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	7,61E-01	3,29E-05	1,17E-03	7,62E-01	8,31E-05	-1,47E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,88E-06	1,22E-05	-7,17E-05	-1,82E-03

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	1,09E-02	5,70E-04	4,04E-02	5,18E-02	7,12E-04	8,49E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,62E-05	1,79E-04	3,93E-05	-2,10E-02
Non-hazardous waste	kg	7,41E-01	1,06E-02	5,10E+01	5,17E+01	1,07E-02	1,74E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,04E-03	6,86E-03	5,51E-02	1,24E-01
Radioactive waste	kg	1,65E-04	4,90E-08	2,78E-05	1,93E-04	6,80E-08	4,84E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,05E-09	5,35E-08	2,25E-09	-2,92E-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	7,50E-05	0,00E+00	0,00E+00	7,50E-05	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	8,03E-02	0,00E+00	4,98E+01	4,98E+01	0,00E+00	8,01E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,00E-02	0,00E+00	0,00E+00
Materials for energy rec	kg	1,77E-03	0,00E+00	0,00E+00	1,77E-03	0,00E+00	4,08E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,00E-04	0,00E+00	0,00E+00
Exported energy	MJ	1,49E-03	0,00E+00	0,00E+00	1,49E-03	0,00E+00	2,74E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,90E-03	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	1,15E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,50E-03	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	1,59E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,40E-03	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	6,04E-01	1,98E-02	2,43E-01	8,67E-01	2,32E-02	3,25E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,27E-03	2,98E-03	9,31E-04	-1,38E-01
Ozone depletion Pot.	kg $CFC_{-11}e$	2,98E-08	2,07E-10	3,24E-09	3,32E-08	6,93E-10	6,47E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,68E-11	2,10E-11	5,51E-12	-1,08E-09
Acidification	kg SO_2e	2,95E-03	1,31E-04	6,30E-04	3,71E-03	6,01E-05	2,42E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,94E-06	1,75E-05	1,56E-06	-7,76E-04
Eutrophication	kg PO_4^3e	6,23E-04	2,03E-05	9,33E-04	1,58E-03	6,60E-05	1,38E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,45E-06	2,60E-06	1,01E-06	-6,19E-05
POCP (“smog”)	kg C_2H_4e	2,19E-04	8,08E-06	4,42E-05	2,71E-04	6,16E-06	4,26E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,29E-07	1,03E-06	1,26E-07	-5,74E-05
ADP-elements	kg Sbe	6,72E-06	5,62E-08	7,61E-07	7,53E-06	8,58E-08	2,50E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,22E-09	1,27E-07	7,25E-10	-1,93E-06

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	7,39E+00	2,65E-01	2,63E+00	1,03E+01	3,19E-01	6,97E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,26E-02	2,09E-02	6,07E-03	-1,38E+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	7,35E-01	1,99E-02	2,41E-01	9,95E-01	2,33E-02	2,38E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,28E-03	2,99E-03	9,34E-04	-1,40E-01

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

1. Electricity, medium voltage, residual mix, Finland, Ecoinvent, 0.51 kgCO2e/kWh
2. Electricity, medium voltage, residual mix, Finland, Ecoinvent, 0.51 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	100
Bulk density of transported products	1,17E+02
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	-
Water use (m^3)	-
Ancillary materials: type and mass (kg)	-
Waste materials: type and mass (kg)	Wood packaging (pallet): 0,010 kg Paper packaging (installation instruction): 0,00023 kg Plastic packaging (plastic film and packaging label): 0,0015 kg Cardboard (packaging box): 0,0048 kg
Waste materials: output routes	Wood packaging (pallet); 0,0032 kg recycled, 0,003 kg incinerated, 0,0038 kg landfilled Paper packaging (installation instruction): 0,00019 kg recycled, 0,00002 kg incinerated, 0,00002 kg landfilled Plastic packaging (plastic film and packaging label): 0,00062 kg recycled, 0,00057 kg incinerated, 0,00036 kg landfilled Cardboard (packaging box): 0,004 kg recycled, 0,00049 kg incinerated, 0,00049 kg landfilled
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	0,1 kg
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0,08
Recovery: energy recovery (kg)	0
Disposal (kg)	0,02
Scenario assumptions e.g. transportation (mode, km) & other	250 km to recycling, 150 km to incineration, 50 km to landfill

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

Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub Limited
23.05.2026



ANNEX 1.

A1-A3 Scaling table – GWP-fossil, GWP-total

		Mass from	per 0,1 kg of product		per product	
Product code	Product name	catalog (g)	GWP-total	GWP-fossil	GWP-total	GWP-fossil
VC02-0006	OT 1,5-50	10	1,36E+00	1,36E+00	1,93E-01	1,93E-01
VC02-0145	OT 1xAl/Cu 6-95mm^2	29	1,12E+00	1,10E+00	3,28E-01	3,22E-01
VC02-0135	OT 2xAl/Cu 1,5-50mm^2	47	1,07E+00	1,01E+00	4,43E-01	4,18E-01
VC02-0146	OT 1xAl/Cu 25-150mm^2	57	1,05E+00	1,01E+00	6,08E-01	5,85E-01
VC02-0150	OT 2xAl/Cu 6-95mm^2 2xM6	69	1,06E+00	1,01E+00	5,85E-01	5,57E-01
VC02-0136	OT 2xAl/Cu 6-95mm^2	69	1,19E+00	1,17E+00	6,57E-01	6,46E-01
VC02-0147	OT 1xAl/Cu 35-240mm^2	108	1,01E+00	9,69E-01	1,10E+00	1,06E+00
VC02-0151	OT 2xAl/Cu 25-150mm^2 2xM8	118	1,01E+00	9,69E-01	1,02E+00	9,78E-01
VC02-0137	OT 2xAl/Cu 25-150mm^2	118	1,17E+00	1,14E+00	1,18E+00	1,15E+00
VC02-0148	OT 1xAl/Cu 95-300mm^2	160	9,75E-01	9,42E-01	1,57E+00	1,51E+00
VC02-0005	OT 2x(25-120)	186	8,83E-01	8,84E-01	1,74E+00	1,74E+00
VC02-0152	OT 2xAl/Cu 35-240mm^2 2xM10	229	9,90E-01	9,62E-01	1,92E+00	1,87E+00
VC02-0138	OT 2xAl/Cu 35-240mm^2	229	9,87E-01	9,60E-01	1,92E+00	1,86E+00
VC02-0149	OT 2xAl/Cu 95-300mm^2	325	9,53E-01	9,15E-01	3,27E+00	3,14E+00
VC02-0004	OT 2x(70-240)	451	9,12E-01	8,99E-01	4,63E+00	4,56E+00