



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Shear Bolt Splice Connector
Ouneva Oy



EPD HUB, HUB-5327

Published on 13.02.2026, last updated on 13.02.2026, valid until 13.02.2031

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	www.ounevagroup.fi

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: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> 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	Shear Bolt Splice Connector
Additional labels	Al/Al and Al/Cu Shear bolt splice connectors (see annex 1)
Product reference	-
Place(s) of raw material origin	EU
Place of production	Tuupovaara, Finland
Place(s) of installation and use	Global
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-50 %
GTIN (Global Trade Item Number)	6410052012823
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	82,2

ENVIRONMENTAL DATA SUMMARY

Declared unit	0,1 kg of product
Declared unit mass	0,1 kg
Mass of packaging	0,00442 kg
GWP-fossil, A1-A3 (kgCO₂e)	0,96
GWP-total, A1-A3 (kgCO₂e)	0,96
Secondary material, inputs (%)	10,7
Secondary material, outputs (%)	80
Total energy use, A1-A3 (kWh)	5,44
Net freshwater use, A1-A3 (m³)	0,13

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

This EPD represents Al/Al and Al/Cu shear bolt splice connectors manufactured by Ouneva, intended for extending aluminium and copper cables. The results are based on a representative product.

Al/Cu Shear bolt splice connectors are suitable for aluminium and copper conductors within the size range of 6 to 300 mm². Stranded, sector shaped and circular conductors are allowed. The installation can be performed with shear head screws. Connector includes dividing wall so it is suitable for aluminium cable and copper cable coupling. Al/Cu connector mass ranges from 15 to 312 grams.

Al/Al Shear bolt splice connectors are designed for extending aluminium cables within the size range from 6 to 300 mm². Joint is made with shear bolts which makes installations permanent. Contact surfaces are treated with a corrosion preventing grease. Al/Al connector mass ranges from 15 to 309 grams.

Representative product VB04-0015 weighs 15 grams and is intended for both Al/Al and Al/Cu connections within the size range from 6 to 25 mm².

Further information can be found at: www.ounevagroup.fi

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	0,00055

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 metal components. The product packaging and transport materials consist of a packaging bag, label and installation instruction. A2 Transport routes and modes were estimated based on supplier locations.

The manufacturing processes include metal working and surface treatment processes, assembly and packing. Production losses are sent to local waste treatment facilities. Recycling rates for manufacturing losses were considered based on International Aluminium Institute for aluminium (81 %) and International Resource Panel statistics for electroplating materials (50 %). A 50 km transport distance was estimated from the factory to local waste treatment operators.

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

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 transport is based on sales data from the year 2024. The module uses sales weighted proportions of the product being shipped to multiple locations.

A5 installation phase considers waste treatment of the packaging materials.

Based on Eurostat statistics, the recycling rate for plastic packaging is 40 % and incineration rate is 37 %.

to avoid double counting. Benefits and loads do not include manufacturing losses or co-products from A3.

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)

Electricity consumption of 0.01 kWh/kg as the average for building deconstruction was considered for C1.

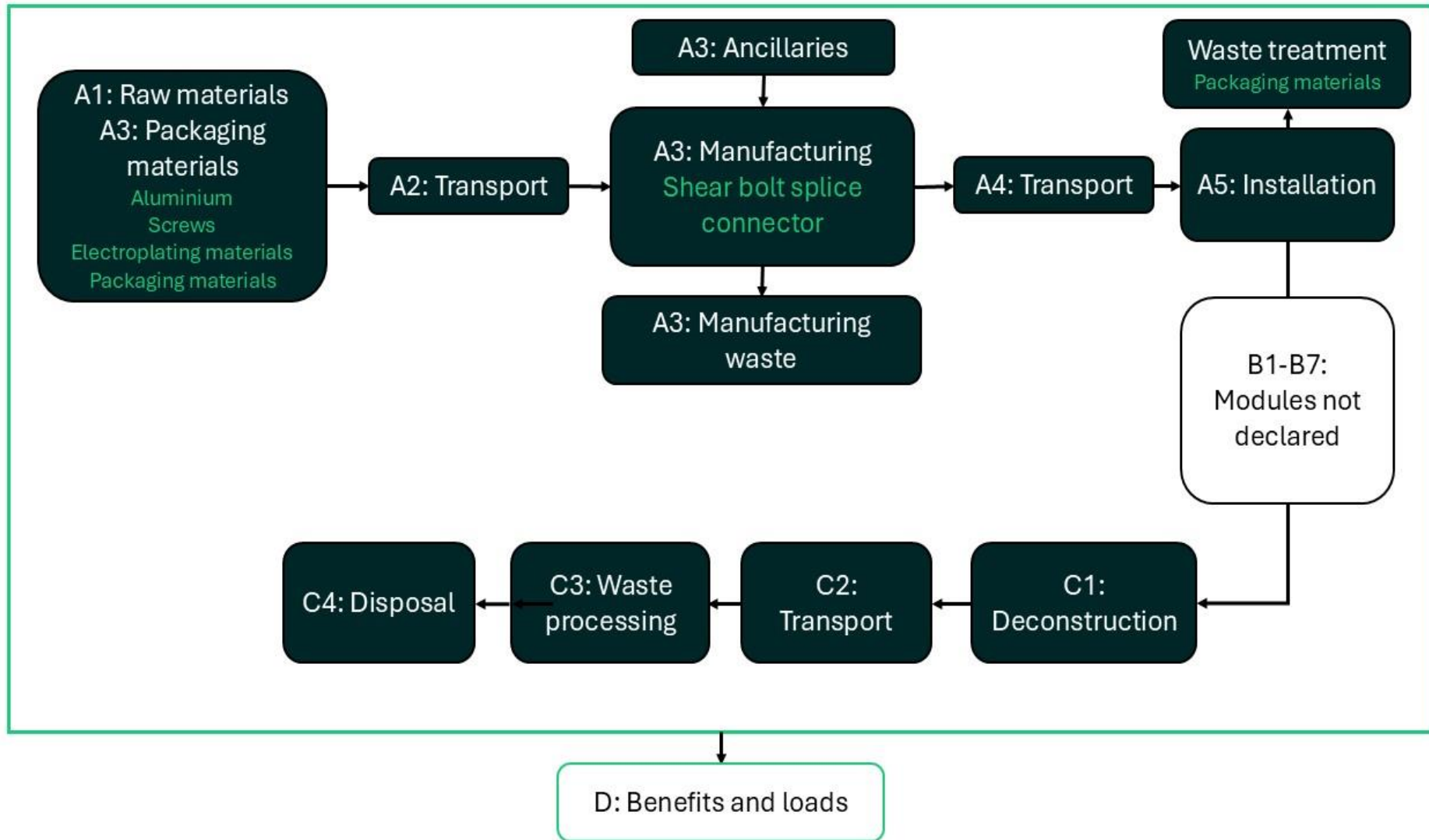
C2-C4 accounts for the processing, disposal and transport of waste. The waste treatment scenarios were modeled based on waste processing statistics in the Europe, where the connectors are mainly in use.

Recycling rates are considered based on World Steel Organization (85 %) and International Aluminium Institute (81 %). Distances included in the datasets were used for transport of materials to waste treatment facilities.

Benefits and loads from recycling and recovery are included in module D. The recycling and recovery of aluminium and steel in C1-C4 and packaging materials in A5 lead to avoided virgin raw material production and energy from primary sources. Benefits and loads in module D correspond to recycling and recovery rates modeled in packaging and product end of life modules A5 and C1-C4. Benefits and loads were modeled using OneClick LCA assemblies modeling scenarios in Europe.

Recycled raw material content has been subtracted from benefits and loads

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, %	-50 %

A representative product VB04-0015 was chosen for the LCA study. The product acts as a representative for the Al/Al and Al/Cu shear bolt splice connectors manufactured by Ouneva (see annex 1).

The products serve a similar purpose and performance rating and are manufactured using the same main processes in the same factory. A4-A5 and the end-of-life scenarios are applicable for use in Europe where the product was mainly in use in 2024. The scenarios are applicable for all products.

A1-A3 GWP-fossil is declared in this EPD and the range of products complies with the allowed averaging and aggregations requirements defined on EPD Hub GPI 2.9 & Annex 1. GWP-fossil and GWP-total for 0,1 kg of product and 1 unit of product are declared in annex 1 for all product variants.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.3. 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'.

International Aluminium Institute: <https://international-aluminium.org/international-aluminium-institute-publishes-global-recycling-data/>

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

World Steel Organization: <https://worldsteel.org/about-steel/facts/steelfacts/wider-sustainability/steel-recovery-rates-by-market/>

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	4,42E-01	1,91E-02	5,00E-01	9,61E-01	1,31E-02	5,93E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,26E-03	1,81E-03	1,25E-04	-1,44E-01
GWP – fossil	kg CO ₂ e	4,35E-01	1,91E-02	5,04E-01	9,57E-01	1,31E-02	3,93E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,26E-03	1,81E-03	1,25E-04	-1,42E-01
GWP – biogenic	kg CO ₂ e	1,34E-03	3,37E-06	-3,81E-03	-2,46E-03	2,60E-06	2,00E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,12E-07	-3,84E-06	-3,97E-08	-1,40E-03
GWP – LULUC	kg CO ₂ e	5,71E-03	8,52E-06	8,07E-05	5,79E-03	4,64E-06	1,28E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,01E-06	2,23E-06	7,14E-08	-6,18E-04
Ozone depletion pot.	kg CFC-11e	3,00E-08	3,27E-10	4,04E-08	7,08E-08	2,61E-10	1,74E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,34E-11	2,43E-11	3,62E-12	-2,18E-09
Acidification potential	mol H ⁺ e	1,89E-03	3,09E-04	2,70E-03	4,90E-03	4,16E-05	1,09E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,71E-06	2,15E-05	8,85E-07	-1,56E-03
EP-freshwater ²⁾	kg Pe	5,14E-04	9,32E-07	1,27E-04	6,42E-04	8,69E-07	4,82E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,76E-07	1,16E-06	1,03E-08	-1,92E-04
EP-marine	kg Ne	5,10E-04	7,96E-05	1,00E-03	1,59E-03	1,40E-05	8,08E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,53E-06	4,76E-06	3,37E-07	-3,86E-04
EP-terrestrial	mol Ne	2,68E-03	8,82E-04	4,18E-03	7,75E-03	1,52E-04	4,54E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,76E-05	5,38E-05	3,68E-06	-4,08E-03
POCP (“smog”) ³⁾	kg NMVOCe	2,09E-03	2,56E-04	1,21E-03	3,55E-03	6,47E-05	1,39E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,14E-05	1,59E-05	1,32E-06	-1,09E-03
ADP-minerals & metals ⁴⁾	kg Sbe	2,98E-05	4,05E-08	2,91E-07	3,01E-05	4,29E-08	1,18E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,31E-09	1,28E-07	1,98E-10	-1,04E-04
ADP-fossil resources	MJ	5,31E+00	2,50E-01	6,47E+00	1,20E+01	1,84E-01	1,74E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,28E-02	2,42E-02	3,06E-03	-2,29E+00
Water use ⁵⁾	m ³ e depr.	8,93E+04	9,83E-04	5,71E+00	8,93E+04	9,04E-04	1,25E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,62E-04	4,36E-04	8,84E-06	-2,27E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, 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	7,66E-09	1,03E-09	9,81E-09	1,85E-08	1,03E-09	4,76E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,26E-10	2,92E-10	2,01E-11	-5,07E-09
Ionizing radiation ⁶⁾	kBq 11235e	1,21E-02	2,23E-04	4,40E-01	4,52E-01	2,35E-04	7,80E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,86E-05	2,06E-04	1,93E-06	-3,40E-02
Ecotoxicity (freshwater)	CTUe	4,46E+00	2,62E-02	3,01E+00	7,49E+00	2,42E-02	9,13E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-03	1,41E-02	2,57E-04	-2,88E+01
Human toxicity, cancer	CTUh	5,15E-10	3,64E-12	5,23E-11	5,71E-10	2,24E-12	5,02E-13	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,73E-13	1,61E-12	2,30E-14	-7,01E-10
Human tox. non-cancer	CTUh	3,35E-08	1,13E-10	5,00E-09	3,86E-08	1,16E-10	1,03E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,12E-11	1,10E-10	5,29E-13	-2,15E-08
SQP ⁷⁾	-	1,73E+00	8,88E-02	6,15E-01	2,43E+00	1,10E-01	2,29E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,30E-02	4,72E-02	6,03E-03	-1,27E+00

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	2,54E+00	3,21E-03	5,46E-01	3,09E+00	3,18E-03	-1,73E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,50E-04	4,52E-03	2,96E-05	-3,82E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,71E-02	1,71E-02	0,00E+00	-1,71E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,50E-02
Total use of renew. PER	MJ	2,54E+00	3,21E-03	5,64E-01	3,11E+00	3,18E-03	-3,45E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,50E-04	4,52E-03	2,96E-05	-3,67E-01
Non-re. PER as energy	MJ	7,13E+00	2,50E-01	9,12E+00	1,65E+01	1,84E-01	-1,29E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,28E-02	2,43E-02	3,06E-03	-2,29E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	1,23E-01	1,23E-01	0,00E+00	-1,23E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,41E-02
Total use of non-re. PER	MJ	7,13E+00	2,50E-01	9,24E+00	1,66E+01	1,84E-01	-2,52E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,28E-02	2,43E-02	3,06E-03	-2,24E+00
Secondary materials	kg	1,07E-02	1,17E-04	8,60E-04	1,17E-02	8,44E-05	4,59E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,40E-05	2,96E-05	7,70E-07	7,75E-02
Renew. secondary fuels	MJ	1,07E-03	8,96E-07	9,37E-05	1,17E-03	1,06E-06	4,33E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,77E-07	1,38E-06	1,59E-08	-1,01E-05
Non-ren. secondary fuels	MJ	1,74E-03	0,00E+00	0,00E+00	1,74E-03	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	1,23E-01	2,60E-05	6,63E-03	1,29E-01	2,48E-05	-1,96E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,85E-06	1,29E-05	3,19E-06	-5,26E-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	3,21E-02	3,46E-04	2,55E-03	3,50E-02	2,64E-04	4,68E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,56E-05	1,59E-04	3,38E-06	4,08E-03
Non-hazardous waste	kg	5,57E-01	6,14E-03	3,42E+01	3,48E+01	5,57E-03	3,96E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,03E-03	5,73E-03	7,73E-05	-5,88E-01
Radioactive waste	kg	4,75E-05	5,53E-08	4,64E-05	9,40E-05	5,83E-08	1,88E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,99E-09	5,27E-08	4,70E-10	-8,74E-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	1,22E-05	0,00E+00	0,00E+00	1,22E-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	9,70E-04	0,00E+00	3,37E+01	3,37E+01	0,00E+00	2,30E-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	2,34E-04	0,00E+00	8,48E-22	2,34E-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
Exported energy	MJ	7,16E-04	0,00E+00	0,00E+00	7,16E-04	0,00E+00	1,95E-02	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	8,13E-03	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	1,13E-02	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 ₂ e	4,63E-01	1,90E-02	5,03E-01	9,85E-01	1,30E-02	4,13E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,25E-03	1,80E-03	1,24E-04	-1,43E-01
Ozone depletion Pot.	kg CFC ₁₁ e	2,49E-08	2,60E-10	4,66E-08	7,18E-08	2,08E-10	1,44E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,66E-11	2,00E-11	2,87E-12	-1,81E-09
Acidification	kg SO ₂ e	2,75E-03	2,46E-04	2,29E-03	5,28E-03	3,16E-05	8,00E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,89E-06	1,73E-05	6,55E-07	-1,25E-03
Eutrophication	kg PO ₄ ³ e	5,48E-04	3,03E-05	9,10E-04	1,49E-03	7,97E-06	4,72E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,43E-06	2,51E-06	2,08E-07	-2,26E-04
POCP (“smog”)	kg C ₂ H ₄ e	2,26E-04	1,32E-05	9,98E-05	3,39E-04	2,99E-06	1,57E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,25E-07	1,03E-06	6,19E-08	-6,41E-05
ADP-elements	kg Sbe	2,99E-05	3,97E-08	2,85E-07	3,02E-05	4,19E-08	1,14E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,15E-09	1,28E-07	1,94E-10	-1,04E-04
ADP-fossil	MJ	4,76E+00	2,47E-01	6,34E+00	1,13E+01	1,80E-01	1,61E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,24E-02	2,07E-02	3,03E-03	-1,81E+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	4,40E-01	1,91E-02	5,04E-01	9,63E-01	1,31E-02	3,93E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,26E-03	1,81E-03	1,25E-04	-1,43E-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, Finland, residual mix, 2024, Finland, One Click LCA, 0.55 kgCO₂e/kWh
2. Electricity, Finland, residual mix, 2024, Finland, One Click LCA, 0.55 kgCO₂e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry 16-32 metric ton, EURO5, 470 km
2. Transport, freight, lorry 16-32 metric ton, EURO5, 550 km
3. Transport, freight, sea, container ship, 90 km
4. Transport, freight, lorry 16-32 metric ton, EURO5, 3400 km
5. Transport, freight, sea, container ship, 90 km
6. Transport, freight, lorry 16-32 metric ton, EURO5, 1600 km
7. Transport, freight, sea, container ship, 300 km

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	100
Bulk density of transported products	-
Volume capacity utilization factor	1

Installation scenario documentation - A5 (Installation waste)

1. Exported Energy: Electricity, Ecoinvent, 0.0079 MJ
2. Exported Energy: Electricity, Ecoinvent, 2.3E-4 MJ
3. Exported Energy: Thermal, Ecoinvent, 0.011 MJ
4. Exported Energy: Thermal, Ecoinvent, 3.2E-4 MJ
5. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.0013 kg
6. Treatment of waste polyethylene, municipal incineration, Ecoinvent, 0.0012 kg
7. Treatment of waste polyethylene, sanitary landfill, Ecoinvent, 7.3E-4 kg

8. Treatment of waste packaging paper, municipal incineration, Ecoinvent, 1.0E-4 kg
9. Treatment of waste packaging paper, sanitary landfill, Ecoinvent, 1.1E-4 kg
10. Treatment of waste paper, unsorted, sorting, Ecoinvent, Materials for recycling, 0.001 kg

End-of-life scenario documentation - C1-C4 (Data source)

1. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.08 kg
2. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.02 kg
3. Market group for electricity, medium voltage, Ecoinvent, 0.001 kWh

Scenario information	Value
Scenario assumptions e.g. transportation	See section PRODUCT END OF LIFE (C1-C4, D)

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
13.02.2026



ANNEX 1

Scaling table: A1-A3, GWP-total & GWP-fossil

Product code	Size	Mass (g)	kg CO2e per 0,1 kg of product		kg CO2e per product	
			GWP- total	GWP-fossil	GWP-total	GWP-fossil
VB04-0015	6-25 Al/Cu	15	9,61E-01	9,57E-01	1,88E-01	1,88E-01
VB04-0027	16-50 Al	26	7,14E-01	6,99E-01	2,41E-01	2,36E-01
VB04-0028	70-95 Al	35	6,39E-01	6,25E-01	3,01E-01	2,95E-01
VB04-0016	16-50 Al	47	7,48E-01	7,34E-01	2,82E-01	2,77E-01
VB04-0040	16-50 Al/Cu	47	6,76E-01	6,60E-01	3,76E-01	3,67E-01
VB04-0017	70-95 Al	65	6,31E-01	6,20E-01	3,61E-01	3,54E-01
VB04-0041	70-95 Al/Cu	65	9,56E-01	9,34E-01	3,98E-01	3,89E-01
VB04-0018	120-185 Al	150	4,89E-01	4,80E-01	8,15E-01	8,00E-01
VB04-0042	120-185 Al/Cu	150	6,86E-01	6,73E-01	1,25E+00	1,22E+00
VB04-0019	240-300 Al	309	4,86E-01	4,74E-01	1,47E+00	1,44E+00
VB04-0043	240-300 Al/Cu	312	5,98E-01	5,82E-01	1,99E+00	1,94E+00