



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

TPE sealing profile

V.A.V. Group Oy



**EPD HUB, HUB-5636**

Published on 06.03.2026, last updated on 06.03.2026, valid until 05.03.2031

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



SEAL YOUR SUCCESS WITH US\*

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	V.A.V. Group Oy
Address	Paneelitie 3, 91100 Ii, Finland
Contact details	sales@vav-group.com
Website	https://vav-group.com/

### 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	Salla Hartikainen, Reforest Finland Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025:  <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Yazan Badour 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	TPE sealing profile
Additional labels	
Product reference	
Place(s) of raw material origin	Turkey, Slovenia, Poland, Luxemburg and Finland
Place of production	Finland
Place(s) of installation and use	Finland and Germany
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-2,6/+2,6 %
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	7,67

## ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0,007 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	3,49
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	3,65
Secondary material, inputs (%)	1,35
Secondary material, outputs (%)	73
Total energy use, A1-A3 (kWh)	23,9
Net freshwater use, A1-A3 (m <sup>3</sup> )	0,07

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

V.A.V. Group is a specialist in tailor-made sealing solutions, raw materials and installation methods. The company manufactures and assembles high-quality silicone and TPE profiles starting all the way from the production of the right raw material mix.

Our production process is extremely flexible with an ability to quickly produce small to medium size production series.

The company's guiding principle is to find the best solution for each customer in order to ensure competitiveness.

V.A.V. Group's value is built around three basic principles: Fast, Flexible, and Reliable. We set these principles so that we can find the best solution for each customer.

The company was founded in 2005 and is located in Ii near Oulu in northern Finland.

## PRODUCT DESCRIPTION

TPE profiles made from thermoplastic elastomer (TPE) are widely used in the construction and engineering industries. TPE is a common material used, among other things, to protect and insulate balcony glazing and windows. It is well suited for multi-component seals and enables the manufacture of products that combine both soft and hard material properties within the same profile.

All products are based on the same primary TPE polymer base, with differences arising from the type and share of additives incorporated. While a large number of different formulations are used in production, variations occur mainly in the proportion of fillers and additives. To assess representativeness, minimum and maximum composition scenarios were

modelled, in which the share of fillers varies between 0% and 12.4% by mass. The declared average product is defined within this composition range and reflects a representative mid-point configuration. The variation in environmental impacts within modules A1–A3 remains very limited, demonstrating that formulation differences have only a negligible effect on overall greenhouse gas emissions. Therefore, the declared unit is considered representative of the full range of TPE profile products covered by this EPD.

Further information can be found at:  
<https://vav-group.com/>

## PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	<0,1	Europe
Minerals	5,4	Europe
Fossil materials	94,2	Europe
Bio-based materials	0,4	Europe

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,002
Biogenic carbon content in packaging, kg C	0,001

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
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	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.

Raw material production includes silicone polymers, reinforcing fillers such as silica, pigments, curing agents, stabilisers and other additives used in the silicone formulation, modelled using generic silicone rubber datasets and proxy chemicals based on the supplied material list. A2 includes transport of all raw materials to the manufacturing site using distances based on supplier locations. A3 covers all on-site manufacturing processes: material drying, feeding, extrusion through customised extrusion dies, cooling, cutting and final finishing, as well as product packaging. All electricity and ancillary materials used in these processes are included according to annual factory consumption data. Production scrap and offcuts generated during extrusion and finishing are treated as mixed municipal waste directed to energy recovery. Packaging materials used for finished products (plastics, cardboard and wood) are also included.

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.

The transportation distance to the construction site (A4) is based on an average distribution distance, calculated using default transport routes for each destination country and weighed according to the annual share of sales. The product is supplied to markets in Finland and Germany. The installation stage (A5) includes the waste management of packaging materials, which are assumed to be incinerated, as they consist of plastics, wood, and cardboard. A 2 % product loss is included in the installation scenario. The installation scenario also accounts for production-line

installation: 25% of the products are estimated to be installed in an automated process consuming electricity, while the remaining 75% are manually installed without electricity use.

### PRODUCT USE AND MAINTENANCE (B1-B7)

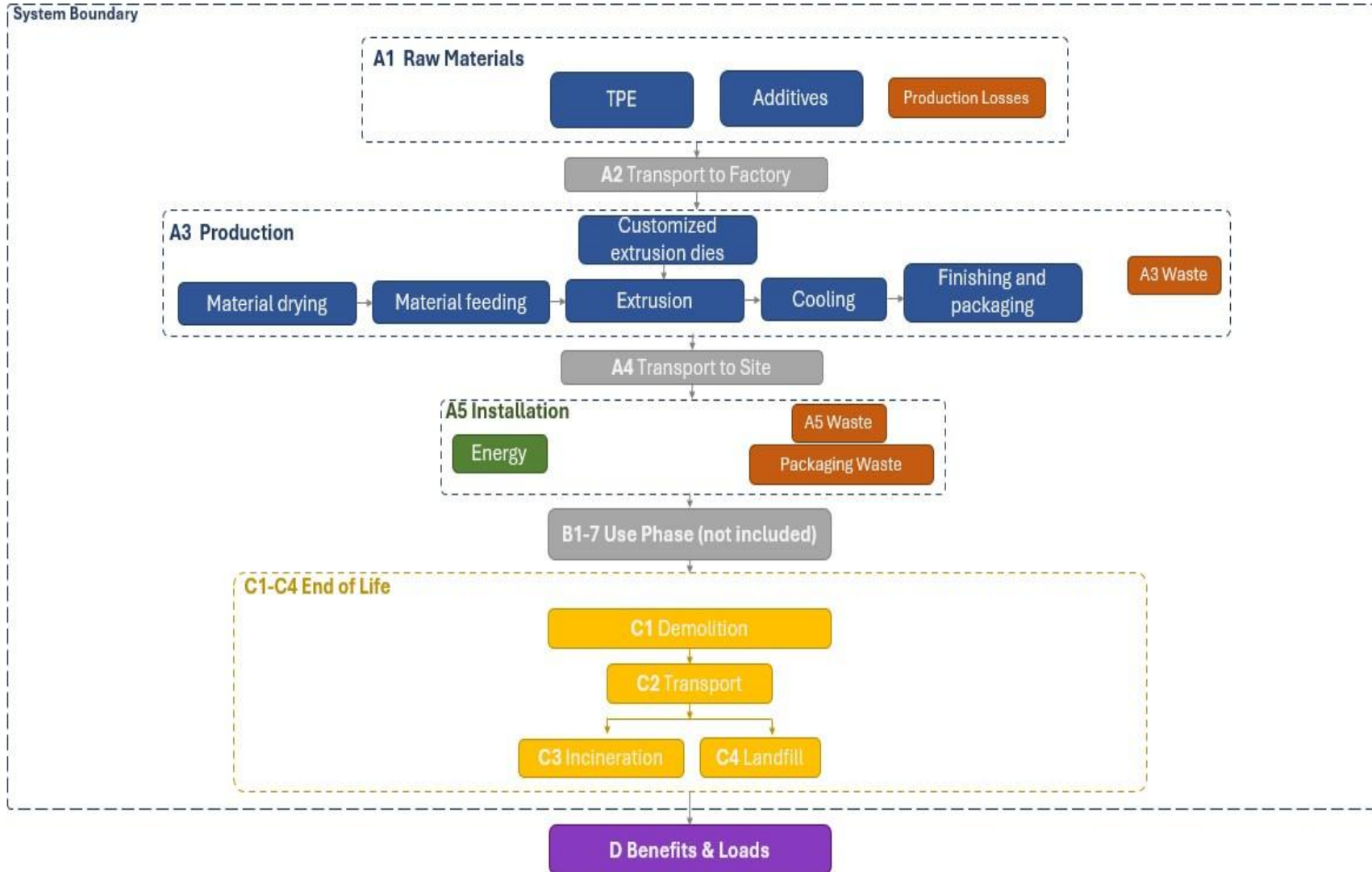
This EPD does not cover the use phase.

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

### PRODUCT END OF LIFE (C1-C4, D)

At end of life, the product is disposed of as mixed municipal solid waste. No dismantling is required in C1, and transport to a municipal waste facility is modelled using an average European distance. As the product is not mechanically recyclable, no material recovery occurs in C3. In C4, the end-of-life treatment follows European average waste statistics for non-recyclable plastics: 73% of the product is incinerated with energy recovery, while 27% is landfilled. Module D accounts for the benefits of exported energy from the incineration process by crediting the avoided production of district heat and electricity based on the recovered thermal and electrical energy output.

# SYSTEM DIAGRAM



# 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.

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 revenue
Ancillary materials	Allocated by revenue
Manufacturing energy and waste	Allocated by revenue

## PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on average results of product group - by total mass
Variation in GWP-fossil for A1-A3, %	-2,6/+2,6 %

The average product results presented in this EPD have been determined using a minimum and maximum composition scenario approach. The product range consists of several hundred recipe variants that differ in colour, hardness and minor formulation adjustments, primarily through variations in the share of fillers and additives. To assess representativeness, two boundary scenarios were modelled in which the filler content varies

between 0% and 12.4% by mass, while the primary TPE polymer base remains similar. The declared average product is defined within this composition range and reflects a representative mid-point configuration.

### 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'.

# 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 <sup>1)</sup>	kg CO <sub>2</sub> e	3,09E+00	2,62E-01	3,06E-01	3,65E+00	6,58E-02	1,10E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,39E-03	9,21E-01	7,93E-02	0,00E+00
GWP – fossil	kg CO <sub>2</sub> e	3,08E+00	2,62E-01	1,44E-01	3,49E+00	6,58E-02	8,56E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,38E-03	3,80E-01	1,36E-02	0,00E+00
GWP – biogenic	kg CO <sub>2</sub> e	-1,57E-02	5,68E-05	1,62E-01	1,46E-01	1,45E-05	2,37E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,22E-06	5,40E-01	6,56E-02	0,00E+00
GWP – LULUC	kg CO <sub>2</sub> e	1,75E-02	1,20E-04	3,46E-05	1,77E-02	2,99E-05	3,55E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,41E-06	7,52E-06	4,72E-06	0,00E+00
Ozone depletion pot.	kg CFC <sub>-11</sub> e	6,40E-09	3,88E-09	2,90E-09	1,32E-08	9,69E-10	3,03E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,95E-11	4,89E-10	9,20E-11	0,00E+00
Acidification potential	mol H <sup>+</sup> e	1,21E-02	1,81E-03	1,89E-04	1,41E-02	3,63E-04	2,98E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,84E-05	2,17E-04	4,59E-05	0,00E+00
EP-freshwater <sup>2)</sup>	kg Pe	1,36E-03	1,87E-05	1,61E-05	1,40E-03	4,87E-06	2,93E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,19E-07	3,25E-05	2,05E-05	0,00E+00
EP-marine	kg Ne	2,57E-03	5,10E-04	6,47E-05	3,14E-03	1,07E-04	6,97E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,03E-06	1,18E-04	3,86E-04	0,00E+00
EP-terrestrial	mol Ne	2,41E-02	5,61E-03	5,90E-04	3,03E-02	1,17E-03	6,71E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,56E-05	1,02E-03	1,43E-04	0,00E+00
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	6,88E-03	1,91E-03	2,17E-04	9,01E-03	4,21E-04	2,00E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,70E-05	2,71E-04	9,05E-05	0,00E+00
ADP-minerals & metals <sup>4)</sup>	kg Sbe	2,52E-06	6,67E-07	1,49E-07	3,34E-06	1,74E-07	7,35E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,50E-08	7,75E-08	9,70E-09	0,00E+00
ADP-fossil resources	MJ	7,91E+01	3,73E+00	9,56E-01	8,38E+01	9,42E-01	3,32E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,81E-02	2,71E-01	8,64E-02	0,00E+00
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	6,49E-01	1,75E-02	1,82E-01	8,49E-01	4,51E-03	1,89E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,86E-04	4,99E-02	9,50E-04	0,00E+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	6,66E-08	2,37E-08	2,30E-09	9,27E-08	6,21E-09	2,07E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,39E-10	2,06E-09	6,19E-10	0,00E+00
Ionizing radiation <sup>6)</sup>	kBq 11235e	1,68E-02	3,08E-03	2,39E-03	2,23E-02	7,93E-04	4,86E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,80E-05	6,09E-04	2,10E-04	0,00E+00
Ecotoxicity (freshwater)	CTUe	5,94E+00	4,96E-01	9,67E-01	7,40E+00	1,29E-01	2,00E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,10E-02	1,32E+00	2,69E+00	0,00E+00
Human toxicity, cancer	CTUh	6,34E-10	4,49E-11	5,74E-11	7,36E-10	1,11E-11	2,11E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,88E-13	1,64E-10	8,49E-12	0,00E+00
Human tox. non-cancer	CTUh	4,19E-09	2,24E-09	1,55E-09	7,98E-09	5,84E-10	3,29E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,06E-11	4,22E-09	1,28E-09	0,00E+00
SQP <sup>7)</sup>	-	6,95E+00	3,35E+00	1,49E-01	1,05E+01	8,88E-01	2,34E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,87E-02	1,48E-01	1,62E-01	0,00E+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 <sup>8)</sup>	MJ	2,08E+00	4,86E-02	7,25E-01	2,85E+00	1,25E-02	-1,91E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,07E-03	-6,71E+00	-2,48E+00	0,00E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,36E-04	2,36E-04	0,00E+00	-2,36E-04	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	2,08E+00	4,86E-02	7,25E-01	2,85E+00	1,25E-02	-1,92E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,07E-03	-6,71E+00	-2,48E+00	0,00E+00
Non-re. PER as energy	MJ	8,02E+01	3,73E+00	-6,84E-01	8,32E+01	9,42E-01	1,53E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,81E-02	-4,13E+00	-1,54E+00	0,00E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	2,62E-03	2,62E-03	0,00E+00	-2,62E-03	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 non-re. PER	MJ	8,02E+01	3,73E+00	-6,81E-01	8,32E+01	9,42E-01	1,53E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,81E-02	-4,13E+00	-1,54E+00	0,00E+00
Secondary materials	kg	1,35E-02	1,61E-03	8,15E-04	1,60E-02	4,04E-04	3,43E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,32E-05	2,93E-04	2,84E-05	0,00E+00
Renew. secondary fuels	MJ	1,58E-02	1,83E-05	1,69E-04	1,60E-02	4,81E-06	3,20E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,22E-07	5,30E-06	4,92E-07	0,00E+00
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	4,64E-02	4,64E-02	0,00E+00	9,28E-04	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 <sup>3</sup>	7,20E-02	5,16E-04	6,45E-04	7,32E-02	1,34E-04	1,50E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,15E-05	7,96E-04	-1,02E-03	0,00E+00

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	1,61E-01	6,14E-03	1,45E-02	1,82E-01	1,57E-03	5,28E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,32E-04	4,32E-02	2,36E-04	0,00E+00
Non-hazardous waste	kg	5,18E+00	1,11E-01	4,58E-01	5,75E+00	2,87E-02	1,57E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,45E-03	1,10E+00	1,38E+00	0,00E+00
Radioactive waste	kg	4,08E-04	7,54E-07	2,05E-06	4,11E-04	1,94E-07	8,23E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,67E-08	1,56E-07	5,14E-08	0,00E+00

## 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	8,12E-10	8,12E-10	0,00E+00	1,62E-11	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	1,05E-07	1,05E-07	0,00E+00	2,09E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	2,24E-01	2,24E-01	0,00E+00	3,15E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,30E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	4,23E-06	4,23E-06	0,00E+00	8,46E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,12E+01
Exported energy – Electricity	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	-4,71E+00
Exported energy – Heat	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	-6,48E+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 <sup>9)</sup>	kg CO <sub>2</sub> e	3,10E+00	2,62E-01	1,44E-01	3,51E+00	6,58E-02	8,59E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,38E-03	3,80E-01	1,37E-02	0,00E+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 – CH<sub>4</sub> fossil, CH<sub>4</sub> 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 CO<sub>2</sub> is set to zero.

## SCENARIO DOCUMENTATION

### DATA SOURCES

#### Manufacturing energy scenario documentation

1. Green electricity, Finland (solar 10 %, water 30 %, wind 60 %), Finland, One Click LCA
2. District Heat, Finland, 2023, Finland, One Click LCA, 0.14 kgCO<sub>2</sub>e/kWh
3. Liquefied petroleum gas production, petroleum refinery operation, Albania, Ecoinvent, 1.09 kgCO<sub>2</sub>e/kg

#### Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO5, 557,3 km
2. Market for transport, freight, sea, container ship, 519,075 km

#### Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	1,01E+03
Volume capacity utilization factor	<1

#### Installation scenario documentation - A5 (Installation resources)

1. Electricity, El-mix-FI-2015, ProBas, 7.75E-4 kWh

#### Installation scenario documentation - A5 (Installation waste)

1. Treatment of municipal solid waste, municipal incineration, Ecoinvent, Materials for energy recovery, 0.027069738 kg

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

1. Treatment of municipal solid waste, municipal incineration, Ecoinvent, Materials for energy recovery, 0.73 kg
2. Treatment of municipal solid waste, sanitary landfill, Ecoinvent, 0.27 kg

Scenario information	Value
Scenario assumptions e.g. transportation	Local waste management practices and locally representative assumptions for transport to treatment facilities.

## 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

Yazan Badour as an authorized verifier for EPD Hub Limited 06.03.2026

