



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

**Akvanor DTM**

**Nor-Maali Oy**



**EPD HUB, HUB-5088**

Published on 30.01.2026, last updated on 30.01.2026, valid until 29.01.2031

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

**NOR MAALI**

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	Nor-Maali Oy
Address	Vanhatie 20, 15240, Lahti, Finland
Contact details	sds@nor-maali.fi
Website	www.nor-maali.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	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Elina Syrjä, Nor-Maali 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	Sarah Curpen, as an authorised verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

### PRODUCT

Product name	Akvanor DTM
Additional labels	-
Product reference	-
Place(s) of raw material origin	Finland, EU, USA, China
Place of production	Finland
Place(s) of installation and use	Finland, EU
Period for data	calendar year 2024
Averaging in EPD	no averaging
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	16,5

### ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0,07 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	2,83
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	2,85
Secondary material, inputs (%)	0,08
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	3,48
Net freshwater use, A1-A3 (m <sup>3</sup> )	0

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

Nor-Maali provides a reliable range of industrial coatings for professional use. The product portfolio includes anti-corrosion protective coatings for metal surfaces, available in both water-based and high-solid solvent-based formulations. In addition, Nor-Maali manufactures CE-certified concrete floor products.

### PRODUCT DESCRIPTION

AKVANOR DTM is a fast drying, acrylic based waterborne semi-matt/semi-gloss paint with rust preventing pigments. Suitable as primer or topcoat as well as a single coat/direct to metal (DTM) paint. Recommended on steel surfaces in environment classes C1 – C3. Suitable for fast painting of machinery and equipment, structural steel in warehouses and factories, internal surfaces in ships, electric motors, air conditioners and steel doors etc.

### PRODUCT APPLICATION

The surface should be dry and clean when applied. Applied with an airless spray, mohair roller or brush. The paint must be thoroughly mixed before application.

### TECHNICAL INFORMATION

Spreading rate (typical):	4 - 6 m <sup>2</sup> /L
Dry film thickness:	80 - 120 µm
Finish:	Semi-matt / Semi-gloss

### PHYSICAL PROPERTIES OF THE PRODUCT

Volume of solids:	48 ± 2%
Mass of solids:	705 g/L
VOC-value:	50 g/L
Density:	1,23 kg/L

Further information can be found at: [www.nor-maali.fi](http://www.nor-maali.fi)

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	23	Finland, EU, CN
Fossil materials	38	EU, CN
Bio-based materials	-	-
Water	39	Finland

### 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	0,0001

### 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	Recovery	Recycling

Modules not declared = ND.

## MANUFACTURING AND PACKAGING (A1-A3)

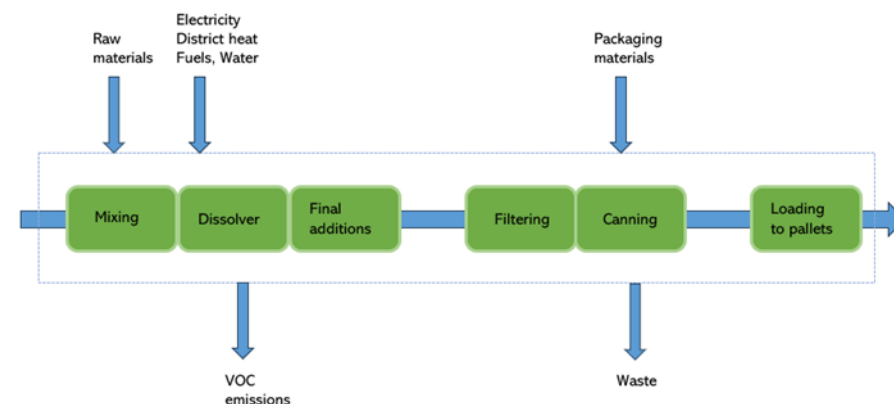
The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities 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: Raw materials are mainly sourced from Europe, and CEPE database v3.0 has been used for modelling.

A2: Transport distances from suppliers to the factory are based on actual data.

A3: The manufacturing and packaging process (A3) is illustrated in the Process Flow Diagram.



The manufacturing process of paint consists of two main steps: paint production and product packaging. Production begins with mixing, in which water, solvents, powders (pigments, fillers, and thickeners), additives, and sometimes binders are dispersed in a dissolver to form a smooth paint paste. This is followed by finishing, where binders, water, solvents, additives, including any tinting pastes, are added to produce a ready-to-use paint. Packaging includes the canning of the paint and loading the cans onto pallets. The paint is filled into cans of various sizes using filling machines, after which the pallets are transferred to a warehouse within the site.

The Process Flow Diagram is used to support the definition of the system boundaries and the completeness of data for module A3 and is consistent with the manufacturing description provided in Section Manufacturing and Packaging (A1–A3).

Guarantee of Origin: Electricity purchased by Nor-Maali Oy is fossil-free, produced from nuclear power (certified by VENI Energia).

### 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: Nor-Maali Oy purchases the entire transport services from a long-standing partner with whom an agreement has been made on the use of BIO fuel.

The transportation distance is defined according to average distance. Average distance of transportation from production plant to building site is assumed as 300 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 100 % which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients.

Manual application scenario was considered with 5 % material loss.

During application and drying time all solvents and water evaporate from paint film.

Distance from the construction site to waste handling facility is assumed to be 50 km.

### 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)

During drying, all volatile compounds and water evaporate from the paint. At the end of the life cycle, the solid mass is less than 1 kg.

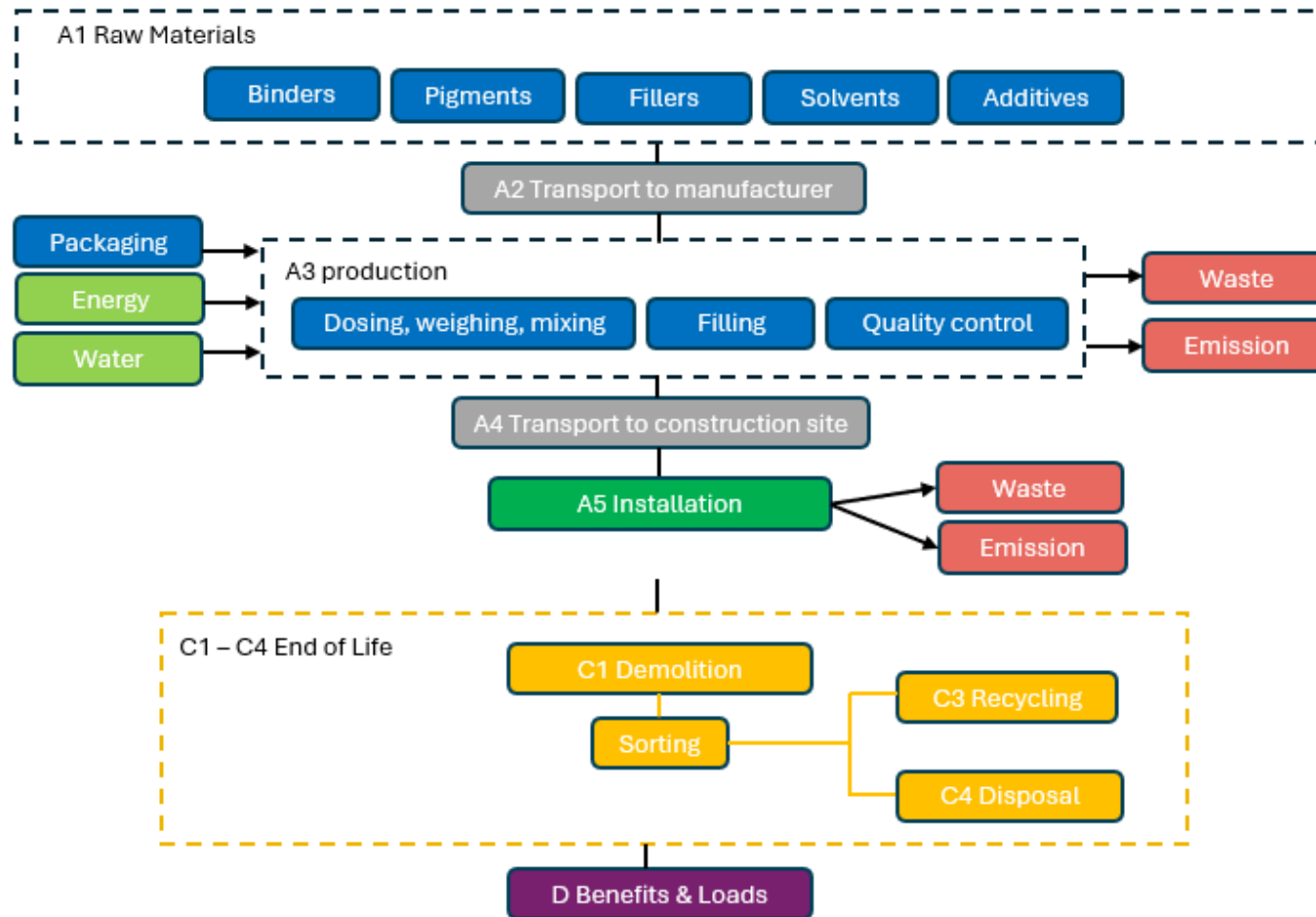
The impacts of demolition are assumed zero, as the consumption of energy and natural resources in disassembling the end-of-life product is negligible. As the product in this EPD is applied on metal surfaces, it is considered to follow the metal object to waste treatment at its end-of-life, treated in the nearest recycling / treatment facility.

Distance from the construction site to waste handling facility is assumed to be 50 km.

As part of the metal waste treatment process, the paint layer is assumed to be removed through incineration. The incineration process does not include energy recovery or utilization. Therefore, no benefits or loads beyond the system boundary are generated, and no credits are reported in Module D.



## 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.

### 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	no grouping
Grouping method	-
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory specific.

### LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD System Verification 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'.

CEPE (European Council of the Paint, Printing Ink, and Artist's Colours Industry) Life Cycle Inventory (LCI) database of raw materials, Version 3.

# 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	2,19E+00	4,52E-01	2,05E-01	2,85E+00	4,32E-04	2,66E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,16E-03	0,00E+00	1,99E+00	-8,67E-02
GWP – fossil	kg CO <sub>2</sub> e	2,18E+00	4,52E-01	2,01E-01	2,83E+00	5,69E-04	2,65E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,16E-03	0,00E+00	1,99E+00	-8,66E-02
GWP – biogenic	kg CO <sub>2</sub> e	8,74E-03	9,19E-05	3,46E-03	1,23E-02	-1,60E-04	1,38E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,60E-07	0,00E+00	-6,72E-05	-1,51E-05
GWP – LULUC	kg CO <sub>2</sub> e	5,20E-05	2,03E-04	1,67E-04	4,22E-04	2,36E-05	4,38E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,53E-06	0,00E+00	7,93E-05	-1,06E-05
Ozone depletion pot.	kg CFC <sub>-11</sub> e	2,44E-07	6,89E-09	3,14E-09	2,54E-07	1,53E-11	1,39E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,37E-11	0,00E+00	1,35E-08	-3,03E-10
Acidification potential	mol H <sup>+</sup> e	1,63E-02	4,56E-03	9,47E-04	2,18E-02	3,29E-06	1,23E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,87E-05	0,00E+00	1,39E-03	-3,43E-04
EP-freshwater <sup>2)</sup>	kg Pe	5,56E-04	2,90E-05	8,20E-05	6,67E-04	3,73E-08	6,86E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,84E-07	0,00E+00	2,10E-05	-3,70E-05
EP-marine	kg Ne	2,24E-03	1,24E-03	2,45E-04	3,72E-03	2,50E-06	2,22E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,35E-06	0,00E+00	2,37E-04	-7,60E-05
EP-terrestrial	mol Ne	2,30E-02	1,37E-02	3,02E-03	3,97E-02	1,31E-05	2,32E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,01E-05	0,00E+00	2,61E-03	-8,33E-04
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	8,21E-03	4,29E-03	2,02E-03	1,45E-02	1,76E-06	4,24E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,88E-05	0,00E+00	1,81E-03	-2,85E-04
ADP-minerals & metals <sup>4)</sup>	kg Sbe	4,10E-04	1,04E-06	1,26E-06	4,13E-04	6,47E-10	2,10E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,32E-08	0,00E+00	7,34E-07	-8,37E-07
ADP-fossil resources	MJ	3,63E+01	6,29E+00	4,09E+00	4,67E+01	7,43E-03	2,93E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,95E-02	0,00E+00	8,98E+00	-7,96E-01
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	6,98E-02	2,79E-02	7,45E-02	1,72E-01	1,93E-04	3,42E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,02E-04	0,00E+00	3,59E-02	-1,45E-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	4,61E-09	3,70E-08	1,62E-08	5,78E-08	2,37E-11	4,52E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,04E-10	0,00E+00	1,58E-08	-5,71E-09
Ionizing radiation <sup>6)</sup>	kBq U235e	5,65E-03	5,06E-03	1,88E-01	1,99E-01	6,87E-06	1,30E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,83E-05	0,00E+00	7,44E-03	3,14E-03
Ecotoxicity (freshwater)	CTUe	1,95E+01	7,74E-01	4,24E+00	2,45E+01	4,12E-03	3,37E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,78E-03	0,00E+00	2,36E+00	-2,12E-01
Human toxicity, cancer	CTUh	9,96E-08	7,93E-11	2,86E-10	1,00E-07	1,20E-13	5,14E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,06E-12	0,00E+00	3,74E-09	-1,39E-11
Human tox. non-cancer	CTUh	4,89E-07	3,49E-09	2,65E-09	4,96E-07	1,08E-11	2,78E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,17E-11	0,00E+00	5,99E-09	-6,82E-10
SQP <sup>7)</sup>	-	2,79E-01	5,02E+00	6,16E+00	1,15E+01	1,17E-02	7,30E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,46E-02	0,00E+00	6,23E-01	-2,50E-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 <sup>8)</sup>	MJ	6,02E-02	7,84E-02	1,50E+00	1,63E+00	5,90E-04	1,14E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,05E-03	0,00E+00	8,32E-02	-5,48E-02
Renew. PER as material	MJ	1,63E-02	0,00E+00	2,82E-03	1,91E-02	0,00E+00	-3,14E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	-1,60E-02	0,00E+00
Total use of renew. PER	MJ	7,64E-02	7,84E-02	1,50E+00	1,65E+00	5,90E-04	1,10E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,05E-03	0,00E+00	6,73E-02	-5,48E-02
Non-re. PER as energy	MJ	8,81E-01	6,29E+00	3,72E+00	1,09E+01	2,44E-03	2,74E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,95E-02	0,00E+00	-1,75E+00	-7,97E-01
Non-re. PER as material	MJ	4,89E-01	0,00E+00	-9,38E-03	4,80E-01	0,00E+00	-2,08E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	-4,79E-01	7,30E-03
Total use of non-re. PER	MJ	1,37E+00	6,29E+00	3,71E+00	1,14E+01	2,44E-03	2,74E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,95E-02	0,00E+00	-2,23E+00	-7,89E-01
Secondary materials	kg	7,51E-04	2,70E-03	3,02E-02	3,36E-02	1,23E-06	1,88E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,70E-05	0,00E+00	3,63E-03	4,76E-02
Renew. secondary fuels	MJ	8,76E-06	2,78E-05	1,64E-04	2,00E-04	1,31E-08	1,44E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,31E-07	0,00E+00	5,23E-06	-7,11E-06
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	1,48E-04	1,48E-04	0,00E+00	7,42E-06	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>	1,39E-03	8,11E-04	1,60E-03	3,80E-03	4,51E-06	4,16E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,47E-06	0,00E+00	9,01E-04	-1,94E-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	9,07E-03	9,81E-03	6,88E-02	8,77E-02	1,34E-05	2,49E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,57E-05	0,00E+00	3,79E-02	-2,85E-02
Non-hazardous waste	kg	3,83E-01	1,74E-01	6,39E-01	1,20E+00	1,17E-04	1,33E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,81E-03	0,00E+00	1,27E-01	-2,25E-01
Radioactive waste	kg	1,53E-06	1,24E-06	3,94E-05	4,22E-05	1,68E-09	2,93E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,95E-08	0,00E+00	1,88E-06	8,18E-07

## 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	5,40E-04	5,40E-04	0,00E+00	2,70E-05	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	3,59E-03	3,59E-03	0,00E+00	5,84E-02	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	2,08E-02	2,08E-02	0,00E+00	5,10E-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	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,63E-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 – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E-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	1,50E-03	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 <sub>2</sub> e	2,18E+00	4,49E-01	2,01E-01	2,83E+00	5,88E-04	2,65E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,14E-03	0,00E+00	1,98E+00	-8,61E-02
Ozone depletion Pot.	kg CFC <sub>11</sub> e	2,34E-07	5,49E-09	3,19E-09	2,43E-07	1,30E-11	1,32E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,66E-11	0,00E+00	1,07E-08	-3,30E-10
Acidification	kg SO <sub>2</sub> e	2,77E-02	3,60E-03	7,04E-04	3,20E-02	2,02E-06	1,71E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,38E-05	0,00E+00	1,16E-03	-2,76E-04
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	6,24E-03	5,16E-04	1,85E-04	6,94E-03	6,50E-06	3,73E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,49E-06	0,00E+00	1,21E-04	-5,12E-05
POCP (“smog”)	kg C <sub>2</sub> H <sub>4</sub> e	1,74E-03	2,13E-04	8,32E-05	2,03E-03	1,01E-07	1,10E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,19E-06	0,00E+00	9,63E-05	-4,34E-05
ADP-elements	kg Sbe	1,31E-05	1,01E-06	1,18E-06	1,53E-05	7,03E-10	9,63E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-08	0,00E+00	6,59E-07	-8,36E-07
ADP-fossil	MJ	3,62E+01	6,21E+00	1,81E+00	4,42E+01	7,32E-03	2,75E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,82E-02	0,00E+00	8,85E+00	-8,55E-01

## 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	2,18E+00	4,52E-01	2,01E-01	2,83E+00	5,93E-04	2,65E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,16E-03	0,00E+00	1,99E+00	-8,67E-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 – 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

Scenario parameter	Value
Electricity data source and quality	Electricity production, nuclear, boiling water reactor (Reference product: electricity, high voltage), Finland
Electricity CO2e / kWh	0,008
District heating data source and quality	60% Heat and power co-generation, wood chips, 6667 kW, state-of-the-art 2014, Finland 30% Heat, from municipal waste incineration to generic market for heat district or industrial, other than natural gas, Finland 5% Heat production, natural gas, at industrial furnace >100 kW, Finland 5% Heat, from electric boiler, district heating, Finland
District heating CO2e / kWh	0,067

### Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	HVO renewable diesel truck
Average transport distance, km	300
Capacity utilization (including empty return) %	100
Bulk density of transported products	1100
Volume capacity utilization factor	<1

## Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	5% loss
Water use / m <sup>3</sup>	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Hazardous waste 0,05 kg Steel packaging waste 0,07 kg Plastic packaging waste 0,0004 kg Wood packaging waste 0,0005 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	End-of-Life Scenarios for Packaging Materials (EU average, EUROSTAT 2021): <b>Wood packaging:</b> 32% recycling, 30% incineration with energy recovery (0.00015 MJ electricity, 0.0002 MJ heat), 38% landfill. <b>Plastic packaging:</b> 40% recycling, 37% incineration with energy recovery (0.00098 MJ electricity, 0.0013 MJ heat), 23% landfill. <b>Steel packaging:</b> 81% recycling, 19% landfill.
Direct emissions to ambient air, soil and water / kg	Direct emission to air: Water, 4,14E-4 m <sup>3</sup> Direct emission to air: NMVOC, non-methane volatile organic compounds, 0,04156 kg

## Use stages scenario documentation - C1-C4 (Data source)

Scenario information	Value
Collection process – kg collected separately	0,54
Scenario assumptions e.g. transportation	50 km, Market for transport, freight, lorry, unspecified (Reference product: transport, freight, lorry, unspecified)

## 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 15802+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

Sarah Curpen, as an authorised verifier acting for EPD Hub Limited  
30.01.2026

