



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025



Made by *FINNFORM*

Manufactured by Finnfoam Oy



EPD HUB, EPD number HUB-6846

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Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 March 2025) and JRC characterization factors EF 3.1.



Created with One Click LCA



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Finnfoam Oy
Address	Satamakatu 5, 24100 Salo, Finland
Contact details	finnfoam@finnfoam.fi
Website	www.finnfoam.fi , www.tulppa.fi

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 March 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	Elisa Lindqvist, FF-FUTURE Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	D.V 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	Tulppa® wet room panel
Additional labels	-
Product reference	1 m ² of Tulppa® wet room panel (20 mm thick)
Places(s) of raw material origin	Europe
Place of production	Salu, Finland
Place of installation and use	Europe
Period for data	1.1.-31.12.2025
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3 (%)	N/A
A1-A3 Specific data (%)	34,5

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m ² of Tulppa® wet room panel with 20 mm thickness
Declared unit mass (kg)	5,27
Mass of packaging (kg)	0,0688
GWP-fossil, A1-A3 (kgCO ₂ e)	4,63
GWP-total, A1-A3 (kgCO ₂ e)	4,71
Secondary material, inputs (%)	0,65
Total energy use, A1-A3 (kWh)	31,7
Net freshwater use, A1-A3 (m ³)	0,25

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Over forty years long history, Finnfoam has become one of the leading manufacturers of plastic-based thermal insulation solutions. The roots of Finnfoam's thermal insulation competence are embedded into the frozen Finnish soil. Today, the group is known for quality, product development, and reliability. Finnfoam's product range includes XPS, EPS and PIR thermal insulation and the Tulppa® wet room boards. The entire Finnfoam (XPS) thermal insulation product range is suitable for use as frost insulation and for insulating floors, ceilings, and walls, as well as for various types of supplementary thermal insulation. As frost and floor insulation, Finnfoam (XPS) is highly resistant to moisture, freezing, and load. FF-EPS is best suited for use as thermal insulation for walls and ceilings, where it provides a safe and highly cost-effective solution. It can also be used on floors that are not subjected to significant loads. The applications of FF-PIR polyurethane insulation products include the thermal insulation of walls and ceilings as well as saunas. FF-PIR insulation products have a very high thermal insulation capacity, which allows for lower structural thickness.

PRODUCT DESCRIPTION

Finnfoam Oy's Tulppa® is a Finnish-made wet room panel, which functions as both a construction board and waterproofing material. The core of the panel is made from a closed-cell, waterproof and mold-proof Finnfoam (XPS) insulation material and the surface layer consists of strong, special-purpose cement mortar. The Tulppa® panel can be used as a base for tiling.

Tulppa® is available as 600x2600 mm panels and the following thickness: 12,5 mm, 20 mm, 30 mm, 50 mm and 80 mm. Declared unit of this EPD is 1 m² Tulppa® wet room panel with 20 mm thickness. GWP-values per 1 m² of other thicknesses are presented in Annex 1. Further information can be found at www.tulppa.fi and www.finnfoam.fi.

PRODUCT STANDARD

ETAG 022-3 Watertight covering kits for wet room floors and/or wall Part 3 – Kits based on inherently watertight boards. EN 13164:2012+A1:2015 Thermal insulation products for buildings. Factory made extruded polystyrene foam (XPS) products.

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	N/A
Minerals	84	Europe
Fossil materials	16	Europe
Bio-based materials	0	N/A

BIOGENIC CARBON CONTENT

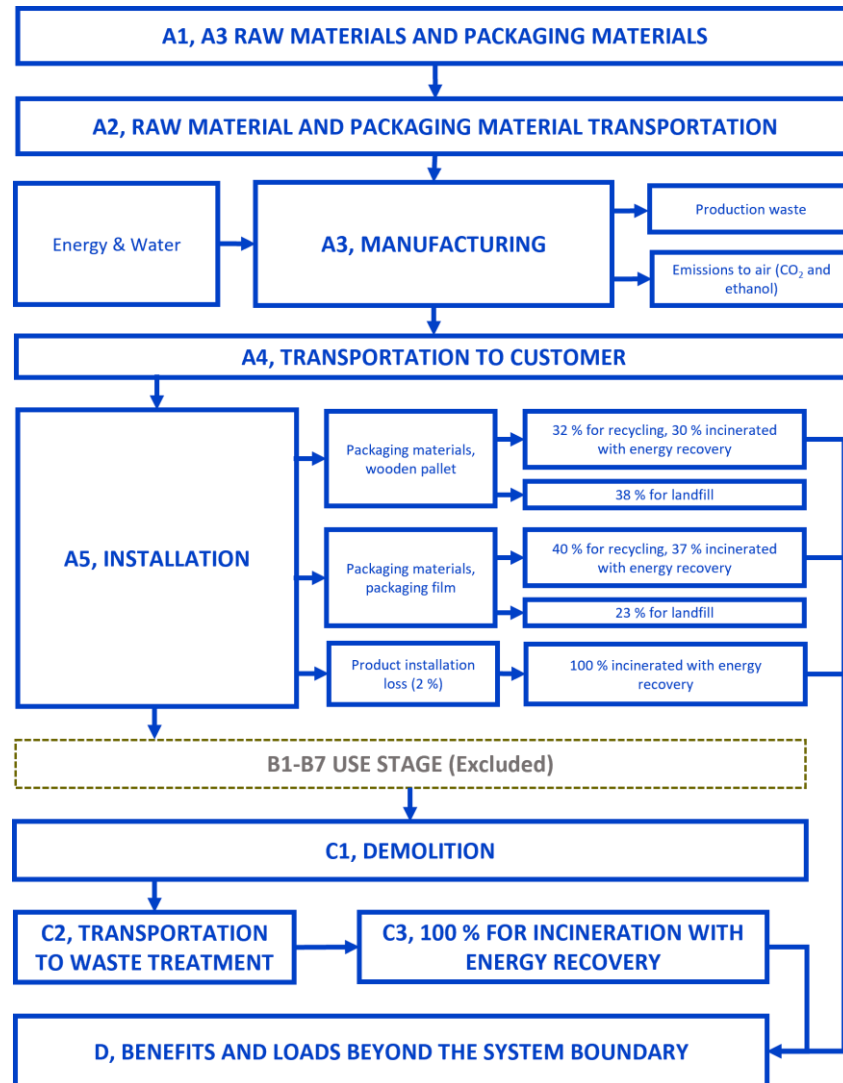
Product's biogenic carbon content at the factory gate.

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0,025

DECLARED / FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m ² of Tulppa® wet room panel with 20 mm thickness
Mass per declared unit	5,27 kg
Functional unit	-
Reference service life	-

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. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The product stage is subdivided into three modules: A1 (raw material supply), A2 (transportation of the raw materials) and A3 (manufacturing).

The environmental impacts considered for the product stage cover the manufacturing of materials used in 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.

Raw materials are transported to the manufacturing site mainly by road transport, using average transport distances based on actual procurement data.

Tulppa® wet room panels are manufactured from Finnfoam thermal insulation (XPS) panels, which are coated on both sides with a glass fibre mesh and a cement-based plaster. The production process consists of two main stages: manufacture of the Finnfoam (XPS) core panel and subsequent coating.

In the first stage, the Finnfoam (XPS) panel is produced. The main raw material is polystyrene, which is melted and mixed with a colorant. The melt is expanded using carbon dioxide (CO₂) and ethanol as blowing agents. The expanded material is then extruded into boards, which are cooled and cut to the required dimensions.

In the second stage, the boards are coated. A glass fibre mesh and cement-based plaster are first applied to one side of the panel, after which the panel is dried in a drying tunnel. The panels are then repositioned, and the same coating is applied to the other side, followed by drying. After drying, the finished products are trimmed, wrapped in plastic and stacked on wooden pallets for distribution.

Manufacturing energy used in module A3 consists of electricity. A market-based approach is applied in modelling the electricity mix used at the manufacturing site. The use of carbon-free electricity is demonstrated through contractual instruments (e.g. guarantees of origin or equivalent), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

The construction process is divided into two modules: A4 (transport to the building site) and A5 (installation in the building).

Transportation impacts that occurred from final product delivery to the construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The transportation distance is assumed to be 120 km, representing the distance from manufacturer to the capital of Finland. Transport is carried out by lorry (16–32 metric ton, EURO 5), and empty return trips are included. Transportation does not cause product losses, as the products are properly packaged. The volume capacity utilization factor is assumed to be 1 for nested packaged products.

Module A5 includes product installation losses, emissions from energy use during installation, other installation resources needed and waste generation at the construction site. It is assumed that there are no significant environmental impacts (energy or water use) caused by the installation phase due to manual installation.

The Tulppa® wet room panels can be installed on different types of substrates and structures depending on the application. In this EPD, a stud frame installation scenario has been selected. The installation of the declared product is carried out using both mechanical fixings and adhesive application. The boards are installed with adhesive/sealing compound applied in a continuous bead to the supporting structure before positioning the boards. The boards are mechanically fixed to the structure using dedicated brackets and screws, and additional adhesive is applied to joints, connections and penetrations to ensure sealing performance.

At this stage, installation waste processing (assumed to be 2%, as defined in EN 16783:2017) as well as packaging materials (LDPE and wooden pallet) are considered. It is assumed that 100% of the product installation waste is incinerated with energy recovery. Additionally, 40% of the packaging film is assumed to be recycled, 37% incinerated with energy recovery, and 23% is landfilled. From wooden pallet, 32% is assumed to be incinerated with energy recovery, 30% recycled and 38% landfilled. An average transport distance of

50 km by lorry (16–32 metric ton, EURO 5) is assumed for waste transport, representing typical regional waste treatment logistics. The scenarios applied reflect current practices and are representative of one of the most likely waste treatment scenarios in Europe. Packaging and installation waste generated in module A5 is assumed to be treated according to these waste management routes.

The potential benefits from recycling and energy recovery of these flows are reported in Module D, where a substitution approach is applied. When modelling benefits from incineration of product installation waste, only the Finnfoam (XPS) fraction is considered, as the remaining materials do not contribute significantly to energy recovery.

PRODUCT USE AND MAINTENANCE (B1-B7)

Use stage is subdivided into seven modules: B1 (Use), B2 (Maintenance), B3 (Repair), B4 (Replacement), B5 (Refurbishment), B6 (Operational energy use) and B7 (Operational water use). This EPD does not cover use phase as it is assumed that the product will last in situ with no requirement for maintenance, repair, replacement or refurbishment throughout its service life. Also, the product doesn't use energy or water during its lifetime. Air, soil and water impacts during the use phase have not been studied.

END OF LIFE (C1-C4, D)

The end-of-life stage is subdivided into four modules: C1 (demolition/deconstruction), C2 (transportation), C3 (waste processing) and C4 (disposal). Stage D describes benefits and loads beyond the system boundary.

Consumption of energy and natural resources in the demolition process is assumed to be negligible (C1). Transportation distance to the nearest waste treatment plant is assumed to be 50 km and the vehicle type is assumed to be a lorry (C2). It is assumed that 100% of the product end-of-life waste

(foam) is incinerated with energy recovery (C3). The end-of-waste state is reached after the waste treatment processes (incineration), at which point the material flows are no longer considered waste but are converted into energy outputs.

Module D includes the potential net benefits beyond the system boundary from material recycling and energy recovery. The scenarios included are currently in use and are representative of typical European end-of-life conditions. In Module D, a substitution approach is applied. Energy recovered from incineration is modelled as electricity and district heat, which are assumed to substitute conventional electricity production (medium voltage) and district heat production, respectively. Recycled materials are assumed to substitute equivalent primary (virgin) material production.

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 materials 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 that is 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.

Note on indicator consistency: A technical inconsistency between PENRT (Total use of non-renewable primary energy) and ADP-fossil (Abiotic depletion potential for fossil resources) results in modules A1–A3 has been identified. A contribution analysis indicates that the discrepancy originates from the background environmental profiles of fossil-based plastic raw materials, such as polystyrene. The difference is related to the specific characterization factors and the treatment of fossil resources as both material feedstock and energy carriers in the background databases. These inconsistencies are inherent to the third-party verified background datasets used and cannot be influenced or adjusted by the LCA practitioner.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. 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. Also, IDEMAT data was used. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology 'allocation, Cutoff, EN 15804+A2'. Additionally, Eurostat data has been used when modelling end-of-life scenarios.

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 made according to 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	N/A
Manufacturing energy and waste	Allocated by mass

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	N/A
Variation in GWP-fossil for A1-A3 (%)	N/A

Products are produced at one location with the same manufacturing process. Declared unit is 1 m² of Tulppa® wet room panel with 20 mm thickness. Scaling factors for different thicknesses are presented in Annex 1.



ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

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.

Note: Environmental performance results are presented per declared unit, defined as 1 m² of Tulppa® wet room panel with 20 mm thickness. GWP-values per 1 m² of other thicknesses are presented in Annex 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	3,36E+00	9,01E-01	4,51E-01	4,71E+00	1,24E-01	9,94E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,30E-02	4,39E+00	2,38E-05	-7,93E-01
GWP – fossil	kg CO ₂ e	3,45E+00	9,01E-01	2,82E-01	4,63E+00	1,24E-01	8,66E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,30E-02	1,80E+00	2,38E-05	-7,71E-01
GWP – biogenic	kg CO ₂ e	-9,31E-02	1,75E-04	1,69E-01	7,63E-02	2,46E-05	1,28E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,05E-05	2,59E+00	1,07E-08	-2,10E-02
GWP – LULUC	kg CO ₂ e	1,10E-03	3,33E-04	1,92E-04	1,62E-03	4,38E-05	3,66E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,87E-05	1,14E-04	1,36E-08	-1,11E-03
Ozone depletion pot.	kg CFC-11E	6,54E-08	1,75E-08	1,72E-09	8,46E-08	2,46E-09	3,99E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,05E-09	1,34E-09	6,62E-13	-9,24E-09
Acidification potential	mol H ⁺ e	7,19E-03	5,22E-03	5,13E-04	1,29E-02	3,87E-04	3,99E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,66E-04	5,88E-04	1,67E-07	-4,82E-03
EP-freshwater ²⁾	kg Pe	2,11E-02	5,64E-05	2,61E-05	2,12E-02	8,22E-06	4,83E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,52E-06	3,22E-05	2,08E-09	-5,30E-04
EP-marine	kg Ne	2,36E-03	1,52E-03	3,09E-04	4,18E-03	1,31E-04	9,86E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,59E-05	2,67E-04	6,39E-08	-7,27E-04
EP-terrestrial	mol Ne	2,54E-02	1,67E-02	1,52E-03	4,36E-02	1,42E-03	9,91E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,08E-04	2,58E-03	6,98E-07	-7,19E-03
POCP ("smog") ³⁾	kg NMVOCe	1,01E-02	5,98E-03	8,95E-03	2,51E-02	6,07E-04	3,37E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,60E-04	2,52E-03	2,52E-07	-2,32E-03
ADP-minerals metals ⁴⁾	kg Sbe	6,21E-06	2,70E-06	6,56E-07	9,57E-06	4,05E-07	7,20E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,73E-07	2,82E-07	3,54E-11	-3,71E-06
ADP-fossil resources	MJ	5,60E+01	1,25E+01	4,91E+01	1,18E+02	1,74E+00	9,42E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,44E-01	1,19E+00	5,82E-04	-1,23E+01
Water use ⁵⁾	m ³ e depr.	1,27E+02	5,91E-02	4,80E-01	1,28E+02	8,55E-03	2,82E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,66E-03	1,01E-01	2,56E-05	-2,62E-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	5,66E-08	6,72E-08	1,52E-08	1,39E-07	9,74E-09	3,51E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,17E-09	1,49E-08	3,83E-12	-4,19E-08
Ionizing radiation ⁶⁾	kBq 11235e	4,77E-02	1,49E-02	3,95E+00	4,01E+00	2,22E-03	1,32E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,49E-04	1,39E-03	3,48E-07	-2,20E-01
Ecotoxicity (freshwater)	CTUe	1,29E+01	1,57E+00	1,04E+00	1,55E+01	2,28E-01	1,60E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,78E-02	3,84E+00	3,89E-04	-2,34E+01
Human toxicity, cancer	CTUh	4,23E-10	1,57E-10	1,44E-10	7,23E-10	2,11E-11	4,16E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,04E-12	1,92E-10	4,31E-15	-2,02E-10
Human tox. non-cancer	CTUh	6,81E-09	7,44E-09	2,13E-09	1,64E-08	1,09E-09	1,26E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,67E-10	7,77E-09	9,69E-14	-6,61E-09
SQP ⁷⁾	-	3,24E+00	7,21E+00	6,85E+00	1,73E+01	1,04E+00	2,66E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,43E-01	1,19E+00	1,14E-03	-3,73E+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	2,26E+00	2,04E-01	-1,89E+00	5,71E-01	3,01E-02	-4,76E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-02	-2,65E+01	5,44E-06	-2,30E+00
Renew. PER as material	MJ	1,03E+00	0,00E+00	7,71E-01	1,80E+00	0,00E+00	-7,71E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,03E+00	0,00E+00	2,10E-01
Total use of renew. PER	MJ	3,29E+00	2,04E-01	-1,12E+00	2,37E+00	3,01E-02	-1,25E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-02	-2,75E+01	5,44E-06	-2,09E+00
Non-re. PER as energy	MJ	4,97E+01	1,25E+01	4,58E+01	1,08E+02	1,74E+00	6,60E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,44E-01	-1,97E+01	5,82E-04	-1,23E+01
Non-re. PER as material	MJ	2,98E+01	0,00E+00	5,25E-01	3,03E+01	0,00E+00	4,01E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-3,07E+01	0,00E+00	3,14E-01
Total use of non-re. PER	MJ	7,95E+01	1,25E+01	4,63E+01	1,38E+02	1,74E+00	7,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,44E-01	-5,04E+01	5,82E-04	-1,20E+01
Secondary materials	kg	3,41E-02	5,70E-03	3,58E-03	4,34E-02	7,97E-04	1,79E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,41E-04	1,99E-03	1,45E-07	1,81E-02
Renew. secondary fuels	MJ	2,77E+00	6,68E-05	2,55E-02	2,80E+00	1,01E-05	5,60E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,31E-06	2,46E-05	3,02E-09	-3,32E-05
Non-ren. secondary fuels	MJ	2,86E+00	0,00E+00	0,00E+00	2,86E+00	0,00E+00	5,72E-02	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	2,37E-01	1,62E-03	1,11E-02	2,49E-01	2,34E-04	9,80E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,00E-04	1,30E-03	6,02E-07	-6,03E-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	4,26E-02	1,77E-02	1,81E-02	7,85E-02	2,50E-03	1,50E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,07E-03	2,65E-02	6,63E-07	-1,44E-01
Non-hazardous waste	kg	8,58E-01	3,63E-01	1,62E+00	2,84E+00	5,27E-02	1,58E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,25E-02	8,30E+00	1,53E-05	-2,80E+00
Radioactive waste	kg	1,36E-03	3,71E-06	8,75E-04	2,24E-03	5,51E-07	6,09E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,36E-07	3,44E-07	8,49E-11	-5,62E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,82E-02	0,00E+00	9,71E-04	2,92E-02	0,00E+00	2,37E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,10E-02	0,00E+00	0,00E+00
Materials for energy recovery	kg	3,86E-09	0,00E+00	2,02E-05	2,02E-05	0,00E+00	1,20E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,46E+00	0,00E+00	0,00E+00
Exported energy	MJ	1,56E-02	0,00E+00	0,00E+00	1,56E-02	0,00E+00	3,47E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,94E+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	1,46E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,34E+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	2,01E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,59E+00	0,00E+00	0,00E+00

SCENARIO DOCUMENTATION

MANUFACTURING ENERGY SCENARIO DOCUMENTATION (A3)

Scenario parameter	Value
Electricity data source and quality	Electricity production, nuclear, boiling water reactor, Finland, Ecoinvent, 0.0077 kgCO ₂ e/kWh
	Electricity production, photovoltaic, 3kWp slanted-roof installation, multi-Si, panel, mounted, Finland, Ecoinvent, 0.0806 kgCO ₂ e/kWh

TRANSPORT SCENARIO DOCUMENTATION (A4)

Scenario parameter	Value
Scenario assumptions e.g. transportation	Transport, freight, lorry 16-32 metric ton, EURO5, 120 km
Transport distance, km	120
Capacity utilization (including empty return) %	50
Bulk density of transported products	267
Volume capacity utilization factor	1

INSTALLATION SCENARIO DOCUMENTATION (A5)

Scenario information	Value
Energy: type and consumption (MJ or kWh)	As installation is carried out manually, installation energy is estimated to be negligible

Water use (m ³)	-
Ancillary materials: type and mass (kg)	Adhesive: 0,19 kg Tulppa® brackets: 0,025 kg
Waste materials: type and mass (kg) and output routes	Product installation loss: 0,1054 kg for incineration with energy recovery Packaging film: 0,0071 for recycling 0,0066 kg for incineration with energy recovery 0,0041 for landfill Wooden pallet: 0,016 kg for recycling 0,015 kg for incineration with energy recovery 0,019 kg for landfill

END OF LIFE SCENARIO DOCUMENTATION (C1-C4)

Scenario information	Value
Collection process: collected separately (kg)	5,485
Collection process: Mixed waste (kg)	0
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0,021
Recovery: energy recovery (kg)	5,46
Disposal (kg)	0,0038
Scenario assumptions e.g. transportation (mode, km) & other	50 km, lorry 16-32 metric ton, EURO5

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

D.V as an authorized verifier for EPD Hub Limited 31.07.2026



ANNEX 1: GWP-VALUES PER 1M2

Product		Tulppa® wet room panel				
Thickness (mm)		12,5	20	30	50	80
Impact category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF	GWP-total	3,99E+00	4,71E+00	5,66E+00	7,56E+00	1,04E+01
	GWP-fossil	3,91E+00	4,63E+00	5,63E+00	7,60E+00	1,06E+01
	GWP-biogenic	7,61E-02	7,63E-02	3,97E-02	-3,98E-02	-1,68E-01
	GWP-LULUC	1,56E-03	1,62E-03	1,75E-03	2,01E-03	2,42E-03