

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Tulvari JTK-550 pinta
Tulvari Oy





EPD HUB, HUB-8005
Published on 02.11.2026, last updated on 02.11.2026, valid until 01.11.2031

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	Tulvari Oy
Address	Mäntäkuja 4, 90440 Kempele, Finland
Contact details	asiakaspalvelu@tulvari.fi
Website	www.tulvari.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	Ossi Karhumaa, Vastos Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen as an authorized verifier for EPD Hub

This EPD is intended for business-to-business 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	Tulvari JTK-550 pinta
Additional labels	JTK-550 (uppo, uppo 66), JTK-775 (uppo, uppo 66, pinta), JTK-930 (uppo, uppo 66, pinta), KV-JTK-550 (uppo, pinta), KV-JTK-775 (uppo, pinta) and KV-JTK-930 (uppo, pinta)
Product reference	2501100550
Place(s) of raw material origin	Finland, Norway, United Kingdom, Sweden, Poland, China
Place of production	Kempele, Finland
Place(s) of installation and use	Finland
Period for data	Calendar year 2025
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-3,6
GTIN (Global Trade Item Number)	6429810838001
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	5,66

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0,279 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	3,79
GWP-total, A1-A3 ($kgCO_2e$)	3,42
Secondary material, inputs (%)	0,42
Total energy use, A1-A3 (kWh)	44
Net freshwater use, A1-A3 (m^3)	0,04

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Tulvari Oy is a Finnish manufacturer specializing in moisture-safe HVAC distribution solutions and underfloor heating manifold cabinets.
Tulvari Oy's product range includes recessed and surface-mounted manifold cabinets, mounting systems, and accessories designed to ensure safe, durable and moisture-controlled installations. The products are engineered to support heating systems and comply with building regulations.

More detailed information about the company and its products can be found at the company's website:

www.tulvari.fi

PRODUCT DESCRIPTION

Tulvari JTK cabinets are watertight manifold cabinets designed for underfloor heating distribution systems. Tulvari KV JTK cabinets are designed for domestic water manifold installations. The cabinets are manufactured in Finland and developed to provide durable, safe and moisture-secure installation solutions for residential and commercial buildings.

The cabinet's body is made from 0.6mm galvanized steel sheet, ensuring high mechanical strength and corrosion resistance. The painted areas are treated with powder-coating in RAL 9016 (white) and equipped with a lock. The robust steel structure and surface treatment provide long service life in demanding building environments.

These cabinets are designed for wall installation. The adjustable mounting plate allows flexible positioning of the underfloor heating manifold or domestic water manifold, enabling easy alignment during installation and compatibility with various manifold models.

Watertightness and moisture management are key design features. The cabinet includes pipe seals for output pipes (12-28 mm) and main supply pipes (10-50 mm), ensuring tight connections around pipe penetrations. The cabinet also includes a leak detection plate with drainage outlet for controlled water discharge.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	92	Norway, United Kingdom
Minerals	0	
Fossil materials	8	Finland, Sweden, Poland, China
Bio-based materials	0	

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	0,11

1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2

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

Not declared = ND

A5 is not fully declared. Waste processing (from collection through to end-of-waste or final disposal) and full energy and biogenic carbon balancing are accounted for. Storage, product wastage, and installation into the building are excluded.

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 JTK manifold cabinet is manufactured in its entirety by a subcontractor. All production processes — including steel sheet cutting, punching, bending, powder coating and final assembly of EPDM gaskets and ABS components — are carried out at the subcontractor's production facility. The finished products are subsequently transported to Tulvari Oy's facility in Finland. During the sheet metal cutting and bending there is used ancillary materials including lubricating oil and water. These materials are modeled in the LCA study in phase A3.

The manifold units are transported to Tulvari Oy manufacturing site as an additional transport (A2), this transport distance is 229km by truck (Ecoinvent 3.12. Market for transport, freight, lorry, >32 metric ton, diesel, EURO 6).

Tulvari Oy's role in the manufacturing stage (A3) is limited to the reception, quality control and warehousing of finished products prior to distribution. The energy consumption reported in module A3 reflects the electricity and heating energy allocated to Tulvari Oy's warehousing operations based on the company's annual energy use and production volume.

The products are individually wrapped in LDPE film and packed into corrugated cardboard boxes. The cardboard boxes are stacked on EUR-pallets together with other products and dispatched in larger quantities to customers.

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. A5 is not in scope. Only packaging waste is accounted for in this module.

Transport (A4) from manufacturing facility to customer is freight by >32 ton EURO 6 and are calculated from calendar year 2025 as a weighted average. Therefore, customers are installing these units to place of use, this delivery is assumed to be 50km by commercial vehicle (Market for transport, freight, light commercial vehicle, fleet average).

Installation (A5) consists of manual assembly using hand tools — electricity consumption during installation is assumed to be 0,01 kWh per kg of the product (Source Bozdağ, Ö & Seçer, M. 2007). The electricity mix is based on the medium-voltage market group dataset.

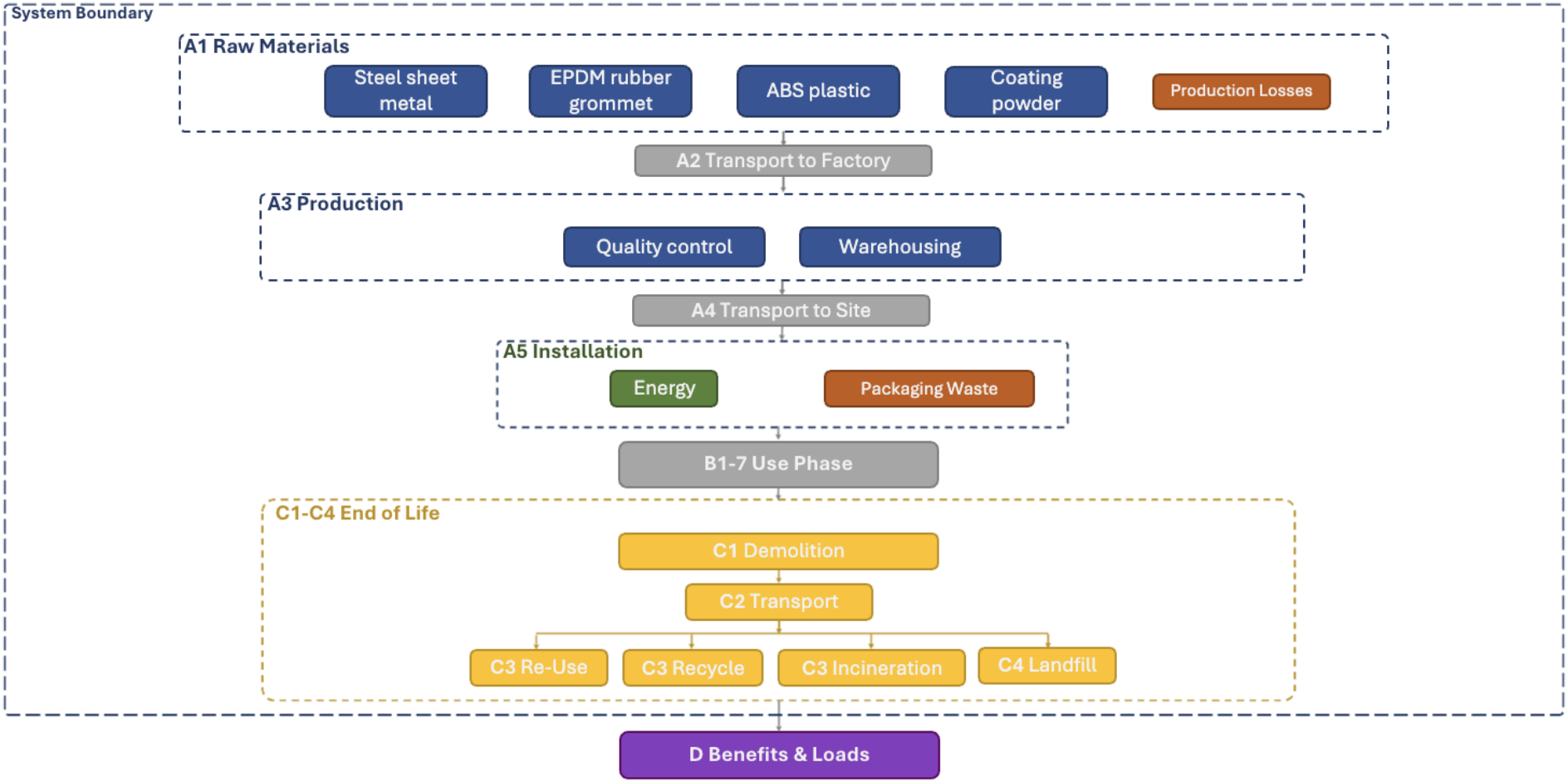
PRODUCT USE AND MAINTENANCE (B1-B7)

This stage is not included in the scope

PRODUCT END OF LIFE (C1-C4, D)

At end of life, the JTK manifold cabinet is removed manually using hand tools during renovation or demolition (C1). No powered demolition equipment is required; the cabinet is unfastened from the wall and disconnected from pipework by hand tools. Electricity consumption during demolition is assumed to be 0.01 kWh per kg of the product (Source: Bozdağ, Ö. & Seçer, M. 2007). Transport to waste treatment facility is assumed to be by truck (C2). All materials are directed to waste processing (C3) or waste disposal (C4) based on default end-of-life scenarios for each material fraction. In module D, benefits are declared for the steel fraction recovered through recycling.

LIFE CYCLE FLOW 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	Physical Properties
Manufacturing energy and waste	Physical Properties

The manufacturing facility is shared between Tulvari Oy and other production activities. Subcontractors electricity use is allocated to the manufacturing by physical properties, using direct questionnarios from the subcontractor. Own factory electricity consumption was allocated to Tulvari Oy's production based on turnover share (revenue-based allocation), in the absence of more precise physical allocation data. Total allocated electricity was then divided by annual production volume (kg of product) to obtain the per-kg electricity input.

Since the JTK manifold cabinet is manufactured entirely by a subcontractor, the majority of environmental impacts are captured through upstream material datasets in module A1. However, EN 15804+A2 requires certain flow types to be allocated to their functionally correct modules regardless of where manufacturing physically occurs. Packaging materials — corrugated board, LDPE film, and EUR-pallet — are therefore declared under A3 (Packaging materials), as their end-of-life waste flows are assigned to module A5 (installation waste at the construction site); placing them in A1

would prevent correct end-of-life accounting in A5. Similarly, ancillary materials consumed during manufacturing (lubricating oil, tap water) are assigned to A3 (Ancillary materials), and process waste streams generated during production (mineral oil waste, wastewater, iron scrap, waste paint) are assigned to A3 (Manufacturing waste), as these flows arise from and are consumed within the manufacturing process and do not persist into the product's use phase or end-of-life stage. This module structure follows the requirements of EN 15804:2012+A2:2019 and EPD Hub PCR Version 1.2.
Raw material transport distances (A1–A2):

Steel: 925 km by truck + 1400 km by container ship — weighted average of two main suppliers (domestic and overseas), based on supplier procurement share.
Powder coating: 370 km by truck + 400 km by container ship.
Synthetic rubber: 451 km by truck + 26 610 km by container ship — Central European supplier; Asian origin estimated using ecoinvent market dataset default.
ABS recycled pellets: transport included in datapoint.
Production loss rates: Steel sheet 20 % (cutting and punching waste; internal data), coating powder 25 % (overspray; internal data), EPDM gaskets injection moulding 0,6 % (value taken from used datapoint), ABS injection moulding 0,6 % (value taken from used datapoint).

Water weight is assumed to be 1m^3 = 1000kg.

The declared unit is 1 kg of product. EPD results for the reference product (JTK-550 pinta, 9,51 kg) are expressed per 1 kg. Environmental impacts for all other products in the JTK series are calculated by linear mass-proportional scaling: Impact (product X) = EPD result (per kg) × Mass of product X (kg). Basis: EN 15804:2012+A2:2019 Annex B, linear scaling from a single representative product. All products in the series share the same design, materials, and manufacturing process; mass is the primary driver of environmental impact, consistent with the homogeneous material composition across the product range.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on worst-case results
Variation in GWP-fossil for A1-A3, %	-3,6

This EPD covers 15 watertight manifold cabinet products in the Tulvari JTK and KV-JTK series, ranging in mass from 8.81 kg to 16.12 kg (without packaging). All products share the same core materials — galvanized steel sheet (92% of mass), powder coating, EPDM rubber gaskets, and ABS plastic components — and are manufactured using identical processes by the same subcontractor.

Products differ in two dimensions: size (550/775/930 mm cabinet width, corresponding to different manifold capacities) and mounting type (uppo = recessed, pinta = surface-mounted). The share of ABS plastic components also varies between mounting types due to differences in fittings and pipe grommets.

The primary driver of variation in GWP at the manufacturing stage (A1–A3) is product mass: heavier products have higher total GWP per unit. Minor variation in GWP per kg (up to −3.6% relative to the worst-case product, JTK-550 pinta) arises from differences in material mix between mounting types and variation in packaging-to-product mass ratio across the size range.
The environmental impacts for all products in the group are calculated based on the worst-case product, Tulvari JTK-550 pinta (9.55 kg), using linear mass-proportional scaling in accordance with EN 15804:2012+A2:2019 Annex B. Each product's results are obtained by multiplying the declared per-kg values by the respective product mass.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

Subcontractor production data, manufacturing energy use, production volumes and production loss data. [2025]

Tulvari Oy internal production data, manufacturing energy consumption, production volumes, material procurement records, and production loss data. Provided by Tulvari Oy [2025].
[Bozdağ, Ö & Seçer, M. 2007]

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	3,47E+00	1,26E-01	-1,78E-01	3,42E+00	1,69E-02	4,37E-01	ND	ND	ND	ND	ND	ND	ND	4,99E-03	2,34E-02	8,18E-02	1,61E-03	-1,69E+00
GWP – fossil	kg CO_2e	3,42E+00	1,26E-01	2,38E-01	3,79E+00	1,68E-02	1,63E-02	ND	ND	ND	ND	ND	ND	ND	4,98E-03	2,34E-02	8,20E-02	1,61E-03	-1,61E+00
GWP – biogenic	kg CO_2e	4,82E-02	5,51E-05	-4,20E-01	-3,72E-01	9,04E-06	4,21E-01	ND	ND	ND	ND	ND	ND	ND	1,48E-05	5,30E-06	-2,68E-04	-6,06E-08	-7,92E-02
GWP – LULUC	kg CO_2e	2,15E-03	5,00E-05	3,93E-03	6,14E-03	6,13E-06	1,33E-05	ND	ND	ND	ND	ND	ND	ND	1,60E-06	1,05E-05	2,33E-05	5,80E-07	-6,41E-04
Ozone depletion pot.	kg CFC-$_{11}$e	4,09E-08	2,84E-09	5,64E-09	4,94E-08	3,97E-10	2,21E-10	ND	ND	ND	ND	ND	ND	ND	8,09E-11	3,46E-10	2,66E-10	2,76E-11	-6,66E-09
Acidification potential	mol H^+e	3,92E-02	5,31E-04	1,02E-03	4,08E-02	3,97E-05	6,60E-05	ND	ND	ND	ND	ND	ND	ND	1,68E-05	7,98E-05	2,31E-04	7,03E-06	-7,09E-03
EP-freshwater[2)]	kg Pe	6,13E-04	8,85E-06	1,09E-04	7,31E-04	1,24E-06	4,96E-06	ND	ND	ND	ND	ND	ND	ND	2,51E-06	1,82E-06	1,26E-05	8,92E-08	-7,81E-04
EP-marine	kg Ne	3,75E-03	1,83E-04	3,84E-04	4,32E-03	1,10E-05	6,31E-05	ND	ND	ND	ND	ND	ND	ND	3,76E-06	2,62E-05	5,28E-05	1,81E-05	-1,59E-03
EP-terrestrial	mol Ne	1,38E-01	2,01E-03	3,14E-03	1,43E-01	1,19E-04	2,27E-04	ND	ND	ND	ND	ND	ND	ND	3,82E-05	2,85E-04	5,94E-04	2,93E-05	-1,73E-02
POCP ("smog")[3)]	kg NMVOCe	5,93E-02	7,89E-04	1,09E-03	6,12E-02	7,01E-05	7,46E-05	ND	ND	ND	ND	ND	ND	ND	1,05E-05	1,18E-04	1,75E-04	1,07E-05	-5,67E-03
ADP-minerals & metals[4)]	kg Sbe	4,66E-06	3,59E-07	1,66E-06	6,68E-06	5,06E-08	8,13E-08	ND	ND	ND	ND	ND	ND	ND	4,31E-08	6,53E-08	1,32E-06	1,55E-09	-8,38E-05
ADP-fossil resources	MJ	2,87E+01	1,86E+00	4,09E+00	3,46E+01	2,54E-01	2,19E-01	ND	ND	ND	ND	ND	ND	ND	9,72E-02	3,40E-01	2,60E-01	2,42E-02	-1,54E+01
Water use[5)]	m^3e depr.	2,02E+01	1,02E-02	1,01E-01	2,03E+01	1,46E-03	4,32E-03	ND	ND	ND	ND	ND	ND	ND	9,94E-04	1,68E-03	8,20E-03	9,92E-04	-4,09E-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	2,86E-07	1,14E-08	1,15E-08	3,08E-07	1,67E-09	9,03E-10	ND	ND	ND	ND	ND	ND	ND	8,65E-11	2,34E-09	3,08E-09	1,61E-10	-1,03E-07
Ionizing radiation[6)]	kBq U235e	4,76E+00	1,89E-03	6,29E-02	4,82E+00	2,73E-04	3,33E-03	ND	ND	ND	ND	ND	ND	ND	2,90E-03	2,96E-04	2,19E-03	1,54E-05	2,39E-02
Ecotoxicity (freshwater)	CTUe	1,64E+01	2,49E-01	1,48E+00	1,82E+01	3,42E-02	1,44E-01	ND	ND	ND	ND	ND	ND	ND	1,12E-02	4,80E-02	1,33E+00	4,07E-02	-2,36E+01
Human toxicity, cancer	CTUh	3,40E-09	2,11E-11	3,31E-10	3,76E-09	2,69E-12	6,47E-12	ND	ND	ND	ND	ND	ND	ND	9,46E-13	3,86E-12	1,72E-11	2,48E-13	-7,12E-10
Human tox. non-cancer	CTUh	8,97E-08	1,09E-09	2,44E-09	9,32E-08	1,57E-10	3,51E-10	ND	ND	ND	ND	ND	ND	ND	5,32E-11	2,20E-10	1,15E-09	2,04E-11	-2,63E-08
SQP[7)]	-	1,29E+02	1,71E+00	2,83E+01	1,59E+02	2,57E-01	1,32E-01	ND	ND	ND	ND	ND	ND	ND	2,36E-02	3,42E-01	4,84E-01	4,83E-02	-5,21E+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	1,23E+02	2,77E-02	1,42E+00	1,25E+02	3,95E-03	-4,17E+00	ND	ND	ND	ND	ND	ND	ND	8,67E-03	4,65E-03	4,65E-02	2,40E-04	-6,57E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	4,02E+00	4,02E+00	0,00E+00	-4,02E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,78E-01
Total use of renew. PER	MJ	1,23E+02	2,77E-02	5,44E+00	1,29E+02	3,95E-03	-8,20E+00	ND	ND	ND	ND	ND	ND	ND	8,67E-03	4,65E-03	4,65E-02	2,40E-04	1,20E-01
Non-re. PER as energy	MJ	2,79E+01	1,86E+00	3,53E+00	3,33E+01	2,54E-01	1,64E-01	ND	ND	ND	ND	ND	ND	ND	9,72E-02	3,40E-01	-2,87E-01	-2,46E-01	-1,54E+01
Non-re. PER as material	MJ	7,40E-01	0,00E+00	2,33E-01	9,73E-01	0,00E+00	-2,33E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	-7,40E-01	7,00E-02
Total use of non-re. PER	MJ	2,87E+01	1,86E+00	3,76E+00	3,43E+01	2,54E-01	-6,88E-02	ND	ND	ND	ND	ND	ND	ND	9,72E-02	3,40E-01	-2,87E-01	-9,86E-01	-1,54E+01
Secondary materials	kg	4,25E-03	8,17E-04	9,54E-02	1,00E-01	1,08E-04	1,23E-04	ND	ND	ND	ND	ND	ND	ND	1,19E-05	1,45E-04	3,15E-04	6,24E-06	8,68E-01
Renew. secondary fuels	MJ	8,10E-04	9,64E-06	9,49E-02	9,57E-02	1,42E-06	1,01E-06	ND	ND	ND	ND	ND	ND	ND	1,01E-07	1,84E-06	1,46E-05	1,29E-07	-1,13E-04
Non-ren. secondary fuels	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	0,00E+00
Use of net fresh water	m^3	3,93E-02	2,34E-04	2,38E-03	4,19E-02	3,36E-05	-2,35E-04	ND	ND	ND	ND	ND	ND	ND	2,42E-05	5,02E-05	1,73E-04	-4,34E-06	-6,99E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,53E-01	1,05E-02	4,88E-02	2,12E-01	1,43E-03	2,61E-03	ND	ND	ND	ND	ND	ND	ND	1,52E-03	5,75E-04	3,62E-03	2,88E-05	-4,89E-01
Non-hazardous waste	kg	1,25E+00	2,01E-01	1,18E+00	2,63E+00	2,98E-02	4,94E-01	ND	ND	ND	ND	ND	ND	ND	1,29E-02	1,06E-02	8,80E-02	3,75E-02	-4,28E+00
Radioactive waste	kg	3,33E-04	4,56E-07	1,49E-05	3,48E-04	6,59E-08	7,72E-07	ND	ND	ND	ND	ND	ND	ND	6,64E-07	7,24E-08	5,61E-07	3,75E-09	6,31E-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	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	0,00E+00	0,00E+00	1,57E-01	1,57E-01	0,00E+00	1,34E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,27E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	4,81E-10	4,81E-10	0,00E+00	6,47E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,01E-02	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	1,39E-04	1,39E-04	0,00E+00	3,46E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,02E-01	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	1,45E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,50E-02	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	2,01E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,17E-01	0,00E+00	0,00E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3,42E+00	1,26E-01	2,42E-01	3,79E+00	1,68E-02	1,63E-02	ND	ND	ND	ND	ND	ND	ND	4,98E-03	2,34E-02	8,21E-02	1,61E-03	-1,61E+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 – 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, low voltage, residual mix, Finland, Ecoinvent, 0.50 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry, >32 metric ton, diesel, EURO 6, 129.2122186495177 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	85
Bulk density of transported products	183
Volume capacity utilization factor	<1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	0,01 kWh / kg Electricity, medium voltage, residual mix. Manual installation using hand tools, source : Bozdağ, Ö & Seçer, M. 2007
Water use (m^3)	-
Ancillary materials: type and mass (kg)	-
Waste materials: type and mass (kg)	Wood 0,19kg Plastic 0,0013kg Cardboard 0,086kg
Waste materials: output routes	Wood: Recycling 0,061kg, Incineration 0,0057kg & Landfill 0,0072kg Plastic: Recycling 0,00054kg, Incineration 0,0005kg & Landfill 0,00031kg Cardboard: Recycling 0,071kg, Incineration 0,0069kg & Landfill 0,0077kg
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	-
Collection process: Mixed waste (kg)	1
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0,83
Recovery: energy recovery (kg)	0,02
Disposal (kg)	0,15
Scenario assumptions e.g. transportation (mode, km) & other	Transport distances for end-of-life waste collection(C1) are based on default assumptions in the dataset, and are following: Plastic: Recycling - km, Incineration 150km & Landfill 50km Steel: Recycling 250km, Incineration 0km & Landfill 50km Waste treatment fractions for recycling, incineration and landfill are based on default end-of-life scenarios applied from datasets, reflecting scenarios, and are following: Plastic: Recycling 0%, Incineration 73% & Landfill 27% Steel: Recycling 85%, Incineration 0% & Landfill 15% Hand tools manual demolition electricity use is assumed to be 0,01 kWh / kg (source Bozdağ, Ö & Seçer, M. 2007)

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.

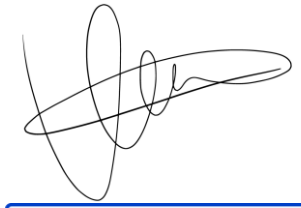
The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Haiha Nguyen as an authorized verifier for EPD Hub Limited 02.11.2026

EPD Hub
VERIFIED ISO 14025





ANNEX 1.

Product	Weight [kg]	Weight without packaging [kg]
Tulvari JTK-550 uppo 66	9,45	7,41
Tulvari JTK-550 uppo	8,81	6,77
Tulvari JTK-550 pinta Representative product	**9,55**	**7,51**
Tulvari JTK-775 uppo 66	13,13	9,90
Tulvari JTK-775 uppo	12,7	9,47
Tulvari JTK-775 pinta	13,39	10,16
Tulvari JTK-930 uppo 66	14,88	11,60
Tulvari JTK-930 uppo	14,42	11,14
Tulvari JTK-930 pinta	15,24	11,96
Tulvari KV-JTK-550 uppo	9,69	7,65
Tulvari KV-JTK-550 pinta	10,08	8,04
Tulvari KV-JTK-775 uppo	13,59	10,36
Tulvari KV-JTK-775 pinta	14,10	10,87
Tulvari KV-JTK-930 uppo	15,39	12,11
Tulvari KV-JTK-930 pinta	16,12	12,84

All products in the JTK and KV-JTK series share the same core materials (galvanized steel, powder coating, EPDM gaskets, ABS plastic) and manufacturing processes. They differ in physical size (550/775/930 mm width) and mounting type: surface-mounted (pinta) models include an additional front frame, increasing the share of steel and powder coating per kg, while recessed (uppo) models have a simpler enclosure. The share of ABS plastic components also varies between mounting types due to differences in fittings and pipe grommets. These differences in material mix — combined with variation in packaging-to-product mass ratio — result in minor variation in GWP-fossil per kg across the product group (up to −3.6% relative to the worst-case product, JTK-550 pinta, 9.55 kg). All other products' results are obtained by multiplying the declared per-kg values by the respective product mass.