Environmental product declaration

In accordance with EN 15804+A2 & ISO 14025

Peltitarvike oy

Screen structure with cast iron grate product group

Rakennustieto EPD

EPD Number:	RTS_476_26
Publication date:	02.04.2026
Valid until:	02.04.2031

Peltitarvike Oy
Screen structure with cast iron grate product group

General information

Manufacturer information

Manufacturer	Peltitarvike Oy
Address	Kivikonlaita 24, 00940 Helsinki, Finland
Contact details	myynti@peltitarvike.fi
Website	https://www.peltitarvike.fi/

Product identification

Product name	Screen structure with cast iron grate
Additional label(s)	
Product identification	Screen structure for rainwater downpipe (Sadevesisyöksyn sihtirakenne) and Screen structure for traffic deck (Liikennöidyn tason sihtirakenne). The product dimensions covered in this product group EPD are listed in Annex 1.
Place(s) of production	Helsinki

The manufacturer has the sole ownership, liability, and responsibility for the EPD. Epds within the same product category but registered in different EPD programmes may not be comparable. For two epds to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned pcrs or versions of pcrs; cover products with identical functions, technical performances and use (e.g. Identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. EN15804 impact assessment indicators are based on EF 3.1.

EPD information

EPD program operator	Rakennustieto EPD, Malminkatu 16 A, 00100 Helsinki, Finland https://ymparisto.rakennustieto.fi/
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. RTS PCR 2024
EPD author	Anni Viitala, Kerli Maiste, Granlund Oy, Malminkaari 21, 00701 Helsinki, Finland
EPD verification	Independent verification of this EPD and data, according to ISO 14025: External verification
Verification date	16.2.2026
EPD verifier	Anni Oviir, LCA Support
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RTS EPD Committee Secretary

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Managing Director

Verification statement

Verified according to the requirements of EN 15804+A2 (product category rules) Independent verification of the declaration, according to EN ISO 14025:2010	
☒ External	☐ Internal
Third party verifier:  Anni Oviir, LCA Support - Rangi Maja OÜ, Tallinn, Estonia, 16.2.2026	

Product information

Product description

The studied product group is screen structure with cast iron grate products, which are made from acid-resistant stainless steel and cast iron.

Representative product

The representative product for the product group has been selected based on the worst-case. The representative product for the product group has highest emissions in the group. The GWP total result for A1-A3 within the product group ranges from 3.20 to 4.52 kg CO2e/kg.

The products covered in this product group EPD are listed in Annex 1.

The representative product is Sadevesisyöksyn sihtirakenne 220.

Product application

Screen structures to prevent leaves and debris from entering the stormwater drainage system.

Product standards

Not applicable product standards.

Product raw material composition

Main substances of the products are presented in table below presenting raw materials of per 1 kg of studied product.

Materials	Weight % per 1 kg	Origin	Renewable content (%)	Non-renewable content (%)	Recycled material content (%)
Acid-resistant stainless steel	9-71 %	EU	0 %	100 %	22,9 %
Cast iron	29-91%	EU	0 %	100 %	0 %
Total mass of materials	1 kg				

Packaging material composition

Main packaging materials of products per 1 kg of product are presented in table below.

Packaging material	Mass (kg) per 1 kg of studied product	% of weight
Plastic	0,00029	65,1
Cardboard	0,037	34,6
EUR-flat pallet	0,069	0,3
TOTAL	0,106 kg	100 %

Substances, reach - very high concern

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

Life-cycle assessment

Life-cycle assessment information

Period for data	1 year, 2024

Declared and functional unit

Declared unit	1 kg of finished product
Weight per declared unit	1 kg
Weight of the representative product	8,5 kg

Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0 kg
Biogenic carbon content in packaging, kg C	0,047 kg

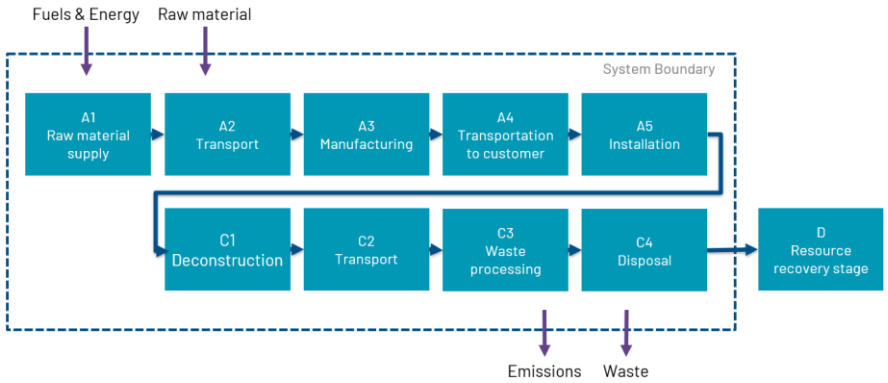
System boundary

This declaration covers the life cycle stages from cradle to gate with options (A4 and A5), modules C1–C4, and module D.

	Product Stage			Construction Process Stage		Use Stage							End-of-Life Stage				Benefits and loads beyond the system boundary		
	Raw material supply	Transport	Manufacturing	Transport to building	Installation to building	Use/applications	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling
Stage	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
Included	X	X	X	X	X								X	X	X	X	X	X	X
Relevancy	D	D	D	D	D	ND	ND	ND	ND	ND	ND	ND	D	D	D	D	D	D	D

Mandatory
Mandatory as per the RTS PCR section 6.2.1 rules and terms
Optional modules based on scenarios

Studied system covers the following steps of life cycle according to EN 15804: **A1** Raw material supply**, A2** Transport, **A3** Manufacturing, **A4** Transportation of the product to construction site, **A5** Installation to building, **C1** Deconstruction, **C2** Transportation of end-of-life **C3** Waste processing and **C4** Disposal. In addition, stage **D** includes the benefits and loads beyond the system boundary, which consists of product reuse, recovery and recycling. Figure describing the system boundary and the input and output flows is shown below:



LCA System Boundary of studied products

The study does not omit any life cycle stages, processes or data needs that are mandatory according to EN 15804 and RTS PCR. The study excludes following life cycle stages which are optional according to EN 15804 and RTS PCR.

- B1 Use
- B2 Maintenance
- B3 Repairs
- B4 Replacement
- B5 Refurbishment
- B6 Operational energy use
- B7 Operational water use

Cut-off Criteria

This study follows the cut-off criteria stated in RTS PCR and EN 15804 -standard. This study does not exclude any modules or processes which represent more than 1 % of the emissions of studied life cycle stage. The study does not exclude any hazardous materials or substances.

Excluded processes and the criteria for exclusion are given in the following table. Machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

Process excluded from study	Cut-off criteria	Quantified contribution from process
-	-	-

The determination of end-of-waste points

A1 module: The end of waste point of the recycled steel materials was assumed to be after the scrap collection, sorting and preparation. Processing of scrap in the production of new products was considered to be part of this life cycle and thus was included to the system boundaries.

A3 module: For metal scrap, the end of waste point is when materials are sorted and pressed and available to be used to replace primary steel. For incinerated waste streams, it is the incineration of the materials, which results as energy that is then available for consumption in the following life cycle.

A5 module: End of waste point of the packaging materials in A5 module is the point where it is processed and to be ready to use in following life cycles.

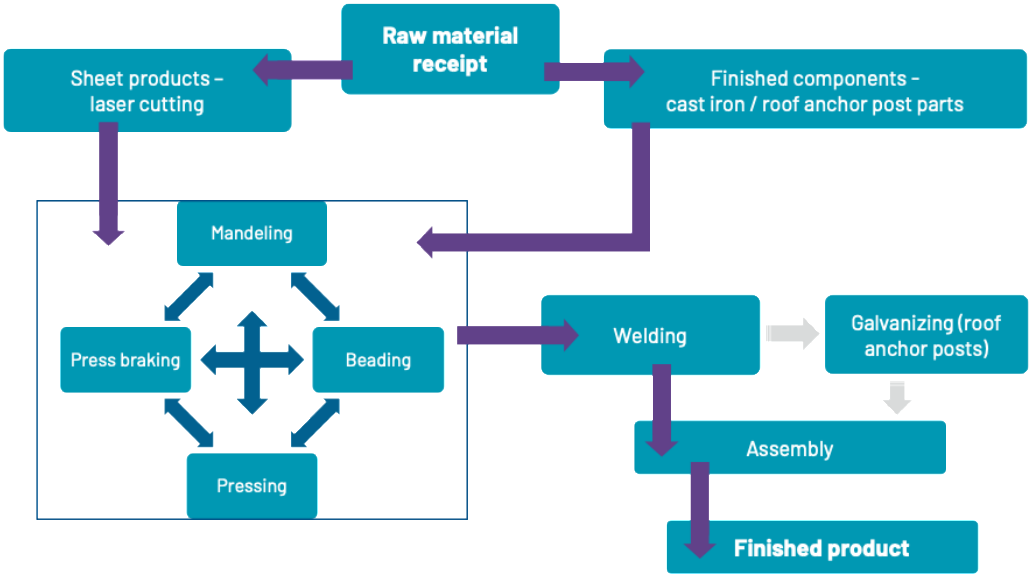
C3 module: End of waste point of the studied product is the step when metal-based materials are sorted and pressed and available to be used to replace primary steel.

The production process of studied product

Production stage (**A3**) of Peltitarvike's production sites cover the following manufacturing processes:

- Raw material supply, including finished components,
- Laser cutting for sheet products,
- Metal processing stages (including mandeling, beading, pressing, press braking),
- Welding,
- Galvanization of the Roof anchor post (also called roof bollards) products, including the transportation to and from the galvanization company back to Peltitarvike's production site,
- Assembly of the products,
- Packaging the final products.

After that, products are transported to the customer. The production processes of the studied products are presented in the following figure.



Allocation, estimates and assumptions

Allocation rules used are made according to the ISO14044:2006. Allocation is avoided when possible and when necessary, allocation is made based on physical shares and also avoiding double calculations. Allocation is required if the production process produces more than one product and the flows of materials, energy and waste cannot be separately measured for the studied product. Allocation used in generic data sources follow the requirements of the EN 15804 -standard. It should be noticed that the allocation method 'allocation, cut-off by classification' has been used for Ecoinvent 3.10.1 data, which complies with EN 15804.

Avoiding allocation could not be avoided for following inputs as the information was only measured on factory process level.

- Electricity: only measured on factory level.
- Production waste flows: measured on factory level
- Packaging materials: only measured on factory level.
- Ancillary materials: only measured on factory level.

The inputs were allocated to studied product based on production volume (mass in kilograms).

According to EN 15804, flows leaving the system at the end-of-waste boundary of the product stage (A1-A3) are allocated as co-products. According to EN 15804, process that has a very low contribution to the overall revenue may be neglected in co-product allocation. Co-product allocation has not been used. No other allocations were made in this assessment.

Key assumptions

The scenarios included are currently in use and are representative for one of the most likely scenario alternatives.

A1 Raw Materials: Recycled raw material content was assumed based on the supplier EPD data. Recycled content is 22,9 % for the Acid-resistant steel.

Transport to building (A4): Transport to building site was assessed based on the transportation distance from Peltitarvike's production site to Helsinki centrum.

A5 Installation to building: Products are installed without heavy machinery that consumes energy and there is no installation waste. The energy consumption of manual devices (e.g., bolt-tightening tools) is assumed to be so low that it has no meaningful impact. The Installation to building A5 consists of only treatment of the packaging materials. Plastics are assumed to be 100 % incinerated among municipal waste, and 83,2% of cardboard is sent to recycling, and the rest is sent to incineration. EUR-flat pallets are assumed to be 95% reused, and the rest 5% is sent to shredding.

C1-4 End of life scenario: was assumed based on the common practices of construction products (SYKE 2023). The material flows at the end of life were assumed to be following:

- C1 Deconstruction/demolition: During the demolition phase C1, the entire final product is dismantled, using the mass of the final product as the input data. The energy use (diesel usage) in the demolition stage is 1,30 kWh/t (Erlandsson, M. & Pettersson, D., 2015.)
- C2 Transportation: Transportation distance 75 km road driving by lorry. (SYKE 2021.)
- C3-C4 Waste treatment and final disposal: It is assumed that 90 % of steel is recycled and 10 % ends up in a landfill (EURIC 2020).
- Module D covers the net benefits and loads arising from the reuse of products or the recycling or recovery of energy from end-of-waste state materials.
    - Loads and benefits of steel recycling are included.

Data quality

The quality requirements for the life cycle assessment were set according to the EN ISO 14044 standard (4.2.3.6) and EN 15804 standard (6.3.7). This LCA study follows the standard EN 15804:2012+A2:2019 and RTS PCR and no decisions are made based on the values. The study does not consider long-term emissions (i.e. over 100 years). Impact assessment characterization factors are aligned with EF 3.1. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

PROCEDURED FOR COLLECTION PROCESS SPECIFIC DATA

Production specific data was collected directly from manufacturer's production plant. The data represents the production of the studied product at the plant from the materials transported to the facility and represents 1 year average. The data represents year 2024, which was the latest year with full year data. All gathered data was used without excluding categories in advance following the system boundaries set in earlier chapters.

CRITERIA FOR CHOOSING THE GENERIC DATA

Generic data that was used for upstream and downstream processes represents complementary data from Ecoinvent 3.10.1 database.

The datasets were chosen to represent the studied system as closely as possible. When available supplier specific information was used for instance in form of EN 15804 EPDs or emissions profile of local energy supplier. When supplier specific information was not available the information sources were chosen based on their technical and geographical representativeness. Only when country specific or European data has not been available has global level data been used (concerns mainly data from ecoinvent 3.10.1)

As up-to-date data as possible was chosen and no more than five-year-old for producer specific data and ten years for generic data was used.

Environmental impact data

Screen structure with cast iron grate, 1 kg

Core environmental impact indicators – EN 15804+A2, EF 3.1

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,52E+00	1,91E-03	1,76E-01	4,69E-04	8,08E-03	3,45E-02	6,25E-04	-1,28E+00
GWP – fossil	kg CO_2e	4,67E+00	1,90E-03	2,65E-03	4,69E-04	8,07E-03	1,96E-02	6,24E-04	-1,28E+00
GWP – biogenic	kg CO_2e	-1,54E-01	0,00E+00	1,74E-01	4,78E-08	1,65E-06	1,49E-02	0,00E+00	-2,74E-04
GWP – LULUC	kg CO_2e	5,81E-03	8,52E-07	1,34E-06	4,80E-08	3,61E-06	1,62E-05	3,57E-07	-1,51E-04
Ozone depletion pot.	kg CFC_{-11}e	8,36E-06	2,81E-11	2,13E-11	7,18E-12	1,19E-10	1,32E-10	1,81E-11	-4,20E-09
Acidification potential	mol H^+e	2,11E-02	6,49E-06	7,97E-06	4,23E-06	2,75E-05	8,69E-05	4,43E-06	-5,04E-03
EP-freshwater[3)]	kg Pe	1,50E-03	1,48E-07	3,15E-07	1,35E-08	6,28E-07	7,69E-06	5,13E-08	-5,46E-04
EP-marine	kg Ne	4,25E-03	2,13E-06	3,20E-06	1,96E-06	9,04E-06	4,10E-05	1,69E-06	-1,12E-03
EP-terrestrial	mol Ne	4,49E-02	2,32E-05	2,75E-05	2,15E-05	9,84E-05	2,29E-04	1,84E-05	-1,23E-02
POCP ("smog")	kg NMVOCe	1,47E-02	9,57E-06	9,05E-06	6,41E-06	4,06E-05	6,81E-05	6,60E-06	-4,18E-03
ADP-minerals & metals	kg Sbe	7,75E-05	5,31E-09	1,03E-08	1,68E-10	2,25E-08	3,54E-07	9,92E-10	-1,24E-05
ADP-fossil resources	MJ	5,42E+01	2,76E-02	2,09E-02	6,13E-03	1,17E-01	1,47E-01	1,53E-02	-1,16E+01
Water use[2)]	m^3e depr.	1,45E+00	1,37E-04	7,34E-04	1,53E-05	5,79E-04	4,60E-03	4,42E-05	-2,13E-01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	9,81E+00	3,79E-04	-6,21E-01	3,88E-05	1,61E-03	2,77E-02	1,48E-04	-7,99E-01
Renew. PER as material	MJ	1,51E+00	0,00E+00	-1,51E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,13E+01	3,79E-04	-2,13E+00	3,88E-05	1,61E-03	2,77E-02	1,48E-04	-7,99E-01
Non-re. PER as energy	MJ	4,95E+01	2,76E-02	1,04E-02	6,13E-03	1,17E-01	1,47E-01	1,53E-02	-1,16E+01
Non-re. PER as material	MJ	8,26E-02	0,00E+00	-8,26E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-ren. PER	MJ	4,96E+01	2,76E-02	-7,23E-02	6,13E-03	1,17E-01	1,47E-01	1,53E-02	-1,16E+01
Secondary materials	kg	4,28E-01	1,18E-05	2,49E-05	2,55E-06	4,99E-05	2,80E-04	3,85E-06	7,03E-01
Renew. secondary fuels	MJ	3,92E-02	1,49E-07	1,89E-07	6,66E-09	6,33E-07	2,18E-05	7,97E-08	-1,05E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,18E-01	4,09E-06	1,36E-05	4,05E-07	1,73E-05	7,46E-05	1,59E-05	-2,80E-03

1)PER = primary energy resources; Non-ren = Non renewable

End of life – waste

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,69E+00	4,68E-05	2,32E-04	6,82E-06	1,98E-04	2,08E-03	1,69E-05	-4,22E-01
Non-hazardous waste	kg	7,81E+00	8,67E-04	9,96E-03	9,30E-05	3,67E-03	1,18E-01	3,87E-04	-3,28E+00
Radioactive waste	kg	1,15E-04	5,89E-09	2,29E-08	6,66E-10	2,50E-08	5,39E-07	2,35E-09	1,24E-05

End of life – output flows

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	6,50E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,35E-01	0,00E+00	3,34E-02	0,00E+00	0,00E+00	9,00E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	2,52E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	2,22E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Biogenic carbon content

Biogenic carbon content	Unit (expressed per functional unit or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0,047 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

Scenario documentation

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, residual mix (Reference product: electricity, medium voltage) EN15804+A2, Finland, 2024. Ecoinvent 3.10.1.
Electricity CO_2e / kWh	0,66 kg CO2 eq. / kWh
District heating data source and quality	Helen Oy district heating energy mix
District heating CO_2e / kWh	0,165 kg CO2e /kWh

Transport scenario documentation (A4)

Scenario parameter	Value
Specific transport CO_2e emissions, kg CO_2e / tkm	Truck: diesel, maximum load capacity 34 t. Specific transport emissions 0,19 kg CO_2 equiv. / tn x km
Average transport distance, km	Average transport distance 16 km
Capacity utilization (including empty return) %	100 % for truck
Bulk density of transported products	Density varies depending on the mass and size of the product type
Volume capacity utilization factor	1

Installation of the product in the building (A5)

Parameter	Unit	
Ancillary materials for installation	-	
Water use	0 m3	
Other resource use	0 kWh (energy use is insignificant)	
Quantitative description of energy type (regional mix) and consumption during the installation process		
Waste materials generated by product installation	Packaging materials per declared unit of product:	
	Plastic	0,00029 kg
	Cardboard	0,037 kg
	EUR-flat pallet	0,069 kg

End of life scenario documentation

		Screen structure with cast iron grate
Process flow		Mass
Collection process specified by type	kg collected separately	1,0 kg
	kg collected with mixed construction waste	
Recovery system specified by type	kg for reuse	0 kg
	kg for recycling	0,9 kg
	kg for energy recovery	0 kg
Disposal specified by type	kg material for final deposition	0,1 kg
Assumptions for scenario development	units as appropriate	Waste materials are transported 75 km by truck to recycling facility with a truck capacity utilization of 45%

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One Click LCA EPD Generator for EPD Hub V3

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The Finnish RTS EPD programme RTS EPD Guideline, 18.2.2021

Annex 1. Product Group coverage

CONVERSION FACTORS

The products are sold in various dimensions, and there can be hundreds of different conversion factors to convert weight (kg) data. Thus, detailed product-specific factors/weight data are available upon request.

Product name	Diameter [mm]	Length [mm]	Weight [kg]
Screen structure for traffic deck (Liikennöidyn tason sihtirakenne), LTSK 300/500 with cast iron grate 300/500	500	180-950	39,2-46,3
Screen structure for traffic deck Liikennöidyn tason sihtirakenne, LTSK 300/500 with cast iron grate 300/450x450	500	180-950	28,1-35,3
Screen structure for traffic deck Liikennöidyn tason sihtirakenne, LTSK 300x300 with cast iron grate 300x300	300x300	140-1200	11,50-13,50
Screen structure for traffic deck Liikennöidyn tason sihtirakenne, LTSK 500/670 with cast iron grate 500/670	670	180-700	38-45,0
Screen structure for rainwater downpipe (Sadevesisyöksyn sihtirakenne) 220	220	400-500	8,5