



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Bathroom cabinet PYK 400/S530

Polaria Oy



EPD HUB, HUB-4403

Published on 14.11.2025, last updated on 21.11.2025, valid until 13.11.2030

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

polaria[®]

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Polaria Oy
Address	4 Yrittäjätie, 52700, Mäntyharju, Finland
Contact details	myynti@polaria.fi
Website	www.polaria.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
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4, A5, and modules C1-C4, D
EPD author	Rami Leppänen, Polaria 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	Vera Durão, 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	PYK 400/S530
Additional labels	-
Product reference	V60105O2, V60106O3, V60105V2, V60106V3
Place(s) of raw material origin	EU
Place of production	Finland
Place(s) of installation and use	Finland
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	1,3
GTIN (Global Trade Item Number)	6417292070828, 6417292070859, 6417292070811, 6417292070835
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	90,1

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	7,12
GWP-total, A1-A3 (kgCO ₂ e)	9,77
Secondary material, inputs (%)	6,74
Secondary material, outputs (%)	87,2
Total energy use, A1-A3 (kWh)	32,1
Net freshwater use, A1-A3 (m ³)	0,03

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Polaria Oy was founded in 1970 in Mäntyharju, Finland. Polaria manufactures high-quality and durable bathroom furniture for the Finnish and Swedish markets. Its main customers are wholesalers, hardware stores and construction companies.

Polaria's durable steel bathroom furnishings are made for living. Polaria is a Finnish company that has been manufacturing and selling steel bathroom furnishings for more than 50 years. Polaria products are made of powder-painted steel with nanoceramic finishing and therefore have excellent water resistance. We have been working for over half a century for a functional and sustainable everyday life.

PRODUCT DESCRIPTION

PYK bathroom cabinet's material is powder-coated steel that is subjected to a corrosion-resistant nanoceramic surface treatment which makes it waterproof. This cabinet's depth is 530 mm, height 1700 mm, width 400 mm and it has place for a lot of dirty laundry. Bottom plate is perforated to ensure ventilation. Cylinder lock and two shelves. PYK cabinets have holes ready for the legs (ordered separately). PYK bathroom cabinet is available in traffic white and anthracite grey with two or three metal wire baskets.

Further information can be found at:

www.polaria.fi

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	94	EU
Minerals	-	-
Fossil materials	6	EU
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,005
Biogenic carbon content in packaging, kg C	0,02

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
Mass per declared unit	1 kg
Functional unit	-
Reference service life	50

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	Recovery	Recycling
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 = NR

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.

PYK 400/S530 cabinets are manufactured at the Polaria Oy site in Mäntyharju, Finland. The product process consists of raw materials, cutting and shaping the product and packaging.

During manufacturing steel plates are cut and shaped to form a cabinet. Cutting metal generates manufacturing waste. Metal scrap is sold, and 50 km transportation is taken account for the scrap steel. After forming the cabinet is washed and painted giving its nanoceramic protection. Some of the assembly is automated. Cabinets are packed to cardboard boxes, stacked on wooden pallets and shipped to temporary storage to Lahti, Finland.

Production requires electricity, water and heat. Realized forms of energy production (2024) from Veni energy is used in modelling the electricity mix utilized in the factory. Slightly more than 10% of electricity comes from facility's own solar panels. Veni energy's electricity came from multiple sources. Majority (72%) of the electricity came from nuclear energy production followed by hydro electricity production (13,5%). Smaller amounts of electricity production came from peat (5,5%), wind (3,4%) and geothermal (0,2%). Washing water is heated by district heat and natural gas is used warm the furnace.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Average distance of transportation from production plant to retailers' site is 97 km and the transportation mode is lorry. Vehicle capacity utilization volume factor is assumed to be 1 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. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as product is packaged properly.

Environmental impacts from installation into the building include generation of waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets/cardboard boxes. The impacts of material production, its processing and its disposal as installation waste are also assessed. Mortars and energy for mortar placing are also considered for the installation process. Only installation waste is the packing waste coming from cardboard box that cabinet is packed.

According to *EUROSTAT* most (83%) of the cardboard packaging will be recycled and (9%) incinerated, rest (9%) ending up on a landfill.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. PYK400/S530 metal cabinet is assumed to be used in bathroom as place for storage. As an environment bathroom is wet, and this requires furniture to survive in harsh conditions. Cabinets waterproof corrosion-resistant nanoceramic surface can be maintained with a soft cloth and water. A mild detergent can also be used for maintaining the painted surface

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

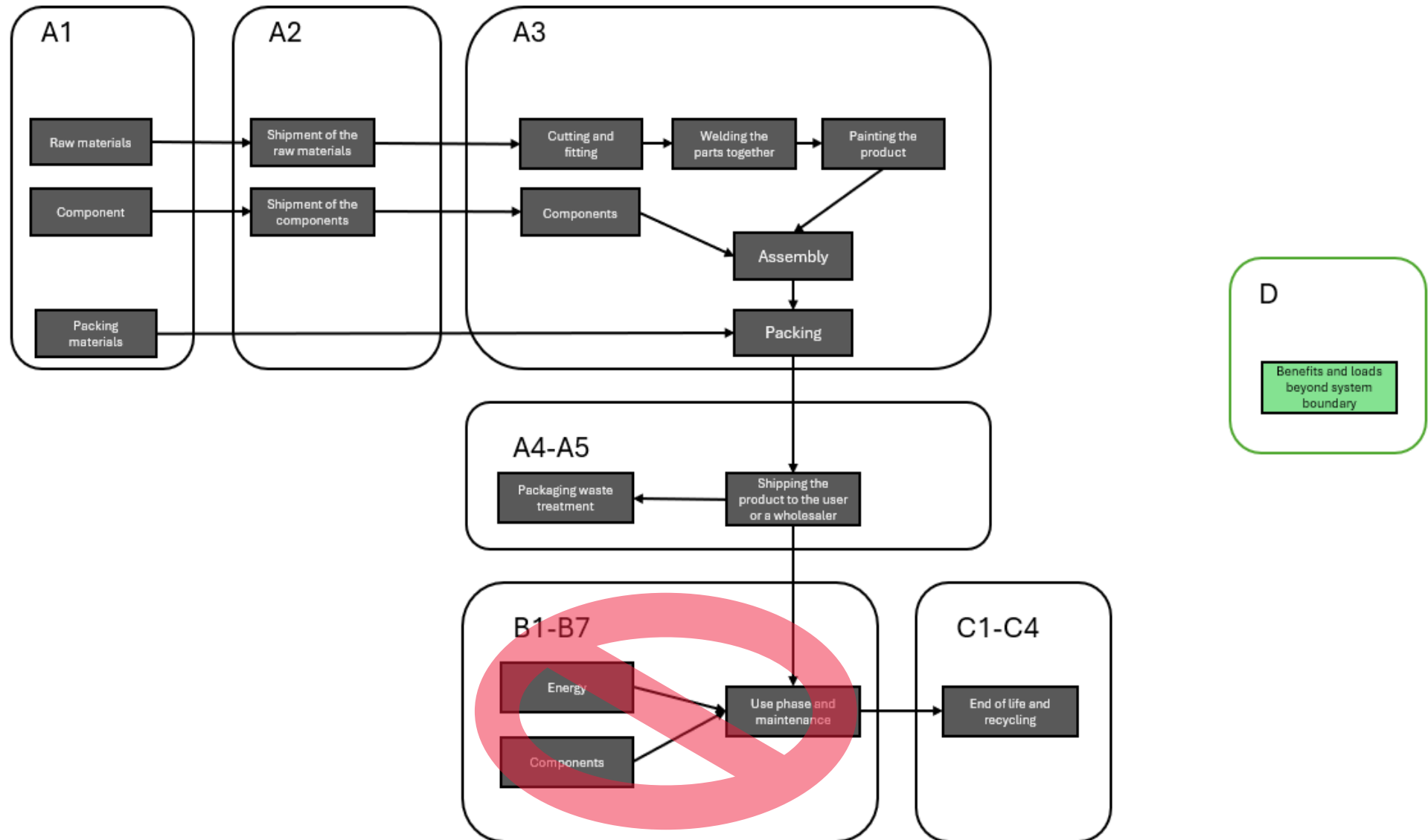
PRODUCT END OF LIFE (C1-C4, D)

It is assumed that the waste is collected separately and transported to the waste treatment facility. Transportation distance to waste treatment plant is assumed to be 250 km for recycled waste, 100 km for incinerated waste and 50 km for the landfilled waste and the transportation method is assumed to be lorry (C2). Module C3 accounts for the incineration of the recycling and incineration with energy recovery of the materials, and the landfilled materials are accounted in module C4.

Steel that forms the majority of mass and the production loss during cutting of the steel plates is considered to be (95%) recycled, and rest (5%) ends up to landfills (Source: World Stainless 2024; ICDA 2023). Aluminium is considered to be (95%) recycled, rest (5%) ending up on a landfill according to European Aluminium (2022). From plastic (20%) is considered to be recycled and same amount (20%) landfilled, rest (60%) going to be incinerated according to EN 50693.

Due to the energy recovery potential of some materials, and material and energy recovery potential of the packaging, recycled raw materials lead to avoided virgin material production and the energy recovered from incineration replaces electricity and heat from primary sources. Benefits and loads from incineration and recycling are included in Module D. Used secondary materials in A1 are not included in this module.

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 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.

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	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

All estimations and assumptions regarding the cut off criteria and the allocation are declared in the part "Cut-off Criteria except the estimations/assumptions below:

Proxy data is used for certain materials due to their unavailability in the database.

is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small, the variety in load is assumed to be negligible. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints.

- Module A4: Transportation does not cause losses as products are packaged properly. Also, volume capacity utilization factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances are assumed based on a particular scenario of delivery to Polaria Oy temporary storage facility in Lahti and a lorry is the assumed vehicle type used.

- Module A5: Packaging waste is declared as installation waste.
- Module C2: Transportation distance to waste handling facility is estimated as 100 km and the transportation method is assumed as lorry.

- Module C3, C4, D: The product is considered to be collected separately. The end-of-life scenario considers incineration and landfill. Ash from incineration processes is assumed negligible. The incinerated end-of-life materials are assumed to displace electricity and heat production.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on worst-case results
Variation in GWP-fossil for A1-A3, %	1,3 %

Primary data represents the manufacturing of products PYK 400/S530 with 2 or 3 wire baskets. The data was used to calculate average impacts for the products. The variability of the primary data or the emissions between the products did not amount to more than 1,3 % of the relevant data (the highest compared to the lowest). The primary data was averaged by calculating a weighted average of the products' consumption of raw materials, energy and production wastes. The production amount mass shares per each product was used in weighing.

Difference in modules A1-A3 GWP fossil compared to the worst-case results are:

PYK 400/S530	GWP fossil	Difference in GWP, %
3 wire baskets	7,12	0
2 wire baskets	7,02	- 1,3

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. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

Bozdağ, Ö & Seğer, M., 2007

EN 17213

EN 50693

EUROSTAT,
https://ec.europa.eu/eurostat/databrowser/view/env_waspac_custom_8519242/default/table?lang=en

EUROSTAT,
https://ec.europa.eu/eurostat/databrowser/view/env_waspac_custom_8519259/default/table?lang=en

International Chromium Development Association (ICDA), 2023
<https://www.icdacr.com/2023/06/27/95-of-stainless-steel-is-recycled-at-the-end-of-its-life/>

Plastics Europe, 2020

ENVIRONMENTAL IMPACT DATA (WITH TREE WIRE BASKETS)

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 ₂ e	3,00E+00	2,39E-02	6,74E+00	9,77E+00	1,10E-02	9,47E-02	ND	ND	ND	ND	ND	ND	ND	3,46E-03	4,59E-02	1,13E-01	4,26E-03	-4,42E+00
GWP – fossil	kg CO ₂ e	2,98E+00	2,38E-02	4,11E+00	7,12E+00	1,10E-02	5,48E-03	ND	ND	ND	ND	ND	ND	ND	3,34E-03	4,59E-02	1,13E-01	4,26E-03	-4,42E+00
GWP – biogenic	kg CO ₂ e	1,85E-02	5,00E-06	2,63E+00	2,65E+00	2,32E-06	8,92E-02	ND	ND	ND	ND	ND	ND	ND	1,07E-04	1,00E-05	-6,42E-05	-4,26E-07	-5,04E-06
GWP – LULUC	kg CO ₂ e	1,80E-03	1,00E-05	3,00E-03	4,82E-03	4,14E-06	1,10E-05	ND	ND	ND	ND	ND	ND	ND	9,87E-06	2,03E-05	2,63E-05	2,15E-07	-4,34E-03
Ozone depletion pot.	kg CFC ₁₁ e	2,71E-08	4,03E-10	1,75E-07	2,03E-07	2,22E-10	8,35E-11	ND	ND	ND	ND	ND	ND	ND	6,19E-11	6,42E-10	2,95E-10	1,06E-11	-2,97E-08
Acidification potential	mol H ⁺ e	7,08E-03	9,56E-05	3,78E-02	4,50E-02	3,55E-05	2,78E-05	ND	ND	ND	ND	ND	ND	ND	1,92E-05	1,53E-04	2,57E-04	3,13E-06	-2,48E-02
EP-freshwater ²⁾	kg Pe	2,54E-04	1,73E-06	8,33E-04	1,09E-03	7,42E-07	3,68E-06	ND	ND	ND	ND	ND	ND	ND	3,21E-06	3,57E-06	1,89E-05	3,87E-08	-1,32E-03
EP-marine	kg Ne	1,59E-03	3,04E-05	3,65E-03	5,27E-03	1,21E-05	1,69E-05	ND	ND	ND	ND	ND	ND	ND	3,06E-06	4,96E-05	5,88E-05	4,67E-06	-4,44E-03
EP-terrestrial	mol Ne	1,67E-02	3,32E-04	9,59E-02	1,13E-01	1,31E-04	5,45E-05	ND	ND	ND	ND	ND	ND	ND	2,71E-05	5,40E-04	6,63E-04	1,36E-05	-4,74E-02
POCP (“smog”) ³⁾	kg NMVOCe	5,17E-03	1,33E-04	1,12E-02	1,65E-02	5,79E-05	1,91E-05	ND	ND	ND	ND	ND	ND	ND	8,67E-06	2,13E-04	1,94E-04	4,45E-06	-1,52E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,02E-05	6,51E-08	9,27E-06	1,95E-05	3,04E-08	5,85E-08	ND	ND	ND	ND	ND	ND	ND	4,47E-08	1,51E-07	1,48E-06	7,94E-10	-1,15E-04
ADP-fossil resources	MJ	1,99E+01	3,44E-01	8,84E+01	1,09E+02	1,59E-01	9,61E-02	ND	ND	ND	ND	ND	ND	ND	7,66E-02	6,44E-01	2,90E-01	8,52E-03	-4,77E+01
Water use ⁵⁾	m ³ e depr.	1,92E-01	1,71E-03	3,52E+00	3,71E+00	8,17E-04	2,63E-03	ND	ND	ND	ND	ND	ND	ND	2,09E-03	2,99E-03	6,63E-03	2,75E-04	-1,27E+00

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	3,38E-08	2,34E-09	2,59E-07	2,95E-07	1,10E-09	1,84E-10	ND	ND	ND	ND	ND	ND	ND	6,81E-11	3,65E-09	3,72E-09	5,59E-11	-3,54E-07
Ionizing radiation ⁶⁾	kBq	4,55E-02	3,42E-04	3,84E+00	3,88E+00	1,92E-04	2,25E-03	ND	ND	ND	ND	ND	ND	ND	2,13E-03	5,22E-04	2,40E-03	6,44E-06	-1,84E-01
Ecotoxicity (freshwater)	CTUe	1,28E+01	4,80E-02	5,82E+01	7,10E+01	1,88E-02	1,75E-01	ND	ND	ND	ND	ND	ND	ND	1,06E-01	1,02E-01	2,15E-01	2,32E-02	-1,26E+01
Human toxicity, cancer	CTUh	7,63E-10	3,96E-12	7,28E-10	1,49E-09	1,81E-12	2,54E-12	ND	ND	ND	ND	ND	ND	ND	9,89E-13	7,80E-12	2,69E-11	3,99E-13	-4,00E-09
Human tox. non-cancer	CTUh	3,84E-08	2,20E-10	3,61E-08	7,47E-08	1,04E-10	1,36E-10	ND	ND	ND	ND	ND	ND	ND	5,38E-11	4,03E-10	1,38E-09	1,65E-11	-8,84E-08
SQP ⁷⁾	-	2,44E+00	3,40E-01	6,00E+00	8,78E+00	1,61E-01	2,93E-02	ND	ND	ND	ND	ND	ND	ND	1,49E-02	3,87E-01	5,48E-01	1,57E-02	-2,25E+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 ⁸⁾	MJ	2,25E+00	5,02E-03	6,42E+00	8,67E+00	2,60E-03	-9,19E-01	ND	ND	ND	ND	ND	ND	ND	2,03E-02	8,83E-03	5,26E-02	1,09E-04	-1,15E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	7,61E-01	7,61E-01	0,00E+00	-7,61E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,25E+00	5,02E-03	7,18E+00	9,43E+00	2,60E-03	-1,68E+00	ND	ND	ND	ND	ND	ND	ND	2,03E-02	8,83E-03	5,26E-02	1,09E-04	-1,15E+01
Non-re. PER as energy	MJ	1,90E+01	3,44E-01	8,85E+01	1,08E+02	1,59E-01	9,61E-02	ND	ND	ND	ND	ND	ND	ND	7,66E-02	6,44E-01	-9,25E-01	-1,08E-01	-4,77E+01
Non-re. PER as material	MJ	2,83E-01	0,00E+00	2,49E-03	2,85E-01	0,00E+00	-2,49E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-2,12E-01	-7,06E-02	0,00E+00
Total use of non-re. PER	MJ	1,93E+01	3,44E-01	8,85E+01	1,08E+02	1,59E-01	9,36E-02	ND	ND	ND	ND	ND	ND	ND	7,66E-02	6,44E-01	-1,14E+00	-1,78E-01	-4,77E+01
Secondary materials	kg	6,97E-02	1,48E-04	6,22E-02	1,32E-01	6,90E-05	4,43E-05	ND	ND	ND	ND	ND	ND	ND	1,22E-05	2,89E-04	3,70E-04	2,68E-06	5,19E-01
Renew. secondary fuels	MJ	1,31E-04	1,84E-06	5,57E-03	5,71E-03	8,71E-07	2,87E-07	ND	ND	ND	ND	ND	ND	ND	1,06E-07	3,68E-06	1,60E-05	6,33E-08	-1,23E-03
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	6,24E-03	5,02E-05	2,08E-02	2,71E-02	2,36E-05	3,78E-05	ND	ND	ND	ND	ND	ND	ND	4,87E-05	8,54E-05	1,82E-04	5,82E-06	-3,88E-02

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	1,71E-01	5,46E-04	2,02E-01	3,74E-01	2,31E-04	5,19E-04	ND	ND	ND	ND	ND	ND	ND	1,86E-04	1,12E-03	2,71E-03	7,46E-05	-4,35E+00
Non-hazardous waste	kg	2,67E+00	1,04E-02	4,51E+00	7,19E+00	4,62E-03	5,30E-02	ND	ND	ND	ND	ND	ND	ND	1,57E-02	2,11E-02	7,10E-02	1,02E-02	-8,96E+00
Radioactive waste	kg	3,50E-04	8,42E-08	8,48E-04	1,20E-03	4,76E-08	5,79E-07	ND	ND	ND	ND	ND	ND	ND	5,46E-07	1,28E-07	6,15E-07	1,58E-09	-4,53E-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	8,16E-07	0,00E+00	0,00E+00	8,16E-07	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	3,42E-04	0,00E+00	0,00E+00	3,42E-04	0,00E+00	4,90E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,22E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	5,43E-03	0,00E+00	0,00E+00	5,43E-03	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
Exported energy	MJ	1,86E-04	0,00E+00	0,00E+00	1,86E-04	0,00E+00	2,35E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,30E-02	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	9,50E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,80E-02	0,00E+00	0,00E+00
Exported energy –	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,40E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,50E-02	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 ₂ e	2,98E+00	2,38E-02	4,11E+00	7,12E+00	1,10E-02	5,49E-03	ND	ND	ND	ND	ND	ND	ND	3,35E-03	4,59E-02	1,13E-01	4,26E-03	-4,42E+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

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	VENI Energia (2024) (5,4% solar, 72% nuclear, 5,5% peat, 0,2 geothermal, 3,4% wind and 13,5% hydro electricity). Datapoints by OneclickLCA.
Electricity CO2e / kWh	0,00969
District heating data source and quality	Market for heat, district or industrial, other than natural gas (Reference product: heat, district or industrial, other than natural gas)
District heating CO2e / kWh	0,071

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Transport, freight, lorry >32 metric ton, EURO5 - Europe
Average transport distance, km	631
Capacity utilization (including empty return) %	50
Bulk density of transported products	111,8
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	0
Water use / m ³	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	0.0561 kg of cardboard packing per functional unit (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	83% of cardboard packaging is considered to be recycled, 8% to be incinerated and 9% landfilled at the end of life.
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	1
Collection process – kg collected with mixed construction waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	0,812
Recovery process – kg for energy recovery	0,006
Disposal (total) – kg for final deposition	1
Scenario assumptions e.g. transportation	<p>Treatment of waste mineral oil, hazardous waste incineration (Reference product: waste mineral oil) – incineration: 150 km.</p> <p>C2-C4 Aluminium, Construction (Eurostat 2020) - EI3.10; recycling: 250 km, landfill: 50 km.</p> <p>C2-C4 Stainless Steel, Construction (World Stainless 2024 & ICDA 2023) - EI3.10; recycling: 250 km, landfill: 50 km.</p> <p>C2-C4 ABS, Electrics (EN 50693) - EI3.10; recycling: 250 km, landfill: 50 km, incineration: 100 km.</p>
Assumptions in Module D	<p>Treatment of waste mineral oil, hazardous waste incineration, Ecoinvent, 0.0297 kg</p> <p>Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 4.9E-4 kg</p>

Scenario information	Value
	<p>Treatment of waste aluminium, sanitary landfill, Ecoinvent, 5.4E-5 kg</p> <p>Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.92 kg</p> <p>Treatment of scrap steel, inert material landfill, Ecoinvent, 0.048 kg</p> <p>Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.0016 kg</p> <p>Treatment of waste plastic, mixture, municipal incineration, Ecoinvent, 0.0032 kg</p> <p>Treatment of waste plastic, mixture, municipal incineration, Ecoinvent, 0.0016 kg</p> <p>Exported Energy: Thermal, Ecoinvent, 0.025 MJ</p> <p>Exported Energy: Electricity, Ecoinvent, 0.018 MJ</p> <p>Treatment of waste plastic, mixture, sanitary landfill, Ecoinvent, 0.0016 kg</p> <p>Market group for electricity, low voltage, Ecoinvent, 0.01 kWh</p>

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

Vera Durão, as an authorised verifier acting for EPD Hub Limited

14.11.2025

Vera Durão

