

ACO. we care for water

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

ACO ShowerDrain C

ACO Passavant GmbH



EPD HUB, HUB-4303

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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 Mar 2025) and JRC characterization factors EF 3.1.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	ACO Passavant GmbH
Address	Ulsterstraße 3, 36269 Philippssthal, Germany
Contact details	info@aco.com
Website	www.aco.com

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	Christin Schlotzhauer ACO Passavant GmbH
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	#VERIFIER#

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	ACO ShowerDrain C
Additional labels	9010.xx.xx
Product reference	
Place(s) of raw material origin	Europa
Place of production	Philippssthal, Germany
Place(s) of installation and use	Europa
Period for data	01/2024 - 12/2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	2,34

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of a fully packaged shower channel SD C
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	4,22
GWP-total, A1-A3 (kgCO ₂ e)	3,71
Secondary material, inputs (%)	26,7
Secondary material, outputs (%)	91
Total energy use, A1-A3 (kWh)	15,7
Net freshwater use, A1-A3 (m ³)	0,05

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

ACO is one of the world's leading water technology companies, particularly for rainwater and wastewater management. Our mission is "ACO. we care for water." Care in this sense means to be protective and attentive and is deeply anchored in the ACO WaterCycle. This cycle describes the collection, transportation, purification, storage and finally the reuse of this vital resource. Using innovative separation and filter technologies, ACO prevents the contamination of water from fats, fuels, heavy metals and microplastics. In all our products and systems, durability, reusability and a low carbon footprint are of great importance. Responsibility for people, the environment and the world of tomorrow is in ACO's DNA. For generations this belief has shaped the values at our locally rooted but globally active family corporation. Founded in Schleswig-Holstein in 1946, ACO is represented in over 50 countries around the world and is known for proximity to regional markets and business partnerships.

The drainage of buildings requires diverse solutions. We are experts in commercial construction, specializing in drainage systems for public, commercial, and residential-like operational buildings. Our portfolio includes comprehensive solutions for drainage, separation, and pump technology – from flat roofs and large-scale kitchens to underground garages. We place particular emphasis on customized solutions for fire and sound protection. To prevent flooding and protect buildings from water damage, we also offer specialized backwater valves and automatic backflow prevention systems.

PRODUCT DESCRIPTION

A shower channel is a linear drainage element used in flush floor level showers. Its main function is to drain wastewater efficiently

and safely direct into the sewage system. It replaces the traditional point drain and enables a barrier-free design of the shower area in the bathroom. The ACO ShowerDrain C consists of a stainless steel channel body, a factory-welded stainless steel drain, a plastic odor trap, and a matching stainless steel design grate. The ACO shower channels, made of stainless steel which are declared in this document are available in various lengths and versions (with surrounding flange, wall flange, no flange) for flush floor level shower areas, refer to the products listed below: ACO ShowerDrain C shower channel without sealing collar, with water trap heights of 25 mm and 50 mm ACO ShowerDrain C shower channel with sealing collar, with water trap heights of 25 mm and 50 mm Further product information (socket dimension, socket direction) can be found on the ACO websites at www.aco-haustechnik.de or www.building-drainage.aco. This declaration has been prepared for the product with the highest environmental impact: ACO ShowerDrain C 1185 mm. The use of the products is subject to the applicable national regulations at the place of use; in Germany, for example, the state building codes of the different federal states and the technical regulations delivered from them. The ACO ShowerDrain shower channels comply with DIN EN 1253-1:2015-03 (Trapped floor gullies with a depth water seal of at least 50 mm) and DIN EN 1253-6:2022 (Trapped floor gullies with a depth of water seal less than 50 mm).

Further information can be found at:
www.aco.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	95	EU
Minerals	0	-
Fossil materials	5	EU
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	0,155

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of a fully packaged shower channel SD C
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	MND	MND	MND	MND	MND	MND	MND	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		

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The distances between the suppliers (sheet metal panels and other individual components) and our production site range from 40 km to 660 km. All sheet metal parts are manufactured in-house using laser cutting, bending, deep drawing, and welding. All other individual components are supplied

by external vendors. During production, our machines consume electricity, water, and various chemicals such as oil. For one product, our manufacturing process generates 60% waste, while other components have a rejection rate of less than 20%. The steel waste is collected and then recycled by a company located 12 km away. We use sustainable energy generated from hydropower. The shower channel packaging consists of cardboard. The packaged channels are transported on Euro pallets.

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.

The distance from our plant to the end customers ranges from 190km to 1358km. No installation materials are required for on-site installation. Electricity is used to operate the machine for installing the product. The supplied wooden pallet is returned via a deposit system, as it can be reused up to 40 times due to weather-protected storage and the low load from the channels. The cardboard packaging, plastic films, and paper-based user manual are collected and treated accordingly to EUROSTAT scenario: - Paper and cardboard: 83% recycled, 8% incineration, 8% landfill;- Plastic: 40% recycled, 37 % incineration, 23% landfill; - Wood: 32% recycled, 30 % incineration, 38% landfill.

PRODUCT USE AND MAINTENANCE (B1-B7)

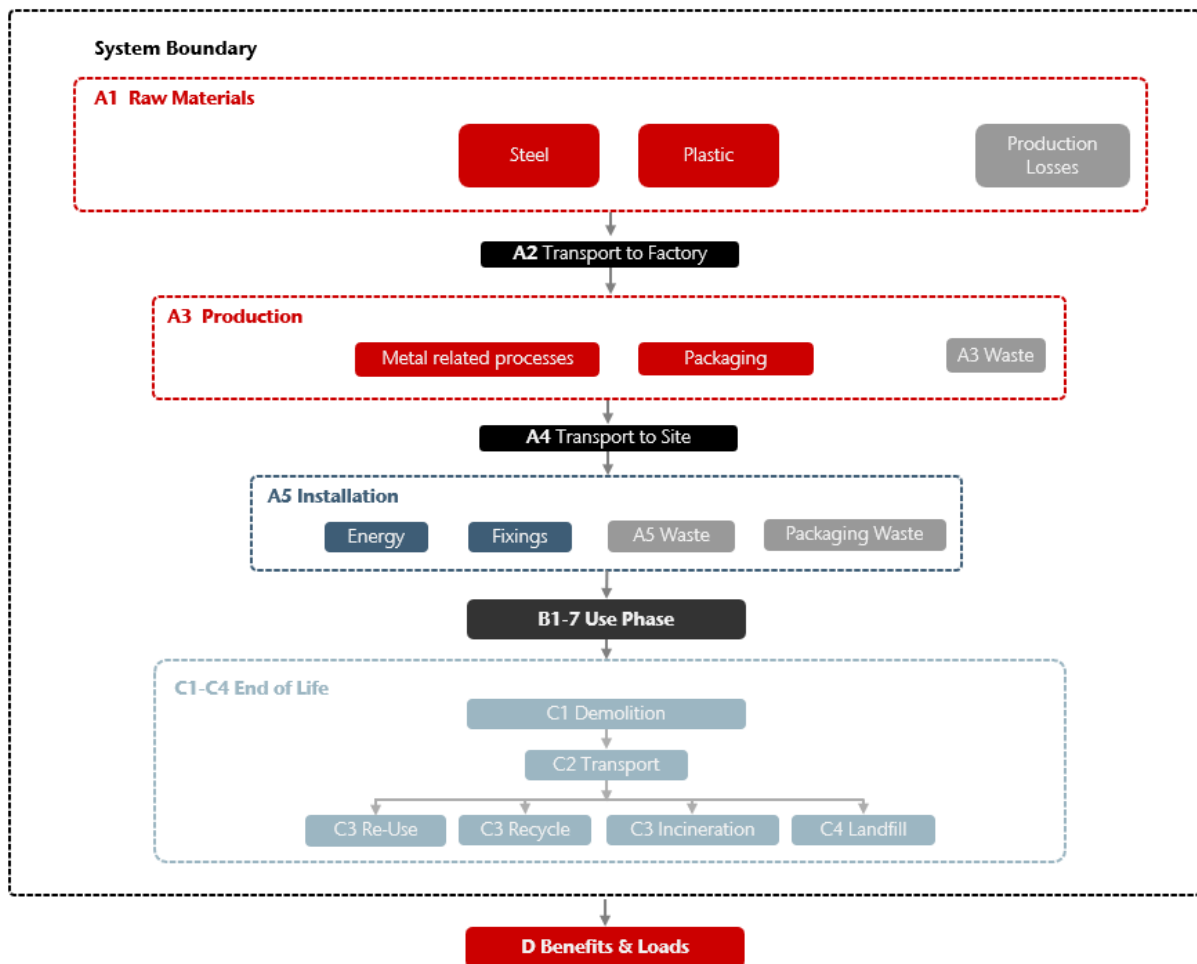
This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

A very low electricity demand is assumed for the de-construction step (C1).. Waste is

collected separately and transported to a waste treatment center, the transported distance between building site and treatment center is assumed to be between 50km to 250km (C2), depending on the scenario. In module C3, the following scenario are assumed (Source: world steel data, Eurostat, EN 50693):- Rubber: 25% recycled, 50% incinerated with energy recovery, the rest landfilled- Polyethylene: 24% recycling, 49% incineration, the rest landfilled; - Polypropylene: 23% recycling, 50% incineration with energy recovery, the rest landfilled - Stainless steel: 95% recycling, the rest landfilled. In Module D, the potential for recycled material and energy recovery at the end of the product and packaging life cycle is considered. The use of recycled materials helps to offset the need for virgin material production, while energy recovered through incineration can replace conventional electricity and heat generation. This analysis captures both the environmental benefits and impacts associated with packaging materials and materials from Module C.

MANUFACTURING PROCESS



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.

Sealing collar and Adhesive point – the proportion of channels sold with a sealing collar is very low compared to the total number of channels sold and is therefore not considered. Chemicals used in the pickling plant are not declared because they each constitute only a very small proportion of the final product

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors

according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

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 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

A5 Packaging sources: Eurostats.
Module C-D sources: World Steel data (for steel), EUROSTAT (for Rubber), Plastic Europe (for plastics)

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, PEF

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	3,98E+00	9,40E-02	-3,63E-01	3,71E+00	3,11E-01	6,03E-01	MND	MND	MND	MND	MND	MND	MND	9,64E-03	4,53E-02	9,36E-02	9,12E-03	-4,66E+00
GWP – fossil	kg CO ₂ e	3,92E+00	9,39E-02	2,04E-01	4,22E+00	3,11E-01	3,23E-02	MND	MND	MND	MND	MND	MND	MND	9,62E-03	4,53E-02	9,36E-02	9,12E-03	-4,65E+00
GWP – biogenic	kg CO ₂ e	6,10E-02	1,62E-05	-5,70E-01	-5,09E-01	1,11E-04	5,70E-01	MND	MND	MND	MND	MND	MND	MND	5,62E-06	9,89E-06	-4,50E-05	-1,32E-06	-6,78E-03
GWP – LULUC	kg CO ₂ e	2,74E-03	3,36E-05	2,82E-03	5,60E-03	1,44E-04	4,49E-05	MND	MND	MND	MND	MND	MND	MND	1,20E-05	2,01E-05	2,63E-05	3,23E-07	-4,46E-03
Ozone depletion pot.	kg CFC ₋₁₁ e	2,97E-08	1,87E-09	4,68E-09	3,63E-08	6,13E-09	3,61E-10	MND	MND	MND	MND	MND	MND	MND	4,88E-10	6,34E-10	2,90E-10	1,44E-11	-3,51E-08
Acidification potential	mol H ⁺ e	1,59E-02	2,97E-04	1,22E-03	1,74E-02	1,25E-03	1,26E-04	MND	MND	MND	MND	MND	MND	MND	3,57E-05	1,51E-04	2,54E-04	4,25E-06	-2,58E-02
EP-freshwater ²⁾	kg Pe	1,39E-03	6,36E-06	1,60E-04	1,56E-03	3,23E-05	1,43E-05	MND	MND	MND	MND	MND	MND	MND	1,73E-06	3,52E-06	1,34E-05	6,31E-08	-1,39E-03
EP-marine	kg Ne	3,44E-03	1,00E-04	4,69E-04	4,01E-03	4,15E-04	9,87E-05	MND	MND	MND	MND	MND	MND	MND	7,73E-06	4,89E-05	5,96E-05	9,04E-06	-4,62E-03
EP-terrestrial	mol Ne	3,59E-02	1,09E-03	3,77E-03	4,08E-02	4,55E-03	2,78E-04	MND	MND	MND	MND	MND	MND	MND	8,95E-05	5,32E-04	6,60E-04	1,76E-05	-4,93E-02
POCP (“smog”) ³⁾	kg NMVOCe	1,24E-02	4,64E-04	1,26E-03	1,41E-02	1,88E-03	1,00E-04	MND	MND	MND	MND	MND	MND	MND	2,50E-05	2,10E-04	1,93E-04	6,17E-06	-1,61E-02
ADP-minerals & metals ⁴⁾	kg Sbe	2,53E-05	3,18E-07	1,22E-06	2,68E-05	1,92E-06	2,49E-07	MND	MND	MND	MND	MND	MND	MND	1,63E-07	1,48E-07	1,45E-06	1,32E-09	-1,19E-04
ADP-fossil resources	MJ	4,41E+01	1,32E+00	3,37E+00	4,88E+01	4,40E+00	4,06E-01	MND	MND	MND	MND	MND	MND	MND	2,61E-01	6,35E-01	2,85E-01	1,16E-02	-5,25E+01
Water use ⁵⁾	m ³ e depr.	1,18E+00	6,54E-03	1,04E+00	2,23E+00	2,68E-02	1,12E-02	MND	MND	MND	MND	MND	MND	MND	2,58E-03	2,95E-03	7,30E-03	4,18E-04	-1,34E+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, PEF

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	3,19E-07	7,43E-09	1,55E-08	3,42E-07	2,96E-08	9,99E-10	MND	MND	MND	MND	MND	MND	MND	2,21E-10	3,61E-09	3,38E-09	7,81E-11	-3,64E-07
Ionizing radiation ⁶⁾	kBq U235e	1,56E-01	1,73E-03	3,27E-02	1,90E-01	9,63E-03	8,58E-03	MND	MND	MND	MND	MND	MND	MND	9,18E-03	5,15E-04	2,37E-03	1,01E-05	-2,05E-01
Ecotoxicity (freshwater)	CTUe	1,47E+01	1,73E-01	1,25E+00	1,61E+01	5,97E-01	4,71E-01	MND	MND	MND	MND	MND	MND	MND	2,63E-02	1,00E-01	1,99E-01	2,48E-02	-1,33E+01
Human toxicity, cancer	CTUh	3,71E-09	1,82E-11	1,24E-10	3,85E-09	2,47E-10	1,39E-11	MND	MND	MND	MND	MND	MND	MND	3,41E-12	7,70E-12	2,08E-11	2,33E-13	-4,10E-09
Human tox. non-cancer	CTUh	3,62E-08	8,28E-10	3,47E-09	4,05E-08	2,75E-09	7,31E-10	MND	MND	MND	MND	MND	MND	MND	1,63E-10	3,98E-10	1,33E-09	2,16E-11	-9,13E-08
SQP ⁷⁾	-	1,46E+01	7,80E-01	4,59E+01	6,12E+01	2,49E+00	1,57E-01	MND	MND	MND	MND	MND	MND	MND	1,58E-01	3,83E-01	5,43E-01	2,25E-02	-2,35E+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	4,09E+00	2,33E-02	5,60E+00	9,71E+00	1,17E-01	-5,69E+00	MND	MND	MND	MND	MND	MND	MND	8,75E-02	8,71E-03	5,18E-02	1,74E-04	-1,19E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	5,84E+00	5,84E+00	0,00E+00	-5,84E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,50E-02
Total use of renew. PER	MJ	4,09E+00	2,33E-02	1,14E+01	1,55E+01	1,17E-01	-1,15E+01	MND	MND	MND	MND	MND	MND	MND	8,75E-02	8,71E-03	5,18E-02	1,74E-04	-1,18E+01
Non-re. PER as energy	MJ	4,23E+01	1,32E+00	3,07E+00	4,67E+01	4,40E+00	1,79E-01	MND	MND	MND	MND	MND	MND	MND	2,61E-01	6,36E-01	-1,05E+00	-5,77E-01	-5,27E+01
Non-re. PER as material	MJ	1,77E+00	0,00E+00	2,45E-01	2,02E+00	0,00E+00	-2,45E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,24E+00	-5,35E-01	1,87E+00
Total use of non-re. PER	MJ	4,41E+01	1,32E+00	3,31E+00	4,87E+01	4,40E+00	-6,55E-02	MND	MND	MND	MND	MND	MND	MND	2,61E-01	6,36E-01	-2,29E+00	-1,11E+00	-5,09E+01
Secondary materials	kg	2,67E-01	6,08E-04	1,02E-01	3,70E-01	2,27E-03	2,51E-04	MND	MND	MND	MND	MND	MND	MND	4,65E-05	2,85E-04	3,77E-04	4,12E-06	5,77E-01
Renew. secondary fuels	MJ	1,44E-03	7,60E-06	5,89E-03	7,33E-03	2,15E-05	1,56E-06	MND	MND	MND	MND	MND	MND	MND	3,35E-07	3,63E-06	1,59E-05	9,56E-08	-1,22E-03
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	2,45E-02	1,79E-04	2,45E-02	4,93E-02	7,26E-04	1,62E-04	MND	MND	MND	MND	MND	MND	MND	6,14E-05	8,43E-05	1,73E-04	-3,58E-05	-4,06E-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	1,18E+00	1,91E-03	1,64E-02	1,20E+00	7,98E-03	2,80E-03	MND	MND	MND	MND	MND	MND	MND	4,00E-04	1,11E-03	2,67E-03	1,70E-04	-4,44E+00
Non-hazardous waste	kg	1,17E+01	4,06E-02	2,95E+00	1,47E+01	1,87E-01	3,10E-01	MND	MND	MND	MND	MND	MND	MND	8,99E-03	2,08E-02	9,42E-02	7,03E-02	-9,94E+00
Radioactive waste	kg	3,86E-05	4,29E-07	8,37E-06	4,74E-05	2,43E-06	2,20E-06	MND	MND	MND	MND	MND	MND	MND	2,00E-06	1,26E-07	6,06E-07	2,50E-09	-5,06E-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	MND	MND	MND	MND	MND	MND	MND	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	6,57E-02	6,57E-02	0,00E+00	3,00E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,10E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-01	MND	MND	MND	MND	MND	MND	MND	REPLACE -	REPLACE -	REPLACE -	REPLACE -	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,78E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,70E-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	1,10E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,05E-01	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	3,96E+00	9,33E-02	2,08E-01	4,26E+00	3,09E-01	6,89E-02	MND	MND	MND	MND	MND	MND	MND	9,60E-03	4,50E-02	9,36E-02	9,05E-03	-4,62E+00
Ozone depletion Pot.	kg CFC ₁₁ e	2,61E-08	1,49E-09	3,88E-09	3,14E-08	4,88E-09	2,99E-10	MND	MND	MND	MND	MND	MND	MND	4,00E-10	5,06E-10	2,39E-10	1,17E-11	-2,94E-08
Acidification	kg SO ₂ e	1,29E-02	2,26E-04	9,32E-04	1,41E-02	9,46E-04	1,03E-04	MND	MND	MND	MND	MND	MND	MND	2,83E-05	1,16E-04	2,03E-04	3,14E-06	-2,15E-02
Eutrophication	kg PO ₄ ³ e	2,74E-03	5,74E-05	8,58E-04	3,65E-03	2,39E-04	6,88E-05	MND	MND	MND	MND	MND	MND	MND	4,78E-06	2,81E-05	3,08E-05	1,38E-06	-3,77E-03
POCP (“smog”)	kg C ₂ H ₄ e	1,49E-03	2,18E-05	1,02E-04	1,62E-03	1,17E-04	1,54E-05	MND	MND	MND	MND	MND	MND	MND	1,96E-06	1,04E-05	1,22E-05	4,89E-07	-1,32E-03
ADP-elements	kg Sbe	2,49E-05	3,11E-07	1,15E-06	2,64E-05	1,90E-06	2,47E-07	MND	MND	MND	MND	MND	MND	MND	1,62E-07	1,45E-07	1,45E-06	1,12E-09	-1,19E-04
ADP-fossil	MJ	4,16E+01	1,29E+00	2,80E+00	4,57E+01	4,23E+00	2,55E-01	MND	MND	MND	MND	MND	MND	MND	1,39E-01	6,27E-01	2,44E-01	1,14E-02	-4,94E+01

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

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	3,92E+00	9,40E-02	2,07E-01	4,22E+00	3,11E-01	3,24E-02	MND	MND	MND	MND	MND	MND	MND	9,64E-03	4,53E-02	9,37E-02	9,12E-03	-4,65E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, hydro, reservoir, alpine region (Reference product: electricity, high voltage)
Electricity CO ₂ e / kWh	0,0061
District heating data source and quality	-
District heating CO ₂ e / kWh	-

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Freight, light vehicle
Average transport distance, km	963,33
Capacity utilization (including empty return) %	5
Bulk density of transported products	-
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 resources use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0,037
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0
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	Paper: recycling: 0.0049 kg; incineration with energy recovery: 0.00047 kg, landfilled: 0.00053 kg Plastic: recycling: 0.0022 kg; incineration with energy recovery: 0.0021 kg, landfilled: 0.0013 kg Cardboard: recycling: 0.29 kg; incineration with energy recovery: 0.028 kg, landfilled: 0.032 kg Wood Pallet: recycling: 0.0027 kg; incineration with energy recovery: 0.0025 kg, landfilled: 0.0032 kg
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 waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	HDPE: 0,0041 kg; PP: 0,0057 kg; Stainless steel: 0,9 kg
Recovery process – kg for energy recovery	Rubber: 0,0046 kg; HDPE: 0,0083 kg; PP: 0,012 kg
Disposal (total) – kg for final deposition	Rubber: 0,0046 kg; HDPE: 0,0046 kg; PP: 0,0067 kg; Stainless steel: 0,047 kg
Scenario assumptions e.g. transportation	transport distance estimation: 50km to 250km by lorry

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

31.10.2025

