ECONOX

Circular ventilation duct
Econox Holding

EPD HUB, HUB-4076
Published on 14.10.2025, last updated on 14.10.2025,
valid until 13.10.2030.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

EPD Hub · One Click LCA · 100% CO_2 Compensated · Binnenklimaat Nederland · Luka® Nederlandse Vereniging van Luchtkanalenfabrikanten · CE · TÜVNORD ISO 9001

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Econox Holding
Address	Park Forum 1047, 5657 HJ, Eindhoven, NL
Contact details	info@econox.nl
Website	www.econox.nl

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 1.1, 5 Dec 2023
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	Econox B.V.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly Gonzalez Vazquez

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	Circular ventilation duct
Additional labels	-
Product reference	Spirobuis / Spiral Duct
Place(s) of raw material origin	Europe
Place of production	Eindhoven, Netherlands
Place(s) of installation and use	Europe
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 (%)	99,9
Sector	Construction product

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of spiral duct
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	2,78E+00
GWP-total, A1-A3 (kgCO2e)	2,78E+00
Secondary material, inputs (%)	6,93
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	8,07
Net freshwater use, A1-A3 (m3)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Econox's mission is; a comfortable and healthy indoor climate for everyone. We want to achieve this by raising awareness and providing the best possible advice. We are a progressive manufacturer, distributor and wholesaler of air conditioning, heat pumps and ventilation systems. Our strength and added value is advising our customers correctly and professionally in custom and standard solutions. We offer an extensive range with more than 50,000 products, all selected or produced using the latest innovative techniques and our many years of knowledge and experience in the industry.

Our areas of application include residential construction, commercial construction, offices, industry, educational institutions, hospitality, the agricultural sector, retail and shipping. We hold BRL 100, LUKA and ISO 9001 certificates . Proof that our management system meets the quality requirements and is tailored to the needs of our customers. In addition, all CO2 we emit is compensated 100%! One way this is done is through the planting of trees in the Katingan peat bog in Indonesia.

PRODUCT DESCRIPTION

Econox spiral ducts are designed for optimum performance in ventilation systems, with a focus on durability, airtightness and easy installation. Made of high-quality sendzimir galvanized steel (Z275) with a 275 g/m^2 double-sided zinc coating, these ducts offer excellent corrosion resistance and long life.

Key Features:
Material: Sendzimir galvanized steel Z275
Airtightness class: Luka D (ATC 2)
Lengths: Available in 1.5 and 3 meters
Diameter range: From Ø80 mm to Ø630 mm
Material thicknesses: Ranging from 0.4 mm to 0.8 mm, depending on the diameter

Applications:
Econox spiral ducts are ideal for use in both residential and commercial ventilation systems. They are often used in HVAC installations, air handling systems and other situations where a reliable and durable air transportation solution is required.

Further information can be found at:
www.econox.nl

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	EUROPE
Minerals	-	-
Fossil materials	-	-
Bio-based materials	-	-
Net freshwater use, A1-A3 (m3)	-	-

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

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of spiral duct
Mass per declared unit	1 kg
Functional unit	-
Reference service life	50 years of durability

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		
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 = 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.

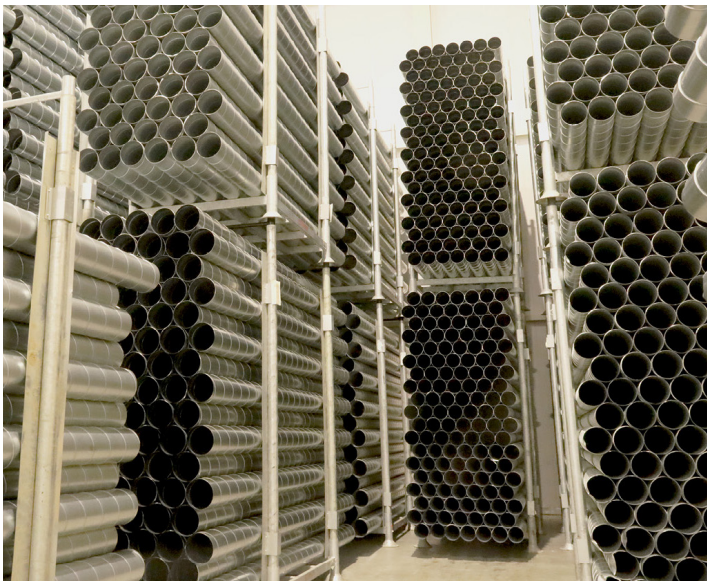
Steel raw material is sourced from local/regional steel centers located in the Netherlands and Belgium. In our EPD we used a single leg transport of 51km (92%) and 166kmm (8%) for our suppliers. They also require their raw materials from other suppliers. We assumed this will be around 150km for both of our suppliers. Upon receipt at our plant, we check for correct weight, thickness and quality. Our ISO9001 procedure ensures that we use the right types of steel for the right spiro ducts.

The slitted steel is fed into a Swiss machine, which through various deformations eventually produce a spiral duct with LUKA air tightness class D. The Swiss A-brand ensures quality, reliability and durability. In our factory there is a constant presence of an operator to control quality during production. Production losses (7% of steel) are collected by a nearby recycle company within a range of 15km.

For warehousing and transport we make use of steel racks. We don't use any packaging material. There is a deposit on the racks, allowing us to reuse them and reduce the use of packaging consumables. These duct are delivered to our customers by energy-efficient truck (HVO100).

All our facilities operate exclusively on green wind energy.

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.

Our transport is planned with intelligent software that translates complex order and information flows into optimal combined routes. The spread of delivery locations is minimal and thus results in very low emissions. In the calculations, we have assumed individual trip data as opposed to actual combined trips. Also, we use HVO100 which is currently the most energy efficient form of diesel.

Material loss during installation is highly dependent on the user or installer. Since the material is easily recyclable and remnants can often be reused, it can be said that material loss is theoretically zero. However, for this EPD, we assumed a realistic scenario in which the loss is higher, and therefore included a 5% material loss during installation. Our calculation assumes a 50-kilometer range, as it is reasonable to expect a recycling facility to be located within this distance.

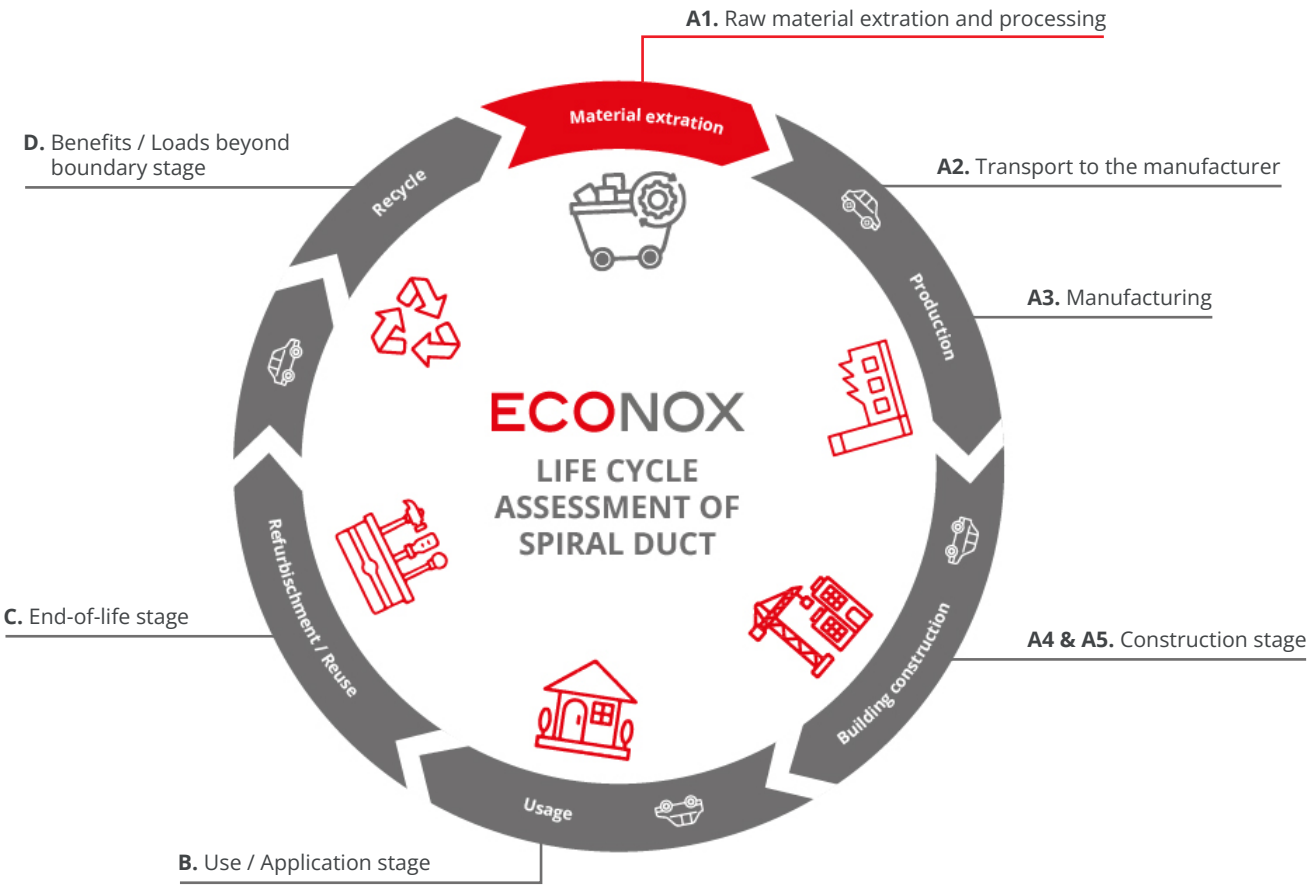
PRODUCT USE AND MAINTENANCE (B1-B7)

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

PRODUCT END OF LIFE (C1-C4, D)

The assumption for demolition phase (C1) is 0,01kWh/kg product. The calculation assumes international standards which imply that 85% of the steel is collected and recycled (<250km). The remaining 15% is considered landfill (World Steel data). We recycle to reuse valuable raw materials and thus reduce the depletion of natural resources. In addition, recycling helps to reduce waste and reduce the environmental impact of production. The benefits and loads from recycling the steel in End-of-Life is accounted in Module D.

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.

A3 packaging: Steel rack is used to transport the final product to installation and clients paid so that the racks comes back to our manufacturing site, and it is reused for 30 years. Therefore we considered this data under cut-off.

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	Allocated by mass or volume
Packaging material	Not applicable
Ancillary materials	Allocated by mass or volume
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, %	-

This EPD is product and factory specific.

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'.

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
GWP – total1)	kg CO2e	2,75E+00	2,42E-02	4,12E-03	2,78E+00	1,19E-02	1,45E-01	MND	MND	MND	MND
GWP – fossil	kg CO2e	2,75E+00	2,42E-02	4,12E-03	2,78E+00	1,19E-02	1,44E-01	MND	MND	MND	MND
GWP – biogenic	kg CO2e	1,29E-03	5,39E-06	-2,34E-06	1,30E-03	2,69E-06	8,33E-04	MND	MND	MND	MND
GWP – LULUC	kg CO2e	1,00E-03	1,04E-05	2,88E-06	1,01E-03	5,32E-06	6,20E-05	MND	MND	MND	MND
Ozone depletion pot.	kg CFC-11e	1,55E-12	3,86E-10	6,63E-11	4,54E-10	1,76E-10	9,89E-11	MND	MND	MND	MND
Acidification potential	mol H+e	6,72E-03	8,15E-05	2,51E-05	6,83E-03	4,05E-05	3,66E-04	MND	MND	MND	MND
EP-freshwater2)	kg Pe	1,57E-06	1,83E-06	1,38E-06	4,78E-06	9,26E-07	3,62E-06	MND	MND	MND	MND
EP-marine	kg Ne	1,73E-03	2,70E-05	5,55E-06	1,77E-03	1,33E-05	9,44E-05	MND	MND	MND	MND
EP-terrestrial	mol Ne	1,88E-02	2,93E-04	6,15E-05	1,92E-02	1,45E-04	1,01E-03	MND	MND	MND	MND
POCP (“smog”)3)	kg NMVOCe	6,07E-03	1,23E-04	3,00E-05	6,22E-03	5,98E-05	3,27E-04	MND	MND	MND	MND
ADP-minerals & metals4)	kg Sbe	3,24E-05	6,73E-08	1,30E-07	3,26E-05	3,32E-08	1,66E-06	MND	MND	MND	MND
ADP-fossil resources	MJ	2,69E+01	3,51E-01	5,69E-02	2,73E+01	1,73E-01	1,46E+00	MND	MND	MND	MND
Water use5)	m3e depr.	1,27E-01	1,75E-03	9,04E-04	1,30E-01	8,52E-04	8,80E-03	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
GWP – total1)	kg CO2e	MND	MND	MND	4,17E-03	4,30E-02	1,92E-02	9,37E-04	-1,77E+00
GWP – fossil	kg CO2e	MND	MND	MND	4,16E-03	4,30E-02	1,92E-02	9,36E-04	-1,77E+00
GWP – biogenic	kg CO2e	MND	MND	MND	3,05E-06	9,38E-06	-4,08E-05	-2,98E-07	0,00E+00
GWP – LULUC	kg CO2e	MND	MND	MND	1,72E-06	1,90E-05	2,37E-05	5,35E-07	-2,82E-03
Ozone depletion pot.	kg CFC-11e	MND	MND	MND	1,41E-10	6,01E-10	2,58E-10	2,71E-11	-9,56E-09
Acidification potential	mol H+e	MND	MND	MND	6,82E-06	1,43E-04	2,29E-04	6,64E-06	-8,33E-03
EP-freshwater2)	kg Pe	MND	MND	MND	9,85E-07	3,34E-06	1,24E-05	7,70E-08	-8,77E-04
EP-marine	kg Ne	MND	MND	MND	2,16E-06	4,64E-05	5,06E-05	2,53E-06	-1,62E-03
EP-terrestrial	mol Ne	MND	MND	MND	2,32E-05	5,05E-04	5,72E-04	2,76E-05	-1,75E-02
POCP (“smog”)3)	kg NMVOCe	MND	MND	MND	7,35E-06	1,99E-04	1,69E-04	9,90E-06	-5,88E-03
ADP-minerals & metals4)	kg Sbe	MND	MND	MND	7,48E-09	1,41E-07	1,36E-06	1,49E-09	-9,71E-05
ADP-fossil resources	MJ	MND	MND	MND	6,43E-02	6,03E-01	2,58E-01	2,30E-02	-1,82E+01
Water use5)	m3e depr.	MND	MND	MND	1,03E-03	2,80E-03	4,64E-03	6,63E-05	-6,22E-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
Particulate matter	Incidence	0,00E+00	2,42E-09	3,58E-10	2,78E-09	1,19E-09	3,69E-10	MND	MND	MND	MND
Ionizing radiation6)	kBq U235e	0,00E+00	3,32E-04	2,57E-04	5,89E-04	1,50E-04	2,30E-03	MND	MND	MND	MND
Ecotoxicity (freshwater)	CTUe	0,00E+00	4,78E-02	1,73E-02	6,51E-02	2,44E-02	2,67E-02	MND	MND	MND	MND
Human toxicity, cancer	CTUh	0,00E+00	3,99E-12	2,05E-12	6,04E-12	1,96E-12	2,37E-12	MND	MND	MND	MND
Human tox. non-cancer	CTUh	0,00E+00	2,27E-10	1,20E-10	3,47E-10	1,12E-10	8,54E-11	MND	MND	MND	MND
SQP7)	-	0,00E+00	3,53E-01	5,21E-02	4,05E-01	1,74E-01	8,85E-02	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	MND	MND	MND	4,07E-11	3,41E-09	3,10E-09	1,51E-10	-1,30E-07
Ionizing radiation6)	kBq U235e	MND	MND	MND	5,42E-04	4,88E-04	2,19E-03	1,44E-05	-5,23E-02
Ecotoxicity (freshwater)	CTUe	MND	MND	MND	5,29E-03	9,53E-02	1,50E-01	1,93E-03	-2,72E+01
Human toxicity, cancer	CTUh	MND	MND	MND	5,56E-13	7,31E-12	1,72E-11	1,73E-13	-2,77E-09
Human tox. non-cancer	CTUh	MND	MND	MND	1,95E-11	3,77E-10	1,17E-09	3,97E-12	-3,13E-08
SQP7)	-	MND	MND	MND	2,61E-02	3,60E-01	5,02E-01	4,52E-02	-5,74E+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
Renew. PER as energy8)	MJ	1,63E+00	5,01E-03	7,28E-02	1,70E+00	2,36E-03	1,05E-01	MND	MND	MND	MND
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND
Total use of renew. PER	MJ	1,63E+00	5,01E-03	7,28E-02	1,70E+00	2,36E-03	1,05E-01	MND	MND	MND	MND
Non-re. PER as energy	MJ	2,70E+01	3,51E-01	2,74E-02	2,73E+01	1,73E-01	1,46E+00	MND	MND	MND	MND
Non-re. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND
Total use of non-re. PER	MJ	2,70E+01	3,51E-01	2,74E-02	2,73E+01	1,73E-01	1,46E+00	MND	MND	MND	MND
Secondary materials	kg	6,93E-02	1,50E-04	5,59E-05	6,95E-02	7,34E-05	3,51E-03	MND	MND	MND	MND
Renew. secondary fuels	MJ	0,00E+00	1,90E-06	1,69E-06	3,59E-06	9,33E-07	1,49E-06	MND	MND	MND	MND
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
Use of net fresh water	m3	4,91E-03	5,19E-05	2,50E-05	4,99E-03	2,55E-05	3,19E-04	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy8)	MJ	MND	MND	MND	1,53E-02	8,27E-03	4,81E-02	2,22E-04	-2,49E+00
Renew. PER as material	MJ	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	MND	MND	MND	1,53E-02	8,27E-03	4,81E-02	2,22E-04	-2,49E+00
Non-re. PER as energy	MJ	MND	MND	MND	0,00E+00	6,03E-01	2,58E-01	2,30E-02	-1,82E+01
Non-re. PER as material	MJ	MND	MND	MND	6,43E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	MND	MND	MND	0,00E+00	6,03E-01	2,58E-01	2,30E-02	-1,82E+01
Secondary materials	kg	MND	MND	MND	9,44E-06	2,71E-04	3,15E-04	5,78E-06	-6,75E-02
Renew. secondary fuels	MJ	MND	MND	MND	3,02E-08	3,45E-06	1,46E-05	1,20E-07	-1,90E-04
Non-ren. secondary fuels	MJ	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m3	MND	MND	MND	4,57E-05	7,99E-05	1,37E-04	2,39E-05	-1,40E-02

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4
Hazardous waste	kg	4,10E-07	5,75E-04	2,71E-04	8,47E-04	2,92E-04	3,53E-04	MND	MND	MND	MND
Non-hazardous waste	kg	6,42E-02	1,08E-02	6,80E-03	8,18E-02	5,41E-03	2,52E-02	MND	MND	MND	MND
Radioactive waste	kg	5,54E-04	8,14E-08	6,55E-08	5,54E-04	3,68E-08	2,83E-05	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	MND	MND	MND	1,50E-04	1,05E-03	1,69E-03	2,54E-05	-7,30E-01
Non-hazardous waste	kg	MND	MND	MND	5,06E-03	1,97E-02	6,09E-02	5,80E-04	-4,50E+00
Radioactive waste	kg	MND	MND	MND	1,34E 07	1,20E-07	5,60E-07	3,52E-09	-1,34E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4
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
Materials for recycling	kg	0,00E+00	0,00E+00	7,00E-02	7,00E-02	0,00E+00	5,35E-02	MND	MND	MND	MND
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
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	MND	MND	MND	0,00E+00	0,00E+00	8,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4
Global Warming Pot.	kg CO2e	2,74E+00	2,41E-02	4,11E-03	2,77E+00	1,18E-02	1,44E-01	MND	MND	MND	MND
Ozone depletion Pot.	kg CFC-11e	2,08E-12	3,08E-10	5,37E-11	3,63E-10	1,40E-10	8,04E-11	MND	MND	MND	MND
Acidification	kg SO2e	5,50E-03	6,21E-05	2,02E-05	5,58E-03	3,10E-05	2,99E-04	MND	MND	MND	MND
Eutrophication	kg PO43e	6,07E-04	1,53E-05	4,36E-06	6,26E-04	7,54E-06	3,54E-05	MND	MND	MND	MND
POCP (“smog”)	kg C2H4e	9,87E-04	5,60E-06	1,35E-06	9,93E-04	2,76E-06	5,11E-05	MND	MND	MND	MND
ADP-elements	kg Sbe	4,44E-05	6,57E-08	1,29E-07	4,46E-05	3,23E-08	2,26E-06	MND	MND	MND	MND
ADP-fossil	MJ	2,50E+01	3,46E-01	5,24E-02	2,54E+01	1,70E-01	1,33E+00	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	MND	MND	MND	4,15E-03	4,27E-02	1,92E-02	9,28E-04	-1,76E+00
Ozone depletion Pot.	kg CFC-11e	MND	MND	MND	1,14E-10	4,80E-10	2,13E-10	2,15E-11	-9,11E-09
Acidification	kg SO2e	MND	MND	MND	5,15E-06	1,10E-04	1,84E-04	4,91E-06	-6,84E-03
Eutrophication	kg PO43e	MND	MND	MND	1,35E-06	2,67E-05	2,66E-05	1,56E-06	-1,08E-03
POCP (“smog”)	kg C2H4e	MND	MND	MND	4,98E-07	9,83E-06	1,09E-05	4,65E-07	-8,28E-04
ADP-elements	kg Sbe	MND	MND	MND	7,26E-09	1,38E-07	1,36E-06	1,46E-09	-9,70E-05
ADP-fossil	MJ	MND	MND	MND	5,44E-02	5,95E-01	2,20E-01	2,28E-02	-1,74E+01

ENVIRONMENTAL IMPACTS – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4
Global Warming Pot.	kg CO2e	2,75E+00	2,42E-02	4,13E-03	2,78E+00	1,19E-02	1,44E-01	MND	MND	MND	MND

Impact category	Unit	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	MND	MND	MND	4,16E-03	4,30E-02	1,92E-02	9,37E-04	-1,77E+00

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

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited