



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

SpiroTrap MBC
Spirotech BV



EPD HUB, HUB-7113

Published on 18.08.2026, last updated on 18.08.2026, valid until 17.08.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.



Created with One Click LCA



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Spirotech BV
Address	Postbus 207, 5700 AE Helmond, Nederland
Contact details	info@spirotech.com
Website	https://www.spirotech.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	Manufactured product
Category of EPD	Sister EPD
Parent EPD number	HUB-2166
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Johannes Spaas, Mantis Consulting
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Ipek Goktas Kalkan, as authorized verifier acting for EPD HUB

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	SpiroTrap MBC
Additional labels	N/A
Product reference	UE022WH: -, -A01, -A02, -K54, -K64. UE028WH: -, -K54. UE075WH: -, -K54, -K53. UE100WH: -, -K54, -K53.
Place(s) of raw material origin	China, Europe
Place of production	Helmond, The Netherlands
Place(s) of installation and use	Global, mainly Europe
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	+5,1% / -1,4%
GTIN (Global Trade Item Number)	N/A
NOBB (Norwegian Building Product Database)	(coming soon)
A1-A3 Specific data (%)	10,4

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 SpiroTrap MBC
Declared unit mass	1,554 kg
Mass of packaging	0,109 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	4,86
GWP-total, A1-A3 (kgCO ₂ e)	4,72
Secondary material, inputs (%)	68,1
Secondary material, outputs (%)	91,9
Total energy use, A1-A3 (kWh)	15,8
Net freshwater use, A1-A3 (m ³)	0,07

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Spirotech is an expert and market leader in the field of system water quality in heating and cooling systems. Our products have been prescribed for many years by international boiler and heat pump manufacturers, installers and consultants in residential and non-residential projects.

As a Helmond family business, we were the first in the Netherlands to start developing air and dirt separators for use in heating and cooling installations/systems. With an air and dirt separator you not only save energy, but you also prevent wear and tear on the (often) expensive components in your system, such as the heating boiler or heat pump.

Our products are mostly produced in the Netherlands with high-quality materials such as brass and steel. In addition, we use high-quality magnets to remove all the harmful magnetite. We also produce and supply products for vacuum degassing, pressure maintenance, hydraulic distributors and additives. We also provide tailor-made advice on the basis of an extensive water analysis.

PRODUCT DESCRIPTION

The SpiroTrap MBC is a small brass dirt separator with magnet and a universal connection (4 possible outer pipe diameters: 22 mm, 28 mm, ¾ in., 1 in.). It is assembled from brass, steel, copper, EPDM and plastic pieces, and includes a magnet.

SPIROTRAP PRODUCT FAMILY

Spirotech dirt separators are fully integrated into the system and remove even the smallest dirt particles from the system fluid. The SpiroTrap MBC makes the advantages of the highly successful SpiroTrap MB3 available at an attractive price.

FUNCTION OF THE SPIROTRAP MBC

The SpiroTrap MBC is equipped with a compact, powerful, removable magnet that ensures effective dirt separation. The swivel connector allows quick, easy installation in horizontal, vertical or even diagonal pipes. SpiroTrap MBC is easy to clean. After temporarily removing the magnet, the nozzle valve is opened. The system pressure quickly and effectively forces out the contamination collected by the SpiroTrap, allowing it to be collected in a collection container.

PRODUCT VARIATIONS

The products within the SpiroTrap MBC range cover a range of outer pipe diameters: 22 mm, 28 mm, Rp ¾ (¾ in.) and Rp1 (1 in.). These products have brass swivels that differ in size and weight. The 22 mm version and 28 mm version are supplied with a brass connection set. The 22 mm version is considered the representative product, as it represents 77% of sales, and as its weight is closest to the average weight of the 4 products.

Further information can be found at: <https://www.spirotech.com/>

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	90,5	China, Europe
Minerals	0	N/A
Fossil materials	9,5	China, Europe
Bio-based materials	0	N/A

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	0,0445

1 kg of biogenic carbon corresponds to the uptake of 44/12 kg of CO₂.

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 SpiroTrap MBC
Mass per declared unit	1,554 kg
Functional unit	1 SpiroTrap MBC
Reference service life	10 years

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage								End of life stage				Beyond the system boundaries	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND.

As such, the Use stage (modules B1-B7) were excluded.

MANUFACTURING AND PACKAGING (A1-A3)

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

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

This product is assembled from brass (80% recycled input), steel, EPDM, plastic and copper pieces, and includes a magnet. The components are partially sourced from China and partially within Europe. Components sourced from China are transported to the port by lorry (16-32 ton, EURO5), then to the port of Rotterdam by container ship, and finally from the port of Rotterdam to Helmond by lorry (16-32 ton, EURO6). Components sourced within Europe are transported by lorry (16-32 ton, EURO6).

The manufacturing process requires electricity (Dutch residual mix) for the different equipment, and only soldering fluid and water are used as ancillary materials. As the production concerns assembly, production losses are negligible. The only manufacturing waste is thus soldering fluid (transport 150 km, 16-32 ton, EURO6, hazardous waste incineration) and wastewater (average waste water treatment).

The product is packed with a manual (paper) in a cardboard box. Per 8 units, the products are packed in a larger cardboard box.

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 product is sold and installed globally, with the majority of products distributed within Europe. The average weighted distance of transportation from production plant to the retail site is 372 km and the transportation method is assumed to be lorry (16-32 tonnes, EURO6). Vehicle capacity utilization volume factor is smaller than 1. 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.

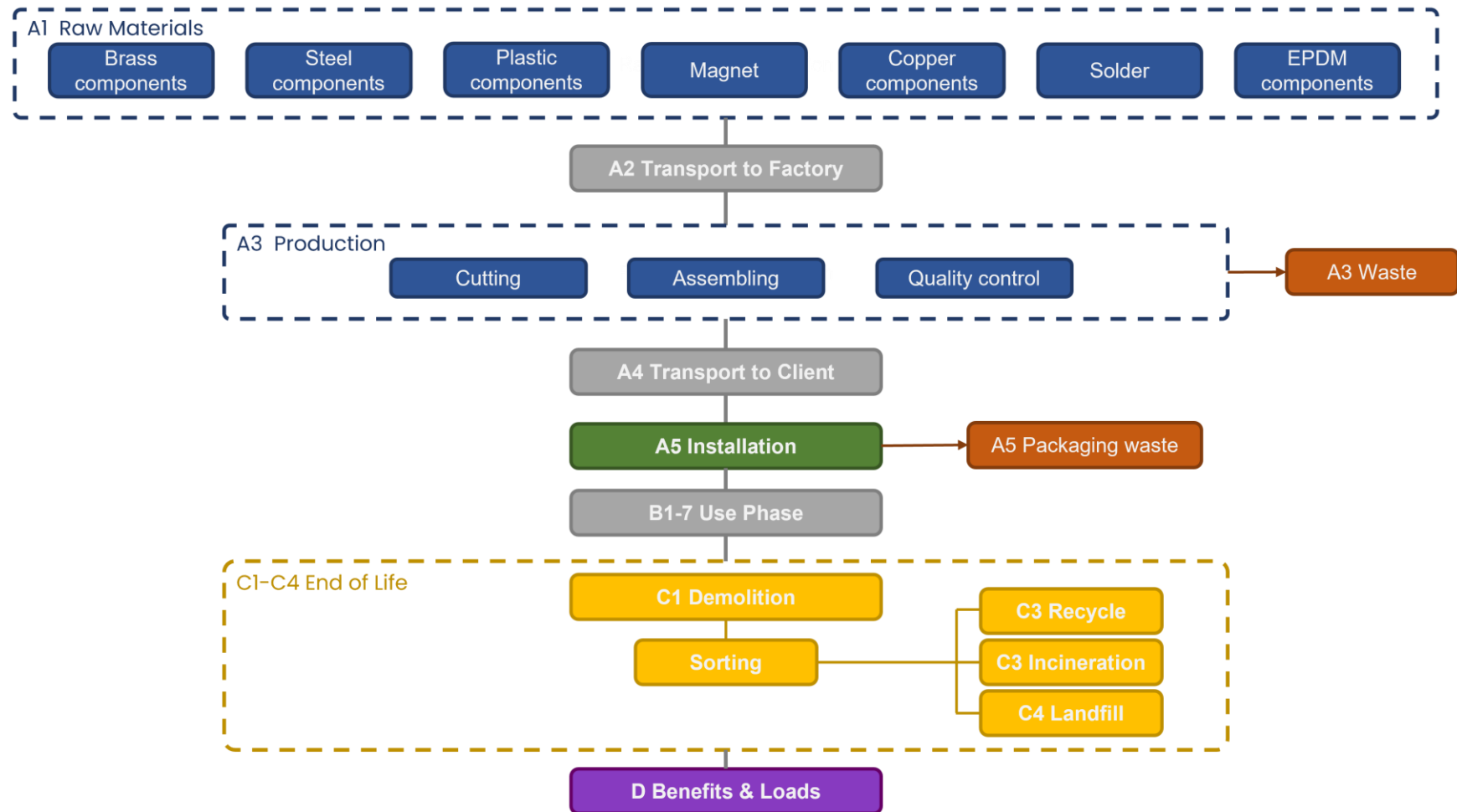
Environmental impacts from installation into the building include generation of waste packaging materials (A5). The impacts of material production, its processing and disposal as installation waste are also included.

PRODUCT END OF LIFE (C1-C4, D)

As the majority of the products are installed in Europe, the end-of-life stage is modeled for Europe.

The consumption of energy for disassembling the product at EoL is assumed to be negligible (C1). The end-of-life product is assumed to be sent to the closest facilities by lorry (C2). 84% of the product is sent to recycling and 8% to incineration facilities (C3). 8% of the end-of-life product goes to landfill (C4). Due to the recycling and incineration potential of metals and plastics, the end-of-life product is converted into recycled materials, while energy and heat is produced from material incineration (D). The benefits and loads of waste packaging materials in A5 are also considered in module D.

LIFE CYCLE FLOW DIAGRAM



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

The following materials and processes are excluded:

- Glue (Loctite) consumption (~0,06g per product)
- Sea transport (relevant to less than 0,01% of production volume)

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	Physical Properties
Manufacturing energy and waste	Physical Properties

The product-specific raw material and packaging material inputs were determined based on actual consumption values per declared unit. Ancillary materials, manufacturing energy and waste were allocated based on annual consumption and production ratios at site-level.

The applied allocation method for post-consumer waste is cut-off.

Neither the mass balance approach nor other offsetting processes are applied in this EPD.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	+5,1% / -1,4%

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 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'.

Default values for waste treatment scenarios associated with:

Installation waste (A5): One Click LCA Paper Packaging EU Scenario (EUROSTAT).

End-of-Life (C1-C4, D): Method for Determining the Environmental Performance of Buildings (Dutch title: Forfaitaire waarden voor verwerkingsscenario's einde leven behorende bij: Bepalingsmethode Milieuprestatie Bouwwerken). NMD, 2024.

Environmental data sources:

ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.

ÖKOBAUDAT 2021-II, Allocation, German Federal Ministry for Housing, Urban Development and Building.

ProBas, German Federal Environment Agency.

One Click LCA, One Click LCA.

ENVIRONMENTAL IMPACT DATA

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

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	4,27E+00	3,88E-01	6,62E-02	4,71E+00	1,17E-01	3,18E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,65E-02	3,17E-01	4,05E-03	-1,23E+00
GWP – fossil	kg CO ₂ e	4,25E+00	3,86E-01	2,25E-01	4,86E+00	1,17E-01	3,94E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,64E-02	3,17E-01	4,05E-03	-1,08E+00
GWP – biogenic	kg CO ₂ e	9,80E-03	7,17E-05	-1,63E-01	-1,53E-01	2,36E-05	3,14E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,33E-05	-7,97E-05	-2,01E-06	-1,54E-01
GWP – LULUC	kg CO ₂ e	1,12E-02	1,55E-03	4,38E-03	1,71E-02	4,22E-05	2,16E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,38E-05	3,87E-05	5,68E-07	-1,87E-03
Ozone depletion pot.	kg CFC-11e	3,97E-08	6,67E-09	8,94E-09	5,53E-08	2,34E-09	3,97E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,32E-09	5,02E-10	2,60E-11	-1,08E-08
Acidification potential	mol H ⁺ e	5,64E-02	9,06E-03	9,21E-04	6,64E-02	2,44E-04	1,59E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,38E-04	4,16E-04	6,66E-06	-8,43E-02
EP-freshwater ²⁾	kg Pe	8,20E-04	1,56E-05	7,24E-05	9,08E-04	7,91E-06	8,77E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,47E-06	1,99E-05	2,67E-05	-1,04E-02
EP-marine	kg Ne	2,53E-02	2,28E-03	3,27E-04	2,79E-02	5,87E-05	2,56E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,32E-05	1,14E-04	9,26E-06	-5,64E-03
EP-terrestrial	mol Ne	5,15E-02	2,51E-02	2,49E-03	7,91E-02	6,33E-04	5,03E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,58E-04	1,19E-03	2,75E-05	-8,01E-02
POCP (“smog”) ³⁾	kg NMVOCe	1,58E-02	6,96E-03	6,59E-04	2,34E-02	4,06E-04	1,92E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,30E-04	3,39E-04	1,05E-05	-2,02E-02
ADP-minerals & metals ⁴⁾	kg Sbe	9,12E-04	5,92E-07	3,57E-04	1,27E-03	3,91E-07	2,54E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,21E-07	2,12E-06	1,74E-09	-1,18E-03
ADP-fossil resources	MJ	3,85E+01	4,89E+00	2,80E+00	4,62E+01	1,65E+00	3,59E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,34E-01	4,52E-01	2,21E-02	-1,37E+01
Water use ⁵⁾	m ³ e depr.	2,42E+00	1,72E-02	1,32E+00	3,76E+00	8,21E-03	9,84E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-03	2,59E-02	7,98E-05	-8,73E-01

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

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	2,81E-07	1,59E-08	5,59E-09	3,03E-07	8,65E-09	2,13E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,89E-09	5,11E-09	1,51E-10	-2,07E-07
Ionizing radiation ⁶⁾	kBq	5,20E-01	3,02E-03	2,51E-02	5,48E-01	2,13E-03	2,36E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,21E-03	3,47E-03	1,68E-05	-1,31E-01
	11235e																		
Ecotoxicity (freshwater)	CTUe	9,33E+01	1,79E+00	1,09E+00	9,62E+01	2,20E-01	1,28E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,24E-01	7,92E-01	1,37E-02	-1,60E+02
Human toxicity, cancer	CTUh	7,24E-09	8,04E-11	4,13E-11	7,37E-09	1,97E-11	2,85E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,11E-11	4,99E-11	1,56E-12	-8,40E-09
Human tox. non-cancer	CTUh	3,70E-07	1,82E-09	1,17E-09	3,73E-07	1,05E-09	1,52E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,91E-10	2,62E-09	7,58E-11	-8,29E-07
SQP ⁷⁾	-	6,13E+02	1,15E+00	5,16E+00	6,19E+02	9,98E-01	2,65E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,65E-01	7,88E-01	4,84E-02	-4,12E+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	1,08E+01	5,12E-02	-1,85E-01	1,07E+01	2,89E-02	-1,35E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,64E-02	7,63E-02	2,62E-04	-6,74E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,41E+00	1,41E+00	0,00E+00	-1,41E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,27E+00
Total use of renew. PER	MJ	1,08E+01	5,12E-02	1,22E+00	1,21E+01	2,89E-02	-2,76E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,64E-02	7,63E-02	2,62E-04	-5,48E+00
Non-re. PER as energy	MJ	3,82E+01	4,90E+00	2,87E+00	4,60E+01	1,65E+00	3,69E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,34E-01	4,70E-01	-1,10E+00	-1,37E+01
Non-re. PER as material	MJ	2,93E-01	0,00E+00	5,18E-03	2,98E-01	0,00E+00	-5,18E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-2,57E-01	-3,53E-02	6,10E-03
Total use of non-re. PER	MJ	3,85E+01	4,90E+00	2,87E+00	4,63E+01	1,65E+00	3,18E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,34E-01	2,13E-01	-1,14E+00	-1,37E+01
Secondary materials	kg	1,66E+00	2,32E-03	1,02E-01	1,76E+00	7,67E-04	5,93E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,34E-04	5,35E-04	6,50E-06	2,15E-01
Renew. secondary fuels	MJ	1,11E-03	1,11E-05	9,94E-03	1,11E-02	9,70E-06	3,34E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,49E-06	2,42E-05	1,29E-07	-3,86E-04
Non-ren. secondary fuels	MJ	2,95E-03	0,00E+00	0,00E+00	2,95E-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
Use of net fresh water	m³	6,74E-02	4,81E-04	2,45E-03	7,04E-02	2,25E-04	-2,02E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,27E-04	5,33E-04	-9,01E-05	-3,94E-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	1,28E-01	7,00E-03	6,67E-03	1,42E-01	2,40E-03	6,08E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,36E-03	7,61E-03	6,48E-03	-3,47E-01
Non-hazardous waste	kg	8,24E+00	1,04E-01	1,87E-01	8,53E+00	5,07E-02	6,88E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,87E-02	2,26E-01	1,43E-01	-2,01E+01
Radioactive waste	kg	3,00E-03	7,39E-07	4,63E-06	3,00E-03	5,29E-07	6,00E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,99E-07	8,87E-07	4,10E-09	-3,41E-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	1,17E-04	0,00E+00	0,00E+00	1,17E-04	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	2,20E-03	0,00E+00	9,73E-04	3,17E-03	0,00E+00	9,05E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,31E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	4,93E-05	0,00E+00	2,73E-23	4,93E-05	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	6,63E-05	0,00E+00	1,38E-02	1,39E-02	0,00E+00	4,69E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,07E-01	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	5,83E-03	5,83E-03	0,00E+00	1,96E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,14E-01	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	8,00E-03	8,00E-03	0,00E+00	2,72E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,94E-01	0,00E+00	0,00E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	4,27E+00	3,88E-01	2,29E-01	4,88E+00	1,17E-01	1,55E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,65E-02	3,17E-01	4,05E-03	-1,09E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO₂ is set to zero

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity, Netherlands, residual mix, 2024, Netherlands, One Click LCA, 0,59 kgCO₂e/kWh
2. Natural gas space heating (2020), Netherlands, ProBas, 0,0737 kgCO₂e/MJ

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry 16-32 metric ton, EURO6, 372 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products (kg/m ³)	740
Volume capacity utilization factor	<1

Installation at the building site (A5) - Scenario documentation

Packaging waste recycling scenario: One Click LCA Paper Packaging EU Scenario (EUROSTAT).

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	N/A
Water use (m ³)	N/A
Ancillary materials: type and mass (kg)	N/A
Waste materials: type and mass (kg)	Paper packaging waste: 0,109 kg
Waste materials: output routes	Paper and cardboard waste (83% recycling, 8% incineration with energy recovery, 9% landfill)
Direct emissions (kg)	N/A

End of life (C1-C4) - Scenario documentation

End-of-life recycling scenarios: Method for Determining the Environmental Performance of Buildings (Dutch title: Forfaitaire waarden voor verwerking-scenario's einde leven behorende bij: Bepalingsmethode Milieuprestatie Bouwwerken). NMD, 2024.

Scenario information	Value
Collection process: collected separately (kg)	1,554
Collection process: Mixed waste (kg)	N/A
Recovery: re-use (kg)	0
Recovery: recycling (kg)	1,31
Recovery: energy recovery (kg)	0,12
Disposal (kg)	0,13
Scenario assumptions e.g. transportation (mode, km) & other	Landfill, 50 km. Incineration, 150 km. Recycling, 250 km.

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

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

Verified tools

Tool verifier: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

Ipek Goktas Kalkan, as authorized verifier acting for EPD HUB 18.08.2026

