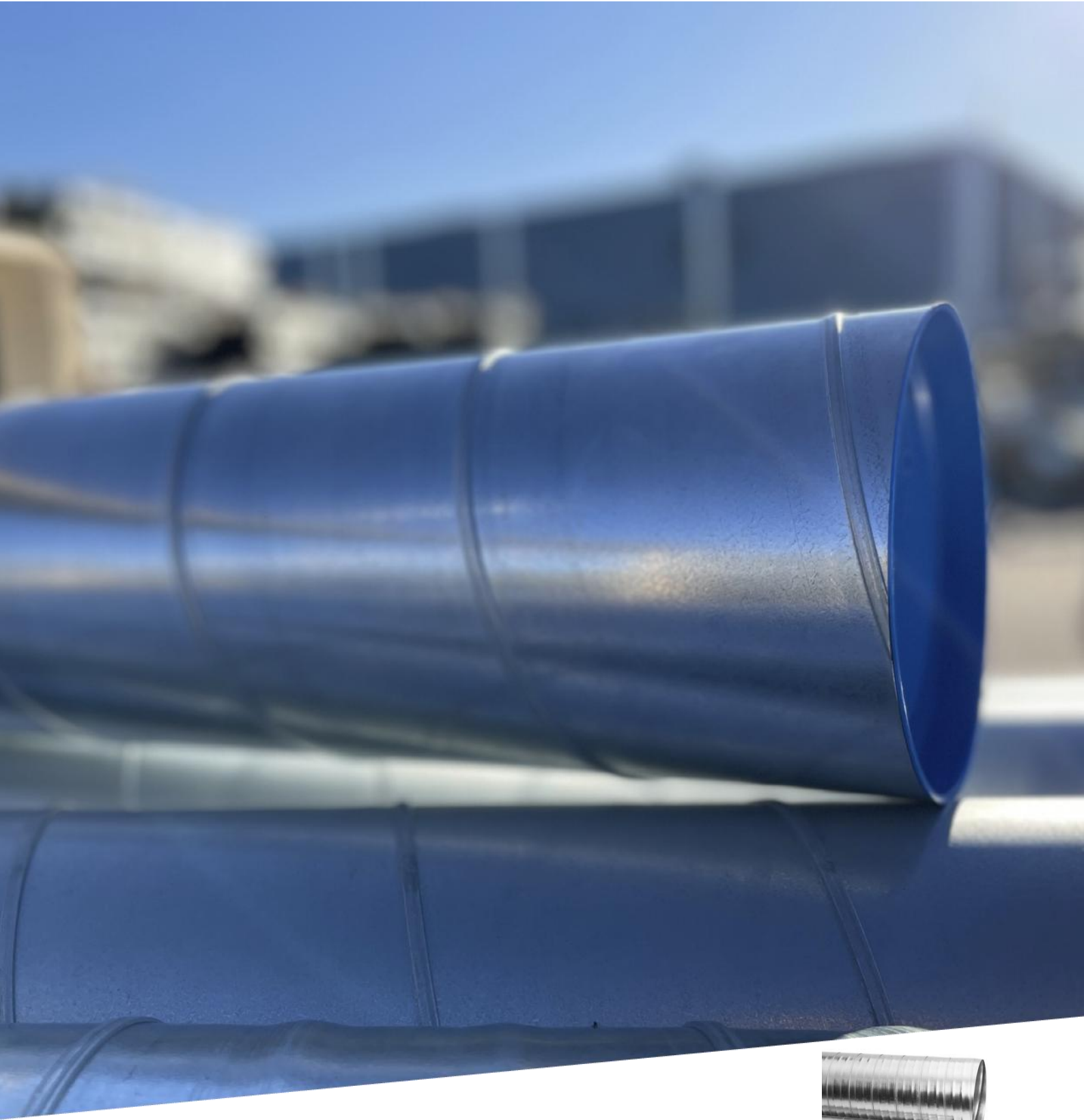


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

SR & SRSS – Circular ducts
Lindab Kft.

EPD Registration number: HUB-3110
Version: 1.0

Publication date: 28.03.2025
Valid until: 27.03.2030
Revision date: 28.03.2025

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Lindab Kft.
Address	2051 Biatorbágy, Állomás út 1/a
Contact details	info.vent@lindab.com
Website	www.lindab.hu

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Sister EPD to HUB-0506
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Oana Petcu
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub, EPD Hub

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	SR & SRSS-Circular ducts
Additional labels	
Product reference	224929
Place of production	Biatorbágy, Hungary
Period for data	Calendar year 2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	Not applicable %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	2.83E+00
GWP-total, A1-A3 (kgCO2e)	2.83E+00
Secondary material, inputs (%)	5.06
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	9.26
Net freshwater use, A1-A3 (m3e)	0

MANUFACTURER

ABOUT LINDAB

Lindab is a leading ventilation company in Europe, offering solutions for energy-efficient ventilation and a healthy indoor climate. The products are characterised by high quality, ease of installation and environmental thinking. In northern Europe, Lindab also offers an extensive range of roof, wall and rainwater systems.

FOR A BETTER CLIMATE

We want to create a better climate. Most of us spend a majority of our time indoors. The air we breathe, in our homes, at our workplaces and at school, affects our well-being. Since air is not visible, we do not always think about it. However, the indoor climate is crucial for how we feel, for our energy levels and whether we stay healthy. Lindab wants to contribute to the architecture and indoor climate of tomorrow. We also want a better climate for our planet. That is why we develop energy-efficient solutions for healthy indoor environments.

OUR VISION

We want to be the leading player in the area in which we are strongest – ventilation in Europe. We focus on air distribution and air diffusion. Since we offer high-quality products, we focus on Europe where demand for good ventilation is high, and we can offer superior availability. We specialise in those parts of the ventilation system where we are the strongest. We adapt our offering to the local market, with our core ventilation offering as the clear common denominator in all markets.

THE IMPORTANCE OF VENTILATION

About 90 percent of the global population breathes poor air every day. A common misconception is that outdoor air is more polluted due to emissions, smog, and harmful chemicals. In fact, indoor air in homes, schools, offices, and factories can be as much as five times more polluted. People nonetheless spend most of their life indoors. The most common causes of indoor air pollution are mould, chemicals in, for example, furniture and building materials, dust, radon, and cigarette smoke but, above all, airborne particles from combustion and industrial processes, which are so small they can enter the human bloodstream via the respiratory system. Today, air pollution is a risk factor in several of the world's most common causes of death, including heart disease, pneumonia, stroke, diabetes, and lung cancer. Ventilation is an efficient and convenient method to remove those indoor air pollutants.

SUSTAINABILITY PLAN

For us, sustainability is a way of thinking and working. This affects how we work with Lindab's strategy in all areas. Everything from the purchases we make, to the deliveries and the service we offer our customers. Lindab has three long-term, non-financial targets for the business, one that focuses on increasing our attractiveness as an employer, one for reducing our own carbon dioxide emissions, and one for a better working environment.

Read more about Lindab Groups sustainability work and non-financial targets on www.lindabgroup.com.

STEEL

Steel provides products with a long service life. Steel has many advantages over other materials – it has a very long service life, is non-combustible and meets hygiene requirements. Steel is a fully recyclable material and scrap steel has a strong market position: steel recovered from structures and end products at the end of their lifecycle is efficiently recycled and re-used. We prioritise cooperation with steel suppliers driving development towards fossil-free steel and whose carbon dioxide intensity values are good. The steel we use must be free of particularly hazardous substances.

The use of steel in Lindab's products is what contributes most to Lindab's CO2 emissions. The transition to decarbonised steel is Lindab's most significant individual action in terms of its effect on the environment. Through our collaboration with SSAB and H2 Green Steel, we will also be among the first in Europe to have access to near-zero and fossil free steel in 2026.

PRODUCT

PRODUCT DESCRIPTION

Hot-dipped galvanized (HDG) steel consists of a core of steel that is coated with a rust protection of 100% zinc by immersing the metal in a bath of molten zinc at a temperature of around 450 °C. The galvanized steel is delivered in wide coils, slit coils, or sheets. It can be processed by conventional processing operations such as bending, drawing, clinching, profiling, stamping, welding etc. and contains approximately 20% of recycled scrap steel. A zinc coating protects the steel from corrosion in two ways. It serves as a protective layer keeping oxygen and water away from the steel, but it also acts as a cathodic protection. This means that at cut edges or in case of damages through the zinc coating, the coating will sacrifice itself and react to form protective compounds and block further corrosion processes. The zinc coating covers the steel on both sides. In addition, a zinc coating can improve formability, resistance welding properties and paintability. The product is available in various qualities, thicknesses, widths and coating masses. For current assortment please contact your sales representative or visit our webpage, www.lindab.hu.

Further information can be found at www.lindab.hu.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	100	EU/ Asia
Minerals		
Fossil materials		
Bio-based materials		

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	1kg
Mass per declared unit	1 kg
Functional unit	-

Reference service life	> 50 years

SUBSTANCES, REACH - VERY HIGH CONCERN

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

MARKET

Hungary

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	Deconstr./demol.	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 generated 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.

Steel coils are received, inspected, and stored until production. The correct slitted coil is selected per the manufacturing order, with a unique ID assigned for traceability.

The coil is rigged in the spiral tube forming machine, and the first duct undergoes quality control. If approved, production runs in auto mode with hourly quality checks. A mineral-based oil emulsion ensures machine longevity and stable conditions.

Finished ducts are packed in reusable wooden crates, stored in the warehouse, and shipped by truck to the customer.

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. In the installation phase, typically results in a loss of around 5% of the product, primarily caused by cutting and customization during the process. Transport from production site to customer is calculated a based on the market share.

Transport from production place to user (A4)

To	Total dist. (km)	Transportation method
EU	150	Lorry

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. These life cycle stages are dependent on how the product is used and should be developed and included as part of a holistic assessment of specific construction works.

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

PRODUCT END OF LIFE (C1-C4, D)

Activities related to steel recycling is included in C3. A recycling rate of 85% (according to World Steel Association, 2020) and landfill rate of 15% has been assumed for the steel. That is to be seen as the proportion of the material in the product that will be recycled in a subsequent system. External scrap in the steel raw material is also deducted and accounts for 20%. Hence the net flow to be credited in module D is 76%. See below tables for scenarios used in Modules C and D, based on EU statistics.

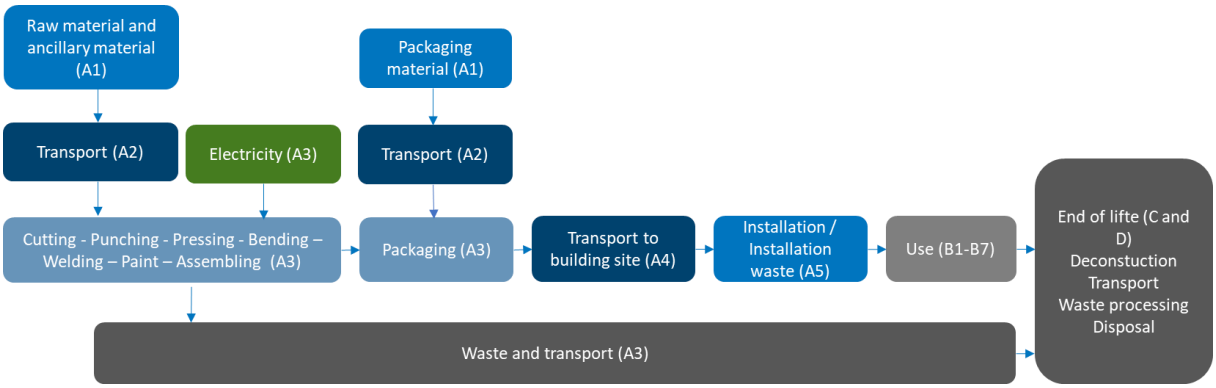
Transport to waste processing scenario (C2)

Type	Distance
Lorry	50 km

End of Life Scenarios based on Eurostat. (A5, C1-C4, D)

Name	%	Source
Steel to recycling	85	World Steel 2020
Steel to landfill	15	World Steel 2020
Paper to recycling	90	Lindab sustainability reporting 2022
Paper to landfill	10	Lindab sustainability reporting 2022
Cardboard to recycling	90	Lindab sustainability reporting 2022
Cardboard to landfill	10	Lindab sustainability reporting 2022
Plastic to recycling	30	Lindab sustainability reporting 2022
Plastic to incineration	70	Lindab sustainability reporting 2022
Rubber to recycling	30	Lindab sustainability reporting 2022
Rubber incineration	70	Lindab sustainability reporting 2022
Rubber to landfill	30	Lindab sustainability reporting 2022
Wood to incineration	100	Lindab sustainability reporting 2022

LIFE-CYCLE PROCESS AND 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. While cut-off criteria according to the PCR were employed, much data which would have fallen within that scope were included regardless, if available, resulting in a data set which is robust and captures all significant contributors to the LCA results.

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.

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

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	-

This EPD is product and factory specific and does not contain average calculations. The products in the scope vary only in sizes.

Production process, transportation, installation, demolition and waste treatment are the same for all products. All products included in this EPD is produced in Lindab Kft.

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, Data from World Steel Association and available supplier EPDs. For other inputs Ecoinvent 3.8 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

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 – total1)	kg CO2e	2,68E+00	1,33E-01	1,23E-02	2,83E+00	1,62E-02	1,44E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,38E-03	1,92E-02	9,37E-04	-1,43E+00
GWP – fossil	kg CO2e	2,68E+00	1,33E-01	1,23E-02	2,83E+00	1,61E-02	1,44E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,38E-03	1,92E-02	9,36E-04	-1,43E+00
GWP – biogenic	kg CO2e	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
GWP – LULUC	kg CO2e	4,80E-04	1,14E-04	3,99E-06	5,99E-04	7,22E-06	3,18E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,41E-06	2,37E-05	5,35E-07	-1,69E-04
Ozone depletion pot.	kg CFC-11e	1,00E-08	2,18E-09	6,37E-10	1,28E-08	2,38E-10	6,73E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,95E-11	2,58E-10	2,71E-11	-4,72E-09
Acidification potential	mol H+e	6,67E-03	1,14E-03	5,62E-05	7,86E-03	5,51E-05	4,10E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,84E-05	2,29E-04	6,64E-06	-5,67E-03
EP-freshwater2)	kg Pe	2,90E-06	2,45E-05	2,32E-06	2,97E-05	1,26E-06	2,30E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,19E-07	1,24E-05	7,70E-08	-6,14E-04
EP-marine	kg Ne	1,57E-03	3,48E-04	1,03E-05	1,93E-03	1,81E-05	1,01E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,03E-06	5,06E-05	2,53E-06	-1,26E-03
EP-terrestrial	mol Ne	1,67E-02	3,79E-03	1,34E-04	2,07E-02	1,97E-04	1,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,56E-05	5,72E-04	2,76E-05	-1,38E-02
POCP ("smog")3)	kg NMVOCe	5,25E-03	1,17E-03	6,54E-05	6,49E-03	8,11E-05	3,40E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,70E-05	1,69E-04	9,90E-06	-4,70E-03
ADP-minerals & metals4)	kg Sbe	1,66E-04	3,70E-07	1,05E-07	1,67E-04	4,50E-08	8,42E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,50E-08	1,36E-06	1,49E-09	-1,39E-05
ADP-fossil resources	MJ	2,79E+01	1,86E+00	3,15E-01	3,01E+01	2,34E-01	1,54E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,81E-02	2,58E-01	2,30E-02	-1,30E+01
Water use5)	m3e depr.	5,17E-01	1,95E-02	1,58E-02	5,52E-01	1,16E-03	2,80E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,86E-04	4,64E-03	6,63E-05	-2,39E-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 PO_4e; [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.

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-GHG9)	kg CO2e	2,68E+00	1,33E-01	1,23E-02	2,83E+00	1,62E-02	1,44E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,38E-03	1,92E-02	9,37E-04	-1,43E+00

[6)] 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.

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	0,00E+00	9,16E-09	3,32E-10	9,49E-09	1,62E-09	7,65E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,39E-10	3,10E-09	1,51E-10	-9,48E-08
Ionizing radiation6)	kBq U235e	0,00E+00	1,16E-02	7,09E-03	1,86E-02	2,04E-04	1,07E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,80E-05	2,19E-03	1,44E-05	5,38E-02
Ecotoxicity (freshwater)	CTUe	0,00E+00	3,38E-01	9,56E-02	4,34E-01	3,31E-02	3,27E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,10E-02	1,50E-01	1,93E-03	-3,51E+00
Human toxicity, cancer	CTUh	0,00E+00	3,03E-11	2,56E-12	3,28E-11	2,66E-12	2,83E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,88E-13	1,72E-11	1,73E-13	-2,30E-10
Human tox. non-cancer	CTUh	0,00E+00	9,67E-10	1,05E-10	1,07E-09	1,52E-10	1,32E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,06E-11	1,17E-09	3,97E-12	-1,13E-08
SQP7)	-	0,00E+00	9,78E-01	2,89E-02	1,01E+00	2,36E-01	9,56E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,87E-02	5,02E-01	4,52E-02	-4,14E+00

7) 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 energy8)	MJ	1,92E+00	1,18E-01	4,76E-02	2,08E+00	3,21E-03	1,07E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,07E-03	4,81E-02	2,22E-04	-8,98E-01
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	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,92E+00	1,18E-01	4,76E-02	2,08E+00	3,21E-03	1,07E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,07E-03	4,81E-02	2,22E-04	-8,98E-01
Non-re. PER as energy	MJ	2,92E+01	1,86E+00	2,32E-01	3,13E+01	2,34E-01	1,59E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,81E-02	2,58E-01	2,30E-02	-1,30E+01
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	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	2,92E+01	1,86E+00	2,32E-01	3,13E+01	2,34E-01	1,59E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,81E-02	2,58E-01	2,30E-02	-1,30E+01
Secondary materials	kg	5,06E-02	1,72E-03	3,05E-05	5,23E-02	9,97E-05	2,64E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,32E-05	3,15E-04	5,78E-06	7,91E-01
Renew. secondary fuels	MJ	5,48E-23	6,68E-06	1,55E-06	8,22E-06	1,27E-06	1,36E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,22E-07	1,46E-05	1,20E-07	-1,18E-04
Non-ren. secondary fuels	MJ	6,44E-22	0,00E+00	0,00E+00	6,44E-22	0,00E+00	3,22E-23	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	2,98E-03	5,51E-04	2,03E-04	3,73E-03	3,46E-05	1,97E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,15E-05	1,37E-04	2,39E-05	-3,15E-03

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	4,44E-02	5,72E-03	3,92E-04	5,05E-02	3,97E-04	2,65E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,32E-04	1,69E-03	2,54E-05	-4,74E-01
Non-hazardous waste	kg	1,33E-01	1,39E-01	1,16E-02	2,83E-01	7,35E-03	1,82E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,45E-03	6,09E-02	5,80E-04	-3,69E+00
Radioactive waste	kg	4,68E-04	2,94E-06	2,70E-06	4,74E-04	5,00E-08	2,37E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,67E-08	5,60E-07	3,52E-09	1,40E-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	4,29E-06	0,00E+00	0,00E+00	4,29E-06	0,00E+00	2,15E-07	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	2,60E-02	0,00E+00	2,00E-02	4,60E-02	0,00E+00	5,23E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	1,10E-03	1,10E-03	0,00E+00	5,51E-05	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	4,16E+00	4,16E+00	0,00E+00	2,08E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	4,14E+00	4,14E+00	0,00E+00	2,07E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	2,02E-02	2,02E-02	0,00E+00	1,01E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	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_2e	2,65E+00	1,32E-01	1,21E-02	2,80E+00	1,61E-02	1,42E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,35E-03	1,92E-02	9,28E-04	-1,43E+00
Ozone depletion Pot.	kg $CFC\text{-}_{11}e$	7,49E-09	1,75E-09	4,96E-10	9,73E-09	1,90E-10	5,12E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,34E-11	2,13E-10	2,15E-11	-5,22E-09
Acidification	kg SO_2e	6,10E-03	8,80E-04	4,40E-05	7,02E-03	4,20E-05	3,65E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,40E-05	1,84E-04	4,91E-06	-4,56E-03
Eutrophication	kg PO_4^3e	6,94E-04	1,45E-04	1,29E-05	8,52E-04	1,02E-05	4,48E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,41E-06	2,66E-05	1,56E-06	-8,42E-04
POCP (“smog”)	kg C_2H_4e	6,54E-04	5,74E-05	2,36E-06	7,14E-04	3,75E-06	3,66E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,25E-06	1,09E-05	4,65E-07	-7,20E-04
ADP-elements	kg Sbe	1,66E-04	3,61E-07	1,03E-07	1,67E-04	4,39E-08	8,42E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,46E-08	1,36E-06	1,46E-09	-1,39E-05
ADP-fossil	MJ	2,79E+01	1,66E+00	3,09E-01	2,99E+01	2,31E-01	1,52E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,70E-02	2,20E-01	2,28E-02	-1,40E+01

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online.

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited 28.03.2025