



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Lindab Stainless Steel

Lindab Steel

EPD HUB, EPD number HUB-6292

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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.



Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Lindab Steel
Address	Stålhögavägen 117, 269 82 Båstad, Sweden
Contact details	order.steel@lindab.com
Website	https://www.lindab.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	Marie Ljungberg, Lindab Ventilation AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: o Internal verification p External verification
EPD verifier	Yazan Badour as an authorized verifier 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	Lindab Stainless Steel
Additional labels	
Product reference	1.4404, 1.4301, 1.4404F, 1.4301F, 1.4301-D, 1.4404-D
Place(s) of raw material origin	Europe
Place of production	Grevie, Sweden
Place(s) of installation and use	Europe
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	+/-20 %
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	98,3

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2,57
GWP-total, A1-A3 (kgCO ₂ e)	2,59
Secondary material, inputs (%)	52,5
Secondary material, outputs (%)	95
Total energy use, A1-A3 (kWh)	10,4
Net freshwater use, A1-A3 (m ³)	0,08

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

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.

PRODUCT DESCRIPTION

Stainless steels are high alloyed steel qualities with good corrosion resistance. Lindab Steel offer stainless steel in the qualities EN 1.4301 and EN 1.4404. EN 1.4301 contains about 18% chromium and 10% nickel and is a common and widely used austenitic stainless steel grade with good corrosion resistance in most environments. EN 1.4404 contains about 17% chromium, 12% nickel and 2% molybdenum and is an austenitic stainless steel with good corrosion resistance also to acids and chloride containing environments.

Lindab steel offer stainless steel with two aesthetically different surfaces, either 2B or BA. 2B is a dull surface and BA (bright annealed) is a very shiny surface. This shiny surface is the result of annealing in a protective atmosphere to prevent oxidation. Stainless steel offered by Lindab Steel are all scrap-based with post-consumer scrap as the main ingredient.

Stainless steel is available at Lindab Steel in various thicknesses and widths, both as wide coils, slit coils and sheets.

Further information can be found at lindab.se

CONVERSION TABLE: WEIGHT PER M² (LINEAR CORRELATION)

Thickness (mm)	Kg/m ²
0,5	4,00
0,6	4,80
0,8	6,40

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	EU
Minerals	0	-
Fossil materials	0	-
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	0,046

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
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).

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 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.

The stainless steel raw material is received by Lindab Group's own steel service centre, Lindab Steel AB. After a quality control the most suitable coil is selected for the manufacturing orders, to minimize scrap. The coil is slitted into correct dimensions, re-coiled or cut to length. For protection and transport, the units are secured with plastic film and snap straps, metal strapping, and wooden pallets. Before packing and shipping each unit gets a unique ID number for traceability.

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.

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. Installation spills and handling of packaging material is considered. Material loss during installation is estimated to be zero.

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.

The reference service life of the product is highly dependent on the conditions of use, average lifespan under normal conditions is minimum 50 years. This is an estimated value based on experience and scientific facts.

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

PRODUCT END OF LIFE (C1-C4, D)

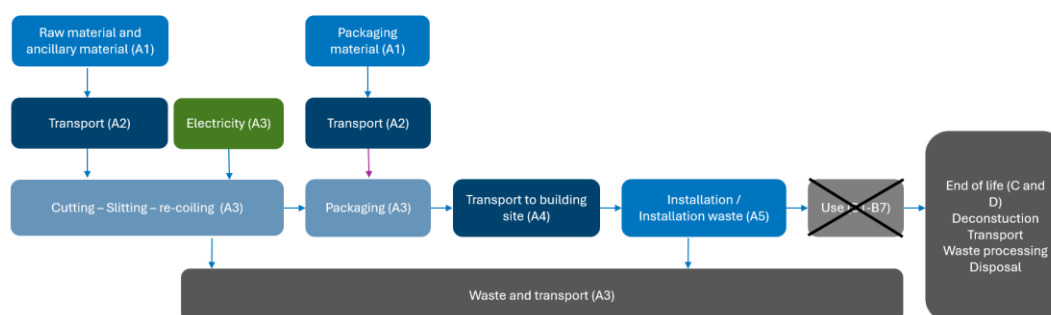
Energy for deconstruction is included in C1, and activities related to steel recycling is included in C3. A recycling rate of 95% has been assumed for the product. That is to be seen as the proportion of the material in the product that will be recycled (or re-used) in a subsequent system. External scrap in the raw material is also deducted and accounts for 75%. Hence the net flow to be credited in module D is 20%. This is illustrated in the table below per declared unit.

End of Life Scenarios (A3, A5, C1-C4, D)

Name	Recycling	Incineration	Landfill	Source
Stainless steel	95		5	World Stainless 2024
Plastic packaging	4	37	23	EUROSTAT, 2020
Wood packaging	32	30	38	EUROSTAT, 2020
Steel Packaging	81		19	EUROSTAT, 2020

Benefits and loads from recycling and recovery are included in module D. Benefits and loads in module D correspond to recycling and recovery rates modelled in packaging and product end of life modules A5 and C1-C4. Recycled raw material content has been subtracted from benefits and loads to avoid double counting. Benefits and loads do not include manufacturing losses or co-products from A3.

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.

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

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on average results of product group - by total mass
Variation in GWP-fossil for A1-A3, %	+/- 20%

This is an average EPD based on all purchased stainless steel during 2024. It is product and factory specific. Production processes, transportation, installation, demolition and waste treatment are the same for all products. Material compositions are the same but vary in sizes. GWP-fossil A1-A3 per kilo of product varies less than 20% and is based on supplier specific EPDs.

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'.

Recycling scenario references:

World Stainless 2024,

Plastics Europe, 2020,

Eurostat:

https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519259/default/table?lang=en

Third-party verified and compliant with EN15804+A2 EPDs:

S-P-08506 - Cold rolled austenitic stainless steels, 8000 kg/m³ (ACERINOX EUROPA, S.A.U.)

EPD-IES-0017264:001 - Cold-rolled austenitic stainless steel (Outokumpu Oyj)

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	2,42E+00	1,78E-01	-5,69E-03	2,59E+00	1,13E-01	1,83E-02	ND	ND	ND	ND	ND	ND	ND	ND	9,77E-03	2,15E-02	3,12E-04	-9,59E-01
GWP – fossil	kg CO ₂ e	2,38E+00	1,78E-01	1,11E-02	2,57E+00	1,13E-01	1,57E-03	ND	ND	ND	ND	ND	ND	ND	ND	9,77E-03	2,15E-02	3,12E-04	-9,53E-01
GWP – biogenic	kg CO ₂ e	3,69E-02	1,71E-04	-1,68E-02	2,03E-02	2,24E-05	1,68E-02	ND	ND	ND	ND	ND	ND	ND	ND	2,13E-06	-4,56E-05	-9,93E-08	-5,10E-03
GWP – LULUC	kg CO ₂ e	2,84E-03	1,14E-04	2,11E-05	2,97E-03	3,98E-05	6,40E-07	ND	ND	ND	ND	ND	ND	ND	ND	4,32E-06	2,65E-05	1,78E-07	-9,19E-04
Ozone depletion pot.	kg CFC-11e	7,55E-06	3,29E-09	2,01E-10	7,55E-06	2,24E-09	7,28E-12	ND	ND	ND	ND	ND	ND	ND	ND	1,37E-10	2,89E-10	9,04E-12	-6,44E-09
Acidification potential	mol H ⁺ e	1,52E-02	1,05E-03	5,04E-05	1,64E-02	3,53E-04	2,54E-06	ND	ND	ND	ND	ND	ND	ND	ND	3,26E-05	2,55E-04	2,21E-06	-5,34E-03
EP-freshwater ²⁾	kg Pe	2,77E-04	1,49E-05	4,46E-06	2,96E-04	7,48E-06	1,20E-07	ND	ND	ND	ND	ND	ND	ND	ND	7,59E-07	1,38E-05	2,57E-08	-2,86E-04
EP-marine	kg Ne	1,83E-03	4,42E-04	1,30E-05	2,29E-03	1,19E-04	2,50E-06	ND	ND	ND	ND	ND	ND	ND	ND	1,05E-05	5,66E-05	8,44E-07	-9,57E-04
EP-terrestrial	mol Ne	2,14E-02	4,83E-03	1,40E-04	2,64E-02	1,29E-03	1,02E-05	ND	ND	ND	ND	ND	ND	ND	ND	1,15E-04	6,39E-04	9,21E-06	-1,02E-02
POCP (“smog”) ³⁾	kg NMVOCe	7,65E-03	1,50E-03	6,08E-05	9,21E-03	5,53E-04	3,31E-06	ND	ND	ND	ND	ND	ND	ND	ND	4,53E-05	1,89E-04	3,30E-06	-3,27E-03
ADP-minerals & metals ⁴⁾	kg Sbe	7,05E-05	4,08E-07	9,92E-08	7,10E-05	3,69E-07	1,86E-09	ND	ND	ND	ND	ND	ND	ND	ND	3,21E-08	1,52E-06	4,96E-10	-2,49E-05
ADP-fossil resources	MJ	3,14E+01	2,36E+00	1,91E-01	3,40E+01	1,58E+00	6,28E-03	ND	ND	ND	ND	ND	ND	ND	ND	1,37E-01	2,88E-01	7,66E-03	-1,03E+01
Water use ⁵⁾	m ³ e depr.	1,35E+00	1,48E-02	2,07E-02	1,38E+00	7,78E-03	1,85E-04	ND	ND	ND	ND	ND	ND	ND	ND	6,36E-04	5,18E-03	2,21E-05	-2,74E-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, 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	9,64E-09	8,49E-10	1,05E-08	8,86E-09	4,39E-11	ND	ND	ND	ND	ND	ND	ND	ND	7,75E-10	3,47E-09	5,04E-11	-7,62E-08
Ionizing radiation ⁶⁾	kBq U235e	0,00E+00	4,38E-03	7,70E-04	5,15E-03	2,02E-03	1,91E-05	ND	ND	ND	ND	ND	ND	ND	ND	1,11E-04	2,44E-03	4,82E-06	-4,01E-02
Ecotoxicity (freshwater)	CTUe	3,47E+00	1,09E+00	3,28E-01	4,89E+00	2,08E-01	2,66E-03	ND	ND	ND	ND	ND	ND	ND	ND	2,17E-02	1,68E-01	6,43E-04	-2,71E+00
Human toxicity, cancer	CTUh	1,77E-08	2,70E-11	2,38E-11	1,77E-08	1,92E-11	2,80E-13	ND	ND	ND	ND	ND	ND	ND	ND	1,66E-12	1,92E-11	5,75E-14	-8,60E-10
Human tox. non-cancer	CTUh	5,64E-09	1,07E-09	1,19E-10	6,83E-09	9,94E-10	1,33E-11	ND	ND	ND	ND	ND	ND	ND	ND	8,57E-11	1,30E-09	1,32E-12	-1,90E-08
SQP ⁷⁾	-	0,00E+00	1,62E+00	1,49E+00	3,10E+00	9,43E-01	6,89E-03	ND	ND	ND	ND	ND	ND	ND	ND	8,18E-02	5,61E-01	1,51E-02	-4,85E+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	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	4,16E+00	5,12E-02	1,67E-01	4,38E+00	2,74E-02	-1,62E-01	ND	ND	ND	ND	ND	ND	ND	ND	1,88E-03	5,37E-02	7,39E-05	-2,43E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,67E-01	1,67E-01	0,00E+00	-1,67E-01	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	4,50E-02
Total use of renew. PER	MJ	4,16E+00	5,12E-02	3,33E-01	4,55E+00	2,74E-02	-3,28E-01	ND	ND	ND	ND	ND	ND	ND	ND	1,88E-03	5,37E-02	7,39E-05	-2,39E+00
Non-re. PER as energy	MJ	3,06E+01	2,36E+00	1,41E-01	3,31E+01	1,58E+00	-3,10E-02	ND	ND	ND	ND	ND	ND	ND	ND	1,37E-01	2,88E-01	7,66E-03	-1,03E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	5,05E-02	5,05E-02	0,00E+00	-5,05E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	1,90E-02
Total use of non-re. PER	MJ	3,06E+01	2,36E+00	1,91E-01	3,32E+01	1,58E+00	-8,15E-02	ND	ND	ND	ND	ND	ND	ND	ND	1,37E-01	2,88E-01	7,66E-03	-1,03E+01
Secondary materials	kg	5,25E-01	1,35E-03	9,82E-04	5,27E-01	7,25E-04	5,52E-06	ND	ND	ND	ND	ND	ND	ND	ND	6,16E-05	3,52E-04	1,93E-06	1,13E-01
Renew. secondary fuels	MJ	4,60E-04	1,06E-05	5,65E-03	6,12E-03	9,16E-06	8,07E-08	ND	ND	ND	ND	ND	ND	ND	ND	7,84E-07	1,63E-05	3,99E-08	-2,63E-04
Non-ren. secondary fuels	MJ	2,88E-03	0,00E+00	0,00E+00	2,88E-03	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	8,00E-02	3,58E-04	4,78E-04	8,08E-02	2,13E-04	-1,43E-05	ND	ND	ND	ND	ND	ND	ND	ND	1,81E-05	1,53E-04	7,97E-06	-8,35E-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	1,79E-01	5,78E-03	1,99E-03	1,87E-01	2,27E-03	4,99E-05	ND	ND	ND	ND	ND	ND	ND	ND	2,39E-04	1,88E-03	8,46E-06	-9,35E-01
Non-hazardous waste	kg	1,00E+00	1,21E-01	4,13E-02	1,16E+00	4,79E-02	2,63E-02	ND	ND	ND	ND	ND	ND	ND	ND	4,48E-03	6,80E-02	1,93E-04	-1,94E+00
Radioactive waste	kg	1,15E-03	1,10E-06	1,97E-07	1,15E-03	5,02E-07	4,79E-09	ND	ND	ND	ND	ND	ND	ND	ND	2,72E-08	6,26E-07	1,17E-09	-9,84E-06

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	2,10E-02	2,10E-02	ND	5,17E-03	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	2,93E-04	0,00E+00	0,00E+00	2,93E-04	0,00E+00	2,29E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,70E-03	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	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	1,32E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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	2,38E+00	1,78E-01	1,11E-02	2,57E+00	1,13E-01	1,57E-03	ND	ND	ND	ND	ND	ND	ND	ND	9,77E-03	2,15E-02	3,12E-04	-9,54E-01

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	GO electricity 100 % hydro, supplied by Becour; Modelled with Electricity production, hydro, reservoir, alpine region Norway, Ecoinvent 3.11
Electricity CO ₂ e / kWh	0,0061
District heating data source and quality	-
District heating CO ₂ e / kWh	0

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	EURO5, truck 16-32 metric ton, diesel
Average transport distance, km	Truck 575 km
Capacity utilization (including empty return) %	50
Bulk density of transported products	28,6
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m ³	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0
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	Waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling, 0.035 kg Waste wood, untreated, municipal incineration, Ecoinvent, 0.033 kg Waste wood, untreated, sanitary landfill, Ecoinvent, 0.042 kg Waste polyethylene plastic, municipal incineration, Ecoinvent, 3.4E-4 kg Waste polyethylene plastic, sanitary landfill, Ecoinvent, 2.1E-4 kg Waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, 3.7E-4 kg Metal scrap, mixed, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.0013 kg Scrap steel, inert material landfill, Ecoinvent, 3.0E-4 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	0,95
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	0,05
Scenario assumptions e.g. transportation	Transported 50 km 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

Yazan Badour as an authorized verifier for EPD Hub Limited 13.05.2026

