The natural choice

TIBNOR

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Hot rolled steel plates, Low CO_2
TIBNOR (SE)



EPD HUB, HUB-4825
Published on 09.01.2026, last updated on 09.01.2026, valid until 09.01.2031

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

TIBNOR

GENERAL INFORMATION

MANUFACTURER

Manufacturer	TIBNOR (SE)
Address	Sundbybergsvägen 1, , 171 73, Solna, , SE
Contact details	objekt@tibnor.com
Website	www.tibnor.se

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	Patrik Bjelovuk
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam 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	Hot rolled steel plates, Low CO2
Additional labels	
Product reference	Further processed steel plates, sheets and coils based upon steel conforming to EN10025 /EN10149
Place(s) of raw material origin	EU
Place of production	Köping, Sweden
Place(s) of installation and use	Sweden, Norway, Denmark and Finland
Period for data	Calendar year 2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
A1-A3 Specific data (%)	99

ENVIRONMENTAL DATA SUMMARY

Declared unit	1kg Hot rolled steel plates, Low CO_2
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	0,69
GWP-total, A1-A3 ($kgCO_2e$)	0,7
Secondary material, inputs (%)	100
Secondary material, outputs (%)	99
Total energy use, A1-A3 (kWh)	4,54
GWP- GHG, A1-A3 ($kgCO_2e$)	0,696

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Tibnor supplies steel, metals and production services to the industry in the Nordics and Baltics. We are driven to make a difference for all our customers. For we, just like them, must work harder, smarter and better to compete in global competition. As a modern distributor of steel and metals, we understand that our role extends far beyond the actual delivery. We make a difference! We are the natural choice

PRODUCT DESCRIPTION

Steel flat products, such as strip (sheet) and plate, are defined by their large width compared to their thickness. Production begins with continuous casting of molten steel into slabs, which are then hot rolled in mills with flat cylindrical rolls. Plates are rolled in reversible mills, while strip is produced on continuous lines and coiled at the end of the process. These hot-rolled products can either be delivered as they are or undergo further cold rolling, which reduces thickness and enhances dimensional accuracy, flatness, and surface quality.
By carefully controlling rolling temperatures and using appropriate alloying, a wide range of mechanical properties can be achieved. These can be further refined through heat treatment and surface coating.
Flat steel products are used across diverse sectors – from large-scale civil engineering, marine and offshore constructions to everyday applications such as vehicles, household appliances, heating and ventilation systems, and building materials like roofing. Importantly, at the end of their service life, steel from these applications can be fully recovered and recycled (100%), ensuring complete circularity.

Further information can be found at:
www.tibnor.se

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1kg Hot rolled steel plate Low CO2
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

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

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	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

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.
Tibnor purchase plates from several suppliers (A1). The exact allocation of volume between suppliers varies over the years depending on availability and cost.
The plates are delivered to Köping (A2) where they can be cut and processed (machined, shotblasted and painted) according to the customers wishes and requirements or delivered to the customer in standard stock lengths (A3).
Some plates are delivered directly from the supplier to the customer. The transport from suppliers is done by train, ship, and/or in some rare cases by truck, the products are always bundled, sometimes with steel wires from the mills. When sent to customers from Tibnors site the products are either bundled or also secured with steel strip with clips, if cut in short pieces EU pallets can be used.
Electricity used at the site is fossil free, waste from production is steel scrap (A3).
The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation process in module A4 comprises impacts from transportation of the products from Tibnors Warehouses to the customer in Sweden. Delivery to customer site either is directly from our supplier or from Tibnors warehouse (A4). Delivery to customer site either is directly from our supplier or from Tibnors warehouse (A4). Transportation from

Tibnors warehouse is done by truck (Euro 6). Vehicle capacity utilization is at least 70% A5 is excluded.

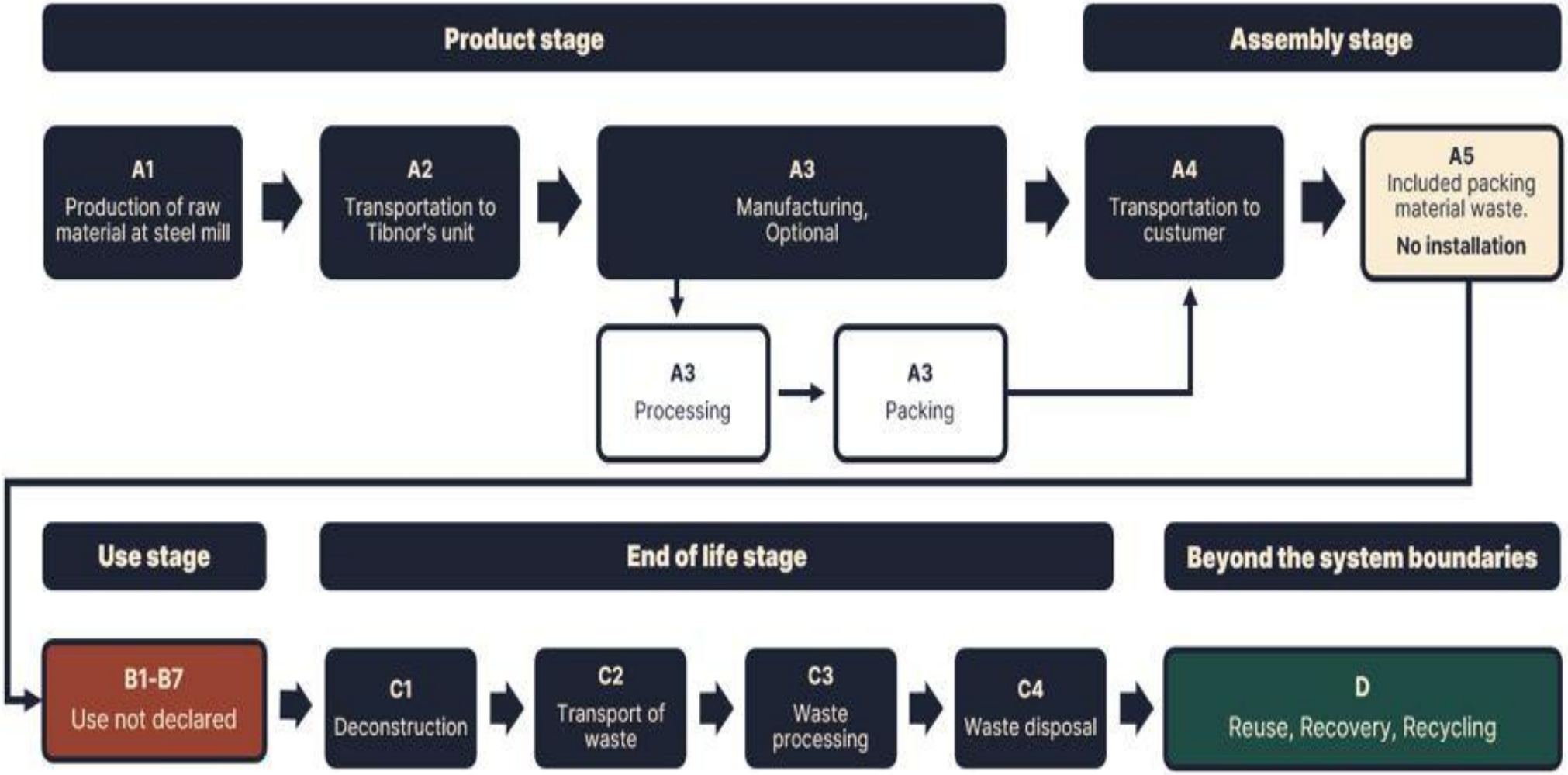
PRODUCT USE AND MAINTENANCE (B1-B7)

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

PRODUCT END OF LIFE (C1-C4, D)

Demolition is assumed to consume 0,01 kWh/kg of product. The source of energy is diesel fuel used by construction machines (C1). It is assumed that 100% of the waste is collected and transported to the waste treatment center. Transportation distance to treatment is assumed as 20 km and the transportation method is assumed to be lorry (C2). Approximately 88% of steel (hot rolled) is assumed to be recycled (C3). It is assumed that the remaining 12 % of steel is divided between 11% re-use and 1% taken to landfill for final disposal (C4). Due to the recycling process, the end-of-life product is converted into recycled steel, while the wooden pallet is incinerated for energy recovery (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.

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	Not applicable
Ancillary materials	Not applicable
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 for EPD Hub V3 and EPD System Verification v3.2.3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 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-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	7,01E-01	5,70E-02	4,30E-04	ND	ND	ND	ND	ND	ND	ND	1,01E-03	3,80E-03	1,99E-02	6,24E-05	-1,54E-02
GWP – fossil	kg CO_2e	6,95E-01	5,69E-02	7,08E-05	ND	ND	ND	ND	ND	ND	ND	1,01E-03	3,80E-03	1,99E-02	6,24E-05	-3,35E-03
GWP – biogenic	kg CO_2e	5,08E-03	1,14E-05	3,59E-04	ND	ND	ND	ND	ND	ND	ND	1,03E-07	7,63E-07	-4,22E-05	-1,99E-08	-1,20E-02
GWP – LULUC	kg CO_2e	1,10E-03	2,04E-05	1,25E-07	ND	ND	ND	ND	ND	ND	ND	1,03E-07	1,36E-06	2,45E-05	3,57E-08	-5,25E-06
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,19E-09	1,13E-09	1,12E-12	ND	ND	ND	ND	ND	ND	ND	1,55E-11	7,55E-11	2,67E-10	1,81E-12	-4,14E-11
Acidification potential	mol H^+e	2,30E-03	1,18E-04	4,28E-07	ND	ND	ND	ND	ND	ND	ND	9,11E-06	7,90E-06	2,37E-04	4,43E-07	-2,11E-05
EP-freshwater[2)]	kg Pe	6,07E-06	3,83E-06	2,17E-08	ND	ND	ND	ND	ND	ND	ND	2,91E-08	2,56E-07	1,28E-05	5,13E-09	-2,08E-06
EP-marine	kg Ne	6,64E-04	2,85E-05	4,91E-07	ND	ND	ND	ND	ND	ND	ND	4,23E-06	1,90E-06	5,24E-05	1,69E-07	-3,20E-06
EP-terrestrial	mol Ne	7,28E-03	3,07E-04	1,76E-06	ND	ND	ND	ND	ND	ND	ND	4,63E-05	2,05E-05	5,92E-04	1,84E-06	-3,16E-05
POCP ("smog")[3)]	kg NMVOCe	1,96E-03	1,97E-04	5,62E-07	ND	ND	ND	ND	ND	ND	ND	1,38E-05	1,31E-05	1,75E-04	6,60E-07	-1,02E-05
ADP-minerals & metals[4)]	kg Sbe	1,35E-06	1,90E-07	1,82E-10	ND	ND	ND	ND	ND	ND	ND	3,62E-10	1,26E-08	1,41E-06	9,92E-11	-4,29E-09
ADP-fossil resources	MJ	7,74E+00	8,01E-01	1,01E-03	ND	ND	ND	ND	ND	ND	ND	1,32E-02	5,34E-02	2,67E-01	1,53E-03	-5,53E-02
Water use[5)]	m^3e depr.	9,22E-02	3,98E-03	3,16E-05	ND	ND	ND	ND	ND	ND	ND	3,30E-05	2,65E-04	4,80E-03	4,42E-06	-1,07E-03

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-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	4,36E-09	4,20E-09	7,26E-12	ND	ND	ND	ND	ND	ND	ND	2,59E-10	2,80E-10	3,21E-09	1,01E-11	-1,78E-10
Ionizing radiation[6)]	kBq U235e	1,65E-02	1,03E-03	2,90E-06	ND	ND	ND	ND	ND	ND	ND	5,85E-06	6,89E-05	2,26E-03	9,63E-07	-1,07E-03
Ecotoxicity (freshwater)	CTUe	1,25E-01	1,07E-01	3,77E-04	ND	ND	ND	ND	ND	ND	ND	7,27E-04	7,10E-03	1,55E-01	1,29E-04	-6,59E-03
Human toxicity, cancer	CTUh	1,03E-11	9,55E-12	3,90E-14	ND	ND	ND	ND	ND	ND	ND	1,04E-13	6,37E-13	1,78E-11	1,15E-14	-6,98E-13
Human tox. non-cancer	CTUh	5,29E-10	5,07E-10	2,15E-12	ND	ND	ND	ND	ND	ND	ND	1,64E-12	3,38E-11	1,21E-09	2,64E-13	-2,83E-11
SQP[7)]	-	5,16E-01	4,84E-01	1,01E-03	ND	ND	ND	ND	ND	ND	ND	9,25E-04	3,23E-02	5,19E-01	3,02E-03	-1,99E-02

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-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	8,59E+00	1,40E-02	-3,67E-02	ND	ND	ND	ND	ND	ND	ND	8,36E-05	9,35E-04	4,98E-02	1,48E-05	6,85E-02
Renew. PER as material	MJ	3,14E-03	0,00E+00	-3,14E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E-01
Total use of renew. PER	MJ	8,59E+00	1,40E-02	-3,99E-02	ND	ND	ND	ND	ND	ND	ND	8,36E-05	9,35E-04	4,98E-02	1,48E-05	1,68E-01
Non-re. PER as energy	MJ	7,74E+00	8,01E-01	1,01E-03	ND	ND	ND	ND	ND	ND	ND	1,32E-02	5,34E-02	2,67E-01	1,53E-03	-5,53E-02
Non-re. PER as material	MJ	2,08E-04	0,00E+00	-2,08E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,80E-03
Total use of non-re. PER	MJ	7,74E+00	8,01E-01	8,05E-04	ND	ND	ND	ND	ND	ND	ND	1,32E-02	5,34E-02	2,67E-01	1,53E-03	-4,85E-02
Secondary materials	kg	1,15E+00	3,72E-04	7,13E-07	ND	ND	ND	ND	ND	ND	ND	5,48E-06	2,48E-05	3,26E-04	3,85E-07	-7,13E-06
Renew. secondary fuels	MJ	1,11E-04	4,70E-06	6,99E-09	ND	ND	ND	ND	ND	ND	ND	1,43E-08	3,14E-07	1,51E-05	7,97E-09	-4,85E-08
Non-ren. secondary fuels	MJ	0,00E+00	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	m^3	4,43E-03	1,09E-04	-3,20E-06	ND	ND	ND	ND	ND	ND	ND	8,73E-07	7,28E-06	1,42E-04	1,59E-06	-4,16E-05

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,27E-03	1,16E-03	7,38E-06	ND	ND	ND	ND	ND	ND	ND	1,47E-05	7,76E-05	1,74E-03	1,69E-06	-2,39E-04
Non-hazardous waste	kg	5,07E-02	2,46E-02	5,55E-03	ND	ND	ND	ND	ND	ND	ND	2,00E-04	1,64E-03	6,30E-02	3,87E-05	-1,05E-02
Radioactive waste	kg	8,12E-04	2,57E-07	7,22E-10	ND	ND	ND	ND	ND	ND	ND	1,43E-09	1,71E-08	5,80E-07	2,35E-10	-2,74E-07

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	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	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,10E-01	0,00E+00	0,00E+00
Materials for recycling	kg	3,49E-03	0,00E+00	8,00E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,80E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	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	0,00E+00	0,00E+00	4,00E-03	ND	ND	ND	ND	ND	ND	ND	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	1,70E-03	ND	ND	ND	ND	ND	ND	ND	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	2,30E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	6,96E-01	5,70E-02	7,09E-05	ND	ND	ND	ND	ND	ND	ND	1,01E-03	3,80E-03	1,99E-02	6,25E-05	-3,35E-03

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. District Heat, Sweden, 2022, Sweden, One Click LCA, 0.14 kgCO2e/kWh
2. Electricity production, nuclear, boiling water reactor, Sweden, Ecoinvent, 0.0077 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry 16-32 metric ton, EURO6, 300 km

Installation scenario documentation - A5 (Installation waste)

1. Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling, 8.0E-4 kg
2. Treatment of waste wood, untreated, municipal incineration, Ecoinvent, 7.5E-4 kg
3. Exported Energy: Electricity, Ecoinvent, 0.0017 MJ
4. Exported Energy: Thermal, Ecoinvent, 0.0023 MJ
5. Treatment of waste wood, untreated, sanitary landfill, Ecoinvent, 9.5E-4 kg

Use stages scenario documentation - C1-C4 (Data source)

1. Diesel, burned in building machine, Ecoinvent, 0.0028 kWh
2. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.88 kg
3. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.01 kg
4. Materials for re-use, Ecoinvent, Components for re-use, 0.11 kg

Scenario information	Value
Scenario assumptions e.g. transportation	Transportation to waste processing assumes an average distance of 20 km by >32 t lorry (Euro 6)

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

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
09.01.2026

