ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

SSAB Precision Tubes

SSAB Europe Oy

EPD HUB, HUB-5822
Published on 23.03.2026, last updated on 23.03.2026, valid until 22.03.2031

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	SSAB Europe Oy
Address	Harvialantie 420, FI-13300 Hämeenlinna, Finland
Contact details	EPDssab@ssab.com
Website	https://www.ssab.com/tubular

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 EN 17662 Execution of steel structures and aluminium structures
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD author	Jori Jokela, Macon Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

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	SSAB Precision Tubes
Additional labels	Cold formed SSAB steel tubes
Place(s) of raw material origin	Finland, Sweden
Place of production	Hämeenlinna, Finland
Place(s) of installation and use	Global
Period for data	Year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-5,3%/+14,1%
A1-A3 Specific data (%)	99,6

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 ton
Declared unit mass	1000 kg
Mass of packaging	3,3 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2490
GWP-total, A1-A3 ($kgCO_2e$)	2490
Secondary material, inputs (%)	5,39
Secondary material, outputs (%)	85,2
Total energy use, A1-A3 (kWh)	9550
Net freshwater use, A1-A3 (m^3)	9,85

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

SSAB is a global steel company with a leading position in high-strength steel and related services. The company is a front runner in the green transformation of the steel industry and aims to largely eliminate carbon dioxide emissions from its operations and together with suppliers and customers create a fossil-free value chain.

SSAB's production sites are in Sweden, Finland and the USA and have an annual crude steel production capacity of 8.8 million tons. SSAB Europe is responsible for sales of strip, heavy plate, and tubular products in Europe as well as for the global business in the Automotive customer segment.

PRODUCT DESCRIPTION

Welded cold-formed precision tubes with excellent performance for all demanding applications. The precision tubes consist of three product variants: precision tubes made of cold rolled (PRT C), metal coated (PRT Z) and hot rolled pickled steel (PRT HP) alternatives. All variants are available in variety of steel grades from high strength to special metal coatings. Precision tube products can be produced in a wide range of shapes such as circular, square, rectangular, oval and flat oval with wall thicknesses ranging from 0.9 to 3.0 mm. The functional performance varies according to profile geometry, wall thickness, steel grade and coating, while all precision tube products are manufactured using similar cold-forming process at Hämeenlinna tube mill.

For more detailed information about technical product properties and the product portfolio, please visit www.ssab.com/tubular.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Finland
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	1,13

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 ton of SSAB Precision Tubes
Mass per declared unit	1000 kg

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	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

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

Precision tubes are manufactured at SSAB's production site in Hämeenlinna, Finland. Hot rolled steel coils, cold rolled steel coils and metal coated steel coils for the production of Precision tubes are manufactured at SSAB's mill in Raahe and Hämeenlinna itself. The newest verified EPD-data concerning SSAB steels has been used (EPD International, 2025), in this case EPDs for Cold rolled steel coils (EPD-IES-0023966) and Metal coated steel coils (EPD-IES-0023967). The SSAB steel is manufactured using a blast furnace process. 18,9% of the total metallic charge consists of recycled steel. This share comprises 14,6% internally generated production scrap (internal scrap), 2,2% externally sourced pre-consumer scrap, and 2,1% post-consumer scrap. The use of recycled material reduces the environmental impact of steelmaking while maintaining SSAB's strict quality standards. The use of energy has been optimized in steel production.

Transport distances for raw materials are calculated based on distances between known raw material manufacturers and product manufacturing site. The transport distance for production waste is modelled using 525km between the production site and SSAB Raahe (SSAB internal recycling).

SSAB products are labeled to be easily identifiable and traceable. The packaging and protection type of SSAB steel products is specified when ordering. Steel bands or strappings, wood props, paper or plastic film, corner protection and other accessories supporting packaging are used as appropriate, depending on the protection needed. The precision tube bundles are fastened with strap bands.

LCA study for market-based country specific electricity mixes (Finland) based on electricity, medium voltage, residual mix (Ecoinvent 3.11) were used as energy sources profile. The use of energy has been optimized in steel product production.

TRANSPORT AND INSTALLATION (A4-A5)

This EPD does not cover the transportation impacts occurred from final products delivery to construction site (A4) or installation (A5). Installation contains only packaging waste impacts and has been declared in C-phase. Installation waste is handled by customers. Installation materials and energy consumption were not taken into account because installation situations vary case by case and are not managed by SSAB Europe Oy. Wooden and metal packing materials will be recycled as materials or used for energy recovery at the EOL stage (C1-C4).

PRODUCT USE AND MAINTENANCE (B1-B7)

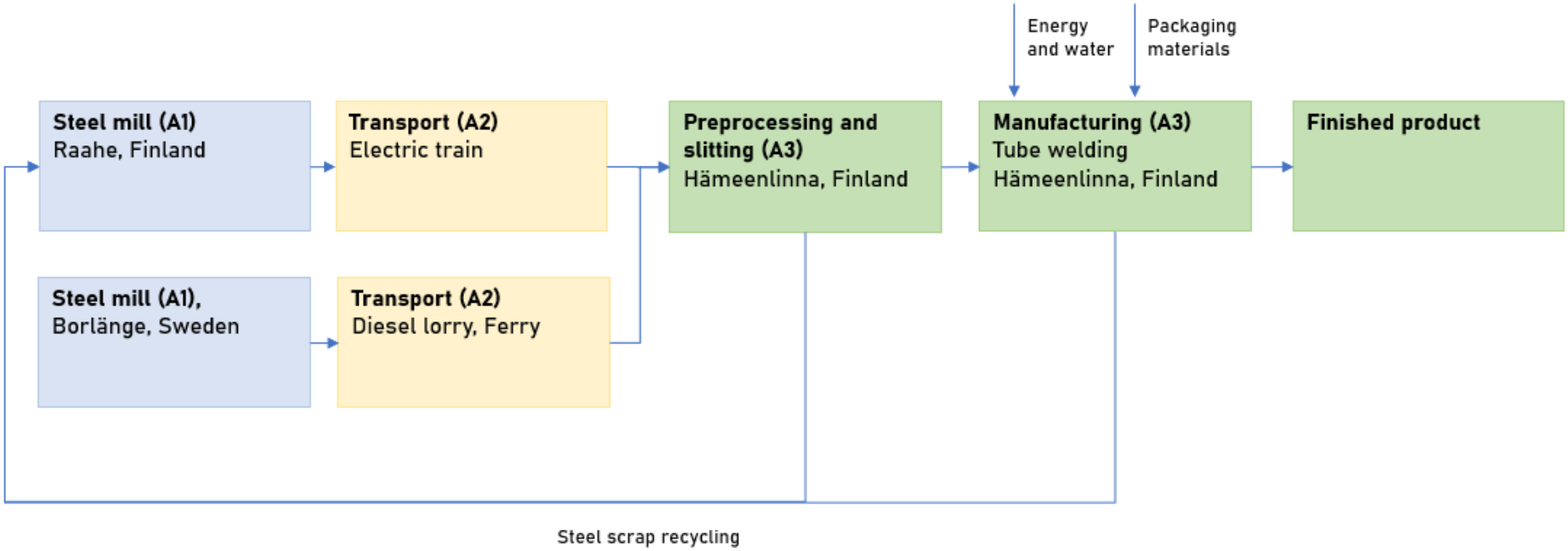
This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

This study considers that the Precision Tubes EoL are dismantled using machinery and separated from other construction waste. It is assumed that 100% of the products are collected (C1). Distance for transportation to treatment is assumed as 50 km to 250 km and the transportation method is assumed to be lorry (C2). End of life scenario for materials is modelled based on data of World Steel Association (2020). At EoL, 85% of the product's metal components are assumed to be recycled (C3) and 15% goes to landfill. Packaging components can be recycled as materials or utilized in energy production (plastic (62% recycled), wood (62% recycled) and metal materials (81% recycled) (Eurostat: https://ec.europa.eu/eurostat/web/main/home). Later reusable (D) metals and packaging materials are utilized to manufacture new products or are utilized as energy.

MANUFACTURING PROCESS

Hot rolled and cold rolled steel coils are shipped from SSAB Raahe or Borlänge directly to SSAB Hämeenlinna, where they are slit into narrower steel strip coils. Some amount of the steel is slitted already in SSAB Raahe. These slitted coils are then processed into precision tubes products.



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	Partly allocated by mass or volume
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 weighted total mass
Variation in GWP-fossil for A1-A3, %	-5,3%/+14,1%

The variation calculated for GWP-fossil in modules A1–A3 is -5,3%/+14,1%. The PTR HP Precision tubes exhibit the highest GWP-fossil values, while the PTR C Precision tubes show the lowest. This variation is primarily attributable to differences in steel grade used, transportation modes and the distances from raw material sources.

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'. EPD Hub Core PCR Version 1.2, 24 Mar 2025 and EN 17662 Execution of steel structures and aluminium structures have been followed.

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	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	2,40E+03	6,32E+00	7,91E+01	2,49E+03	3,61E+00	4,30E+01	2,18E+01	2,48E+00	-1,16E+03
GWP – fossil	kg CO_2e	2,40E+03	6,25E+00	7,88E+01	2,49E+03	3,60E+00	4,30E+01	1,93E+01	9,47E-01	-1,16E+03
GWP – biogenic	kg CO_2e	1,01E+00	4,92E-02	2,03E-01	1,26E+00	0,00E+00	9,39E-03	2,47E+00	1,53E+00	3,22E-02
GWP – LULUC	kg CO_2e	5,58E-01	1,59E-02	3,35E-02	6,07E-01	3,69E-04	1,90E-02	2,38E-02	5,42E-04	-1,38E-01
Ozone depletion pot.	kg CFC-$_{11}$e	9,98E-09	6,15E-08	1,34E-06	1,41E-06	5,52E-08	6,01E-07	2,59E-07	2,74E-08	-3,83E-06
Acidification potential	mol H^+e	5,23E+00	3,89E-02	3,14E-01	5,58E+00	3,25E-02	1,43E-01	2,29E-01	6,71E-03	-4,60E+00
EP-freshwater[2)]	kg Pe	8,94E-04	2,70E-03	4,39E-02	4,75E-02	1,04E-04	3,34E-03	1,24E-02	8,46E-05	-4,98E-01
EP-marine	kg Ne	1,49E+00	9,92E-03	2,47E-01	1,75E+00	1,51E-02	4,64E-02	5,08E-02	2,85E-03	-1,02E+00
EP-terrestrial	mol Ne	1,58E+01	1,04E-01	8,15E-01	1,67E+01	1,65E-01	5,05E-01	5,73E-01	2,80E-02	-1,12E+01
POCP ("smog")[3)]	kg NMVOCe	4,15E+00	3,24E-02	2,42E-01	4,43E+00	4,93E-02	2,00E-01	1,70E-01	1,00E-02	-3,81E+00
ADP-minerals & metals[4)]	kg Sbe	2,59E-02	2,21E-05	2,85E-04	2,62E-02	1,29E-06	1,41E-04	1,36E-03	1,51E-06	-1,13E-02
ADP-fossil resources	MJ	3,14E+04	8,37E+01	1,10E+03	3,26E+04	4,72E+01	6,03E+02	2,58E+02	2,32E+01	-1,06E+04
Water use[5)]	m^3e depr.	2,15E+02	1,89E+00	3,43E+02	5,60E+02	1,18E-01	2,80E+00	4,67E+00	6,74E-02	-1,94E+02

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterization 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	C1	C2	C3	C4	D
Particulate matter	Incidence	0,00E+00	3,86E-07	4,13E-06	4,52E-06	9,25E-07	3,41E-06	3,11E-06	1,53E-07	-7,69E-05
Ionizing radiation[6)]	kBq U235e	0,00E+00	6,60E-01	1,25E+01	1,31E+01	2,09E-02	4,88E-01	2,19E+00	1,47E-02	4,35E+01
Ecotoxicity (freshwater)	CTUe	0,00E+00	1,51E+02	2,20E+03	2,35E+03	2,60E+00	9,54E+01	1,51E+02	2,03E+00	-2,84E+03
Human toxicity, cancer	CTUh	0,00E+00	2,07E-09	1,97E-08	2,18E-08	3,71E-10	7,31E-09	1,72E-08	1,76E-10	-1,86E-07
Human tox. non-cancer	CTUh	0,00E+00	5,52E-08	1,35E-06	1,40E-06	5,87E-09	3,78E-07	1,17E-06	4,20E-09	-9,16E-06
SQP[7)]	-	0,00E+00	6,20E+01	7,48E+02	8,10E+02	3,30E+00	3,60E+02	5,03E+02	4,58E+01	-3,36E+03

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	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1,54E+03	1,01E+01	3,04E+02	1,85E+03	2,99E-01	8,27E+00	2,90E+01	-1,45E+01	-7,22E+02
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,69E+01	3,69E+01	0,00E+00	0,00E+00	-2,29E+01	-1,40E+01	1,86E+00
Total use of renew. PER	MJ	1,54E+03	1,01E+01	3,41E+02	1,89E+03	2,99E-01	8,27E+00	6,18E+00	-2,85E+01	-7,20E+02
Non-re. PER as energy	MJ	3,14E+04	8,37E+01	1,07E+03	3,25E+04	4,72E+01	6,03E+02	2,58E+02	2,32E+01	-1,06E+04
Non-re. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,20E-01
Total use of non-re. PER	MJ	3,14E+04	8,37E+01	1,07E+03	3,25E+04	4,72E+01	6,03E+02	2,58E+02	2,32E+01	-1,06E+04
Secondary materials	kg	5,39E+01	1,36E-01	4,09E-01	5,44E+01	1,96E-02	2,71E-01	3,15E-01	5,86E-03	6,41E+02
Renew. secondary fuels	MJ	5,05E-23	5,11E-04	1,46E-02	1,51E-02	5,12E-05	3,45E-03	1,46E-02	1,21E-04	-9,59E-02
Non-ren. secondary fuels	MJ	5,94E-22	0,00E+00	1,22E-01	1,22E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	9,43E+00	4,22E-02	3,77E-01	9,85E+00	3,12E-03	7,99E-02	1,37E-01	2,07E-02	-2,56E+00

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste	kg	1,72E-03	5,45E-01	7,05E+00	7,60E+00	5,25E-02	1,05E+00	1,69E+00	2,58E-02	-3,84E+02
Non-hazardous waste	kg	5,39E+01	1,44E+01	9,93E+03	1,00E+04	7,15E-01	1,97E+01	6,17E+01	4,90E+00	-2,99E+03
Radioactive waste	kg	9,85E-01	1,59E-04	2,91E-03	9,88E-01	5,12E-06	1,20E-04	5,61E-04	3,58E-06	1,13E-02

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	9,70E+03	9,70E+03	0,00E+00	0,00E+00	8,52E+02	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,90E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,66E+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	0,00E+00	1,54E+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	0,00E+00	2,12E+00	0,00E+00	0,00E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	2,40E+03	6,27E+00	7,88E+01	2,49E+03	3,61E+00	4,30E+01	1,93E+01	9,48E-01	-1,16E+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 characterization 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 characterization factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, residual mix, Finland, Ecoinvent 3.11
Electricity CO2e / kWh	0,71
District Heat	District Heat, Finland, 2023, Finland, One Click LCA
Heating CO2e / MJ	0,14
Diesel combusted in building machine, World, One Click LCA, kgCO2e/l	3,38

End-of-life scenario documentation - C1-C4 (Data source)

Scenario information	Value
Diesel, burned in building machine, Ecoinvent,	10 kWh
Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling	850 kg
Treatment of scrap steel, inert material landfill, Ecoinvent	150,2 kg
Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling,	0,74 kg
Treatment of waste wood, untreated, municipal incineration, Ecoinvent, Materials for energy recovery	0,69 kg
Exported Energy: Electricity, Ecoinvent	1,54 MJ
Exported Energy: Thermal, Ecoinvent	2,12 MJ
Treatment of waste wood, untreated, sanitary landfill, Ecoinvent,	0,87 kg
Treatment of metal scrap, mixed, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling	0,82 kg
Recycling or waste disposal transport	Transport is assumed to be 50 km or 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

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
23.03.2026