ENVIRONMENTAL PRODUCT DECLARATION

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

Sawn timber of spruce and pine
Stenvalls Trä AB

EPD HUB, HUB-0316
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Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Stenvalls Trä AB
Address	Lövholmsvägen 1, 941 51 Piteå
Contact details	info@stenvalls.se
Website	https://www.stenvalls.se/

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 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Daria Sas, iTid Tarinfo AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	H.N, as an authorized verifier acting for EPD Hub Limited

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	Sawn timber of spruce and pine
Place of production	Sweden, Sikfors
Period for data	2021
Averaging in EPD	Multiple factories
Variation in GWP-fossil for A1-A3	22 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m3
Declared unit mass	500 kg
GWP-fossil, A1-A3 (kgCO2e)	5,75E1
GWP-total, A1-A3 (kgCO2e)	-1,05E3
Secondary material, inputs (%)	0.00129
Secondary material, outputs (%)	100.0
Total energy use, A1-A3 (kWh)	2170.0
Total water use, A1-A3 (m3e)	0.354

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Stenvalls Trä AB is a family-owned company with roots in Sikfors since 1947. Today the company is owned and run by Anna Flink, Folke and Sven Stenvall who are the children of the founders Elof and Inger Stenvall. Stenvalls Trä currently has facilities in Sikfors, Piteå, Luleå, Örarna and Seskarö. The company has 270 employees and the annual turnover of 1.5 billion SEK. The annual production turnover is 480 000 m3 of sawn timber and large parts are further processed and delivered to customers. The customers are mainly based in Europe, with the Nordic region as the largest market, but wooden products are also shipped for instance to Japan.

PRODUCT DESCRIPTION

Sawn timber produced from softwood (pine and spruce) supplied exclusively from Norr- and Västerbotten in Sweden, and northern Finland. The softwood with average density of 500kg/m3 is sawn and dried in different dimensions as well as sorted based on strength classes. The sawn timber is delivered both to own planing mills for further processing but also to external customers as building material or to independent planing mills for processing.

Further information can be found at https://www.stenvalls.se/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	241.9
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m3
Mass per declared unit	500 kg
Reference service life	60

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		
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 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.

For this EPD the overall company level data (intake of timber, electricity, diesel, oil, package usage) was considered. Stenvalls Trä has sawmill and further processing facilities. The share between total received timber to sawmills are 90% of pine and 10% of spruce.

According to the Swedish wood organisation (Svenskt Trä) the dry density of spruce is stated at 370-440 kg/m3 and pine at 400-470 kg/m3. The density can vary within wide limits, and is affected, for example, by the climate. Generally, the density of pine grown in northern Sweden is higher than pines in the south. Typical value for dry wood is 510 kg/m 3. Source: Svensk Trä. For this EPD, the density of softwood (pine and spruce) 500 kg/m3 is considered.

The delivery target moisture content is approx. 18% for sawn timber and lower moisture content is allowed as well, according to EN 14298 – adapted to product and customer demand (Source: Svenskt Trä). For this EPD a moisture content of 16% is considered.

The use of packaging film (PE) and plastic straps (PET) were considered for this EPD as packaging and ancillary materials.

In Sweden all sawn timber is kiln dried. During the kiln drying process used water becomes vapour as direct emission. To produce the heat and power for the kiln dryer the wood chips generated on the site are used. The used oil for production line and machinery are in high degree re-used on the site for lubrication of conveyor belt.

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.

Stenvalls Trä has customers (suppliers of building material) around the world, for this EPD customers in Sweden, Norway, Denmark, England, and Japan are considered. The share of each customer is approximately 20% of total sales. The average transport distance on land (by lorry) and by see (ferry to England and container ship to Japan) were considered (A4).

There is no installation waste, but packaging materials are sent for recycling (100km) at this stage (PE and PET) (A5).

During the installation its assumed that diesel consumed by machinery (for example, forklift to unload products on the customer site) (A5).

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)

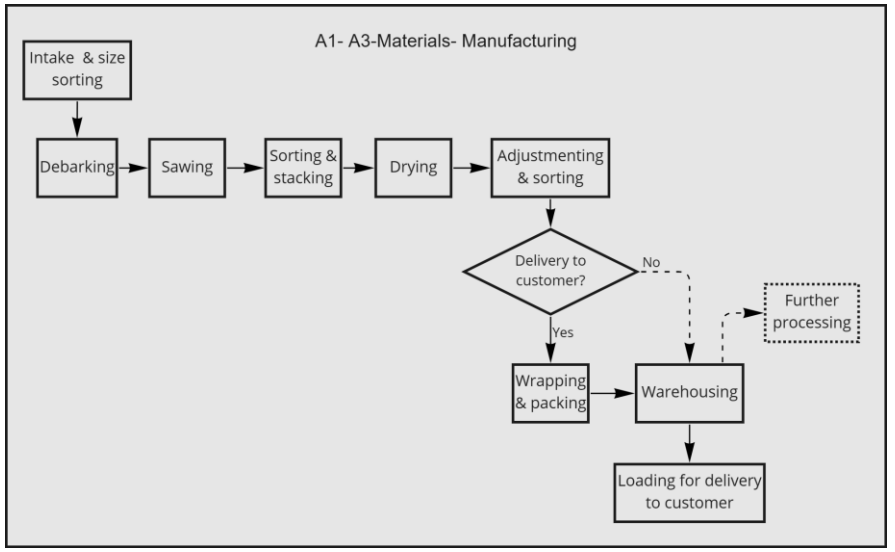
In the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. The demolition consumes energy in the form of diesel fuel used by building machines (C1).

The dismantled timber is transported to the nearest treatment facilities (C2).

As such, there are no specific emissions in the later phase that relate to waste separation. It is assumed that 100% of the product reaching end of life stage is recycled (C3, C4).

Due to the recycling potential of wood, it can be used as secondary material and as energy production from the combustion of wood (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.

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	Allocated by revenue
Packaging materials	Allocated by revenue
Ancillary materials	Allocated by revenue
Manufacturing energy and waste	Allocated by revenue

AVERAGES AND VARIABILITY

Type of average	Multiple factories
Averaging method	Averaged by shares of total volume
Variation in GWP-fossil for A1-A3	22 %

The averaging has been done through multiple factories based on volume of the production.

The calculations of the variation in GWP fossil for modules A1-A3 based on GWP fossil (A1-A3) from all 4 sites.

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. Ecoinvent 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 – total[1)]	kg CO_2e	-1,1E3	1,51E1	3,13E1	-1,05E3	1,32E2	1,77E0	MND	MND	MND	MND	MND	MND	MND	1,65E0	6,62E0	0E0	0E0	2,04E1
GWP – fossil	kg CO_2e	1,38E1	1,51E1	2,86E1	5,75E1	1,33E2	1,75E0	MND	MND	MND	MND	MND	MND	MND	1,65E0	6,62E0	0E0	0E0	-8,95E0
GWP – biogenic	kg CO_2e	-1,11E3	4,6E-2	2,43E0	-1,11E3	4,66E-2	1,07E-2	MND	MND	MND	MND	MND	MND	MND	4,58E-4	3E-3	0E0	0E0	2,94E1
GWP – LULUC	kg CO_2e	3,9E-1	1,09E-2	3,59E-1	7,59E-1	5,69E-2	2,34E-4	MND	MND	MND	MND	MND	MND	MND	1,39E-4	2,44E-3	0E0	0E0	-1,54E-2
Ozone depletion pot.	kg $CFC_{-11}e$	2,75E-6	2,86E-6	8,17E-6	1,38E-5	2,94E-5	3,67E-7	MND	MND	MND	MND	MND	MND	MND	3,56E-7	1,45E-6	0E0	0E0	-6,14E-7
Acidification potential	mol H^+e	7,83E-2	9,38E-2	7,97E-1	9,69E-1	1,29E0	1,77E-2	MND	MND	MND	MND	MND	MND	MND	1,72E-2	2,77E-2	0E0	0E0	-3,19E-2
EP-freshwater[2)]	kg Pe	2,52E-3	3,68E-4	1,36E-2	1,65E-2	1E-3	9,17E-6	MND	MND	MND	MND	MND	MND	MND	6,66E-6	6,61E-5	0E0	0E0	-4,76E-4
EP-marine	kg Ne	2,93E-2	3,12E-2	2,36E-1	2,97E-1	3,04E-1	7,75E-3	MND	MND	MND	MND	MND	MND	MND	7,61E-3	8,04E-3	0E0	0E0	-1,28E-3
EP-terrestrial	mol Ne	3,04E-1	3,45E-1	3,81E0	4,46E0	3,38E0	8,49E-2	MND	MND	MND	MND	MND	MND	MND	8,35E-2	8,89E-2	0E0	0E0	-1,79E-2
POCP ("smog")[3)]	kg NMVOCe	1,44E-1	9,95E-2	6,84E-1	9,27E-1	9,54E-1	2,34E-2	MND	MND	MND	MND	MND	MND	MND	2,3E-2	2,78E-2	0E0	0E0	-6,42E-3
ADP-minerals & metals[4)]	kg Sbe	1,42E-4	1,94E-4	3,83E-4	7,19E-4	3,04E-3	4,35E-6	MND	MND	MND	MND	MND	MND	MND	2,52E-6	1,61E-4	0E0	0E0	-1,79E-4
ADP-fossil resources	MJ	1,94E2	2,29E2	5,21E2	9,43E2	1,93E3	2,42E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	0E0	0E0	-1,43E2
Water use[5)]	m^3e depr.	1,89E0	1,59E0	6,36E0	9,84E0	5,84E0	7,26E-2	MND	MND	MND	MND	MND	MND	MND	4,23E-2	4,09E-1	0E0	0E0	-1,49E0

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	7,53E2	1,05E1	6,13E3	6,9E3	2,47E1	1,87E-1	MND	MND	MND	MND	MND	MND	MND	1,23E-1	1,13E0	0E0	0E0	-6,23E-1
Renew. PER as material	MJ	1,18E4	0E0	0E0	1,18E4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-9,31E3	0E0	9,29E3
Total use of renew. PER	MJ	1,26E4	1,05E1	6,13E3	1,87E4	2,47E1	1,87E-1	MND	MND	MND	MND	MND	MND	MND	1,23E-1	1,13E0	-9,31E3	0E0	9,29E3
Non-re. PER as energy	MJ	1,94E2	2,29E2	5,03E2	9,25E2	1,93E3	2,42E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	0E0	0E0	-1,25E2
Non-re. PER as material	MJ	0E0	0E0	1,78E1	1,78E1	0E0	-6,45E1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	4,67E1
Total use of non-re. PER	MJ	1,94E2	2,29E2	5,21E2	9,43E2	1,93E3	-4,03E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	0E0	0E0	-7,86E1
Secondary materials	kg	0E0	0E0	6,46E-3	6,46E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-5E2
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m^3	9,77E-2	6,23E-2	1,94E-1	0.354	3,03E-1	2,37E-3	MND	MND	MND	MND	MND	MND	MND	2E-3	1,89E-2	0E0	0E0	-4,54E-2

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	4,69E-1	5,73E-1	1,05E0	2,09E0	2,03E0	3,2E-2	MND	MND	MND	MND	MND	MND	MND	2,44E-2	1,3E-1	0E0	0E0	-6,95E-1
Non-hazardous waste	kg	8,66E0	2,78E1	2,85E1	6,49E1	1,15E2	4,56E-1	MND	MND	MND	MND	MND	MND	MND	2,61E-1	8,81E0	0E0	0E0	-2,54E1
Radioactive waste	kg	1,27E-3	1,47E-3	4,49E-3	7,23E-3	1,33E-2	1,64E-4	MND	MND	MND	MND	MND	MND	MND	1,59E-4	6,54E-4	0E0	0E0	-4,69E-4

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	0E0	0E0	5,62E-2	5,62E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	7,8E-1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	1E3	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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	1,4E1	1,49E1	2,86E1	5,76E1	1,32E2	1,74E0	MND	MND	MND	MND	MND	MND	MND	1,64E0	6,55E0	0E0	0E0	-8,64E0
Ozone depletion Pot.	kg CFC_{-11}e	2,22E-6	2,34E-6	8E-6	1,26E-5	2,33E-5	2,91E-7	MND	MND	MND	MND	MND	MND	MND	2,82E-7	1,15E-6	0E0	0E0	-5,65E-7
Acidification	kg SO_2e	4,62E-2	6,1E-2	4,75E-1	5,83E-1	1E0	2,79E-3	MND	MND	MND	MND	MND	MND	MND	2,43E-3	2,01E-2	0E0	0E0	-4,45E-2
Eutrophication	kg PO_4^3e	2,25E-2	1,95E-2	1,62E-1	2,04E-1	1,31E-1	1,02E-3	MND	MND	MND	MND	MND	MND	MND	4,29E-4	4,61E-3	0E0	0E0	-1,78E-2
POCP (“smog”)	kg C_2H_4e	1,33E-2	2,66E-3	1,82E-2	3,42E-2	3,29E-2	2,83E-4	MND	MND	MND	MND	MND	MND	MND	2,51E-4	8,7E-4	0E0	0E0	-1,64E-3
ADP-elements	kg Sbe	1,42E-4	1,94E-4	3,83E-4	7,19E-4	3,04E-3	4,35E-6	MND	MND	MND	MND	MND	MND	MND	2,52E-6	1,61E-4	0E0	0E0	-1,79E-4
ADP-fossil	MJ	1,94E2	2,29E2	5,21E2	9,43E2	1,93E3	2,42E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	0E0	0E0	-1,43E2

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.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
17.02.2023

VERIFIED ISO 14025