

# ENVIRONMENTAL PRODUCT DECLARATION

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

Roofing boards  
Stenvalls Trä AB



**EPD HUB, HUB-0359**

Publishing date 27 March 2023, last updated date 27 March 2023, valid until 27 March 2028

## 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: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> 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	Roofing boards
Additional labels	-
Product reference	-
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	501.72 kg
GWP-fossil, A1-A3 (kgCO2e)	7,87E1
GWP-total, A1-A3 (kgCO2e)	-1,2E3
Secondary material, inputs (%)	0.0766
Secondary material, outputs (%)	0.0002
Total energy use, A1-A3 (kWh)	2590.0
Total water use, A1-A3 (m3e)	0.523

## 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, Örnarna 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 to Japan.

### PRODUCT DESCRIPTION

Roofing boards 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 roofing boards are made of tongue and groove panels with staples and nails in the sides and glue in the end. The panel is safe to walk on. Roofing boards have a high quality and excellent mounting possibilities.

The product is certified according to the following three organizations: 1) Forest Stewardship Council (FSC): Certificate codes: DNV-COC-000005 and DNV-CW-000005. Valid until 31.10.2027. 2) Programme for the Endorsement of Forest Certification (PEFC) Certificate code: 2020-SKM-PEFC-320. Valid until: 20.05.2025 Certificate code: DNVSE-PEFC-COC-70. Valid until: 06.03.2024 3) ISO 9001:2015. Certificate code: 2007-SKM-AQ-2429. Valid until: 31.12.2024.

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	-345.6
Biogenic carbon content in packaging, kg C	-

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m3
Mass per declared unit	501.72 kg
Functional unit	-
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 like planing.

For this EPD, planed softwood with density of 500 kg/m<sup>3</sup> is considered as input.

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.

For manufacturing of roofing board, the planed boards are glued and nailed which are considered in A1 raw materials, since both glue and nails are the part of the final product.

The use of fibre reinforced plastic (FRP) is considered for 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.

Stenvalls Trä has customers (suppliers of building material) around the world, for this EPD customers in 5 locations in Sweden. The share of each customer is approximately 20% of total sales. The average transport distance on land (by lorry) were considered. (A4)

There is no installation waste, but packaging materials are sent for recycling (100km) at this stage (FRP) (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)

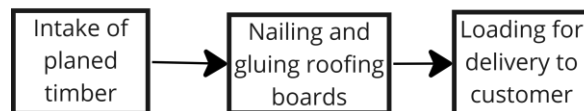
In the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. the demolition consumes energy in the form of diesel fuel used by building machines (C1).

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

Due to limited recycling potential of glued and nailed wood, it can be used as secondary material by removing nails which can be recycled and removing glue which is disposal (C3, C4)

## MANUFACTURING PROCESS

### A1- A3-Materials- Manufacturing



## 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 <sup>1)</sup>	kg CO <sub>2</sub> e	-1,2E3	2,86E-1	4,03E0	-1,2E3	2,96E1	1,78E0	MND	MND	MND	MND	MND	MND	MND	1,65E0	6,62E0	1,28E3	2,3E-1	0E0
GWP – fossil	kg CO <sub>2</sub> e	7,43E1	2,86E-1	4,03E0	7,87E1	2,99E1	1,77E0	MND	MND	MND	MND	MND	MND	MND	1,65E0	6,62E0	3,8E-2	9,39E-2	-1,06E1
GWP – biogenic	kg CO <sub>2</sub> e	-1,28E3	2,08E-4	-3,06E-3	-1,28E3	1,36E-2	7,46E-3	MND	MND	MND	MND	MND	MND	MND	4,58E-4	3E-3	1,28E3	1,36E-1	-3,74E2
GWP – LULUC	kg CO <sub>2</sub> e	9,4E-1	8,6E-5	4,75E-3	9,44E-1	1,68E-2	2,5E-4	MND	MND	MND	MND	MND	MND	MND	1,39E-4	2,44E-3	4,31E-5	1,5E-6	-1,53E-2
Ozone depletion pot.	kg CFC-11e	1,71E-5	6,72E-8	1,01E-7	1,73E-5	6,39E-6	3,69E-7	MND	MND	MND	MND	MND	MND	MND	3,56E-7	1,45E-6	5,46E-9	7,57E-10	-6,68E-7
Acidification potential	mol H <sup>+</sup> e	1,16E0	1,2E-3	1,67E-2	1,18E0	1,18E-1	1,78E-2	MND	MND	MND	MND	MND	MND	MND	1,72E-2	2,77E-2	4,61E-4	5,55E-5	-3,83E-2
EP-freshwater <sup>2)</sup>	kg Pe	1,76E-4	2,33E-6	5,34E-5	2,32E-4	3,52E-4	9,42E-6	MND	MND	MND	MND	MND	MND	MND	6,66E-6	6,61E-5	2,62E-6	1,02E-7	-5,62E-4
EP-marine	kg Ne	3,55E-1	3,62E-4	5,22E-3	3,6E-1	3,15E-2	7,77E-3	MND	MND	MND	MND	MND	MND	MND	7,61E-3	8,04E-3	1,02E-4	2,4E-5	-2,64E-3
EP-terrestrial	mol Ne	5,28E0	4E-3	2,73E-2	5,31E0	3,5E-1	8,51E-2	MND	MND	MND	MND	MND	MND	MND	8,35E-2	8,89E-2	1,18E-3	2,47E-4	-3,2E-2
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	1,12E0	1,28E-3	9,33E-3	1,13E0	1,09E-1	2,35E-2	MND	MND	MND	MND	MND	MND	MND	2,3E-2	2,78E-2	3,22E-4	6,14E-5	-1,6E-2
ADP-minerals & metals <sup>4)</sup>	kg Sbe	9,04E-4	4,88E-6	1,32E-5	9,23E-4	1,47E-3	4,62E-6	MND	MND	MND	MND	MND	MND	MND	2,52E-6	1,61E-4	2,1E-6	5,8E-8	-1,75E-4
ADP-fossil resources	MJ	1,3E3	4,45E0	6,59E1	1,37E3	4,42E2	2,44E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	5,26E-1	5,87E-2	-1,36E2
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	1,62E1	1,65E-2	3,46E0	1,97E1	1,83E0	7,75E-2	MND	MND	MND	MND	MND	MND	MND	4,23E-2	4,09E-1	7,47E-3	1,23E-2	-1,32E0

## 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 <sup>6)</sup>	MJ	8E3	5,6E-2	5,53E0	8,01E3	9,5E0	1,96E-1	MND	MND	MND	MND	MND	MND	MND	1,23E-1	1,13E0	8,26E-2	1,94E-3	-3,12E-1
Renew. PER as material	MJ	1,36E4	0E0	0E0	1,36E4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-1,36E4	0E0	1,36E4
Total use of renew. PER	MJ	2,16E4	5,6E-2	5,53E0	2,16E4	9,5E0	1,96E-1	MND	MND	MND	MND	MND	MND	MND	1,23E-1	1,13E0	-1,36E4	1,94E-3	1,36E4
Non-re. PER as energy	MJ	1,26E3	4,45E0	6,59E1	1,33E3	4,42E2	2,44E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	5,26E-1	5,87E-2	-1,36E2
Non-re. PER as material	MJ	3,73E1	0E0	1,44E1	5,17E1	0E0	-1,44E1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	-4,58E0	1,44E1
Total use of non-re. PER	MJ	1,3E3	4,45E0	8,03E1	1,39E3	4,42E2	9,99E0	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	5,26E-1	-4,52E0	-1,21E2
Secondary materials	kg	3,8E-1	0E0	2,98E-3	3,83E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-4,99E2
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 <sup>3</sup>	4,68E-1	9,26E-4	5,38E-2	0,523	8,09E-2	2,42E-3	MND	MND	MND	MND	MND	MND	MND	2E-3	1,89E-2	2,15E-4	2,91E-4	-5,89E-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	3,2E0	4,32E-3	7,88E-2	3,28E0	6,35E-1	3,31E-2	MND	MND	MND	MND	MND	MND	MND	2,44E-2	1,3E-1	0E0	6,54E-3	-9,56E-1
Non-hazardous waste	kg	8,67E1	4,78E-1	1,92E0	8,91E1	2,77E1	4,83E-1	MND	MND	MND	MND	MND	MND	MND	2,61E-1	8,81E0	0E0	1,74E-1	-2,84E1
Radioactive waste	kg	1,02E-2	3,05E-5	1,53E-4	1,04E-2	2,94E-3	1,65E-4	MND	MND	MND	MND	MND	MND	MND	1,59E-4	6,54E-4	0E0	2,03E-7	-4,57E-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	9,68E-2	0E0	2,5E-3	9,93E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	9E-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 <sub>2</sub> e	7,43E1	2,83E-1	3,83E0	7,84E1	2,96E1	1,76E0	MND	MND	MND	MND	MND	MND	MND	1,64E0	6,55E0	3,74E-2	9,38E-2	-1,02E1
Ozone depletion Pot.	kg CFC-11e	1,59E-5	5,34E-8	1,17E-7	1,6E-5	5,11E-6	2,92E-7	MND	MND	MND	MND	MND	MND	MND	2,82E-7	1,15E-6	4,63E-9	7,39E-10	-6,13E-7
Acidification	kg SO <sub>2</sub> e	6,96E-1	5,82E-4	1,43E-2	7,11E-1	6,54E-2	2,87E-3	MND	MND	MND	MND	MND	MND	MND	2,43E-3	2,01E-2	2,86E-4	4E-5	-4,94E-2
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	2,46E-1	1,17E-4	3,46E-3	2,5E-1	1,57E-2	1,19E-3	MND	MND	MND	MND	MND	MND	MND	4,29E-4	4,61E-3	1,17E-4	5,19E-5	-2,15E-2
POCP (“smog”)	kg C <sub>2</sub> H <sub>4</sub> e	4,25E-2	3,69E-5	6,85E-4	4,32E-2	4,27E-3	2,88E-4	MND	MND	MND	MND	MND	MND	MND	2,51E-4	8,7E-4	1,34E-5	1,07E-6	-3,19E-3
ADP-elements	kg Sbe	9,04E-4	4,88E-6	1,32E-5	9,23E-4	1,47E-3	4,62E-6	MND	MND	MND	MND	MND	MND	MND	2,52E-6	1,61E-4	2,1E-6	5,8E-8	-1,75E-4
ADP-fossil	MJ	1,3E3	4,45E0	6,59E1	1,37E3	4,42E2	2,44E1	MND	MND	MND	MND	MND	MND	MND	2,27E1	9,88E1	5,26E-1	5,87E-2	-1,36E2



## 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  
24.03.2023

