

# Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## Construction plywood sheets

EPD of multiple products, based on the average results of the product group  
from

**Bo Andrén AB**



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

The International EPD® System, [www.environdec.com](http://www.environdec.com)

EPD International AB

S-P-13607

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*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

### Accountabilities for PCR, LCA and independent, third-party verification

#### Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): Round and sawn timber – Environmental Product Declarations – Product category rules for wood and wood-based products for use in construction, EN 16485:2014, Version 1, and Construction Products 2019:14, Version 1.3.2 and EN 15804:2012+ A2:2019 Sustainability of Construction Works

PCR review was conducted by: The Technical Committee on the International EPD® System.  
Contact via [www.environdec.com](http://www.environdec.com) [info@environdec.com](mailto:info@environdec.com)

#### Life Cycle Assessment (LCA)

LCA accountability: Kristin Fransson and Jacob Näslund, AFRY, [www.afry.com](http://www.afry.com)

#### Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by individual verifier

Third-party verifier: Martyna Mikusinska, Sweco

Approved by: The International EPD® System

OR

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes  No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

### Owner of the EPD:

Bo Andrén AB  
Box 4018, SE- 195 04 Rosersberg  
Järngatan 19, SE- 195 72 Rosersberg  
<https://boandren.se>

### Contact:

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+46(0) 0-6234101

### Description of the organisation:

Bo Andrén AB (BOA) is a Swedish family-owned company whose journey started back in 1942. For over 80 years, we have worked to find the right building boards from the best producers around the world. We carefully select quality products for our wide range that fit into our sustainability line for a non-toxic, responsible and sustainable construction industry. With the customer in focus and with the most up-to-date logistics, we are one of the leading suppliers of building boards in Sweden.

### Product-related or management system-related certifications:

ISO 14001:2015; ISO 9001:2015; FSC 100%; FSC Mix Credit

### Name and location of production sites:

Somapar - Paraná – Brazil  
Palmasola - Santa Catarina - Brazil  
Tableros – Paraná - Brazil

## Product information

### Product name:

Konstruktionsplywood WBP-limmad CE2+  
Trossbottenplywood WBP-limmad CE2+  
Furuplywood WBP-limmad CE2+

### Product identification:

#### GTIN:

12011243	7330822120918	Konstruktionsplywood CE2+ C+/C 5ply 12x2500x1200
12011284	7330822120871	Konstruktionsplywood CE2+ C+/C 7ply 12x2500x1200
12011292	7330822120789	Konstruktionsplywood CE2+ C+/C 5ply 12x2500x898
12011289	7330822120666	Konstruktionsplywood CE2+ C+/C 7ply 12x2500x898
12011543	7330822120925	Konstruktionsplywood CE2+ C+/C 5ply 15x2500x1200
12011584	7330822120888	Konstruktionsplywood CE2+ C+/C 7ply 15x2500x1200
12011592	7330822120772	Konstruktionsplywood CE2+ C+/C 5ply 15x2500x898
12011589	7330822120659	Konstruktionsplywood CE2+ C+/C 7ply 15x2500x898
12011843	7330822120956	Konstruktionsplywood CE2+ C+/C 9ply 18x2500x1200
12012143	7330822120963	Konstruktionsplywood CE2+ C+/C 9ply 21x2500x1200
12011247	7330822121038	Konstruktionsplywood CE2+ C+/C Ergo 6ply 12x2400x618
12011246	7330822120949	Konstruktionsplywood CE2+ C+/C Ergo 5ply 12x2400x618

12011547	7330822121045	Konstruktionsplywood CE2+ C+/C Ergo 6ply 15x2400x618
12011546	7330822120932	Konstruktionsplywood CE2+ C+/C Ergo 5ply 15x2400x618
12019552	7330822120765	Trossbottenplywood CE2+ 5ply träskyddsbeh 9x550x1200
1408127	7330822121052	Furuplywood CE2+ 5-ply A/C 12x2500x1200
1408128	7330822140725	Furuplywood CE2+ 7-ply A/C 12x2500x1200
1408157	7330822121069	Furuplywood CE2+ 5-ply A/C 15x2500x1200
1408158	7330822120796	Furuplywood CE2+ 7-ply A/C 15x2500x1200

#### Product description:

Board for wall, ceiling and floor constructions. Plank around construction sites, for footbridges and work platforms and packaging. The board can firmly be attachable with screws and fits perfectly behind gypsum board for better attachment of suspensions. Plywood is made from several thinner veneer layers glued together crosswise. The veneer is usually turned from logs. The veneers are then sorted by size and quality and stacked in preparation for drying. The drying process typically involves using kilns or other heat sources to remove the moisture from the wood. The sheets are pressed under high pressure and high heat into a finished product. Included in the EPD are three products, konstruktionsplywood, furuplywood, and trossbottenplywood. The difference between the products is that trossbottenplywood additionally contains fungicides, and trossbottenplywood contains a WBP-glue.

#### UN CPC code:

4412390010 – Other plywood, veneered panels and similar laminated wood, of coniferous wood.

#### Geographical scope:

Raw materials and components (A1) stems from Brazilian suppliers. The manufacturing of the final product (A3) is made in Brazil. The end-of-life (C1-C4) takes place in Sweden.

### **LCA information**

This EPD is an EPD of multiple products, based on the average results of the product group

#### Functional unit / declared unit:

1 m<sup>3</sup>

#### Conversion factor to mass:

1kg = 0.0017 m<sup>3</sup>

#### Reference service life:

No RSL is declared.

#### Allocation:

Materials and energy use for Tableros, Somapar, and Palmasola were allocated based on finished product volumes. Allocations were made for various input factors, including raw materials, energy use, and wastes. The volume of plywood sheets produced by each manufacturing company determined the allocation. For the year 2022, input materials were divided by the output of finished sheets to present the materials needed per m<sup>3</sup> of finished plywood sheets.

The "polluter pays principle" has been used to allocate recycled materials in accordance with the standards used. The recycling of materials does not imply benefits for the system, and the effects of using recycled materials do not have a negative impact on the results, but rather an environmental gain.

Cut-off criteria:

The study followed the cut-off criteria specified in EN 15804. All inputs and outputs were included in the calculations when data was available. Two materials have been excluded from the study, the "saw" and "sandpaper" used in Palmasola's manufacturing. Since the amount of sandpaper and saw represent less than 5% of the total weight and no suitable data sets have been found these materials have been excluded. The fact that they correspond to an insubstantial share of the total weight suggests that the cut-off is in line with the 95% cut-off rule, that is specified in the standard.

Infrastructure and capital goods for upstream, core and downstream processes have been excluded from the study.

Time representativeness:

The information underlying this EPD is taken from the reference year 2022, taking into account inputs and outputs for the whole calendar year.

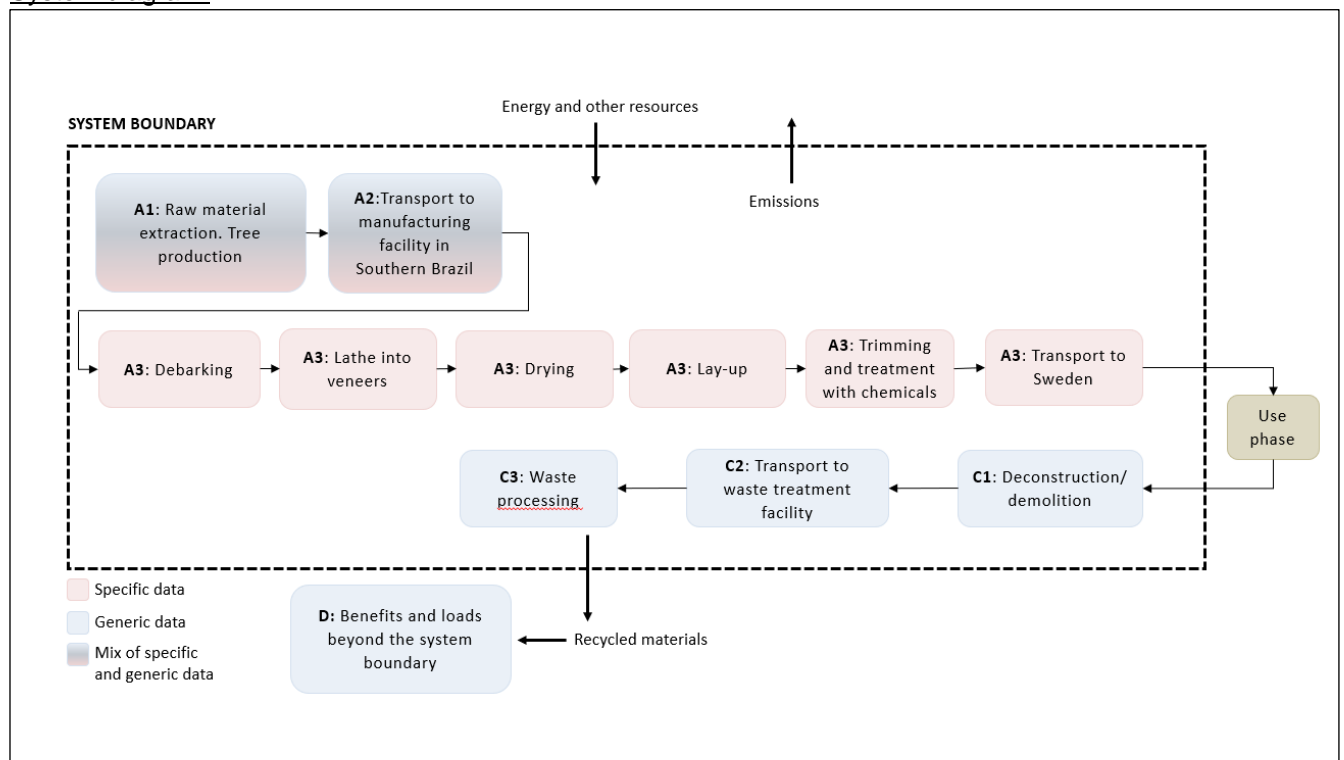
Database(s) and LCA software used:

Ecoinvent 3.9.1 and SimaPro 9.5.0.0

Description of system boundaries:

Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

System diagram:



Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	BR	BR	GLO										SE	SE	SE	SE	SE
Specific data used	27 % of the total GWP-GHG impact stems from specific data					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	48% variation in GWP-GHG impact between the manufacturing sites					-	-	-	-	-	-	-	-	-	-	-	-

### A1: Raw Material

This stage includes raw material extraction and production of bought components.

### A2: Transport

This stage includes transportation of raw materials to production sites and of components to final site of assembly.

### A3: Manufacturing

This stage includes resource use in the manufacturing facilities in southern Brazil such as use of energy. It also includes treatment of waste generated from the manufacturing processes and transports of the finished products to Sweden. Data from the full year of 2022 has been used in the calculations.

The climate impact of the national electricity mix is 167 gCO<sub>2</sub>-eq/kWh.

The climate impact of the hydropower electricity is 82 gCO<sub>2</sub>-eq/kWh.

### C1: Deconstruction

This stage includes impacts from energy use related to deconstruction of the fire damper.

### C2: Waste Transport

Includes the transportation of the discarded product to a waste treatment facility. 100 km transportation is assumed.

**C3: Crushing, site operation and wood combustion**

This stage includes sorting of waste and the waste disposal processes i.e. incineration. Incineration is assumed for all of the used plywood sheets.

**C4**

As specified in EN 16485:2014, this module does not imply any impact

**D: Benefits and loads outside the system boundary**

This stage includes benefits and burdens associated with recovery/recycling that affects future life cycles. For this product it includes benefits from the recycling of metals, as well as energy recovery from waste incineration.

## Content information for 1 m<sup>3</sup> average product

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/m <sup>3</sup>
Wood	529.9		100% and 260 kg C/m <sup>3</sup>
Phenolic Bonding Resin	30.1		
Wheat Flour	17.6		100% and 6.9 kg C/m <sup>3</sup>
Filler	8.9		
Alkyd Coating*	0.23		
Fungicide*	0.027		
TOTAL	587		
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Steel straps	0.6	0.1%	
TOTAL	0.6		

\* Chemicals only added to trossbottenplywood, GTIN: 7330822120765

No substances that appear in the REACH Candidate List of Substances of Very High Concern (SVHC) are present or used in the product.



## Results of the environmental performance indicators

### Mandatory impact category indicators according to EN 15804

Results per m <sup>3</sup> plywood sheets							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	9.02E+02	0.00E+00	1.09E+01	1.68E+01	0.00E+00	-9.88E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	-1.27E+03	0.00E+00	1.00E-02	1.67E+03	0.00E+00	-5.03E-01
GWP-luluc	kg CO <sub>2</sub> eq.	1.36E+01	0.00E+00	5.40E-03	1.84E-02	0.00E+00	-9.49E-01
GWP-total	kg CO <sub>2</sub> eq.	-3.50E+02	0.00E+00	1.09E+01	1.69E+03	0.00E+00	-1.13E+01
ODP	kg CFC 11 eq.	1.95E-05	0.00E+00	2.38E-07	2.22E-07	0.00E+00	-9.45E-07
AP	mol H <sup>+</sup> eq.	7.58E+00	0.00E+00	2.39E-02	1.34E-01	0.00E+00	-2.17E-01
EP-freshwater	kg P eq.	1.40E-01	0.00E+00	7.77E-04	7.92E-03	0.00E+00	-2.87E-03
EP-marine	kg N eq.	3.23E+00	0.00E+00	6.03E-03	5.85E-02	0.00E+00	-6.71E-02
EP-terrestrial	mol N eq.	3.44E+01	0.00E+00	6.13E-02	5.66E-01	0.00E+00	-1.02E+00
POCP	kg NMVOC eq.	1.06E+01	0.00E+00	3.71E-02	1.47E-01	0.00E+00	-1.83E-01
ADP-minerals&metals*	kg Sb eq.	1.99E-03	0.00E+00	3.57E-05	2.67E-05	0.00E+00	-4.71E-05
ADP-fossil*	MJ	1.36E+04	0.00E+00	1.55E+02	1.85E+02	0.00E+00	-1.60E+03
WDP*	m <sup>3</sup>	3.05E+02	0.00E+00	6.40E-01	-5.51E+00	0.00E+00	-1.89E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption						

**The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.**

*\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

*The use of the results of modules A1-A3 without considering the results of module C is discouraged.*

## Additional mandatory and voluntary impact category indicators

Results per m <sup>3</sup> plywood sheets							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	9.16E+02	0.00E+00	1.09E+01	1.68E+01	0.00E+00	-1.08E+01

## Resource use indicators

Results per m <sup>3</sup> plywood sheets							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	8.38E+04	0.00E+00	2.44E+00	1.68E+01	0.00E+00	-1.56E+03
PERM	MJ	2.90E+04	-2.90E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.13E+05	-2.90E+04	2.44E+00	1.68E+01	0.00E+00	-1.56E+03
PENRE	MJ	1.45E+04	0.00E+00	1.65E+02	1.98E+02	0.00E+00	0.00E+00
PENRM	MJ	1.63E+03	-1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.61E+04	-1.63E+03	1.65E+02	1.98E+02	0.00E+00	0.00E+00
SM	kg	8.52E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m <sup>3</sup>	1.07E+01	0.00E+00	2.54E-02	1.90E-01	0.00E+00	-4.20E-01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

<sup>1</sup> This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO<sub>2</sub> is set to zero.

## Waste indicators

Results per 1 m <sup>3</sup> plywood sheets							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## Output flow indicators

Results per 1 m <sup>3</sup> plywood sheets						
Indicator	Unit	A1-A3	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	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	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## Additional environmental information

BOA has an active sustainability profile. We are keen to make continuous improvements in all parts of our business. We have been certified by ISO 14001:2015 and ISO 9001:2015 since 2009. BOA is certified by FSC and PEFC since 2014. Traceability of our products are very important for us. Through risk assessments, third-party certifications and ongoing controls, BOA can thus ensure that wood raw material comes from responsibly used forests where reforestation is an important part of production.

We are only working with suppliers that reach our highly placed targets when it comes to environment such as chemical content in our construction boards. Our products are registered in different databases that carry out environmental assessments. This makes it easier for our customers to choose boards which has a good environmental profile when the information is accessible on the market.

Several of our suppliers are located in Brazil, a country that possess rainforest with high biodiversity values. We work with serious and responsible producers who can guarantee the origin of the wood through traceability certification. Our products come from the south part of Brazil and does not contain any wood from the rainforest. To make sure we are contributing to a sustainable forestry we are supporting the organisation "Rädda Regnskogen". They assure the rainforest is kept untouched by buying land, to prevent further deforestation of rainforests.

At BOA we take responsibility for our emissions related to our transportation of products. We are doing this by investing in environmentally friendly fuels, in this case biofuels and natural gas for our transport by boat with one of our carriers. The remaining emissions from boat travel is climate compensated through investigating in projects outside our operational boundaries. Transport by train is also something we prioritize. That is why our boards are transported from Gävle harbour all the way to our headquarters by train.

## Additional social and economic information

For BOA it's very important to stand for safe and just working conditions for everyone working for us and our suppliers. We want our suppliers to have the same values as we have, for example working for gender equality. All our suppliers need to sign our code of conduct before we can begin any collaboration of any kind. We also regularly visit our suppliers to make sure they work accordingly.

## References

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Ecoinvent v.3. Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B. (2016): The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at: <<http://link.springer.com/10.1007/s11367-016-1087-8>>

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SimaPro. SimaPro LCA Package, Pré Consultants, the Netherlands, [www.pre-sustainability.com](http://www.pre-sustainability.com)

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