

# Environmental Product Declaration

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

## Tantimber Thermowood®

from

**Tanwood Orman Ürünleri San. Tic. A.Ş.**



THE INTERNATIONAL EPD® SYSTEM



TÜRKİYE

THE INTERNATIONAL EPD® SYSTEM

Programme:

Programme operator:

Local operator:

EPD registration number:

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

EPD International AB

EPD Türkiye

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This environmental product declaration has been produced for Tantimber Thermowood®  
in accordance with ISO 14025 and EN 15804:2012 + A2:2019/AC:2021.

**WOOD.  
REFINED.  
REDEFINED.**

*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>Local operator:</b>	EPD Türkiye, managed and run by: SÜRATAM A.S
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden	<b>Address:</b>	Nef 09 B Blok No:7/15 34415 Kağıthane/Istanbul, Türkiye
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<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): 2019:14 Version 1.3.1, 2023-07-08, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works, C-PCR-006 Wood and Wood-based Products for use in Construction (EN 16485:2014)
PCR review was conducted by: <i>The Technical Committee of the International EPD® System.</i> <a href="https://www.environdec.com/about-us/the-international-epd-system-about-the-system">https://www.environdec.com/about-us/the-international-epd-system-about-the-system</a> . The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a> .
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: <i>Imnera Sustainability Consulting</i> [ <a href="http://www.imnera.com">www.imnera.com</a> ]
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: <input checked="" type="checkbox"/> EPD verification by individual verifier
Third-party verifier: Vladimír Kocí, PhD Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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: Tantimber – Tanwood Orman Ürünleri San. Tic. A.Ş.

Contact: YAKUP KAYATAŞ, [export@tantimber.com](mailto:export@tantimber.com)

### Description of the organisation:

The world's most precious timbers have been transformed into unique products by Tantimber to increase your quality of life.

Wood is a living material with its breathing structure. While maintaining this vitality, there is Tantimber to add a long life. Tantimber, with its innovative production approach, has used advanced techniques to restore the wood to its most healthy and durable form.

As a living, natural and organic construction material, wood has been carried to a sturdy and aesthetic dimension. To be there in spaces for many years and smoothly. With Tantimber's safe production method that does not harm the nature and health of living creatures, wooden products are much more resistant to harsh climatic and physical conditions.

The leading Thermowood® manufacturer Tantimber produces Thermally Modified Timber (TMT) according to International Thermowood® Association standards with the best experts on the field. Tantimber facilities are located at the Gümüşova Industrial Park in 81850 Düzce, Türkiye.

Tantimber, with the production infrastructure according to European norms CEN/TS 15679, sourcing its raw materials in the light of the "sustainable natural environment" concept, which has an annual production capacity of 800,000 m<sup>2</sup> thermally modified decking and cladding materials, is aiming to add value to life by bringing nature together with the spaces. Tantimber grants new life to the wood with its ecological process, which provides durable and long-lasting products. Tantimber is a member of the International Thermowood Association (ITWA) with yearly auditing and quality assurance.

Physical texture, high aesthetic value, superior dimensional stability, environmental production processes and their natural properties live in Tantimber. Living areas transform into sustainable, durable, stable and aesthetically pleasing environments with Tantimber products.

Tantimber is a well-known and preferred brand in many countries when it comes to wooden products. Advanced production lines with high-level manufacturing criteria in global standards; the product quality that functions in all qualities such as endurance, sustainability, innovative production concept and intense design line constitutes the framework of the Tantimber brand value.

## TANTIMBER PRODUCTION PRINCIPLES

*Prefer the World's Highest Quality and Sustainable Raw Materials Sources:* Tantimber believes that the planet we live on must be acted with the awareness that it is home to all living creatures. Being attentive for a sustainable natural life is the responsibility and duty of all people and institutions. Tantimber raw material procurement operations are held with awareness of protecting the natural habitat and for this reason all the raw materials are obtained from sustainable forests.

*Excellence in Physical Durability and Aesthetics:* Tantimber focuses on achieving the maximum durability and stability expected from the product during all production stages. Along with this, by evaluating modern aesthetic trends in the light of customer demands, attaches great importance to design for visually important products. The aesthetic values of the products with their physical quality parameters are at same level of indispensability for Tantimber.

*Innovation:* Tantimber considers customers suggestions, expectations, and feedbacks to be the most important guide. It watches the woodworking industry and architectural trends closely and takes the ideal solutions to the production agenda.

*Naturelness (Non-Toxic):* Tantimber products are completely natural. From the supply of raw materials to the occurrence of the final product, no chemical is used at any stage of the process.

With Tantimber Thermowood® processing technology, while resin in wood is extracted, biological durability and dimensional stability is increased, exposure to moisture is minimized, consequently decay is eliminated, and naturelness is protected.

## ENVIRONMENTALLY MODIFIED WOOD BRAND

A strong material modification is needed for a wood with superior durability. In this process, Tantimber forms the wood without compromising environmental sensitivity. Tantimber products are made from solid wood. This is the reason why wood takes its place in the environmental transformation after it completes its long life cycle. It does not leave any waste and harmful material. It is the healthy and conscious alternative against environmentally damaging petroleum-based wood imitations and hybrid products.

## THERMALLY MODIFIED TIMBER FOR DESIGNING INDOOR AND OUTDOOR SPACES

Timber, harvested and prepared for construction, is a durable material known for its strength and versatility. It serves as an architectural element in structural systems, framing, cladding, decking, and flooring. Although it possesses a warm and natural character that creates an aesthetic appeal, the inherent humidity of timber can cause wood deformation, leading to bending, mold, and rot once the moisture content reaches 23%. However, with the development of new products and production techniques, Thermowood® –also known as Thermally Modified Timber– has emerged as a method for creating natural, chemical-free solutions made from certified raw materials.

By reducing moisture content, it does not rot or mould, experiences no longitudinal shrinking, and ensures high dimensional stability, resulting in a minimum biological life span of 25 years. After analyzing how to apply these solutions in architecture and design, we will showcase indoor and outdoor spaces featuring Tantimber's Thermowood® products.

### *How does Thermowood® work?*

The thermal modification method results in a product that minimizes wood deformation, making it extremely durable regardless of the environment in which it is applied. This manufacturing process is suitable for both hardwoods and softwoods, and it is always optimized depending on the wood species that is used as the raw material. It consists of three phases: first, a high-temperature drying process to decrease the moisture content to zero; second, the actual thermal modification procedure; and lastly, a cooling/conditioning phase. After this process, the moisture content of Thermowood® solutions is 4-7%. During the thermal modification, only high heat and steam are used, resulting in a non-toxic, recyclable, ecological, and natural process. After undergoing this process, timber can be adapted and applied to different types of architectural products.

Even though thermal modification processes allow for durability and resistance to external elements such as fungi, insects, and weather, regular maintenance is still required. Annual inspections are recommended to assess its condition, including neutralization and the application of UV-protective finishes to prevent material discoloration. Regular maintenance also involves cleaning and applying surface oil treatments to prevent chips or cracks and preserve the wood's natural color.

#### *Thermowood® for architectural applications*

Tantimber combines natural materials with a chemical-free manufacturing process, from the original raw wood to the finished solution. By preserving the natural characteristics of wood and improving its durability, stability, and resistance to humidity, Thermowood® processes offer versatile solutions for both indoor and outdoor construction applications.

#### *Creating attractive outdoor spaces with sustainable strategies*

Designing outdoor spaces is a crucial aspect of some architectural projects, as they serve as gathering places for inhabitants. To achieve durable spaces with minimal maintenance, Thermowood® makes use of sustainable materials and strategies. As thermal modification involves a natural process, the installation of these renewable solutions ensures that no harmful chemicals are released into their surroundings.

Thermally modified wood conveys numerous benefits for outdoor spaces, including resistance to warping, expansion, contraction, and damage from temperature and humidity variations. Moreover, its low moisture content prevents the presence of organisms. These qualities make it suitable for outdoor applications such as decking, siding, and garden constructions.

These materials come in a wide range of sizes and cross-section profiles, making them adaptable to various building applications and architectural styles. Tantimber's decking, made from ash, pine, and iroko woods, provides long-lasting, high-performance, and aesthetically pleasing solutions for terraces, gardens, walkways, and landscaping.

Because of their thermal insulation properties, thermally modified claddings are highly durable in extreme weather conditions. As for their aesthetic purposes, they can be used as primary or complementary covers for different architectural applications. These claddings can be customized with diverse textures and colors, as well as being adapted to horizontal and vertical applications. Their unique profiles are designed to meet the thickness requirements of each project.

Product-related or management system-related certifications: ISO 9001, FSC, PEFC, TMT Certificate, ITWA Certificate, FINOTROL Certificate

#### Name and location of production site(s):

Tantimber – Tanwood Orman Ürünleri San. Tic. A.Ş.

Address: Merkez Mah. Kumbaşı Cad. NO:40 Gümüşova, 81850 Düzce - Türkiye

## Product information

Product name: Thermowood®

Product identification: Tantimber Thermowood®

Product description: The thermal modification process produces highly durable wood products with minimal deformation, suitable for various environments. This method is applied to both hardwoods and softwoods and involves three phases: moisture reduction, thermal modification, and conditioning. The resulting Thermowood® has 4-7% moisture content, achieved through non-toxic, ecologically friendly heat and steam treatment. This wood is versatile for architectural products.

Thermowood®, which can be used as deckings, claddings, soffits, louvers and under-construction products, offers significant advantages for outdoor spaces, including resistance to warping, expansion, contraction, and temperature/humidity damage. Its low moisture content prevents organism growth, making it perfect for outdoor uses like decking, siding, and garden constructions. The extended property of biological durability allows Tantimber Thermowood® products to be used both for interior and exterior applications. The products may be oiled in case demanded by the end user. If not oiled colour of the product changes into a silver grey patina with its habitual. Tantimber Thermowood® Products are widely used as Decking and Cladding applications.

Available in diverse sizes and profiles, Thermowood® adapts well to different architectural styles and applications. Tantimber's decking, using ash, pine, and iroko woods, offers long-lasting and visually pleasing solutions for terraces, gardens, and walkways.

With excellent thermal insulation, thermally modified claddings endure extreme weather. They serve both functional and aesthetic purposes, serving as primary or complementary covers for various architectural applications. Customizable in terms of texture, color, and orientation, these claddings meet different project thickness requirements, ensuring extended service life.

Tantimber products with Thermowood® processing are being produced according to EN15679. From the start to the end of the manufacturing process, no chemicals are added to the timber. The colour of the wood gets darker due to the high heat applied. Due to the Thermowood® Process the swelling, shrinking, and cupping are being minimized thus longer lifespan is provided.

### Technical specifications:

The colour of the single boards is turned into darker Brown colour, and different species are processed with different temperatures depending on the use and wood properties, such as;

Pine: 212°C ( 413,6°F)

Ash / Oak / Poplar : 210°C ( 410°F)

Iroko / Ayous : 190°C ( 374°F)

Each board will have an individual structure in terms of slight colour variations due to its natural properties. The colour gets darker homogenously and the durability is being increased by the Process applied.

Thermowood® (Wood Type)	Durability Class (EN 350-2 and EN 335)	Final Product Density (kg / m <sup>3</sup> )	Final Product Moisture Content (%)	Raw Product Moisture Content (%)	Wood Origin (Country)
Ash	1	640	4-7%	6-10%	US / CANADA
Oak	1	650	4-7%	6-10%	US / CANADA
Iroko	1	645	4-7%	10-14%	CAMEROON / BELGIUM
Tulipwood	2	420	4-7%	6-10%	US / CANADA
Pine	2	390	4-7%	18%	FINLAND
Ayous	2	400	4-7%	10-14%	CAMEROON / BELGIUM

<b>Sizes of Products</b>						
Wood Type	Metric	Imperial	Widths (m)	widths (inch)	Lengths (m)	Lengths (ft)
Ash	20/25/42 mm	0.78" / 0.98" / 1.65"	40 mm - 240 mm	1.57" - 9.45"	0.6 - 4.2 m	2'-14'
Pine	19/26/42 mm	0.75" / 1.02" / 1.65"	40 mm - 140 mm	1.57" - 5.5"	0.6 - 5.7 m	2'-19'
Oak	20/25 mm	0.78" / 0.98"	40 mm - 140 mm	1.57" - 5.5"	0.6 - 4.2 m	2'-14'
Poplar	20/42 mm	0.78" / 1.65"	40 mm - 240 mm	1.57" - 9.45"	0.6 - 4.8 m	2'-16'
Iroko	20/25/40 mm	0.78" / 0.98" / 1.65"	40 mm - 200 mm	1.57" - 7.87"	0.6 - 3.6 m	2'-12'
Ayous	20/25/40 mm	0.78" / 0.98" / 1.65"	41 mm - 200 mm	1.57" - 7.87"	0.6 - 4.5 m	2'-15'



UN CPC code: 31600 Builders' joinery and carpentry of wood (including cellular wood panels, assembled parquet panels, shingles and shakes) (HS CODE: 4418).

Other codes for product classification: N/A

Geographical scope: Türkiye



**LCA information**

Functional unit / declared unit: 1 m<sup>3</sup> Thermowood<sup>®</sup>

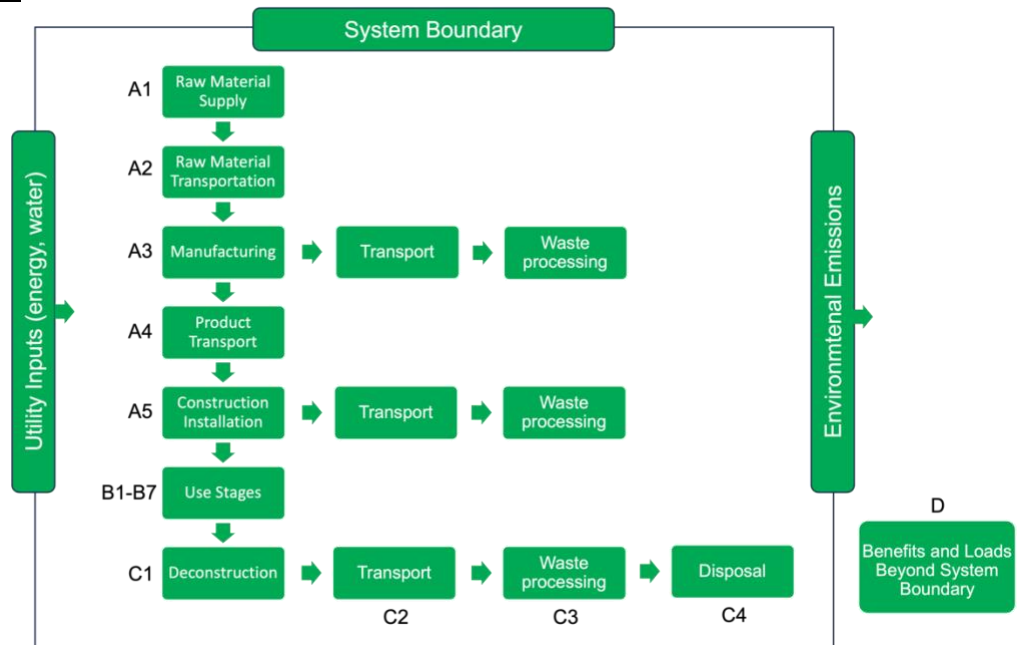
Reference service life: The RSL is understood as the period of time until the Thermowood<sup>®</sup> is replaced, rebuilt, renovated or restored. Wood products can reach over 100 years' service life in service classes 1 and 2.

Time representativeness: 2022

Database(s) and LCA software used: Ecoinvent 3.9.1 with OpenLCA 2.0.0

Description of system boundaries: Cradle to grave and module D (A + B + C + D).

System diagram:



More information: LCA was performed in 2023 by Imnera Sustainability Consulting ([www.imnera.com](http://www.imnera.com)) for the purposes of business-to-business (B2B) communication.

This EPD is based upon an underlying LCA of the Tantimber Thermowood<sup>®</sup> timber product manufacturing process, with operational data obtained for 2022.

The declared unit is one cubic meter of Thermowood<sup>®</sup> timber, representing an average production of Tantimber Thermowood<sup>®</sup>, with an average density of 560 kg/m<sup>3</sup> at an average end product moisture content of 4-7%.

Information on electricity use: The manufacturing facility sources its electricity from the Turkish grid. The GWP-GHG impact for the electricity used is 0.587 kg CO<sub>2</sub> eq./ kWh.

Production processes:



The underlying LCA is based upon the following information and assumptions:

Modules A1-A3: Various species of timber are cultivated and processed (kiln-dried) across different countries. These timber boards are subsequently transported to Tantimber's manufacturing facility in Türkiye. There, they undergo the thermo process, being cut and shaped to fulfill the specific requirements of clients. The product described in this Environmental Product Declaration (EPD) and the underlying study was modeled as an average product. This average takes into account the production volumes of the diverse wood species employed in manufacturing the product.

Module A1-A3 includes an allocation for co-products (sawdust), which has been allocated based on economic values derived from the sales prices of both the main product and the co-product. Both hazardous and non-hazardous waste resulting from the manufacturing process are assumed to be disposed of in landfills.

Modules A4-A5: The assumed distance to the construction site was 200 km, with transportation carried out by truck. The installation process was assumed to involve the use of 8 kg of stainless-steel screws. Within module A5, the scenario assumes that packaging waste will be gathered and transported to a landfill, covering a distance of 10 km by truck. Additionally, an assumption was made that no product waste was generated during the installation process.

Modules B1-B7: No impacts are present during the usage stage. The actual maintenance requirements depend on the specific installation and usage conditions.

Modules C1-C4: It is assumed the product undergoes deconstruction using manual labor, resulting in no impacts. Waste materials are then assumed to be transported by truck over a 10 km distance. Module C4 takes into account the oxidation of the wood product, wherein the stored biogenic carbon is released back into the atmosphere. This step is taken to fulfill the requirements outlined in EN15804:2012+A2:2019/AC:2021.

Module D: Benefit was assumed with the incineration of wood which was used as a substitute for natural gas in a heating plant.

For characterization factors see Version 2.0 of the default list dated 29/03/2022, which adopts the core environmental impact indicators of EN 15804:2012+A2:2019/AC:2021.  
 [<https://www.environdec.com/resources/indicators>]

Cut-off criteria were based upon input flows being less than 1% of the total individually, subject to the sum of all flows being less than 5% of the total, and subject to verification that the impacts associated

with such flows were not of a magnitude to affect the reported data significantly (less than 5% in total). In the LCA study underlying this EPD no cut-off was applied for the input flows.

The biogenic carbon content of wood is calculated in line with the EN 16449:2014 standard.

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	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
Specific data used	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10% for different wood species			0		-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0					-	-	-	-	-	-	-	-	-	-	-	-

## Content information (per m<sup>3</sup>)

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Thermowood®	560	100%	Wood, 100%, 0.47 kg C/kg
TOTAL	560	100%	Wood, 100%, 0.47 kg C/kg
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Cardboard	0.760	0.136%	1.70 kg C/kg
Pallets (spent, turned to waste)	8.60	1.54%	1.70 kg C/kg
Polyethylene packaging film	0.810	0.145%	0 kg C/kg
Polypropylene packaging tape	0.086	0.015%	0 kg C/kg
TOTAL	10.3	1.84%	

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
N/A			

Tantimber does not use any chemicals during the manufacturing of its Thermowood® products. There is no use of dangerous substances from the candidate list of SVHC Authorisation.

## Environmental Information

This EPD contains information about environmental impact, use of resources and waste production in the form of quantitative indicators. The following abbreviations have been used in the tables which quantify environmental performance:

Indicator	Abbreviation
Global warming potential	GWP
Global warming potential – fossil	GWP-fossil
Global warming potential - biogenic	GWP-biogenic
Global warming potential – land use and land use change	GWP-luluc
Global warming potential with characterisation factor for biogenic CO <sub>2</sub> set as zero	GWP-GHG
Depletion potential of the stratospheric ozone layer	ODP
Acidification potential	AP
Eutrophication potential	EP
Formation potential of tropospheric ozone	POCP
Abiotic depletion potential – Elements	ADPE
Abiotic depletion potential – Fossil resources	ADPF
Water scarcity potential	WSP
Primary energy resources – Renewable (use as energy carrier)	PERE
Primary energy resources – Renewable (use raw materials)	PERM
Primary energy resources – Renewable (total)	PERT
Primary energy resources – Non-renewable (use as energy carrier)	PENRE
Primary energy resources – Non-renewable (use raw materials)	PENRM
Primary energy resources – Non-renewable (total)	PENRT
Secondary material	SM
Renewable secondary fuels	RSF

Non-renewable secondary fuels	NRSF
Net use of fresh water	NUFW
Hazardous waste disposed	HWD
Non-hazardous waste disposed	NHWD
Radioactive waste disposed	RWD
Components for re-use	CFR
Material for recycling	MFR
Materials for energy recovery	MFER
Exported energy, electricity	EE-E
Exported energy, thermal	EE-T

## Results of the environmental performance indicators

### Mandatory impact category indicators according to EN 15804

Results per 1 m <sup>3</sup> of Tantimber Thermowood®										
Indicator	Unit	A1-A3	A4	A5	B1-7	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	333	21.5	16.1	0	0	1.06	0	0	-380
GWP-biogenic	kg CO <sub>2</sub> eq.	-989	0.006	17.6	0	0	2.79E-04	0	974	-0.041
GWP-luluc	kg CO <sub>2</sub> eq.	3.29	0.011	0.011	0	0	5.56E-04	0	0	-0.034
GWP-total	kg CO <sub>2</sub> eq.	-653	21.5	33.7	0	0	1.06	0	974	-380
GWP-GHG	kg CO <sub>2</sub> eq.	337	21.5	17.8	0	0	1.06	0	0	- 3.77E+02
ODP	kg CFC 11 eq.	8.03E-06	3.39E-07	2.80E-07	0	0	1.66E-08	0	0	-6.55E-06
AP	mol H <sup>+</sup> eq.	3.44	0.053	0.073	0	0	0.003	0	0	-0.351
EP-freshwater	kg P eq.	0.167	0.002	0.008	0	0	8.64E-05	0	0	-0.007
EP-marine	kg N eq.	0.896	0.013	0.021	0	0	6.37E-04	0	0	-0.129
EP-terrestrial	mol N eq.	9.54	0.134	0.170	0	0	0.007	0	0	-1.40
POCP	kg NMVOC eq.	3.04	0.071	0.077	0	0	0.003	0	0	-9.23E-01
ADP-minerals&metals*	kg Sb eq.	4.71E-04	7.17E-05	1.15E-04	0	0	3.52E-06	0	0	-2.23E-04
ADP-fossil*	MJ	4341	305	171	0	0	15.0	0	0	- 6.06E+03
WDP*	m <sup>3</sup>	134	1.46	5.31	0	0	0.071	0	0	-25.0

\* 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. Use of the results of module A1-A3 is discouraged without considering the results of module C. 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.

## Resource use indicators

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ	1.29E+04	3.91	178	0	0	0.192	0	9.98E+03	-13.4
PERM	MJ	1.01E+04	0	-162	0	0	0	0	-9.98E+03	0
PERT	MJ	2.31E+04	3.91	15.3	0	0	0.192	0	0	-13.4
PENRE	MJ	4.64E+03	325	221	0	0	15.9	0	0	-6.72E+03
PENRM	MJ	38.8	0	-38.8	0	0	0	0	0	0
PENRT	MJ	4.67E+03	325	182	0	0	15.9	0	0	-6.72E+03
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m <sup>3</sup>	9.03	0.057	0.250	0	0	0.003	0	0	-0.688

## Waste indicators

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
HWD	kg	0.263	0	0	0	0	0	0	0	0
NHWD	kg	0.517	0	10.3	0	0	0	0	8	0
RWD	kg	0	0	0	0	0	0	0	0	0

## Output flow indicators

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	8	0
MER	kg	0	0	0	0	0	0	0	0	0
EE (Electrical)	MJ	0	0	0	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0	0	0	6.72E+03



## Information on biogenic carbon content

Results per functional or declared unit		
Biogenic Carbon Content	kgC	kgCO <sub>2</sub> eq
Biogenic carbon content in product	266	974
Biogenic carbon content in packaging	4.33	15.9

Note: 1 kg biogenic carbon is equivalent to 44,12 kg CO<sub>2</sub>.

## Additional environmental information

### Biogenic Carbon

Biogenic carbon stored in the wood (biogenic uptake) is declared in module A1, where this is reported as under the entry for climate change – biogenic. This includes both emissions of biogenic carbon due to processing and the atmospheric carbon stored in the wood, which is reported as a negative flow. Biogenic carbon release that balances out and neutralizes this uptake was represented in module C4 with a positive flow.

The same principles were applied for the packaging with biogenic carbon content, which are cardboard and pallets. Biogenic carbon uptake for these materials was assumed to be in module A1, while biogenic carbon release for these materials is represented in module A5.

## References

General Programme Instructions of the International EPD® System. Version 4.0.

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EN 16449:2014 Wood and wood-based products. Calculation of the biogenic carbon content of wood and conversion to carbon dioxide.

EN 16485:2014 Round and sawn timber. Environmental product declarations. Product category rules for wood and wood-based products for use in construction.

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**WOOD.  
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