



# SHI-PRODUKTPASS

Produkte finden - Gebäude zertifizieren

SHI-Produktpass-Nr.:

**2939-10-1002**

## OSB 3 Fichte

Warengruppe: Holz & Holzwerkstoffe - OSB & Spanplatten



KRONOSPAN OSB spol. s r.o.  
Na Hranici 2361/6  
58601 Jihlava



### Produktqualitäten:



*Köttner*

Helmut Köttner  
Wissenschaftlicher Leiter  
Freiburg, den 13.02.2026



# Inhalt

 SHI-Produktbewertung 2024	1
 QNG - Qualitätssiegel Nachhaltiges Gebäude	2
 DGNB Neubau 2023	3
 DGNB Neubau 2018	4
 BNB-BN Neubau V2015	5
 BREEAM DE Neubau 2018	6
Produktsiegel	7
Rechtliche Hinweise	8
Technisches Datenblatt/Anhänge	9

Wir sind stolz darauf, dass die SHI-Datenbank, die erste und einzige Datenbank für Bauprodukte ist, die ihre umfassenden Prozesse sowie die Aktualität regelmäßig von dem unabhängigen Prüfunternehmen SGS-TÜV Saar überprüfen lässt.





Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## SHI-Produktbewertung 2024

Seit 2008 etabliert die Sentinel Holding Institut GmbH (SHI) einen einzigartigen Standard für schadstoffgeprüfte Produkte. Experten führen unabhängige Produktprüfungen nach klaren und transparenten Kriterien durch. Zusätzlich überprüft das unabhängige Prüfunternehmen SGS-TÜV Saar regelmäßig die Prozesse und Aktualität.

Kriterium	Produktkategorie	Schadstoffgrenzwert	Bewertung
SHI-Produktbewertung	Holzwerkstoffe	TVOC $\leq 300 \mu\text{g}/\text{m}^3$ Formaldehyd $\leq 36 \mu\text{g}/\text{m}^3$	Schadstoffgeprüft
Gültig bis: 23.07.2027			



Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## QNG - Qualitätssiegel Nachhaltiges Gebäude

Das Qualitätssiegel Nachhaltiges Gebäude, entwickelt durch das Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen (BMWSB), legt Anforderungen an die ökologische, soziokulturelle und ökonomische Qualität von Gebäuden fest. Das Sentinel Holding Institut prüft Bauprodukte gemäß den QNG-Anforderungen für eine Zertifizierung und vergibt das QNG-ready Siegel. Das Einhalten des QNG-Standards ist Voraussetzung für den KfW-Förderkredit. Für bestimmte Produktgruppen hat das QNG derzeit keine spezifischen Anforderungen definiert. Diese Produkte sind als nicht bewertungsrelevant eingestuft, können jedoch in QNG-Projekten genutzt werden.

Kriterium	Pos. / Bauproduktgruppe	Betrachtete Stoffe	QNG Freigabe
3.1.3 Schadstoffvermeidung in Baumaterialien	9.1 Holzwerkstoffe (FPY, OSB und HPL) für den Holzbau und Innenausbau	Formaldehyd / VOC / Emissionen / gefährliche Stoffe / SVHC: Borverbindungen	QNG-ready
<b>Nachweis:</b> Prüfbericht vom Institut Fraunhofer WKI vom 24.10.2023 (Prüfberichts Nr. MAIC-2023-2865). Herstellererklärung vom 15.01.2024.			



Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## **DGNB Neubau 2023**

Das DGNB-System (Deutsche Gesellschaft für Nachhaltiges Bauen) bewertet die Nachhaltigkeit von Gebäuden verschiedener Art. Das System ist sowohl anwendbar für private und gewerbliche Großprojekte als auch für kleinere Wohngebäude. Die Version 2023 setzt hohe Standards für ökologische, ökonomische, soziokulturelle und funktionale Aspekte während des gesamten Lebenszyklus eines Gebäudes.

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt, 03.05.2024 (3. Auflage)	48 Holzbau und Fertigholzhäuser: Holzwerkstoffe im konstruktiven Holzbau	Formaldehyd Emissionen	Qualitätsstufe: 4
<b>Nachweis:</b> Prüfbericht vom Institut Fraunhofer WKI vom 24.10.2023 (Prüfberichts Nr. MAIC-2023-2865)			

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt, 29.05.2025 (4. Auflage)	48 Holzbau und Fertigholzhäuser: Holzwerkstoffe im konstruktiven Holzbau	Formaldehyd Emissionen	Qualitätsstufe: 4
<b>Nachweis:</b> Prüfbericht vom Institut Fraunhofer WKI vom 24.10.2023 (Prüfberichts Nr. MAIC-2023-2865)			



Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## DGNB Neubau 2018

Das DGNB-System (Deutsche Gesellschaft für Nachhaltiges Bauen) bewertet die Nachhaltigkeit von Gebäuden verschiedener Art. Das System ist sowohl anwendbar für private und gewerbliche Großprojekte als auch für kleinere Wohngebäude.

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt	48 Holzbau und Fertigholz-häuser: Holzwerkstoffe im konstruktiven Holzbau (z. B. aussteifend): Spanplatten, Furnierplatten, Faserplatten	Formaldehyd	Qualitätsstufe: 4

**Nachweis:** Prüfbericht vom Institut Fraunhofer WKI vom 24.10.2023 (Prüfberichts Nr. MAIC-2023-2865)



Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## **BNB-BN Neubau V2015**

Das Bewertungssystem Nachhaltiges Bauen ist ein Instrument zur Bewertung von Büro- und Verwaltungsgebäuden, Unterrichtsgebäuden, Laborgebäuden sowie Außenanlagen in Deutschland. Das BNB wurde vom damaligen Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMUB) entwickelt und unterliegt heute dem Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen.

Kriterium	Pos. / Bauprodukttyp	Betrachtete Schadstoffgruppe	Qualitätsniveau
1.1.6 Risiken für die lokale Umwelt	41 Holzwerkstoffplatten nach EN 13986 wie Span-, Tischler-, Faser-, mitteldichte Faser-, Sperrholz-, Massivholz- und OSB-Platten sowie Furnierschichtholz (beschichtet oder unbeschichtet)	VOC / Formaldehyd / gefährliche Stoffe	Qualitätsniveau 5
<b>Nachweis:</b> Blauer Engel zertifiziert			



Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## BREEAM DE Neubau 2018

BREEAM (Building Research Establishment Environmental Assessment Methodology) ist ein britisches Gebäudebewertungssystem, welches die Nachhaltigkeit von Neubauten, Sanierungsprojekten und Umbauten einstuft. Das Bewertungssystem wurde vom Building Research Establishment (BRE) entwickelt und zielt darauf ab, ökologische, ökonomische und soziale Auswirkungen von Gebäuden zu bewerten und zu verbessern.

Kriterium	Produktkategorie	Betrachtete Stoffe	Qualitätsstufe
Hea 02 Qualität der Innenraumluft	Holzwerkstoffe	Emissionen: Formaldehyd, TVOC, TSVOC, Krebserregende Stoffe	herausragende Qualität
<b>Nachweis:</b> Prüfbericht vom Institut Fraunhofer WKI vom 24.10.2023 (Prüfberichts Nr. MAIC-2023-2865).			



# Produktsiegel

In der Baubranche spielt die Auswahl qualitativ hochwertiger Materialien eine zentrale Rolle für die Gesundheit in Gebäuden und deren Nachhaltigkeit. Produktlabels und Zertifikate bieten Orientierung, um diesen Anforderungen gerecht zu werden. Allerdings besitzt jedes Zertifikat und Label eigene Prüfkriterien, die genau betrachtet werden sollten, um sicherzustellen, dass sie den spezifischen Bedürfnissen eines Bauvorhabens entsprechen.



Der vom Umweltbundesamt als Zeichengeber und vom RAL e.V. als verantwortliche Prüforganisation verliehene „Blaue Engel“ ist eines der ältesten und in Deutschland das am häufigsten vorkommende Umweltzeichen. Den „Blauen Engel“ gibt es in zahlreichen Ausprägungen für die unterschiedlichsten Produktgruppen. Die zugrunde liegenden Prüfkriterien der jeweiligen Umweltzeichen (UZ) sollten in gesundheitlicher Hinsicht individuell betrachtet werden, da es durchaus Unterschiede in der Relevanz und Strenge gibt.



Dieses Produkt ist schadstoffgeprüft und wird vom Sentinel Holding Institut empfohlen. Gesundes Bauen, Modernisieren und Betreiben von Immobilien erfolgt dank des Sentinel Holding Konzepts nach transparenten und nachvollziehbaren Kriterien.



Produkte mit dem QNG-ready Siegel des Sentinel Holding Instituts eignen sich für Projekte, für welche das Qualitätssiegel Nachhaltiges Gebäude (QNG) angestrebt wird. QNG-ready Produkte erfüllen die Anforderungen des QNG Anhangdokument 3.1.3 "Schadstoffvermeidung in Baumaterialien". Das KfW-Kreditprogramm Klimafreundlicher Neubau mit QNG kann eine höhere Fördersumme ermöglichen.



EPD Hub ist ein globales EPD-Programm, das den gesamten Prozess von der Datenerfassung über die Verifizierung bis zur Veröffentlichung von Environmental Product Declarations (EPDs) digitalisiert und effizient gestaltet. EPD Hub arbeitet nach international anerkannten Standards wie ISO 14025, EN 15804 + A2 und ISO 21930, und verwendet eigene feste Regelwerke (GPI und PCR), um eine einheitliche Methodik zu sichern.



Produkt:

**OSB 3 Fichte**

SHI Produktpass-Nr.:

**2939-10-1002**



## Rechtliche Hinweise

(\* ) Die Kriterien dieses Steckbriefs beziehen sich auf das gesamte Bauobjekt. Die Bewertung erfolgt auf der Ebene des Gebäudes. Im Rahmen einer sachgemäßen Planung und fachgerechten Installation können einzelne Produkte einen positiven Beitrag zum Gesamtergebnis der Bewertung leisten. Das Sentinel Holding Institut stützt sich einzig auf die Angaben des Herstellers.

---

Alle Kriterien finden Sie unter:

<https://www.sentinel-holding.eu/de/Themenwelten/Pr%C3%BCfverfahren/kriterien%20f%C3%BCr%20Produkte>

---

Wir sind stolz darauf, dass die SHI-Datenbank, die erste und einzige Datenbank für Bauprodukte ist, die ihre umfassenden Prozesse sowie die Aktualität regelmäßig von dem unabhängigen Prüfunternehmen SGS-TÜV Saar überprüfen lässt.



### Herausgeber

Sentinel Holding Institut GmbH  
Bötzingen Str. 38  
79111 Freiburg im Breisgau  
Tel.: +49 761 590 481-70  
info@sentinel-holding.eu  
www.sentinel-holding.eu

KRONOSPAN OSB, spol. s r.o.  
Na Hranici 2361/6, 586 01 Jihlava, ČR  
Tel.: +420 567 124 204, Fax: +420 567 124 235  
IČ / Id. N°: 26936364, DIČ / VAT N°: CZ26936364  
sales@kronospan.cz, www.kronospan.com

KRONOSPAN OSB, spol. s r.o. · Na Hranici 2361/6, 586 01 Jihlava, ČR

Sentinel Haus Institut GmbH  
Merzhauser Straße 74  
D-79100 Freiburg i. Br.

15. 01. 2024

## Věc / Concerns: Producer's statement

Herewith we confirm that no boron compounds are used in production process of OSB board and therefore the all our OSB-based products contain no boron compounds in concentration exceeding the value of 0,1 % w/w.

Jan Knize  
Quality Assurance

T +420 567 124 194  
M +420 724 157 546

[j.knize@kronospan.cz](mailto:j.knize@kronospan.cz)

KRONOSPAN  
Na Hranici 2361/6, 586 01 Jihlava, ČR  
IČ: 26936364  
spol. s r.o.  
586 01 Jihlava  
26936364

### Note:

All the information above is provided to the best of our knowledge at the time at which this letter was completed.

This letter is of an informative nature.

# URKUNDE



*Simply Excellent.*

## Kronospan OSB, spol.s.r.o. 587 04 Jihlava, Tschechische Rep.

wird aufgrund des Zeichenbenutzungsvertrages Nr. 32609 zur DE-UZ 76  
Ausgabe 2016 das Recht verliehen, für das Produkt

**OSB Platten, Dicke 9 - 30 mm, Produkte: OSB 3, OSB 3 Spruce, OSB 4, K-Board**

das nachstehend abgebildete Umweltzeichen als Ausweis für die besondere Umweltfreundlichkeit zu führen.



Bonn, den 22. Februar 2019

*R. Wollmann*

Geschäftsführer  
RAL gGmbH



Bundesministerium  
für Umwelt, Naturschutz,  
Bau und Reaktorsicherheit





# ENVIRONMENTAL PRODUCT DECLARATION

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

**Oriented Strand Board (OSB)**

**Kronospan OSB spol. s r. o.**



**EPD HUB, HUB-3369**

Publishing date 25 May 2025, last updated on 25 May 2025, valid until 25 May 2030.

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	Kronospan OSB spol. s r. o.
Address	Na Hranici 2361/6, 586 01 Jihlava 1-Bedrichov, Czechia
Contact details	office@kronospan.cz
Website	https://kronospan.com/en_CZ

### 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 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Wei-Li Hung
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Magaly González Vázquez, 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	Oriented Strand Board (OSB)
Additional labels	OSB 3, K-Board, OSB 3 Spruce
Product reference	-
Place of production	Jihlava, Czech Republic
Period for data	1.1.2023- 31.12.2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	-

### ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m3
Declared unit mass	568 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	143
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	-793
Secondary material, inputs (%)	7.07
Secondary material, outputs (%)	100
Total energy use, A1-A3 (kWh)	2300
Net freshwater use, A1-A3 (m <sup>3</sup> )	24.6

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

Kronospan OSB spol. s r. o. (Kronospan OSB) is one of the leading manufacturer of wood-based panel products. We produce particleboard (PB), high/ medium density fibreboard (HDF/ MDF), oriented strand board (OSB), melamine-faced (MF) products, laminate flooring, and worktops. Our products are used in construction, furniture manufacture and the DIY industry.

### PRODUCT DESCRIPTION

Oriented Strand Board (OSB) is a wooden panel made from oriented wood strands bonded with resin, available in a range of thicknesses from 6 to 38 mm. OSB is developed and manufactured entirely in compliance with the current demand for ecological living, focusing on organic materials. By selecting suitable wood and binder, OSB meets high standards not only for sustainable buildings but also for other applications, including furniture elements, door panels, cladding, and partition walls.

Further information can be found at [https://kronospan.com/en\\_CZ](https://kronospan.com/en_CZ).

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	4-5%	Czech Republic
Bio-based materials	95-96%	Czech Republic

### BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	284.7
Biogenic carbon content in packaging, kg C	3.11

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m3
Mass per declared unit	568.3 kg
Functional unit	-
Reference service life	-

### 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	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.

Raw material/energy supply (A1):

Extraction and processing / manufacture of raw materials including: post-consumer recycled timber, resins, hardeners, and wax. Production loss is considered at this stage.

Transportation to manufacturing site (A2):

- Transportation of the post-consumer recycled timber to the Jihlava site.
- Transportation of chemicals and packaging from manufacturer/supplier to the Jihlava site.

Manufacturing (A3):

Ancillary water is sourced from and returned to the local water network in accordance with local standards and agreement. Electricity is sourced from the local grid network, and heat is provided primarily by our onsite biomass boiler (fuelled with site waste) and supplemented by natural gas. Packaging materials include PET banding, PE film, cardboard, and lath made from reject board.

The proper manufacturing of the boards and treatment of waste generated from the manufacturing process up to the end-of waste state during manufacturing is included in module A3.

Manufacturing waste includes bottom ash from the biomass boilers, which is landfilled, metal waste from chip preparation, which is recycled, and waste wood, which is used for energy recovery through incineration.

The transport distance of manufacturing waste is assumed to be 50 km by truck.

## 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.

### Module A4:

This module considers 307 km truck transport to site (diesel driven, EURO 6, 40 tonnes total load, 61% utilisation) from average delivery distance within the timeframe.

### Module A5:

Installation has been excluded as a factor because, typically, this product undergoes reprocessing by our customers to make final construction products. There are boundless variations in processing methods, auxiliary materials, energy consumption, wastage, etc.

### Packaging materials:

Wood, plastic, and cardboard packaging are assumed to follow the EU scenario based on Ecoinvent v3.10

## PRODUCT USE AND MAINTENANCE (B1-B7)

Not included. Air, soil, and water impacts during the use phase have not been studied.

## PRODUCT END OF LIFE (C1-C4, D)

### Module C1:

Manual dismantling → no loads in C1 have been generated.

### Module C2:

Transport to waste treatment site after dismantling using EURO 6 truck average (50 km assumed).

### Module C3:

The scenario at the end of life assumes the full recycling of the product as OSB can be recycled and returned to the system as post-consumer waste wood. The end-of-waste status for the wood board is achieved at the waste treatment site where the material is recycled.

### Module C4:

Within the EoL scenario, no disposal to landfill will occur, thus this module will show zero values.

### Module D:

The benefits from the recycling of the OSB into new product (modelling it as avoided raw material) is calculated and stated in module D.

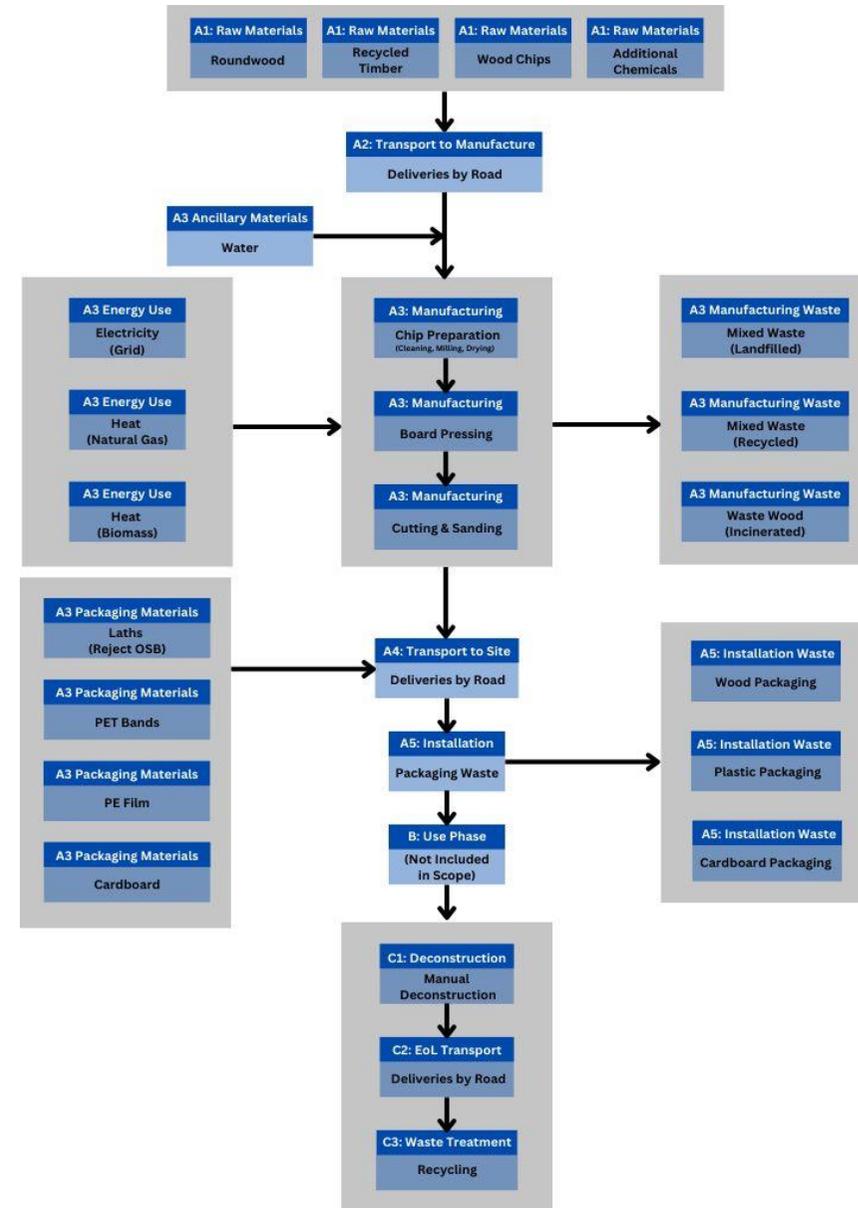
### Packaging materials:

Wood, plastic, and cardboard packaging are assumed to follow the EU scenario based on Ecoinvent v3.10

## MANUFACTURING PROCESS

Recycled timber is cleaned and milled into various sized flakes in the pre-production stage. At this stage the contaminants from the cleaned recycled timber are sent off site for further recycling. The timber flakes are then sent to a dryer for moisture removal before further sorting and grading in preparation for the press. Resin is added and the material enters the press where the raw board is formed, before being sanded and cut to size.

Thermal energy and electricity are sourced from biomass, natural gas, and the regional grid, and are used in the drying and pressing processes. Residues are sent for energy recovery for either direct heat in the drying process or to the biomass that provides heat for the presses and various other processes on site. Finished product are either transported by road to customers or internally transferred for further processing.



# 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 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

## AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	-

This EPD is product and factory specific and does not contain average calculations.

## 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. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2’.

# 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	-9.56E+02	7.84E+00	1.55E+02	-7.93E+02	1.90E+01	1.10E+01	MND	0.00E+00	3.06E+00	9.34E+02	0.00E+00	-5.86E+00						
GWP – fossil	kg CO <sub>2</sub> e	9.04E+01	7.84E+00	4.49E+01	1.43E+02	1.90E+01	7.72E-01	MND	0.00E+00	3.06E+00	9.80E+00	0.00E+00	-5.84E+00						
GWP – biogenic	kg CO <sub>2</sub> e	-1.04E+03	0.00E+00	1.10E+02	-9.34E+02	0.00E+00	1.02E+01	MND	0.00E+00	0.00E+00	9.24E+02	0.00E+00	0.00E+00						
GWP – LULUC	kg CO <sub>2</sub> e	-2.35E+00	3.51E-03	1.38E-01	-2.21E+00	8.51E-03	3.63E-04	MND	0.00E+00	1.37E-03	1.40E-02	0.00E+00	-1.66E-02						
Ozone depletion pot.	kg CFC-11e	3.38E-07	1.16E-07	7.64E-06	8.09E-06	2.81E-07	4.02E-09	MND	0.00E+00	4.52E-08	1.80E-07	0.00E+00	-1.57E-07						
Acidification potential	mol H <sup>+</sup> e	1.84E-01	2.67E-02	2.31E-01	4.42E-01	6.48E-02	1.40E-03	MND	0.00E+00	1.04E-02	4.69E-02	0.00E+00	2.01E-02						
EP-freshwater <sup>2)</sup>	kg Pe	1.96E-02	6.10E-04	3.59E-02	5.61E-02	1.48E-03	6.52E-05	MND	0.00E+00	2.38E-04	3.85E-03	0.00E+00	-4.56E-03						
EP-marine	kg Ne	6.00E-02	8.78E-03	5.26E-02	1.21E-01	2.13E-02	1.47E-03	MND	0.00E+00	3.43E-03	1.40E-02	0.00E+00	2.12E-02						
EP-terrestrial	mol Ne	5.83E-01	9.56E-02	4.10E-01	1.09E+00	2.32E-01	5.69E-03	MND	0.00E+00	3.73E-02	1.46E-01	0.00E+00	2.41E-01						
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	5.43E-01	3.94E-02	1.34E-01	7.16E-01	9.56E-02	1.85E-03	MND	0.00E+00	1.54E-02	5.09E-02	0.00E+00	5.61E-02						
ADP-minerals & metals <sup>4)</sup>	kg Sbe	1.20E-04	2.19E-05	1.24E-04	2.65E-04	5.30E-05	7.90E-07	MND	0.00E+00	8.53E-06	2.90E-05	0.00E+00	-4.79E-05						
ADP-fossil resources	MJ	2.68E+03	1.14E+02	1.02E+03	3.82E+03	2.76E+02	3.48E+00	MND	0.00E+00	4.44E+01	1.73E+02	0.00E+00	-1.38E+02						
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	-1.28E+02	5.62E-01	3.26E+01	-9.50E+01	1.36E+00	1.03E-01	MND	0.00E+00	2.19E-01	2.88E+00	0.00E+00	-3.31E+00						

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation 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, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.56E-06	7.85E-07	1.41E-06	3.75E-06	1.90E-06	2.40E-08	MND	0.00E+00	3.06E-07	6.57E-07	0.00E+00	1.57E-06						
Ionizing radiation <sup>6)</sup>	kBq 11225a	2.12E+00	9.91E-02	2.56E+01	2.79E+01	2.40E-01	9.69E-03	MND	0.00E+00	3.87E-02	2.58E+00	0.00E+00	-2.93E+00						
Ecotoxicity (freshwater)	CTUe	5.88E+02	1.61E+01	2.36E+02	8.40E+02	3.90E+01	1.57E+00	MND	0.00E+00	6.28E+00	2.20E+01	0.00E+00	-2.75E+01						
Human toxicity, cancer	CTUh	4.90E-08	1.29E-09	1.20E-08	6.23E-08	3.14E-09	1.44E-10	MND	0.00E+00	5.05E-10	3.97E-09	0.00E+00	-4.55E-09						
Human tox. non-cancer	CTUh	1.09E-06	7.37E-08	4.45E-07	1.61E-06	1.79E-07	7.38E-09	MND	0.00E+00	2.87E-08	9.97E-08	0.00E+00	-1.51E-07						
SQP <sup>7)</sup>	-	2.26E+04	1.15E+02	1.78E+02	2.29E+04	2.78E+02	3.29E+00	MND	0.00E+00	4.47E+01	8.23E+01	0.00E+00	-1.41E+02						

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	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>8)</sup>	MJ	5.17E+03	1.56E+00	2.45E+02	5.42E+03	3.78E+00	-1.00E+02	MND	0.00E+00	6.08E-01	-5.65E+03	0.00E+00	5.56E+03						
Renew. PER as material	MJ	5.86E+03	0.00E+00	-5.03E+02	5.36E+03	0.00E+00	-1.70E+02	MND	0.00E+00	0.00E+00	-5.19E+03	0.00E+00	0.00E+00						
Total use of renew. PER	MJ	1.10E+04	1.56E+00	-2.58E+02	1.08E+04	3.78E+00	-2.70E+02	MND	0.00E+00	6.08E-01	-1.08E+04	0.00E+00	5.56E+03						
Non-re. PER as energy	MJ	1.77E+03	1.14E+02	9.97E+02	2.88E+03	2.76E+02	-1.38E+01	MND	0.00E+00	4.44E+01	1.73E+02	0.00E+00	-1.38E+02						
Non-re. PER as material	MJ	9.16E+02	0.00E+00	-8.76E+01	8.28E+02	0.00E+00	-1.42E+01	MND	0.00E+00	0.00E+00	-7.84E+02	0.00E+00	0.00E+00						
Total use of non-re. PER	MJ	2.69E+03	1.14E+02	9.09E+02	3.71E+03	2.76E+02	-2.79E+01	MND	0.00E+00	4.44E+01	-6.11E+02	0.00E+00	-1.38E+02						
Secondary materials	kg	4.02E+01	4.84E-02	3.59E-01	4.06E+01	1.17E-01	2.92E-03	MND	0.00E+00	1.89E-02	9.47E-02	0.00E+00	1.05E-01						
Renew. secondary fuels	MJ	7.38E-04	6.15E-04	2.51E-02	2.64E-02	1.49E-03	2.76E-05	MND	0.00E+00	2.40E-04	1.37E-03	0.00E+00	-1.65E-03						
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
Use of net fresh water	m <sup>3</sup>	2.30E+01	1.68E-02	1.56E+00	2.46E+01	4.08E-02	-8.53E-03	MND	0.00E+00	6.56E-03	8.79E-02	0.00E+00	-1.04E-01						

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	6.94E-01	1.93E-01	2.30E+00	3.18E+00	4.68E-01	2.74E-02	MND	0.00E+00	7.52E-02	4.32E-01	0.00E+00	-4.73E-01						
Non-hazardous waste	kg	3.34E+01	3.57E+00	1.95E+02	2.32E+02	8.65E+00	1.54E+01	MND	0.00E+00	1.39E+00	4.30E+01	0.00E+00	-4.93E+01						
Radioactive waste	kg	5.51E-04	2.43E-05	6.66E-03	7.24E-03	5.88E-05	2.42E-06	MND	0.00E+00	9.46E-06	6.62E-04	0.00E+00	-7.51E-04						

### 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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	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	7.98E-02	7.98E-02	0.00E+00	2.47E+00	MND	0.00E+00	0.00E+00	5.68E+02	0.00E+00	0.00E+00						
Materials for energy rec	kg	0.00E+00	0.00E+00	1.94E-01	1.94E-01	0.00E+00	2.14E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+01	MND	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	5.47E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
Exported energy –	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.52E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						

### 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>2e</sub>	8,53E+01	7,81E+00	4.49E+01	1.38E+02	1.89E+01	9.38E-01	MND	0.00E+00	3.04E+00	9.76E+00	0.00E+00	-5.81E+00						
Ozone depletion Pot.	kg CFC <sub>11e</sub>	2.76E-07	9,25E-08	5.12E-06	5.49E-06	2.24E-07	3.24E-09	MND	0.00E+00	3.60E-08	1.45E-07	0.00E+00	-1.28E-07						
Acidification	kg SO <sub>2e</sub>	1.45E-01	2.04E-02	1.92E-01	3.58E-01	4.95E-02	1.04E-03	MND	0.00E+00	7.96E-03	3.67E-02	0.00E+00	8.59E-03						
Eutrophication	kg PO <sub>4</sub> <sup>3e</sup>	1.11E-01	4.98E-03	3.65E-02	1.53E-01	1.21E-02	4.02E-04	MND	0.00E+00	1.94E-03	7.46E-03	0.00E+00	3.06E-03						
POCP (“smog”)	kg C <sub>2</sub> H <sub>4e</sub>	8.08E-02	1.82E-03	1.10E-02	9.36E-02	4.41E-03	1.22E-04	MND	0.00E+00	7.10E-04	2.70E-03	0.00E+00	4.93E-04						
ADP-elements	kg Sbe	1.20E-04	2.14E-05	1.23E-04	2.63E-04	5.17E-05	7.60E-07	MND	0.00E+00	8.32E-06	2.84E-05	0.00E+00	-4.69E-05						
ADP-fossil	MJ	2.68E+03	1.12E+02	5.70E+02	3.36E+03	2.72E+02	3.32E+00	MND	0.00E+00	4.38E+01	1.27E+02	0.00E+00	-8.68E+01						

### ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>9)</sup>	kg CO <sub>2</sub> e	8.80E+01	7.84E+00	4.51E+01	1.41E+02	1.90E+01	7.72E-01	MND	0.00E+00	3.06E+00	9.81E+00	0.00E+00	-5.86E+00						

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH<sub>4</sub> fossil, CH<sub>4</sub> biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO<sub>2</sub> is set to zero.

## 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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited  
25.05.2025

