SENTINEL HOLDING
INSTITUT

SHI PRODUCT PASSPORT

Find products. Certify buildings.

SHI Product Passport No.:

2939-10-1000

K-Board

Product group: Wood & Wood materials - OSB & chipboard

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

Product qualities:

- SHI Product Assessment 2024
- QNG Qualitätssiegel Nachhaltiges Gebäude
- DGNB NEW CONSTRUCTION 2023
- DGNB NEW CONSTRUCTION 2018
- BNB-BN NEUBAU V2015
- BREEAM DE NEUBAU 2018

CERTIFIED SUSTAINABLE PRODUCT
SHI PRODUCT PASSPORT
SENTINEL HOLDING INSTITUT
www.sentinel-holding.eu

Köttner

Helmut Köttner
Scientific Director
Freiburg, 13 February 2026

Product:
K-Board

SHI Product Passport no.:
2939-10-1000

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Contents

The SHI Database is the first and only database for construction products whose comprehensive processes and data accuracy are regularly verified by the independent auditing company SGS-TÜV Saar

SENTINEL HOLDING
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Product:
K-Board

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SHI Product Assessment 2024

Since 2008, Sentinel Holding Institut GmbH (SHI) has been establishing a unique standard for products that support healthy indoor air. Experts carry out independent product assessments based on clear and transparent criteria. In addition, the independent testing company SGS regularly audits the processes and data accuracy.

Criteria	Product category	Harmful substance limit	Assessment
SHI Product Assessment	Wood materials	TVOC ≤ 300 µg/m^3 Formaldehyd ≤ 36 µg/m^3	Indoor Air Quality Certified
Valid untill: 23 July 2027			

Product:
K-Board

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QNG - Qualitätssiegel Nachhaltiges Gebäude

The Qualitätssiegel Nachhaltiges Gebäude (Quality Seal for Sustainable Buildings), developed by the German Federal Ministry for Housing, Urban Development and Building (BMWSB), defines requirements for the ecological, socio-cultural, and economic quality of buildings. The Sentinel Holding Institut evaluates construction products in accordance with QNG requirements for certification and awards the QNG ready label. Compliance with the QNG standard is a prerequisite for eligibility for the KfW funding programme. For certain product groups, the QNG currently has no specific requirements defined. Although classified as not assessment-relevant, these products remain suitable for QNG-certified projects.

Criteria	Pos. / product group	Considered substances	QNG assessment
3.1.3 Schadstoffvermeidung in Baumaterialien	9.1 Wood-based materials (plywood, OSB, and HPL)	Formaldehyde / VOC / emissions / hazardous substances / SVHC: boron compounds	QNG ready
Verification: Prüfbericht vom Institut Fraunhofer WKI vom 25.10.2023 (Prüfberichts Nr. MAIC-2023-2866). Herstellererklärung vom 15.01.2024.			

Product:
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DGNB New Construction 2023

The DGNB System (German Sustainable Building Council) assesses the sustainability of various types of buildings. It can be applied to both large-scale private and commercial projects as well as smaller residential buildings. The 2023 version sets high standards for ecological, economic, socio-cultural, and functional aspects throughout the entire life cycle of a building.

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact, 03.05.2024 (3rd edition)	48 Timber construction and prefabricated wooden houses	Formaldehyde emissions	Quality level 4
Verification: Prüfbericht vom Institut Fraunhofer WKI vom 25.10.2023 (Prüfberichts Nr. MAIC-2023-2866).			

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact, 29.05.2025 (4th edition)	48 Timber construction: Wood-based materials	Formaldehyde emissions	Quality level 4
Verification: Prüfbericht vom Institut Fraunhofer WKI vom 25.10.2023 (Prüfberichts Nr. MAIC-2023-2866).			

Product:
K-Board

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DGNB New Construction 2018

The DGNB System (German Sustainable Building Council) assesses the sustainability of various types of buildings. It can be applied to both large-scale private and commercial projects as well as smaller residential buildings.

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact	48 Timber construction and prefabricated wooden houses	Formaldehyde	Quality level 4
Verification: Prüfbericht vom Institut Fraunhofer WKI vom 25.10.2023 (Prüfberichts Nr. MAIC-2023-2866).			

Product:
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BNB-BN Neubau V2015

The Bewertungssystem Nachhaltiges Bauen (Assessment System for Sustainable Building) is a tool for evaluating public office and administrative buildings, educational facilities, laboratory buildings, and outdoor areas in Germany. The BNB was developed by the former Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and is now overseen by the Federal Ministry for Housing, Urban Development and Building (BMWSB).

Criteria	Pos. / product type	Considered substance group	Quality level
1.1.6 Risiken für die lokale Umwelt	41 Wood-based panels according to EN 13986, such as chipboard, plywood, fiberboard, medium-density fiberboard (MDF), plywood, solid wood panels, and OSB panels, as well as veneer plywood	VOC / formaldehyde / hazardous substances	Quality level 5
Verification: Blauer Engel zertifiziert			

Product:
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BREEAM DE Neubau 2018

BREEAM (Building Research Establishment Environmental Assessment Methodology) is a UK-based building assessment system that evaluates the sustainability of new constructions, refurbishments, and conversions. Developed by the Building Research Establishment (BRE), the system aims to assess and improve the environmental, economic, and social performance of buildings.

Criteria	Product category	Considered substances	Quality level
Hea 02 Indoor Air Quality	Wood-based products	Emissions: Formaldehyde, TVOC, TSVOC, carcinogens	Exemplary quality
Verification: Prüfbericht vom Institut Fraunhofer WKI vom 25.10.2023 (Prüfberichts Nr. MAIC-2023-2866)			

Product:
K-Board

SHI Product Passport no.:
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Product labels

In the construction industry, high-quality materials are crucial for a building's indoor air quality and sustainability. Product labels and certificates offer guidance to meet these requirements. However, the evaluation criteria of these labels vary, and it is important to carefully assess them to ensure products align with the specific needs of a construction project.

The *Blue Angel* ("Blauer Engel") ecolabel, awarded by the German Federal Environment Agency, is one of the oldest and most widely used ecolabels in Germany. It exists in several variants for many different product groups. Since the test criteria, such as threshold values, differ between these variants, it is important to consider each one individually when assessing indoor air quality.

This product is SHI Indoor Air Quality certified and recommended by Sentinel Holding Institut. Indoor-air-focused construction, renovation, and operation of buildings is made possible by transparent and verifiable criteria thanks to the Sentinel Holding concept.

Products bearing the Sentinel Holding Institute QNG-ready seal are suitable for projects aiming to achieve the "Qualitätssiegel Nachhaltiges Gebäude" (Quality Seal for Sustainable Buildings). QNG-ready products meet the requirements of QNG Appendix Document 3.1.3, "Avoidance of Harmful Substances in Building Materials." The KfW loan program Climate-Friendly New Construction with QNG may allow for additional funding.

EPD Hub is a global EPD program that digitizes and streamlines the entire process from data collection and verification to the publication of Environmental Product Declarations (EPDs). EPD Hub operates in accordance with internationally recognized standards such as ISO 14025, EN 15804 + A2, and ISO 21930, and uses its own established rule sets (GPI and PCR) to ensure a consistent methodology.

Product:
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Legal notices

(*) These criteria apply to the construction project as a whole. While individual products can positively contribute to the overall building score through proper planning, the evaluation is always conducted at the building level. The information was provided entirely by the manufacturer.

Find our criteria here: https://www.sentinel-holding.eu/de/Themenwelten/Pr%C3%BCfkriterien%20f%C3%BCr%20Produkte

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SGS TÜV SAAR

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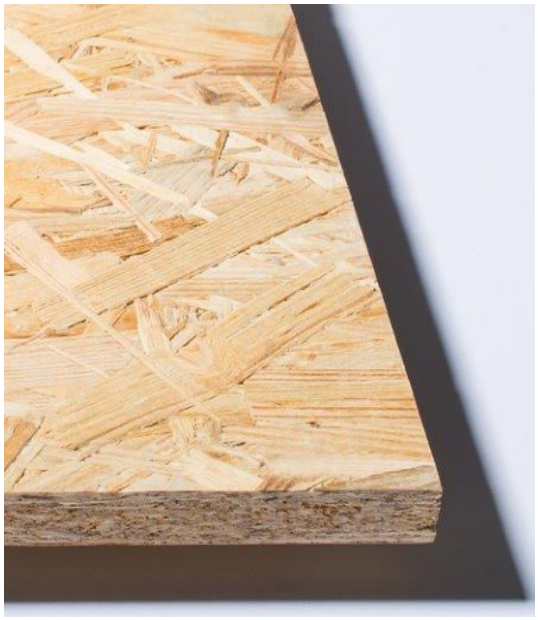
Technisches Datenblatt

Produkt: K-Board
Großflächige Bauplatten aus orientierten Flachspänen



1. Angaben zum Produkt

Es handelt sich um mehrschichtige Platten aus flachen, großflächigen Holzspänen festgelegter Form und Dicke. Die großflächigen Späne in den Außenschichten sind parallel zur Plattenlänge orientiert, die Orientierung der Späne in den Mittelschichten ist überwiegend senkrecht zur Plattenlänge. Die getrockneten, orientierten Holzspäne werden samt Bindemittel aus synthetischem Harz und Paraffin unter Anwendung von Temperatur und Druck gepresst.

Die K-Board-Platten sind mit einem Anspruch auf die Rauheit der Oberfläche und mit geringen Dickentoleranzen, entweder ungeschliffen oder beidseitig geschliffen hergestellt.

Die K-Board-Platten sind durch die Norm EN 300 und EN 13986 als tragende Platten Zur Verwendung im Trocken- und Feucht-bereich[1)] definiert.

Die K-Board-Platten sind zur Ausführung von tragenden oder aussteifenden Bauteilen vorgesehen, z.B. Wand-, Fußboden- und Dachkonstruktionen[2)].

Identifikation des Herstellers

Kronospan OSB, spol. s r.o.
Na Hranici 2361/6
586 01 Jihlava
Tschechische Republik
IdNr. 62 41 76 90

Informationen zum Produkt

Telefon	+420 567 124 204
Hotline	+420 800 112 222
Telefax	+420 567 124 132

2. Technische Produktspezifikation nach EN 300

Fertigungstoleranz der K-Board-Platten				
Eigenschaft			Prüfverfahren	Anforderung
Toleranz der Nennmaße [3)]	Stärke	geschliffen	EN 324-1	± 0,3 mm
		ungeschliffen		± 0,8 mm
	Länge und Breite			± 3 mm
Kantengeradheit [3)]			EN 324-2	1,5 mm/m
Rechtwinkligkeit [3)]				2 mm/m
Gleichgewichtsfeuchte			EN 322	2 - 12 %
Rohdichtentoleranz, bezogen auf die mittlere Rohdichte innerhalb der Platte [3)]			EN 323	± 15 %
Formaldehydgehalt			EN ISO 12460-5	Klasse E1 ≤ 8 mg/100 g
Formaldehydabgabe			EN 717-1	Klasse E1 < 0,03 ppm

[1)] Feuchtbereich ist eine in der EN 13986 definierte Umgebung, die sich durch eine Material-Feuchtigkeit auszeichnet, entsprechend einer Temperatur von 20°C und einer relativen Luftfeuchtigkeit, die nur wenige Wochen im Jahr 85% überschreitet (siehe auch Nutzungsklasse 2 in der Terminologie der Norm EN 1995-1-1).
[2)] Siehe Norm EN 1995-1-1 und/oder Leistungsnormen.
[3)] Die aufgeführten Werte beziehen sich auf einen Feuchtigkeitsgehalt der Platten, welcher einer relativen Feuchte der Umgebungsluft von 65% und einer Temperatur von 20°C entspricht.

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Technisches Datenblatt

Produktspezifikation in Bezug auf mechanische Eigenschaften und Quellung							
Eigenschaft		Prüf-verfahren	Einheit	Stärke [mm, nominal]			
				8 bis 10	> 10 bis 18	> 18 bis 25	> 25 bis 30
Biegefestigkeit	Hauptachse	EN 310	N/mm^2	22	20	18	16
	Nebenachse			11	10	9	8
Biege-elastizitätsmodul	Hauptachse	EN 310	N/mm^2	3500	3500	3500	3500
	Nebenachse			1400	1400	1400	1400
Querzugsfestigkeit		EN 319	N/mm^2	0,34	0,32	0,29	0,26
	nach Kochprüfung [4]	EN 321		0,15	0,13	0,12	0,06
	nach Zyklustest [5]	EN 321		0,18	0,15	0,13	0,10
Biegefestigkeit nach Zyklustest-Hauptachse [5]		EN 1087-1		9	8	7	6
Dickenquellung nach 24 h		EN 317	%	15	15	15	15

[4] Verfahren 1; [5] Verfahren 2; Der Hersteller muß nach einem der Verfahren vorgehen.
Bemerkung: Die aufgeführten Festigkeitswerte sind Produkteigenschaften. Zur Berechnung im Holzrahmenbau sind Werte gem. z.B. der EN 1995-1-1 anzuwenden.

3. Bauphysikalische Eigenschaften

Die für die Verwendung von Platten in der Bauindustrie erforderlichen mechanisch-physikalischen Eigenschaften und sonstigen Parameter sind in der Leistungserklärung (DoP) Nr .: K-BOARD-CPR-2015-01 angegeben.

Technische Eigenschaften K-Board-Platten		
Eigenschaft	Prüfverfahren, Vorschriften	Wert
Brandverhalten [6]	EN 13501-1	Klasse D,s2-d0 für Dicke < 12 mm Klasse D,s1-d0 für Dicke ≥ 12mm
Formaldehydemissionen	EN 16516	< 0,06 ppm [7]
	EN 717-1	< 0,03 ppm [7]
Emissionen flüchtiger organischer Verbindungen (VOC)	EN 16516, AgBB Schema 2018	Grenzwerte eingestellt in MVV TB 2017/1, Anhang 8 [8]

[6] Zur Info. Die genaue Definition ist in der Leistungserklärung angegeben.
[7] Produkt erfüllt die Grenzwerte nach dem Chemikalien-Verbotsverordnung (ChemVerbotsV).
[8] Produkt erfüllt Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes (ABG).

4. Anweisungen für Transport und Lagerung

Transport:

- per LKWs. Das Transportgut ist gegen Witterungseinflüsse durch Plane und gegen Beschädigungen beim Verrutschen durch Verzurren gesichert.
- in Eisenbahnwaggons, die für diese Art der Beförderung bestimmt sind (geschlossen und gesichert gegen Witterungseinflüsse). Das Transportgut ist in den Waggons durch eine bewegliche Trennwand und Verzurren gegen Beschädigung geschützt.

Lagerung:

Die Platten sind in einem trockenen und gelüfteten Raum bei einer optimalen relativen Luftfeuchtigkeit von 40 - 65 %, auf einem ebenen Untergrund zu lagern. Zwischen den einzelnen Plattenpaketen müssen sich Zwischenlagen befinden, das unterste Paket sollte mindestens 10 cm über dem Boden gelagert werden.

5. Montage- und Verarbeitungshinweise

Die Hinweise für eine richtige Lagerung, Verarbeitung und Installation der Platten sind dem Kronobuild Katalog zu entnehmen. Vor der Installation ist eine Klimatisierung der Platten vorzunehmen, während der Montage ist dann insbesondere auf eine korrekte Orientierung der Platten aus dem Grund abweichender Festigkeitseigenschaften in der Längs- und Querrichtung der Platte zu achten (die Hauptachse liegt in der Längsrichtung). Die für Nut & Feder bestimmten Platten haben einen Stempel auf der Rückseite der Platte.

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6. Arbeitsschutzmittel

Bei der Arbeit Arbeitsschutzmittel je nach Art der Verarbeitung und der technischen Ausstattung des Verarbeitungsbetriebes verwenden (Schutzbrille, Staubmaske, Handschuhe).

7. Entsorgung von bei der Verarbeitung von OSB-Platten angefallenen Abfällen

In Bezug auf die durch das Gesetz Nr. 185/2001 Slg. über die Abfälle festgelegten, allgemeinen Pflichten ist für die gegebenen Abfälle, sofern deren Anfallen nicht verhindert werden konnte, immer bevorzugt eine stoffliche Verwertung zu suchen. In dieser Hinsicht können diese Arten der Abfälle als jene Abfälle betrachtet werden, die den durch die Firma Kronospan CR, spol. s r.o. für die Eingangsrohstoffe festgelegten Anforderungen genügen.

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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

KRONOSPAN ... spol. s r.o.
Na Hranici 2 ... 01 Jihlava
IČ: 2693636... 6936364

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.

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.

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Making circularity a reality

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: ☐ Internal verification ☑ 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 ($kgCO_2e$)	143
GWP-total, A1-A3 ($kgCO_2e$)	-793
Secondary material, inputs (%)	7.07
Secondary material, outputs (%)	100
Total energy use, A1-A3 (kWh)	2300
Net freshwater use, A1-A3 (m^3)	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.

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		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
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.

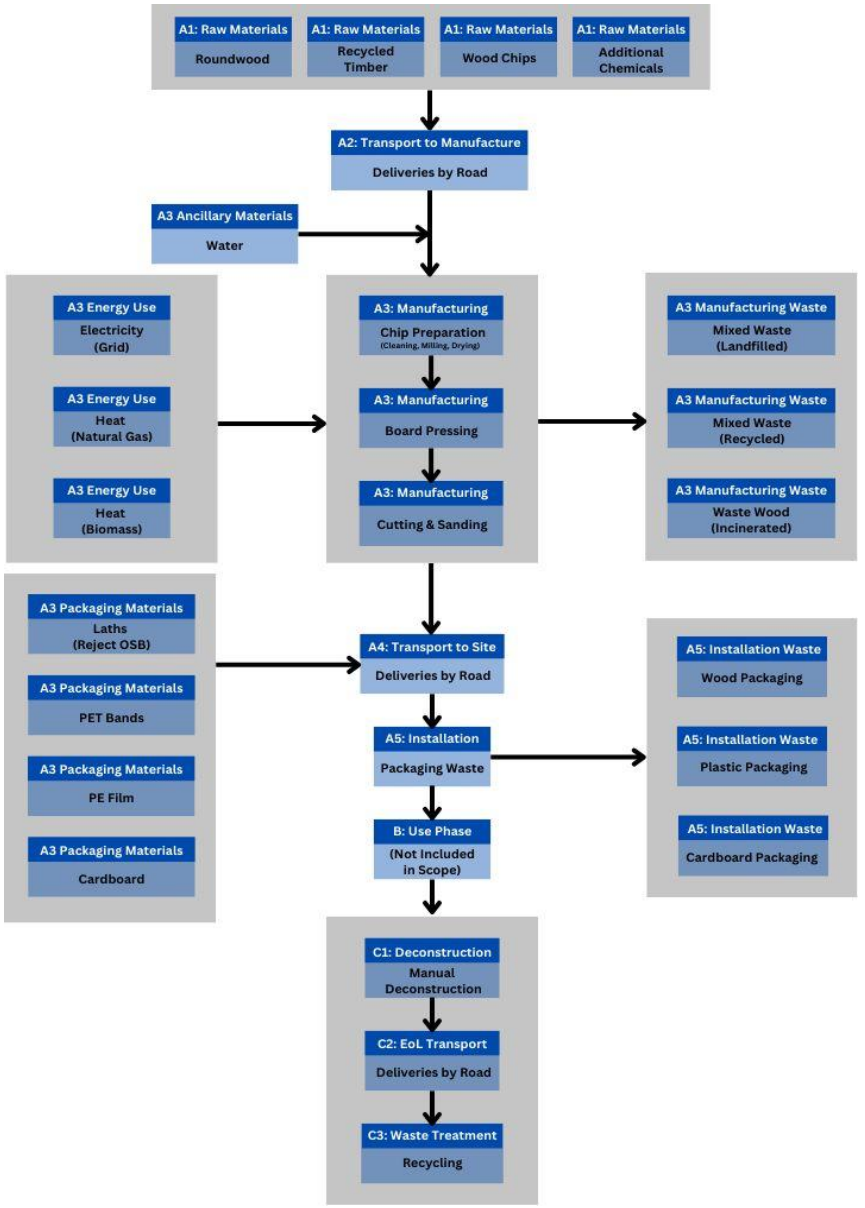
Module D:
The benefits from the recycling of the OSB into new product (modelling it as avoided raw material) is calculated and stated in module D.

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[1)]	kg CO_2e	-9.56E+02	7.84E+00	1.55E+02	-7.93E+02	1.90E+01	1.10E+01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.06E+00	9.34E+02	0.00E+00	-5.86E+00
GWP – fossil	kg CO_2e	9.04E+01	7.84E+00	4.49E+01	1.43E+02	1.90E+01	7.72E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.06E+00	9.80E+00	0.00E+00	-5.84E+00
GWP – biogenic	kg CO_2e	-1.04E+03	0.00E+00	1.10E+02	-9.34E+02	0.00E+00	1.02E+01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	9.24E+02	0.00E+00	0.00E+00
GWP – LULUC	kg CO_2e	-2.35E+00	3.51E-03	1.38E-01	-2.21E+00	8.51E-03	3.63E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.37E-03	1.40E-02	0.00E+00	-1.66E-02
Ozone depletion pot.	kg CFC-$_{11}$e	3.38E-07	1.16E-07	7.64E-06	8.09E-06	2.81E-07	4.02E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.52E-08	1.80E-07	0.00E+00	-1.57E-07
Acidification potential	mol H^+e	1.84E-01	2.67E-02	2.31E-01	4.42E-01	6.48E-02	1.40E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.04E-02	4.69E-02	0.00E+00	2.01E-02
EP-freshwater[2)]	kg Pe	1.96E-02	6.10E-04	3.59E-02	5.61E-02	1.48E-03	6.52E-05	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	MND	0.00E+00	3.73E-02	1.46E-01	0.00E+00	2.41E-01
POCP ("smog")[3)]	kg NMVOCe	5.43E-01	3.94E-02	1.34E-01	7.16E-01	9.56E-02	1.85E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.54E-02	5.09E-02	0.00E+00	5.61E-02
ADP-minerals & metals[4)]	kg Sbe	1.20E-04	2.19E-05	1.24E-04	2.65E-04	5.30E-05	7.90E-07	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	MND	0.00E+00	4.44E+01	1.73E+02	0.00E+00	-1.38E+02
Water use[5)]	m^3e depr.	-1.28E+02	5.62E-01	3.26E+01	-9.50E+01	1.36E+00	1.03E-01	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	MND	0.00E+00	3.06E-07	6.57E-07	0.00E+00	1.57E-06
Ionizing radiation[6)]	kBq U235e	2.12E+00	9.91E-02	2.56E+01	2.79E+01	2.40E-01	9.69E-03	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	MND	0.00E+00	2.87E-08	9.97E-08	0.00E+00	-1.51E-07
SQP[7)]	-	2.26E+04	1.15E+02	1.78E+02	2.29E+04	2.78E+02	3.29E+00	MND	MND	MND	MND	MND	MND	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[8)]	MJ	5.17E+03	1.56E+00	2.45E+02	5.42E+03	3.78E+00	-1.00E+02	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	2.30E+01	1.68E-02	1.56E+00	2.46E+01	4.08E-02	-8.53E-03	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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_2e	8,53E+01	7,81E+00	4.49E+01	1.38E+02	1.89E+01	9.38E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.04E+00	9.76E+00	0.00E+00	-5.81E+00
Ozone depletion Pot.	kg CFC_{-11}e	2.76E-07	9,25E-08	5.12E-06	5.49E-06	2.24E-07	3.24E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.60E-08	1.45E-07	0.00E+00	-1.28E-07
Acidification	kg SO_2e	1.45E-01	2.04E-02	1.92E-01	3.58E-01	4.95E-02	1.04E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.96E-03	3.67E-02	0.00E+00	8.59E-03
Eutrophication	kg PO_4^3e	1.11E-01	4.98E-03	3.65E-02	1.53E-01	1.21E-02	4.02E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.94E-03	7.46E-03	0.00E+00	3.06E-03
POCP (“smog”)	kg C_2H_4e	8.08E-02	1.82E-03	1.10E-02	9.36E-02	4.41E-03	1.22E-04	MND	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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	MND	MND	MND	MND	MND	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[9)]	kg CO_2e	8.80E+01	7.84E+00	4.51E+01	1.41E+02	1.90E+01	7.72E-01	MND	MND	MND	MND	MND	MND	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 - CH4 fossil, CH4 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 CO2 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

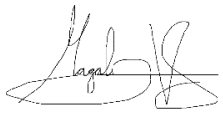
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried 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



VERIFIED ISO 14025

URKUNDE

RAL
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.

BLAUER ENGEL
DAS UMWELTZEICHEN

Bonn, den 22. Februar 2019

Geschäftsführer
RAL gGmbH

Bundesministerium
für Umwelt, Naturschutz,
Bau und Reaktorsicherheit

RAL
UMWELT

Umwelt
Bundesamt