SENTINEL HOLDING
INSTITUT

SHI PRODUCT PASSPORT

Find products. Certify buildings.

SHI Product Passport No.:

12065-10-1018

Kährs 3-Schicht Parkett Original

Product group: Floor coverings / Wall coverings - Parquet

Kährs Parkett Deutschland GmbH & Co. KG
Konrad-Adenauer-Str. 15
72072 Tübingen

Product qualities:

- SHI Product Assessment 2024
- QNG Qualitätssiegel Nachhaltiges Gebäude
- DGNB NEW CONSTRUCTION 2023.2
- DGNB NEW CONSTRUCTION 2023
- DGNB NEW CONSTRUCTION 2018
- BNB-BN NEUBAU V2015
- EU TAXONOMY
- BREEAM DE NEUBAU 2018
- LEED v4.1 (outside US)

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

Köttner

Helmut Köttner
Scientific Director
Freiburg, 17 August 2026

SENTINEL HOLDING
INSTITUT

Product:
Kährs 3-Schicht Parkett Original

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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

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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-based floor coverings	TVOC ≤ 300 µg/m^3 Formaldehyd ≤ 36 µg/m^3	Indoor Air Quality Certified
Valid untill: 26 August 2027			

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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	2.3 Multi-layer wood parquet, bamboo coverings, and floor coverings on wood-based panels	VOC / Emissions / hazardous substances	QNG ready

Verification: Herstellererklärung vom 17.03.2026 nachgewiesen durch Emissionsprüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt. Keine geräucherte Variante.

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Product:
Kährs 3-Schicht Parkett Original

SHI Product Passport no.:
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DGNB New Construction 2023.2

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact	47c Parkette, Laminatböden, MMF- und WPC-Bödenbeläge (innen)	VVOC, VOC, SVOC Emissionen und Gehalt an gefährlichen Stoffen	Quality level 3
Verification: Prüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt			

SENTINEL HOLDING INSTITUT

Product:
Kährs 3-Schicht Parkett Original

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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)	47c Wood-based materials in floor coverings	VVOCs, VOC, SVOC emissions and content of hazardous substances	Quality level 4
Verification: Prüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt			

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact, 29.05.2025 (4th edition)	47c Floor coverings for indoor use (with wooden components)	VVOCs, VOC, SVOC emissions and content of hazardous substances	Quality level 4
Verification: Prüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt			

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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	47a Industrially manufactured products	Formaldehyde	Quality level 4

Verification: Prüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt

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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	2b Wood-based floor coverings – also systems	VOC / hazardous substances	Quality level 3
Verification: Herstellererklärung vom 17.03.2026 nachgewiesen durch Emissionsprüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt.			

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EU taxonomy

The EU Taxonomy classifies economic activities and products according to their environmental impact. At the product level, the EU regulation defines clear requirements for harmful substances, formaldehyde and volatile organic compounds (VOCs). The Sentinel Holding Institut GmbH labels qualified products that meet this standard.

Criteria	Product type	Considered substances	Assessment
DNSH - Pollution prevention and control	Floor coverings (including associated adhesives and sealants)	Stoffe nach Anlage C, Formaldehyd, Karzinogene VOC Kategorie 1A/1B	compliant
Verification: Herstellererklärung vom 17.03.2026 nachgewiesen durch Emissionsprüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt.			

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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	Flooring materials (including floor levelling compounds and resin flooring)	Emissions: Formaldehyde, TVOC, TSVOC, carcinogens	Exemplary quality
Verification: Prüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt			

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LEED v4.1

LEED (Leadership in Energy and Environmental Design) is an internationally recognised building certification system developed by the U.S. Green Building Council. It is one of the most widely used sustainability standards for buildings worldwide and is particularly applied in internationally oriented projects. LEED assesses buildings holistically across categories such as energy efficiency, resource conservation, material selection, indoor environmental quality and site sustainability. Depending on the number of points achieved, projects are awarded one of the certification levels: LEED Certified, Silver, Gold or Platinum.

Criteria	Product category	Considered substances	Assessment
EQ Credit: Low-Emitting Materials	Bodenbeläge	Emissionen: Formaldehyd, VOC, Krebserregende Stoffe	compliant
Verification: Prüfbericht des Instituts Eurofins Product Testing A/S vom 10.11.2022 (Nr. 392-2022-00430701_A_EN). Konformitätserklärung vom 09.10.2025 bestätigt die materielle Übereinstimmung mit dem geprüften Produkt			

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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.

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.

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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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EUROPEAN COLLECTION

Eiche Garmisch

Aufbau	3-Schicht
Besonderheiten	gebürstet, 4-seitig gefast
Nutzschicht	ca. 3,2 mm
Mittellage / Gegenzug	Nadelholz / Echtholz
Verbindung	Woodloc 5s
Design	1-Stab
Fußbodenheizung	geeignet

Sortierung (nach Werksnorm)	Dynamic
Beschreibung	Alle natürlichen Farbvariationen. Unbegrenzte Größe und Anzahl von Ästen. Kleine gespachtelte Risse am Dielenende möglich. Viele Dielen mit Splint.

Artikelnummer	Oberfläche	Abmessung (mm)	Dielen / Paket	m² / Paket	kg / Paket
151N9AEKFVKW240	Naturöl	2420 x 187 x 15	6	2,72	21,8

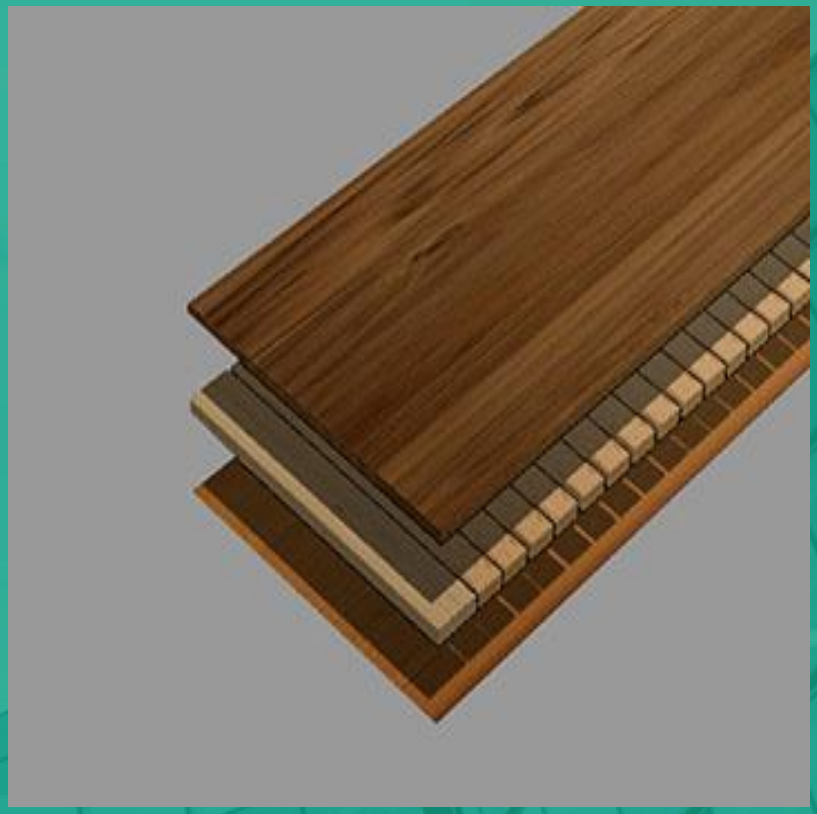


Der Originalboden kann vom Bild abweichen. Holz ist ein Naturmaterial. Die Sortierung dieses Produkts ist nicht willkürlich, jedoch den natürlichen Schwankungen in Farbe und Struktur ausgesetzt.



ENVIRONMENTAL PRODUCT DECLARATION

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



KÄHRS 15MM, 14MM, 13MM ENGINEERED WOOD FLOORS

KÄHRS GROUP

GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Kährs Group
Address	Ångbåtsbron 1, 211 20 Malmö, Sweden
Contact details	info@kahrs.se
Website	www.kahrs.com

PRODUCT IDENTIFICATION

Product name	Kährs 15mm, 14mm, 13mm Engineered Wood Floors
Additional label(s)	Kährs, Karelia. Additional brands available on request.
Product number / reference	Wood floor coverings according to EN 13489:2017 and EN 14342:2013
Place(s) of production	Nybro, Sweden



Jessica Karhu

RTS EPD Committee secretary



Laura Apilo

Managing Director

EPD INFORMATION

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.

EPD program operator	Building Information Foundation RTS sr / Building Information Ltd Malminkatu 16 A, 00100 Helsinki, Finland http://cer.rts.fi
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (English version 26.8.2020) is used.
EPD author	Bruce Uhler, Kährs Group, bruce.uhler@kahrs.com
EPD verification	Independent verification of this EPD and data, according to ISO 14025: □ Internal certification ☑ External verification
Verification date	27.04.2021
EPD verifier	Silvia Vilčeková, Silcert, s.r.o.
EPD number	RTS_117_21
Publishing date	29.04.2021
EPD valid until	27.04.2026

PRODUCT INFORMATION

PRODUCT DESCRIPTION

Kährs 3-layer floors consist of a surface layer, core layer, and backing. The core material is made from pine/spruce lamella. The total thickness of the floor is 13 mm, 14 mm, 15 mm. The surface layer can be re-sanded 3-4 times. Our 3-layer floors can both be installed floating on a level, solid surface such as concrete, particleboard, wood or glued down. Products can have either an oil or lacquer surface treatment and various species. Our lamella-constructed wood floors are not only strong and stable, they also use raw materials more effectively so they have a lower environmental impact.

PRODUCT APPLICATION

The multi-layered engineered flooring board was originally invented by Kährs. Its use and design possibilities combined with ease of installation and long-lasting beauty has made this type of wood flooring the most preferred choice globally, for homes and commercial use.

TECHNICAL SPECIFICATIONS

All Kährs lamella floors are constructed in three layers. The surface layer that you see and walk on every day is always made of solidwood. The other two layers make up the floor's foundation and the material of these layers varies depending on the manufacturer. Ours are made from pinewood and spruce. All the layers have a combined thickness of between 13 and 15 millimetres. You can lay the floors floating or glue them down.

PRODUCT STANDARDS

Kährs is certified at all sites ISO 9001, ISO 14001. All sites are certified to FSC® 019122 and PEFC TM. The parquet meets the requirements of EN13489 and the CE DOP.

PHYSICAL PROPERTIES OF THE PRODUCT

https://www.kahrs.com/en/how-to/technical-documentation/

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at www.kahrs.com.

PRODUCT RAW MATERIAL COMPOSITION

Material (for 13-15 mm)	Weight, kg	Post consumer %	Renewable %	Country / Region of origin
Wood	6.6 - 7.9	0	100	EU
Other	0.4	0	0	EU

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category (for 13-15 mm)	Amount, mass- %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	5% - 6%	EU
Bio-based materials	94% - 95%	EU

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

MANUFACTURING AND PACKAGING (A1-A3)

Quality control is involved with every process step of production. The raw material is sourced from hundreds of forest owners each year as logs and also sourced as sawn planks or backside veneers. The material is sawn and dried for core and top layer material. The surface material is graded, then strip glued then glued to core/backside material. Then as needed filler, sanding, lacquering/oil applied. Profiling of the board. Final inspection and then packing of flooring, then placed in our warehouse and shipped to the customer.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation of warehouse material is shipped to customers.Initially, shipment is by truck/lorry to either end-user customer ortaken to a harbor for shipment to overseas markets. (A4) covers all transport from the factory to the final customer. Installing a woodfloor from Kährs is quick and simple and glueless, thanks to our innovative locking joint system Woodloc®. The Woodloc-systemlocks the boards together mechanically, eliminating gapping in between the boards. The superior fit also enhances the floors performance and durability. Environmental impacts from installation into the building (A5) include the product installation losses and packaging waste of the product.

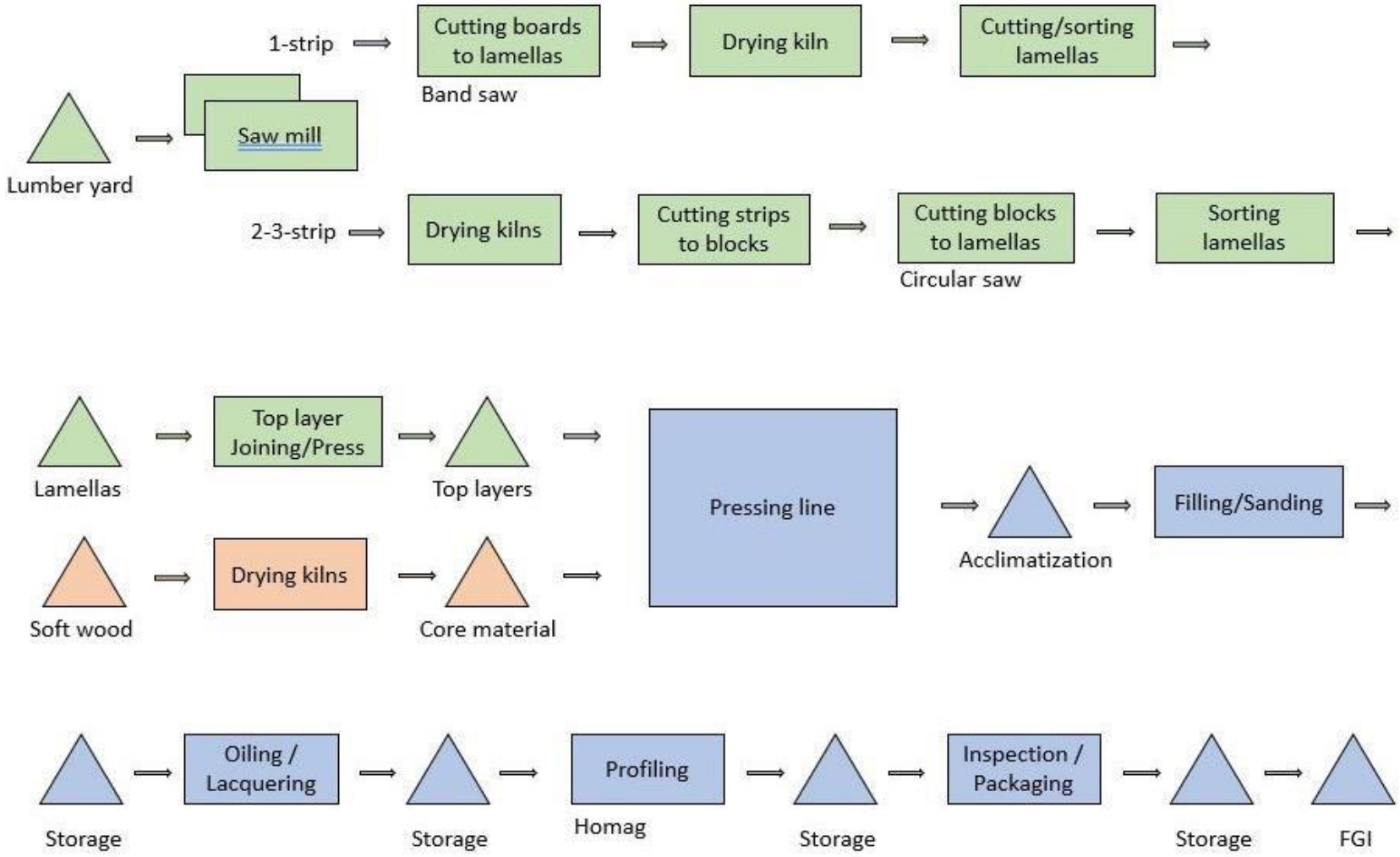
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover use phase. Air, soil and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

All of the end-of-life product is assumed to be sent to the closest facility. End-of-life scenarios for wood products is almost 100% incineration with energy recovery, as it is assumed that it is the most probable treatment for the product. The transport between a construction site and waste/energy facility is by truck.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	Calendar year 2019

DECLARED AND FUNCTIONAL UNIT

Declared unit	1 square meter
Mass per declared unit	7,0 kg (13 mm thickness)
Mass per declared unit	7,9 kg (14 mm thickness)
Mass per declared unit	8,3 kg (15 mm thickness)

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	3,30 (13 mm)
Biogenic carbon content in product, kg C	3,76 (14 mm)
Biogenic carbon content in product, kg C	3,96 (15 mm)
Biogenic carbon content in packaging, kg C	0,06 (13, 14, 15 mm)

SYSTEM BOUNDARY

This EPD covers cradle to gate with options scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

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	D	D
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019
The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes which data are available for are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total neglected input and output flows do also not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution and end-of-life stages.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is based on annual production rate and made with high accuracy and precision. The values for 1 m2 of the produced product which is used within this study are calculated by considering the total product area per annual production. The product output is fixed to 1 m2 and the corresponding amount of product is used in the calculations.

In the production plants, same products with 3 different thickness are produced; since the production processes of these products are same, the annual production percentages are taken into consideration for allocation of raw materials. Energy consumption and packaging materials do not differ as per the thickness, so the allocation is based on the annual production.

There is no waste as an output since the only outputs are the product itself and by-product wood chip which is sold to a pellet factory for fuel production. Allocation for by-product is handled by mass ratio. Since the shares of raw materials in the main product and by-product is known, allocation is done considering these shares, energy consumption is allocated considering final produced amounts.

Electricity is contracted from green hydropower. Independent research suggests that use of hydropower instead of fossil fuels for electricity generation has helped to avoid more than 100 billion tonnes of carbon dioxide in the past 50 years alone, exceedingly even the emissions averted by nuclear power. That's roughly equivalent to the total annual carbon footprint of the United States for 20 years.

All estimates and assumptions are given below:

- Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality it may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation companies to serve the needs of other clients.

- Module A4: Transportation doesn't cause losses as products are packaged properly. The volume capacity utilisation factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances and vehicle types are assumed according to the exports in the last year.

- Module A5: The impacts of the ancillary materials and consumed energy during installation are assumed zero since they are negligible. Weight loss from product is assumed as 1% by mass.
- Module C1: The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible.

- Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumedas lorry which is the most common.

- Module C3, C4, D: 100% of the end-of-life product is assumed to be recovered to energy.

ENVIRONMENTAL IMPACT DATA

NOTE: ENVIRONMENTAL IMPACTS - EN 15804+A1, CML / ISO 21930 ARE PRESENTED IN ANNEX.

15 MM 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
Climate change – total	kg CO2e	-1.53E+01	8.31E-01	1.11E-01	-1.44E+01	2.88E-01	3.83E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.26E-02	1.68E+01	0.00E+00	-7.05E+00
Climate change – fossil	kg CO2e	1.38E+00	8.30E-01	2.94E-01	2.51E+00	2.88E-01	1.29E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.25E-02	1.20E-01	0.00E+00	-7.05E+00
Climate change – biogenic	kg CO2e	-1.67E+01	4.91E-04	-1.84E-01	-1.69E+01	1.76E-04	2.54E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.21E-05	1.66E+01	0.00E+00	-3.36E-03
Climate change – LULUC	kg CO2e	8.71E-03	3.06E-04	1.06E-03	1.01E-02	9.90E-05	2.19E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.85E-05	2.32E-05	0.00E+00	-2.92E-04
Ozone depletion	kg CFC11e	4.92E-07	1.89E-07	3.28E-08	7.14E-07	6.66E-08	1.11E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.20E-08	9.61E-09	0.00E+00	-1.45E-06
Acidification	mol H+e	7.87E-03	3.69E-03	2.69E-03	1.43E-02	2.12E-03	7.21E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.16E-04	1.35E-03	0.00E+00	-3.66E-02
Eutrophication, aquatic freshwater	kg PO4e	9.88E-05	7.09E-06	3.79E-05	1.44E-04	2.23E-06	9.15E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.53E-07	1.60E-06	0.00E+00	-1.38E-05
Eutrophication, aquatic marine	kg Ne	1.59E-03	1.08E-03	7.27E-04	3.40E-03	5.81E-04	3.23E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.40E-05	6.38E-04	0.00E+00	-6.66E-03
Eutrophication, terrestrial	mol Ne	1.74E-02	1.19E-02	1.03E-02	3.97E-02	6.44E-03	3.40E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.07E-04	6.79E-03	0.00E+00	-6.78E-02
Photochemical ozone formation	kg NMVOCe	6.77E-03	3.64E-03	2.35E-03	1.28E-02	1.89E-03	8.56E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.22E-04	1.67E-03	0.00E+00	-1.91E-02
Abiotic depletion, minerals & metals	kg Sbe	3.00E-05	2.12E-05	3.59E-06	5.47E-05	4.60E-06	1.45E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.31E-06	1.58E-06	0.00E+00	-4.13E-06
Abiotic depletion of fossil resources	MJ	2.69E+01	1.25E+01	6.22E+00	4.56E+01	4.39E+00	8.55E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	8.01E-01	1.05E+00	0.00E+00	-8.97E+01
Water use	m3e depr.	8.73E-01	4.19E-02	1.57E-01	1.07E+00	1.57E-02	4.22E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.84E-03	-9.29E-02	0.00E+00	-2.64E+00

EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all 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.

Eutrophication aquatic freshwater is reported as *kg PO_4 eq,* although the reference given ("EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe") uses the unit *kg P eq.*

14 MM 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
Climate change – total	kg CO2e	-1.44E+01	7.85E-01	1.06E-01	-1.35E+01	2.75E-01	3.77E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.00E-02	1.59E+01	0.00E+00	-6.72E+00
Climate change – fossil	kg CO2e	1.37E+00	7.84E-01	2.89E-01	2.45E+00	2.75E-01	1.29E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.00E-02	1.14E-01	0.00E+00	-6.72E+00
Climate change – biogenic	kg CO2e	-1.58E+01	4.66E-04	-1.84E-01	-1.60E+01	1.68E-04	2.48E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.06E-05	1.58E+01	0.00E+00	-3.20E-03
Climate change – LULUC	kg CO2e	8.37E-03	2.89E-04	1.02E-03	9.67E-03	9.44E-05	2.16E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.76E-05	2.21E-05	0.00E+00	-2.78E-04
Ozone depletion	kg CFC11e	4.89E-07	1.78E-07	3.15E-08	6.99E-07	6.35E-08	1.09E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.15E-08	9.15E-09	0.00E+00	-1.38E-06
Acidification	mol H+e	7.87E-03	3.50E-03	2.56E-03	1.39E-02	2.02E-03	7.13E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.06E-04	1.28E-03	0.00E+00	-3.49E-02
Eutrophication, aquatic freshwater	kg PO4e	9.68E-05	6.70E-06	3.56E-05	1.39E-04	2.12E-06	9.03E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.32E-07	1.52E-06	0.00E+00	-1.31E-05
Eutrophication, aquatic marine	kg Ne	1.57E-03	1.02E-03	6.88E-04	3.28E-03	5.54E-04	3.20E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.10E-05	6.08E-04	0.00E+00	-6.35E-03
Eutrophication, terrestrial	mol Ne	1.72E-02	1.13E-02	9.64E-03	3.82E-02	6.14E-03	3.36E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.74E-04	6.47E-03	0.00E+00	-6.46E-02
Photochemical ozone formation	kg NMVOCe	6.66E-03	3.44E-03	2.24E-03	1.23E-02	1.80E-03	8.46E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.11E-04	1.59E-03	0.00E+00	-1.82E-02
Abiotic depletion, minerals & metals	kg Sbe	2.99E-05	1.99E-05	3.52E-06	5.34E-05	4.39E-06	1.43E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.25E-06	1.50E-06	0.00E+00	-3.94E-06
Abiotic depletion of fossil resources	MJ	2.67E+01	1.18E+01	6.16E+00	4.47E+01	4.19E+00	8.44E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.63E-01	1.00E+00	0.00E+00	-8.55E+01
Water use	m3e depr.	8.74E-01	3.96E-02	1.55E-01	1.07E+00	1.49E-02	4.26E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.71E-03	-8.85E-02	0.00E+00	-2.52E+00

EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all 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.

Eutrophication aquatic freshwater is reported as *kg PO_4 eq,* although the reference given ("EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe") uses the unit *kg P eq.*

13 MM 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
Climate change – total	kg CO2e	-1.27E+01	7.08E-01	1.01E-01	-1.18E+01	2.44E-01	3.64E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.43E-02	1.41E+01	0.00E+00	-5.95E+00
Climate change – fossil	kg CO2e	1.37E+00	7.07E-01	2.84E-01	2.36E+00	2.44E-01	1.29E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.43E-02	1.01E-01	0.00E+00	-5.95E+00
Climate change – biogenic	kg CO2e	-1.41E+01	4.14E-04	-1.84E-01	-1.42E+01	1.49E-04	2.35E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.71E-05	1.40E+01	0.00E+00	-2.84E-03
Climate change – LULUC	kg CO2e	7.50E-03	2.60E-04	9.72E-04	8.74E-03	8.39E-05	2.11E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.56E-05	1.96E-05	0.00E+00	-2.47E-04
Ozone depletion	kg CFC11e	4.87E-07	1.61E-07	3.03E-08	6.78E-07	5.65E-08	1.06E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.02E-08	8.11E-09	0.00E+00	-1.23E-06
Acidification	mol H+e	8.02E-03	3.14E-03	2.43E-03	1.36E-02	1.80E-03	6.93E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.82E-04	1.14E-03	0.00E+00	-3.09E-02
Eutrophication, aquatic freshwater	kg PO4e	9.24E-05	6.03E-06	3.33E-05	1.32E-04	1.89E-06	8.77E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.83E-07	1.35E-06	0.00E+00	-1.16E-05
Eutrophication, aquatic marine	kg Ne	1.54E-03	9.19E-04	6.49E-04	3.11E-03	4.93E-04	3.11E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.40E-05	5.39E-04	0.00E+00	-5.62E-03
Eutrophication, terrestrial	mol Ne	1.69E-02	1.02E-02	9.00E-03	3.60E-02	5.46E-03	3.27E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.97E-04	5.73E-03	0.00E+00	-5.73E-02
Photochemical ozone formation	kg NMVOCe	6.40E-03	3.09E-03	2.12E-03	1.16E-02	1.60E-03	8.22E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.87E-04	1.41E-03	0.00E+00	-1.61E-02
Abiotic depletion, minerals & metals	kg Sbe	3.02E-05	1.81E-05	3.45E-06	5.18E-05	3.90E-06	1.39E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.11E-06	1.33E-06	0.00E+00	-3.49E-06
Abiotic depletion of fossil resources	MJ	2.68E+01	1.07E+01	6.10E+00	4.36E+01	3.72E+00	8.19E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.76E-01	8.86E-01	0.00E+00	-7.57E+01
Water use	m3e depr.	8.91E-01	3.56E-02	1.54E-01	1.08E+00	1.33E-02	4.35E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.40E-03	-7.84E-02	0.00E+00	-2.23E+00

EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all 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.

Eutrophication aquatic freshwater is reported as *kg PO_4 eq,* although the reference given ("EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe") uses the unit *kg P eq*

15 MM 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
Renewable PER used as energy	MJ	1.65E+01	1.80E-01	2.89E+01	4.56E+01	5.28E-02	1.95E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.14E-02	2.40E-02	0.00E+00	-2.53E-01
Renewable PER used as materials	MJ	1.72E+02	0.00E+00	1.79E+00	1.74E+02	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
Total use of renewable PER	MJ	1.89E+02	1.80E-01	3.07E+01	2.20E+02	5.28E-02	1.95E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.14E-02	2.40E-02	0.00E+00	-2.53E-01
Non-renew. PER used as energy	MJ	1.91E+01	1.25E+01	3.79E+00	3.55E+01	4.39E+00	8.55E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	8.01E-01	1.05E+00	0.00E+00	-8.97E+01
Non-renew. PER used as materials	MJ	7.73E+00	0.00E+00	2.42E+00	1.02E+01	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
Total use of non-renewable PER	MJ	2.69E+01	1.25E+01	6.22E+00	4.56E+01	4.39E+00	8.55E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	8.01E-01	1.05E+00	0.00E+00	-8.97E+01
Use of secondary materials	kg	6.13E-03	0.00E+00	8.10E-04	6.94E-03	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 renewable 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 non-renew. 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	m3	9.67E-03	2.21E-03	2.66E-03	1.45E-02	8.67E-04	2.59E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.52E-04	2.10E-03	0.00E+00	-1.07E-02

PER abbreviation stands for primary energy resources

14 MM 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
Renewable PER used as energy	MJ	1.59E+01	1.70E-01	2.66E+01	4.27E+01	5.04E-02	1.93E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.08E-02	2.28E-02	0.00E+00	-2.41E-01
Renewable PER used as materials	MJ	1.63E+02	0.00E+00	1.79E+00	1.65E+02	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
Total use of renewable PER	MJ	1.79E+02	1.70E-01	2.84E+01	2.07E+02	5.04E-02	1.93E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.08E-02	2.28E-02	0.00E+00	-2.41E-01
Non-renew. PER used as energy	MJ	1.90E+01	1.18E+01	3.73E+00	3.46E+01	4.19E+00	8.44E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.63E-01	1.00E+00	0.00E+00	-8.55E+01
Non-renew. PER used as materials	MJ	7.70E+00	0.00E+00	2.42E+00	1.01E+01	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
Total use of non-renewable PER	MJ	2.67E+01	1.18E+01	6.16E+00	4.47E+01	4.19E+00	8.44E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.63E-01	1.00E+00	0.00E+00	-8.55E+01
Use of secondary materials	kg	6.21E-03	0.00E+00	8.10E-04	7.02E-03	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 renewable 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 non-renew. 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	m3	9.65E-03	2.09E-03	2.62E-03	1.44E-02	8.27E-04	2.57E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.45E-04	2.00E-03	0.00E+00	-1.02E-02

PER abbreviation stands for primary energy resources

13 MM 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
Renewable PER used as energy	MJ	1.48E+01	1.53E-01	2.43E+01	3.92E+01	4.48E-02	1.88E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.60E-03	2.02E-02	0.00E+00	-2.13E-01
Renewable PER used as materials	MJ	1.45E+02	0.00E+00	1.79E+00	1.46E+02	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
Total use of renewable PER	MJ	1.59E+02	1.53E-01	2.61E+01	1.86E+02	4.48E-02	1.88E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.60E-03	2.02E-02	0.00E+00	-2.13E-01
Non-renew. PER used as energy	MJ	1.91E+01	1.07E+01	3.67E+00	3.34E+01	3.72E+00	8.19E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.76E-01	8.86E-01	0.00E+00	-7.57E+01
Non-renew. PER used as materials	MJ	7.73E+00	0.00E+00	2.42E+00	1.02E+01	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
Total use of non-renewable PER	MJ	2.68E+01	1.07E+01	6.10E+00	4.36E+01	3.72E+00	8.19E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.76E-01	8.86E-01	0.00E+00	-7.57E+01
Use of secondary materials	kg	6.58E-03	0.00E+00	8.10E-04	7.39E-03	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 renewable 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 non-renew. 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	m3	9.70E-03	1.88E-03	2.58E-03	1.42E-02	7.35E-04	2.55E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.28E-04	1.78E-03	0.00E+00	-9.06E-03

PER abbreviation stands for primary energy resources

15 MM 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	9.33E-02	1.30E-02	1.56E-02	1.22E-01	4.35E-03	2.68E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	8.33E-04	0.00E+00	0.00E+00	-2.94E-02
Non-hazardous waste	kg	2.06E+00	9.36E-01	4.56E-01	3.45E+00	4.34E-01	2.26E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.92E-02	0.00E+00	0.00E+00	-4.31E-01
Radioactive waste	kg	5.65E-05	8.59E-05	1.21E-05	1.54E-04	3.02E-05	3.85E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.47E-06	0.00E+00	0.00E+00	-6.50E-04

14 MM 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	9.37E-02	1.23E-02	1.53E-02	1.21E-01	4.14E-03	2.66E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.93E-04	0.00E+00	0.00E+00	-2.80E-02
Non-hazardous waste	kg	2.06E+00	8.87E-01	4.48E-01	3.39E+00	4.14E-01	2.22E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.60E-02	0.00E+00	0.00E+00	-4.10E-01
Radioactive waste	kg	5.57E-05	8.10E-05	1.17E-05	1.48E-04	2.88E-05	3.80E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.22E-06	0.00E+00	0.00E+00	-6.19E-04

13 MM 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	9.67E-02	1.10E-02	1.49E-02	1.23E-01	3.69E-03	2.61E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.03E-04	0.00E+00	0.00E+00	-2.48E-02
Non-hazardous waste	kg	2.10E+00	7.91E-01	4.40E-01	3.33E+00	3.68E-01	2.13E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.85E-02	0.00E+00	0.00E+00	-3.64E-01
Radioactive waste	kg	5.43E-05	7.31E-05	1.13E-05	1.39E-04	2.56E-05	3.68E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.62E-06	0.00E+00	0.00E+00	-5.49E-04

15 MM 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 reuse	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	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 energy recovery	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
Exported energy	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

14 MM 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 reuse	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	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 energy recovery	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
Exported energy	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

13 MM 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 reuse	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	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 energy recovery	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
Exported energy	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

15 MM KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change – total	kg CO2e	-1.84E+00	9.99E-02	1.34E-02	-1.73E+00	3.46E-02	4.60E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.31E-03	1.46E+00	0.00E+00	-8.48E-01
Abiotic depletion, minerals & metals	kg Sbe	3.61E-06	2.54E-06	4.32E-07	6.58E-06	5.53E-07	1.74E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.57E-07	1.89E-07	0.00E+00	-4.97E-07
Abiotic depletion of fossil resources	MJ	3.23E+00	1.51E+00	7.47E-01	5.49E+00	5.28E-01	1.03E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.62E-02	1.26E-01	0.00E+00	-1.08E+01
Water use	m3e depr.	1.05E-01	5.04E-03	1.88E-02	1.29E-01	1.88E-03	5.07E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.42E-04	-1.12E-02	0.00E+00	-3.18E-01
Use of secondary materials	kg	7.37E-04	0.00E+00	9.74E-05	8.34E-04	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
Biogenic carbon content in product	kg C	N/A	N/A	4.75E-01	N/A	N/A	N/A	MND	MND	MND	MND	MND	MND	MND	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	N/A	N/A	7.20E-03	N/A	N/A	N/A	MND	MND	MND	MND	MND	MND	MND	N/A	N/A	N/A	N/A	N/A

14 MM KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change – total	kg CO2e	-1.82E+00	9.90E-02	1.34E-02	-1.71E+00	3.47E-02	4.76E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.31E-03	1.46E+00	0.00E+00	-8.48E-01
Abiotic depletion, minerals & metals	kg Sbe	3.78E-06	2.51E-06	4.44E-07	6.73E-06	5.54E-07	1.80E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.57E-07	1.89E-07	0.00E+00	-4.97E-07
Abiotic depletion of fossil resources	MJ	3.37E+00	1.49E+00	7.77E-01	5.65E+00	5.28E-01	1.06E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.62E-02	1.26E-01	0.00E+00	-1.08E+01
Water use	m3e depr.	1.10E-01	5.00E-03	1.96E-02	1.35E-01	1.89E-03	5.37E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.42E-04	-1.12E-02	0.00E+00	-3.18E-01
Use of secondary materials	kg	7.84E-04	0.00E+00	1.02E-04	8.86E-04	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
Biogenic carbon content in product	kg C	N/A	N/A	4.73E-01	N/A	N/A	N/A	MND	MND	MND	MND	MND	MND	MND	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	N/A	N/A	7.55E-03	N/A	N/A	N/A	MND	MND	MND	MND	MND	MND	MND	N/A	N/A	N/A	N/A	N/A

13 MM KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change – total	kg CO2e	-1.81E+00	1.01E-01	1.43E-02	-1.69E+00	3.48E-02	5.18E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.31E-03	1.46E+00	0.00E+00	-8.48E-01
Abiotic depletion, minerals & metals	kg Sbe	4.31E-06	2.58E-06	4.91E-07	7.38E-06	5.56E-07	1.98E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.57E-07	1.89E-07	0.00E+00	-4.97E-07
Abiotic depletion of fossil resources	MJ	3.82E+00	1.52E+00	8.68E-01	6.21E+00	5.30E-01	1.17E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.62E-02	1.26E-01	0.00E+00	-1.08E+01
Water use	m3e depr.	1.27E-01	5.06E-03	2.20E-02	1.54E-01	1.89E-03	6.20E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.42E-04	-1.12E-02	0.00E+00	-3.18E-01
Use of secondary materials	kg	9.37E-04	0.00E+00	1.15E-04	1.05E-03	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
Biogenic carbon content in product	kg C	N/A	N/A	4.70E-01	N/A	N/A	N/A	MND	MND	MND	MND	MND	MND	MND	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	N/A	N/A	8.55E-03	N/A	N/A	N/A	MND	MND	MND	MND	MND	MND	MND	N/A	N/A	N/A	N/A	N/A

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, hydro, run-of-river, Ecoinvent v3.6, Sweden data has been used as per the LCA model
Electricity CO2e / kWh	0.0039 kg CO2e /kWh
District heating data source and quality	Heat and power co-generation, wood chips, 6667 kw, state-of-the-art 2014, Ecoinvent v3.6, Sweden data has been used as per the LCA model
District heating CO2e / kWh	0.0009 kg CO2e /kWh

Transport scenario documentation

Scenario parameter	Value
A4 specific transport CO2e emissions, kg CO2e / tkm	0,0819
A4 average transport distance, km	733

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	7.6895
Collection process – kg collected with mixed waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	0
Recovery process – kg for energy recovery	7.6895
Disposal (total) – kg for final deposition	0
Scenario assumptions e.g. transportation	End-of-life product is transported 50 km with an average lorry

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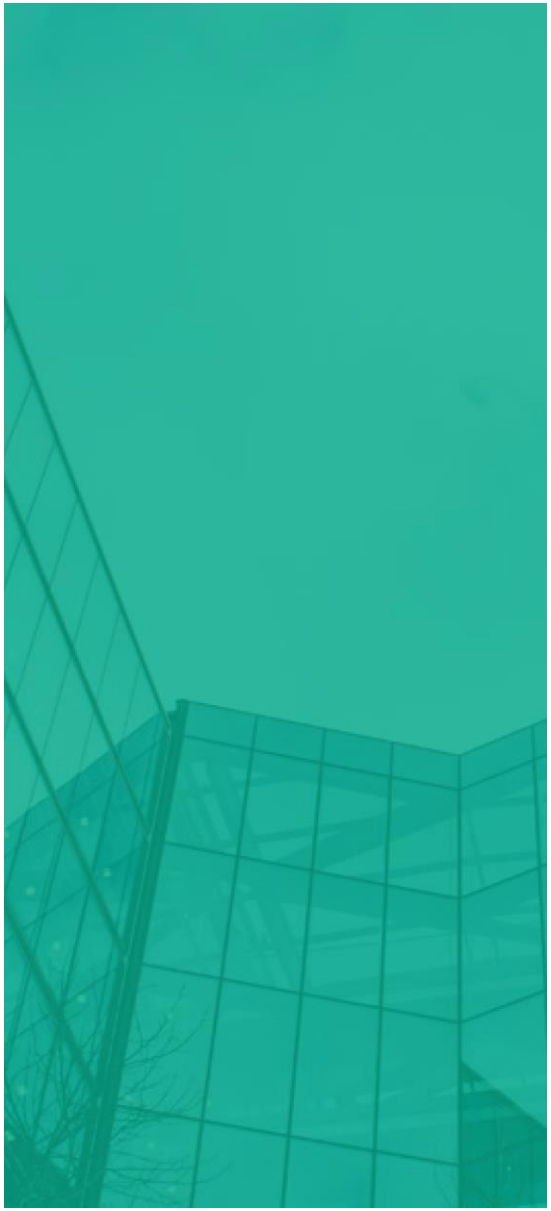
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ABOUT THE MANUFACTURER

Kährs has been working with wood for more than 160 years and is today one of the oldest and most innovative manufacturers of engineered wood floors in the world. Kährs' long history is lined with a series of innovations that have shaped the entire global wood flooring industry over the years – from the invention of the multi-layer board to the glue-less Woodloc® locking joint. The wood knowledge we have accumulated over the years has been passed down from generation to generation. We are constantly discussing new ideas how to improve our floors. At work, we are trying, testing and eventually succeeding. But the goal is always the same: how to find ways to make our floors even better looking, stronger, easier to install and more sustainable. We're proud that people all over the world appreciate the result. Today, our floors can be found in homes, offices, shops, hotels, concert halls, theaters and sports arenas from Europe and Asia to the Americas. Kährs supplies products to more than 70 countries and holds a leading market position in Sweden and a strong presence in Europe and the UK. Over the decades, Kährs, in cooperation with its customers, became a leader in providing flooring offering high expectations of quality and design and innovative and sustainable solutions. Sustainability and environmental actions are at the heart of Kährs Group.

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Background data	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for for Wood and Plant Fiber Based Products

ANNEX: ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

15 MM 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 potential	kg CO2e	1.33E+00	8.23E-01	2.83E-01	2.44E+00	2.86E-01	1.29E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.20E-02	1.17E-01	0.00E+00	-7.02E+00
Depletion of stratospheric ozone	kg CFC11e	7.23E-07	1.50E-07	3.26E-08	9.06E-07	5.29E-08	9.74E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.57E-09	8.08E-09	0.00E+00	-1.15E-06
Acidification	kg SO2e	6.46E-03	1.92E-03	1.83E-03	1.02E-02	1.36E-03	4.61E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.07E-04	9.36E-04	0.00E+00	-3.06E-02
Eutrophication	kg PO4 3e	2.09E-03	3.74E-04	6.90E-04	3.15E-03	1.98E-04	4.52E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.22E-05	1.05E-03	0.00E+00	-3.05E-03
Photochemical ozone formation	kg C2H4e	6.36E-04	1.15E-04	1.35E-04	8.87E-04	5.48E-05	1.30E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.91E-06	1.94E-05	0.00E+00	-1.03E-03
Abiotic depletion of non-fossil res.	kg Sbe	3.00E-05	2.12E-05	3.59E-06	5.47E-05	4.60E-06	1.45E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.31E-06	1.58E-06	0.00E+00	-4.13E-06
Abiotic depletion of fossil resources	MJ	2.69E+01	1.25E+01	6.22E+00	4.56E+01	4.39E+00	8.55E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	8.01E-01	1.05E+00	0.00E+00	-8.97E+01

MND abbreviation stands for Module Not Declared

14 MM 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 potential	kg CO2e	1.33E+00	7.77E-01	2.78E-01	2.38E+00	2.72E-01	1.29E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.95E-02	1.12E-01	0.00E+00	-6.68E+00
Depletion of stratospheric ozone	kg CFC11e	7.19E-07	1.42E-07	3.14E-08	8.93E-07	5.05E-08	9.63E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.12E-09	7.70E-09	0.00E+00	-1.09E-06
Acidification	kg SO2e	6.50E-03	1.82E-03	1.75E-03	1.01E-02	1.30E-03	4.55E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.02E-04	8.92E-04	0.00E+00	-2.91E-02
Eutrophication	kg PO4 3e	2.07E-03	3.54E-04	6.62E-04	3.09E-03	1.89E-04	4.45E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.12E-05	1.00E-03	0.00E+00	-2.90E-03
Photochemical ozone formation	kg C2H4e	6.27E-04	1.09E-04	1.32E-04	8.68E-04	5.23E-05	1.28E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.58E-06	1.85E-05	0.00E+00	-9.83E-04
Abiotic depletion of non-fossil res.	kg Sbe	2.99E-05	1.99E-05	3.52E-06	5.34E-05	4.39E-06	1.43E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.25E-06	1.50E-06	0.00E+00	-3.94E-06
Abiotic depletion of fossil resources	MJ	2.67E+01	1.18E+01	6.16E+00	4.47E+01	4.19E+00	8.44E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.63E-01	1.00E+00	0.00E+00	-8.55E+01

MND abbreviation stands for Module Not Declared

13 MM 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 potential	kg CO2e	1.32E+00	7.01E-01	2.73E-01	2.30E+00	2.42E-01	1.29E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.39E-02	9.88E-02	0.00E+00	-5.92E+00
Depletion of stratospheric ozone	kg CFC11e	7.20E-07	1.28E-07	3.02E-08	8.78E-07	4.49E-08	9.39E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	8.08E-09	6.82E-09	0.00E+00	-9.70E-07
Acidification	kg SO2e	6.71E-03	1.63E-03	1.67E-03	1.00E-02	1.15E-03	4.43E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.03E-05	7.90E-04	0.00E+00	-2.58E-02
Eutrophication	kg PO4 3e	2.07E-03	3.18E-04	6.34E-04	3.02E-03	1.68E-04	4.31E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.88E-05	8.87E-04	0.00E+00	-2.57E-03
Photochemical ozone formation	kg C2H4e	6.06E-04	9.80E-05	1.29E-04	8.33E-04	4.65E-05	1.25E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.84E-06	1.64E-05	0.00E+00	-8.71E-04
Abiotic depletion of non-fossil res.	kg Sbe	3.02E-05	1.81E-05	3.45E-06	5.18E-05	3.90E-06	1.39E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.11E-06	1.33E-06	0.00E+00	-3.49E-06
Abiotic depletion of fossil resources	MJ	2.68E+01	1.07E+01	6.10E+00	4.36E+01	3.72E+00	8.19E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.76E-01	8.86E-01	0.00E+00	-7.57E+01

MND abbreviation stands for Module Not Declared

HERSTELLERERKLÄRUNG

Zur Bestätigung der Konformität gemäß den Anforderungen an die Schadstoffvermeidung nach QNG / DGNB / BNB / EU-TAXONOMIE

Hiermit bestätigen wir:

Kährs Holding AB

Ångbåtsbron 1

201 80 Malmö

für die folgenden **Bodenbeläge mit Holz(-werkstoff)-Anteil**:

Alle Kährs 3-Schicht und 2-Schicht Parkettböden

sowie alle 7 und 10 mm Echtholzböden

Das Produkt/ Erzeugnis/ mindestens ein Teilerzeugnis enthält Stoffe der Kandidatenliste (Version zum Ausstellungsdatum) oberhalb 0,1 Massen%:	**Nein**
Das Produkt/Erzeugnis/mindestens ein Teilerzeugnis enthält weitere CMR-Stoffe der Kategorie 1A oder 1B, die nicht auf der Kandidatenliste stehen, oberhalb von 0,1 Massen-% in mindestens einem Teilerzeugnis:	**Nein**
Einhaltung AgBB-Schema	**Ja**
Für geräucherte Varianten: Ammoniak ≤ 0,10 mg/m³	**Ja**

Malmo, 17/03/2026,

Ort, Datum, Unterschrift, Stempel

Ihr Ansprechpartner für Rückfragen:

Name: PETRAS ROXANA Telefon: +40 742 149 329

Mailadresse: roxana.petras@kahrs.com