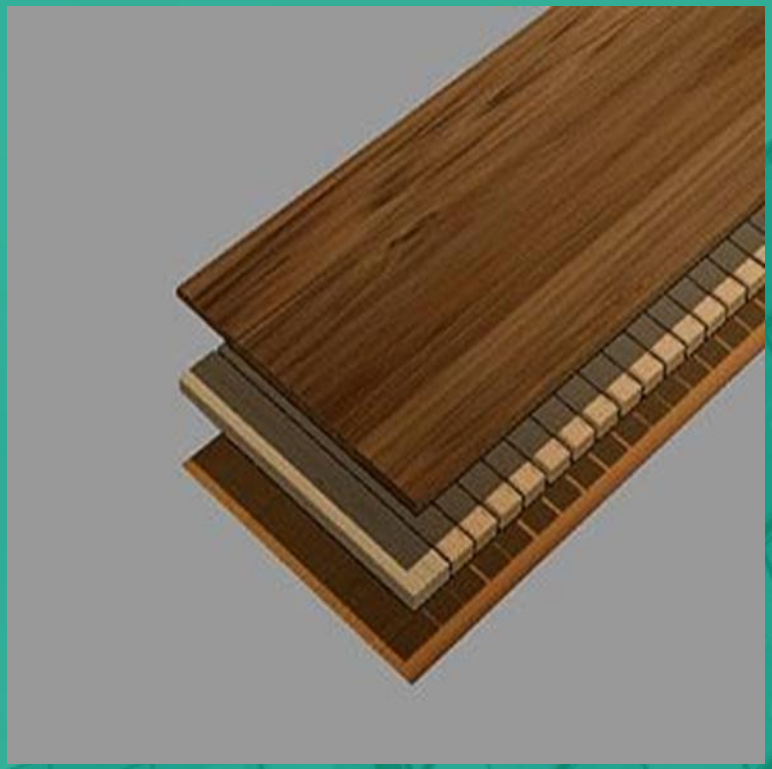
ENVIRONMENTAL PRODUCT DECLARATION

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



KÄHRS 14MM 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 14mm Engineered Wood Floors Kährs Group
Additional label(s)	Kährs, Karelia, Cello, Forbo, RAW, Langmoen, White box
Product number / reference	Wood floor coverings according to EN 13489:2017 and EN 14342:2013
Place(s) of production	Maklino, Russia
CPC code	31210

The Building Information Foundation RTS sr

EPDs within the same product category but from different programmes may not be comparable.

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs 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	The Building Information Foundation RTS sr
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	Neena Chandramathy, One Click LCA
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Verification date	27.10.2021
EPD verifier	Silvia Vilčeková, Silcert, s.r.o.
EPD number	RTS_159_21
Publishing date	November 19, 2021
EPD valid until	November 19, 2026

Jessica Karhu
RTS EPD Committee secretary

Laura Apilo
Managing Director

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 14 mm. The surface layer can be re-sanded 3-4 times. Kährs 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, but 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 have 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 solid wood. The other two layers make up the floors foundation and the material of these layers varies depending on the manufacturer. Ours is made from pinewood and spruce. All the layers have a combined thickness of 14 mm. You can install the floors as floating (float-in) or glue them down.

PRODUCT STANDARDS

Kährs is certified at all sites ISO 9001, ISO 14001. All sites are certified to FSC® and PEFC™. 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

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
wood	10,094	0	100	EU
Paper	0,0320	0	100	EU
Other	0,5150	0	0	EU

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	5%	EU
Bio-based materials	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 high-quality 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 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.

Transportation of warehouse material is shipped to customers. Initially, shipment is by truck/lorry to either end-user customer. (A4) covers all transport from the factory to the final customer. Installing a wood floor from Kährs is quick and simple and glueless, thanks to our innovative locking joint system Woodloc®. The glueless system locks the boards together mechanically, eliminating gapping in between the boards. The superior fit also enhances the performance and durability of the floor.

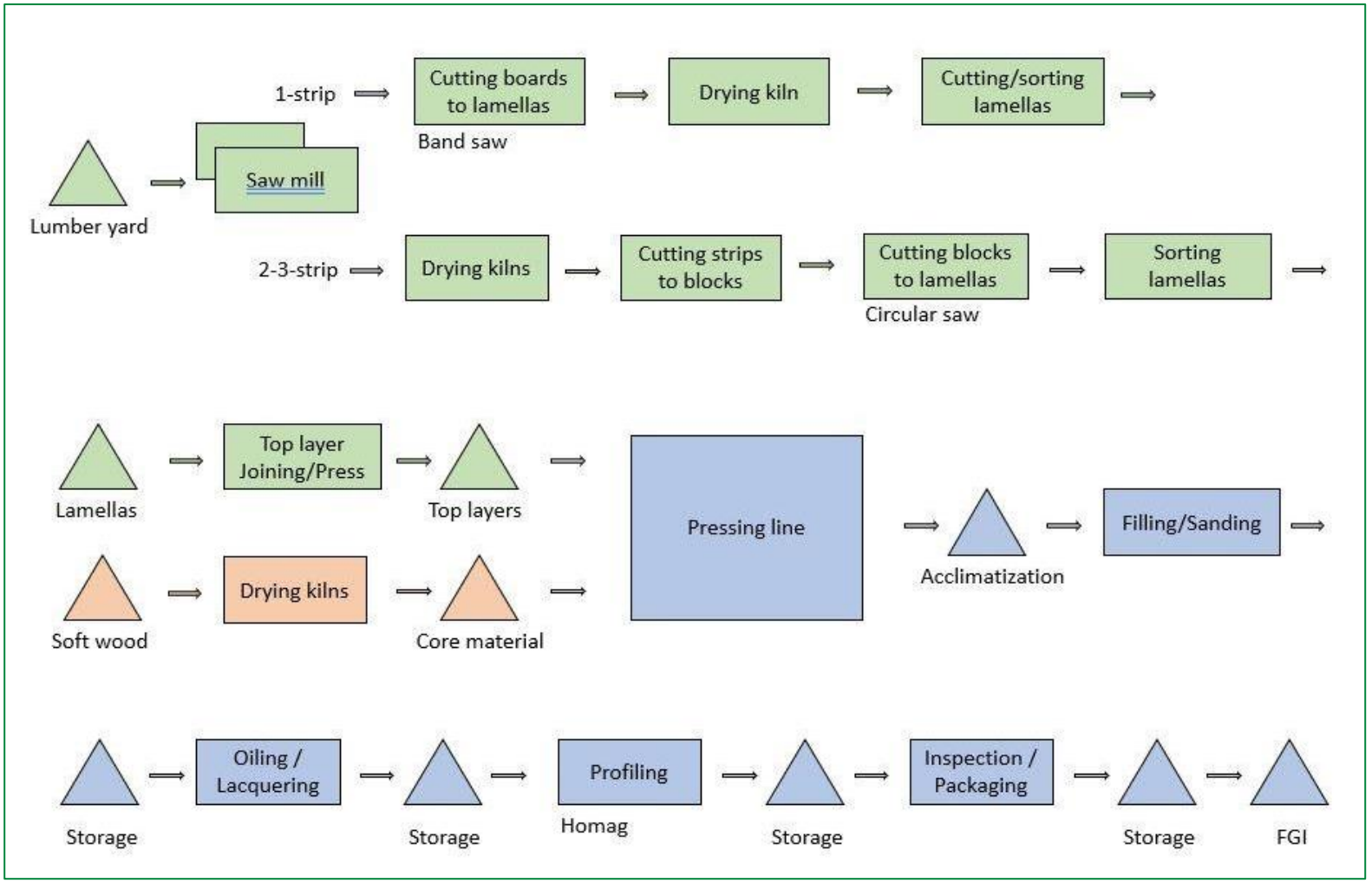
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the 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 are 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	10.4676

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	5,06
Biogenic carbon content in packaging, kg C	0,07

SYSTEM BOUNDARY

This EPD covers the *cradle to gate* 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
Geography, by two-letter ISO country code or regions. The International EPD System only.																		
EU	EU	EU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU		
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 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. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution, and end-of-life stages.

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019

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.

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 sourced from several types of energy sources combined in Romania. Independent research suggests that the 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.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 - standard.

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. 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 considered 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 assumed as lorry which is the most common.
  Module C3, C4, D: 100% of the end-of-life product is assumed to be recovered to energy

AVERAGES AND VARIABILITY

Data derived from specific production processes or average data derived from specific production processes have been used as a basis for calculating.

ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data may be presented in annexes.

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	kg CO_2e	-2,26E1	8,61E-1	1,8E1	-3,76E0	1,9E0	3,83E-1	MND	MND	MND	MND	MND	MND	MND	0E0	6,61E-2	1,67E-1	0E0	6,43E0
GWP – fossil	kg CO_2e	1,91E0	8,6E-1	6,37E0	9,14E0	1,92E0	5,76E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,6E-2	1,67E-1	0E0	-8,73E0
GWP – biogenic	kg CO_2e	-2,45E1	5,53E-4	1,16E1	-1,29E1	7,84E-4	3,25E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,04E-5	3,1E-4	0E0	1,52E1
GWP – LULUC	kg CO_2e	1,45E-2	2,65E-4	1,95E-2	3,43E-2	6,33E-4	1,89E-6	MND	MND	MND	MND	MND	MND	MND	0E0	2,33E-5	3,1E-4	0E0	-3,38E-4
Ozone depletion pot.	kg CFC_{-11}e	5,85E-7	1,99E-7	6,12E-7	1,4E-6	4,32E-7	9,92E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,51E-8	5,86E-9	0E0	-1,82E-6
Acidification potential	mol H^+e	1,11E-2	3,63E-3	4,16E-2	5,63E-2	8,86E-3	6,34E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,72E-4	8,25E-4	0E0	-4,44E-2
EP-freshwater[2)]	kg Pe	1,53E-4	7,51E-6	5,89E-4	7,5E-4	1,78E-5	8,27E-8	MND	MND	MND	MND	MND	MND	MND	0E0	5,7E-7	8,34E-6	0E0	-1,53E-5
EP-marine	kg Ne	2,29E-3	1,08E-3	9,53E-3	1,29E-2	2,69E-3	2,83E-5	MND	MND	MND	MND	MND	MND	MND	0E0	8,05E-5	1,46E-4	0E0	-7,58E-3
EP-terrestrial	mol Ne	2,52E-2	1,2E-2	1,09E-1	1,47E-1	2,97E-2	3E-4	MND	MND	MND	MND	MND	MND	MND	0E0	8,9E-4	1,63E-3	0E0	-7,68E-2
POCP (“smog”)	kg NMVOCe	1,05E-2	3,84E-3	3,39E-2	4,82E-2	9,31E-3	7,61E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,79E-4	4,41E-4	0E0	-2,2E-2
ADP-minerals & metals	kg Sbe	3,97E-5	1,49E-5	2,99E-5	8,45E-5	3,13E-5	1,28E-7	MND	MND	MND	MND	MND	MND	MND	0E0	1,65E-6	3,47E-7	0E0	-3,22E-6
ADP-fossil resources	MJ	3,61E1	1,33E1	1,09E2	1,58E2	2,92E1	7,85E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,01E0	1,98E0	0E0	-1,12E2
Water use[1)]	m^3e depr.	1,16E0	5,21E-2	1,46E0	2,67E0	1,21E-1	1,76E-4	MND	MND	MND	MND	MND	MND	MND	0E0	3,58E-3	3,51E-2	0E0	-3,44E0

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

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	1,46E-7	7,64E-8	2,33E-6	2,55E-6	1,88E-7	6,82E-10	MND	MND	MND	MND	MND	MND	MND	0E0	5,1E-9	6,77E-9	0E0	-3,58E-7
Ionizing radiation[3)]	kBq U235e	8,14E-2	5,7E-2	7,37E-1	8,76E-1	1,26E-1	2,44E-4	MND	MND	MND	MND	MND	MND	MND	0E0	4,4E-3	6,99E-3	0E0	-4,93E-1
Ecotoxicity (freshwater)	CTUe	4,68E1	1,05E1	1,69E2	2,26E2	2,39E1	1,9E-1	MND	MND	MND	MND	MND	MND	MND	0E0	7,87E-1	3,12E0	0E0	-5,5E1
Human toxicity, cancer	CTUh	2,66E-9	2,61E-10	3,44E-9	6,36E-9	6,82E-10	1,5E-11	MND	MND	MND	MND	MND	MND	MND	0E0	2,23E-11	5,49E-11	0E0	-1,32E-9
Human tox. non-cancer	CTUh	4E-8	1,2E-8	1,8E-7	2,32E-7	2,76E-8	7,05E-10	MND	MND	MND	MND	MND	MND	MND	0E0	9,02E-10	1,63E-9	0E0	-2,91E-9
SQP	-	3,8E0	1,95E1	7,37E0	3,07E1	4,27E1	5,58E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,12E0	1,9E-1	0E0	-1,6E0

4) SQP = Land use related impacts/soil quality.5) 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.

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	MJ	2,52E1	1,57E-1	8,28E1	1,08E2	4,33E-1	1,59E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,43E-2	2,02E-1	0E0	-2,88E-1
Renew. PER as material	MJ	2,49E2	0E0	2,35E0	2,52E2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	2,75E2	1,57E-1	8,52E1	3,6E2	4,33E-1	1,59E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,43E-2	2,02E-1	0E0	-2,88E-1
Non-re. PER as energy	MJ	2,65E1	1,33E1	1,07E2	1,47E2	2,92E1	7,85E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,01E0	1,98E0	0E0	-1,12E2
Non-re. PER as material	MJ	9,55E0	0E0	1,05E0	1,06E1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	3,61E1	1,33E1	1,09E2	1,58E2	2,92E1	7,85E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,01E0	1,98E0	0E0	-1,12E2
Secondary materials	kg	8,16E-3	0E0	3,43E-4	8,5E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m^3	1,45E-2	2,74E-3	3,1E-2	4,82E-2	6,39E-3	1,51E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,91E-4	6,88E-4	0E0	-1,09E-2

6) 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	1,27E-1	1,43E-2	2,98E-1	4,4E-1	3,88E-2	1,95E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,05E-3	0E0	0E0	1,93E-2
Non-hazardous waste	kg	2,85E0	1,42E0	1,73E1	2,16E1	3,12E0	2,45E-1	MND	MND	MND	MND	MND	MND	MND	0E0	8,71E-2	0E0	0E0	9,76E0
Radioactive waste	kg	8,45E-5	8,99E-5	4,2E-4	5,94E-4	1,97E-4	3,64E-7	MND	MND	MND	MND	MND	MND	MND	0E0	6,89E-6	0E0	0E0	-8,15E-4

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	1,04E1	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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
GWP – total	kg CO_2e	-2,16E0	8,22E-2	1,72E0	-3,59E-1	1,83E-1	3,66E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,31E-3	1,6E-2	0E0	6,15E-1
ADP-minerals & metals	kg Sbe	3,79E-6	1,43E-6	2,85E-6	8,07E-6	2,99E-6	1,23E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1,57E-7	3,32E-8	0E0	-3,08E-7
ADP-fossil	MJ	3,45E0	1,27E0	1,04E1	1,51E1	2,79E0	7,5E-3	MND	MND	MND	MND	MND	MND	MND	0E0	9,62E-2	1,89E-1	0E0	-1,07E1
Water use	m^3e depr.	1,11E-1	4,97E-3	1,39E-1	2,55E-1	1,16E-2	1,68E-5	MND	MND	MND	MND	MND	MND	MND	0E0	3,42E-4	3,35E-3	0E0	-3,29E-1
Secondary materials	kg	7,79E-4	0E0	3,28E-5	8,12E-4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Biog. C in product	kg C	N/A	N/A	4,83E-1	4,83E-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	6,69E-3	6,69E-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

7) Biog. C in product = Biogenic carbon content in product

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, high voltage, production mix Ecoinvent v3.6, Russia data has been used as per the LCA model
Electricity kg CO_2e / kWh	0,65 kg CO_2e / kWh

Transport scenario documentation (A4)

Scenario parameter	Value
A4 specific transport CO2e emissions, kg CO2e / tkm	0,0943
A4 average transport distance, km	2132

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	10,3629
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	10,3629
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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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. Were 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. After years of use, these floors can be removed and reused or recycled. The service life recommended is 50 years when well maintained in domestic application. After many years of use, the floors can be removed, reused and or recycled or converted to energy.

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	Kährs Group
EPD author	Neena Chandramathy, One Click LCA
EPD verifier	Silvia Vilčeková, Silcert, s.r.o.
EPD program operator	The Building Information Foundation RTS sr
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 Wood and Plant Fiber Based Products

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 EN 15804, 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 background report (project report) for this EPD

Why does verification transparency matter? Read more online.

VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Silvia Vilčeková, Silcert, s.r.o.
EPD verification started on	25.10.2021
EPD verification completed	27.10.2021
Approver of the EPD verifier	The Building Information Foundation RTS sr

Author & tool verification	Answer
EPD author	Neena Chandramathy, One Click LCA
EPD Generator module	Wood and Plant Fiber Based
Independent software	Teija Käpynen, Envineer Oy
Software verification date	11 August 2020

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 EN 15804:2012+A2:2019.

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.

Silvia Vilčeková, Silcert, s.r.o.

ANNEX 1 : 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	1,85E0	8,52E-1	6,23E0	8,93E0	1,9E0	5,76E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,54E-2	1,61E-1	0E0	-8,68E0
Ozone depletion Pot.	kg CFC_{-11}e	8,32E-7	1,58E-7	5,68E-7	1,56E-6	3,44E-7	8,36E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,2E-8	5,43E-9	0E0	-1,43E-6
Acidification	kg SO_2e	9,15E-3	2,12E-3	3,3E-2	4,43E-2	4,07E-3	3,95E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,35E-4	6,98E-4	0E0	-3,73E-2
Eutrophication	kg PO_4^3e	3,01E-3	4,56E-4	1,52E-2	1,86E-2	8,68E-4	4,34E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,8E-5	2,81E-4	0E0	-2,51E-3
POCP (“smog”)	kg C_2H_4e	1,08E-3	1,11E-4	1,46E-3	2,65E-3	2,61E-4	1,16E-6	MND	MND	MND	MND	MND	MND	MND	0E0	8,7E-6	2,79E-5	0E0	-1,27E-3
ADP-elements	kg Sbe	3,97E-5	1,49E-5	2,99E-5	8,45E-5	3,13E-5	1,28E-7	MND	MND	MND	MND	MND	MND	MND	0E0	1,65E-6	3,47E-7	0E0	-3,22E-6
ADP-fossil	MJ	3,61E1	1,33E1	1,09E2	1,58E2	2,92E1	7,85E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,01E0	1,98E0	0E0	-1,12E2