

Owner: Junckers Industrier A/S  
No.: MD-25120-EN  
Issued: 28-05-2025  
Valid to: 28-05-2030

3<sup>rd</sup> PARTY VERIFIED

**EPD**

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



**Owner of declaration**  
 Junckers Industrier A/S  
 Værftsvej 4  
 4600 Køge  
 Denmark



**Issued:**  
 28-05-2025

**Valid to:**  
 28-05-2030

**Programme**  
 EPD Danmark  
[www.epddanmark.dk](http://www.epddanmark.dk)



- |   |  |
|---|--|
| <input type="checkbox"/> Industry EPD           | <input checked="" type="checkbox"/> Product specific |
| <input checked="" type="checkbox"/> Product EPD | <input type="checkbox"/> Average                     |
|   | <input type="checkbox"/> Worst Case                  |

**Basis of calculation**

This EPD is developed and verified in accordance with the European standard EN 15804+A2.

**Comparability**

EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

**Validity**

This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

**Use**

The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

**Declared product(s)**

Plank Oak 20,5 x 140mm  
 Plank Oak 20,5 x 185mm

Plank Oak 15 x 129mm

The EPD covers one hardwood types: oak.  
 Surface treatment are grouped into three groups as three scenarios for A1-A3.

Number of declared datasets/product variations: 2

3 scenarios of A1-A3 for different surface treatments

**EPD type**

- Cradle-to-gate with modules C1-C4 and D
- Cradle-to-gate with options, modules C1-C4 and D
- Cradle-to-grave and module D
- Cradle-to-gate
- Cradle-to-gate with options

**Production site**

Junckers Industrier A/S  
 Værftsvej 4  
 4600 Køge  
 Denmark

Junckers Industrier A/S  
 Herthadølvej 5  
 4840 Nørre Alslev  
 Denmark

**Use of Guarantees of Origin**

- No certificates used
- Electricity covered by GoO
- Biogas covered by GoO

**Declared/ functional unit**

1 m<sup>2</sup> of solid hardwood plank floor incl. surface treatment

**Year of production site data (A3)**

2023

**EPD version**

Version 1

CEN standard EN 15804 serves as the core PCR
Independent verification of the declaration and data, according to EN ISO 14025
<input type="checkbox"/> internal <input checked="" type="checkbox"/> external
Third party verifier:  <hr/> Guangli Du


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 Martha Katrine Sørensen  
 EPD Danmark

Life cycle stages and modules (ND = module not declared)																
Product			Construction process		Use							End of life			Beyond the system boundary	
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
<b>X</b>	<b>X</b>	<b>X</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

# Product information

## Product description

The main product components are shown in the table below.

Material	Weight-% of declared product
Wood, dry weight	91%
Water in wood	8%
Lacquers and oils	<2%

The thermal properties of the floorboards are as follows.

Thermal conductivity, [W/m·K]:  
Oak: Approx. 0,17

Thermal resistance, md [m<sup>2</sup>·K/W]:  
20,5 mm floorboards: 0,13  
15 mm floorboards: 0,09

## Product packaging:

The composition of the sales- and transport packaging of the product is shown in the table below.

Material	Weight of packaging material (kg)	Weight-% of packaging
PE-film	0,045 – 0,046	26%
Cardboard	0,13	74%
Total	0,17	100%

## Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of 1 m<sup>2</sup> of plank floor on the production site located in Køge and Nørre Alslev. Product specific data are based on average values collected in the period 2023. Background data are based on datasets from Ecoinvent 3.10 and a few datasets from CEPE 4.0 and are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

## Hazardous substances

The declared products do not contain substances listed on the "Candidate List of Substances of Very High Concern for authorisation"

(<http://echa.europa.eu/candidate-list-table>)

## Product(s) use

Hardwood 2-strip parquet floor, which is ready to be installed in accordance with Junckers Laying Instructions. Intended for indoor use.

## Essential characteristics

The hardwood floors are covered by harmonized technical specification EN 13226, EN13629 and EN 14342. Furthermore, a DoP (Declaration of Performance) can be found at under certificates at:

<https://www.junckers.com/download>

Further technical information can be obtained by contacting the manufacturer or on the manufacturer's website:

<https://www.junckers.com/wood-flooring/guidance/technical-advice>

## Reference Service Life (RSL)

The reference service life (RSL) is not declared, as this EPD is based on a cradle-to-gate with modules C1-C4 and D, assessment where the RSL is not relevant.

Picture of product(s)

Plank floors	Picture
Plank Oak 20.5 x 140mm Plank Oak 20.5 x 185mm  Plank Oak 15 x 129mm	

Example of product installed



# LCA background

## Declared unit

The LCI and LCIA results in this EPD relates to 1 m<sup>2</sup> of plank floor.

Name	Value	Unit
Declared unit	1	m <sup>2</sup>

The product variations include one hardwood species (oak), different thicknesses (15 mm or 20,5 mm) and different surface treatments.

The EPD covers seven surface treatments, which are grouped into three different surface treatment groups.

Surface treatment group	Surface treatment
Lacquers 1 (L1)	Nordic and ultra matt Ultra matt, ammonia treated
Lacquers 2 (L2)	Silk matt Ultra matt
Oil (O)	Oil Oil, ammonia treated

The results are presented for three different scenarios for the surface treatments in A1-A3:

- L1** = Average lacquer group 1
- L2** = Average lacquer group 2
- O** = Average oil group

## Functional unit

Not defined.

## Material properties

The planks are made of oak and are available in different lengths and widths:

Plank floor with 20,5 mm thickness in the width of 140 mm and 185 mm in the lengths of 600 mm, 900 mm, 1200 mm, 1500 mm, 1800 mm, 2100 mm, 2400 mm, 2700 mm and 3000 mm

and planks with 15 mm thickness in the width of 129 mm in the lengths of 600 mm, 900 mm, 1200

mm, 1500 mm, 1800 mm, 2100 mm and 2400 mm

The 2-strip parquet floor has a moisture content of the wood of 8%. Mass factor and the density of the hardwood are listed in the table below.

Name	Mass factor (kg/DU)	Density wood* (kg/m <sup>3</sup> )
Plank Oak 20,5 x 140mm	16,02	790
Plank Oak 20,5 x 185mm	16,02	790
Plank Oak 15 x 129mm	12,06	790

\*At moisture content of 8%

## PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804+A2, and EN16485.

## Conversion factors

Conversion factors from the declared unit of 1 m<sup>2</sup> to 1 kg are listed in the table below.

Name	Conversion factor to 1 kg
Plank Oak 20,5 x 140mm	0,062
Plank Oak 20,5 x 185mm	0,062
Plank Oak 15 x 129mm	0,083

## Energy modelling principles

Foreground system:

The product is produced using Danish residual electricity mix in the production in A3.

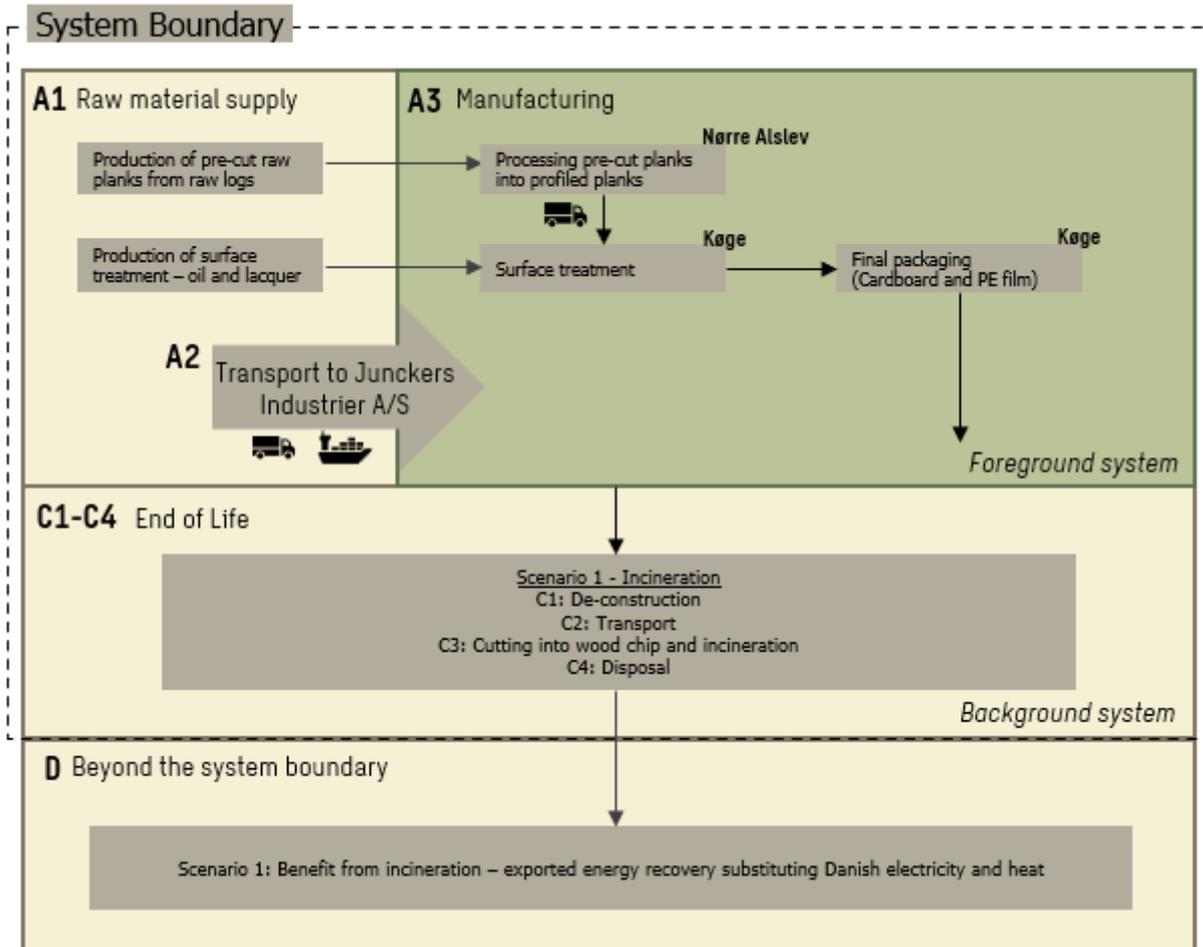
Information about the energy mix in the foreground system:

Energy mix	EF	Unit
Residual grid mix	0,632	kg CO <sub>2</sub> e/kWh

Background system:

Upstream processes are modelled using national energy mixes. Downstream processes are modelled using national energy mixes.

## Flowdiagram



### System boundary

This EPD is based on a cradle-to-gate with options, modules C1-C4 and D, cradle-to-gate LCA, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Joint co-production as defined in EN15804+A2, section 6.4.3.2 is allocated based on economic values, as the difference in revenue is regarded as high. This economic allocation has been applied in each sub-process of the production to allocate the specific processes to the different co-products.

#### Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging and waste processing up to the “end-of-waste” state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

The production processes of plank floor only take place at both Junckers production sites in Køge and Nørre Alslev. The pre-cut planks are transported from North Germany, the East coast of USA and Canada to the production site in Nørre Alslev where they are processed into Junckers Plank floors. Hereafter they are transported to Køge where they are surfaced treated with lacquer or oil. After that plank floor is packaged before leaving the factory gate.

Three scenarios of A1-A3 are modelled for the different surface treatments:

- **L1** = Average lacquer group 1
- **L2** = Average lacquer group 2

- **O** = Average oil group

#### End of Life (C1-C4) includes:

One end of life (EoL) is modelled;

- Incineration

A 100% incineration with energy recovery in module D from exported energy is presented. The EoL is modelled for the Danish market. EoL scenarios for other countries will vary from the one presented in this EPD.

In module C1 the deconstruction of the products covered by this EPD was assumed to be done manually, thus does not require any processes with an environmental impact. Hence, no impact is reported in this module.

In module C2 the transport between a demolition site and a waste management and incineration plant is modelled. A distance of 50 km is included in this EPD.

Module C3 includes the waste processing up until end-of-waste state. The twin herringbone floor is chopped into smaller pieces whereafter it is incinerated and exported as thermal and electric energy.

#### Re-use, recovery and recycling potential (D) includes:

In general, module D includes reuse, recovery and/or recycling potential, expressed as net impact and benefits, due to reuse, recycling and incineration of materials with energy recovery in module C3.

Module D credits the electricity and heat produced at a combined heat and power plant when incinerating wood and surface treatment + adhesives in module C3.

To calculate the amount for credit in module D, the net flow is calculated:  $M_{MR\ out} - M_{MR\ in}$

The electricity generated is assumed to replace the average Danish grid mix. For heat, the market is more regionalized, and a national average thermal energy mix is not as representative. As a simplified assumption, it is therefore assumed that heat from natural gas would be replaced.

# LCA results

## Plank Oak 15 x 129mm

ENVIRONMENTAL IMPACTS PER 1 m <sup>2</sup> plank floor – 15 mm oak									
Indicator	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq.	-5,40E+00	-5,88E+00	-6,41E+00	0,00E+00	6,25E-02	2,09E+01	0,00E+00	-7,95E+00
GWP-fossil	kg CO <sub>2</sub> eq.	1,49E+01	1,44E+01	1,39E+01	0,00E+00	6,24E-02	6,44E-01	0,00E+00	-7,73E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	-2,03E+01	-2,03E+01	-2,03E+01	0,00E+00	3,34E-05	2,02E+01	0,00E+00	-2,06E-01
GWP-luluc	kg CO <sub>2</sub> eq.	4,52E-02	3,59E-02	5,61E-02	0,00E+00	2,21E-05	2,91E-04	0,00E+00	-1,42E-02
ODP	kg CFC 11 eq.	3,65E-07	2,93E-07	2,40E-07	0,00E+00	1,30E-09	3,53E-09	0,00E+00	-2,58E-07
AP	mol H <sup>+</sup> eq.	1,03E-01	1,00E-01	9,83E-02	0,00E+00	1,48E-04	2,37E-03	0,00E+00	-2,30E-02
EP-freshwater	kg P eq.	9,45E-04	9,17E-04	8,99E-04	0,00E+00	5,04E-07	1,03E-05	0,00E+00	-2,67E-04
EP-marine	kg N eq.	2,44E-02	2,40E-02	2,38E-02	0,00E+00	3,79E-05	9,92E-04	0,00E+00	-4,35E-03
EP-terrestrial	mol N eq.	2,85E-01	2,80E-01	2,77E-01	0,00E+00	4,19E-04	1,06E-02	0,00E+00	-5,59E-02
POCP	kg NMVOC eq.	8,65E-02	8,46E-02	8,28E-02	0,00E+00	2,56E-04	2,72E-03	0,00E+00	-1,91E-02
ADPm <sup>1</sup>	kg Sb eq.	7,91E-05	7,63E-05	7,37E-05	0,00E+00	1,75E-07	5,27E-07	0,00E+00	-1,04E-04
ADPf <sup>1</sup>	MJ	1,01E+02	9,80E+01	9,28E+01	0,00E+00	7,71E-02	1,75E+00	0,00E+00	-3,90E+01
WDP <sup>1</sup>	m <sup>3</sup> world eq. deprived	2,14E+00	1,69E+00	1,91E+00	0,00E+00	4,46E-03	1,01E-01	0,00E+00	-9,61E-01
Caption	GWP-total = Global Warming Potential – total; GWP-fossil = Global Warming Potential – fossil fuels; GWP-biogenic = Global Warming Potential – biogenic; GWP-luluc = Global Warming Potential – land use and land use change; ODP = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use								
Disclaimer	<sup>1</sup> The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACTS PER 1 m <sup>2</sup> plank floor – 15 mm oak									
Parameter	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
PM	[Disease incidence]	1,29E-06	1,27E-06	1,24E-06	0,00E+00	6,06E-09	2,34E-08	0,00E+00	-1,42E-07
IRP <sup>2</sup>	[kBq U235 eq.]	4,55E-01	4,46E-01	4,36E-01	0,00E+00	4,13E-04	1,71E-02	0,00E+00	-5,24E-01
ETP-fw <sup>1</sup>	[CTUe]	6,79E+01	6,08E+01	5,91E+01	0,00E+00	2,22E-01	2,66E+00	0,00E+00	-2,60E+01
HTP-c <sup>1</sup>	[CTUh]	4,09E-08	3,96E-08	3,85E-08	0,00E+00	3,99E-10	4,39E-09	0,00E+00	-2,22E-08
HTP-nc <sup>1</sup>	[CTUh]	2,00E-07	2,09E-07	1,54E-07	0,00E+00	6,01E-10	2,53E-08	0,00E+00	-1,09E-07
SQP <sup>1</sup>	-	2,45E+03	2,45E+03	2,45E+03	0,00E+00	9,43E-01	8,10E-01	0,00E+00	-9,25E+01
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality								
Disclaimers	<sup>1</sup> The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. <sup>2</sup> 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.								

RESOURCE USE PER 1 m <sup>2</sup> plank floor – 15 mm oak									
Parameter	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
PERE	[MJ]	4,55E+02	4,54E+02	4,54E+02	0,00E+00	1,45E-02	4,66E-01	0,00E+00	-7,82E+01
PERM	[MJ]	1,74E+02	1,74E+02	1,74E+02	0,00E+00	0,00E+00	-1,73E+02	0,00E+00	0,00E+00
PERT	[MJ]	6,29E+02	6,28E+02	6,28E+02	0,00E+00	1,45E-02	-1,72E+02	0,00E+00	-7,82E+01
PENRE	[MJ]	2,05E+02	1,96E+02	1,86E+02	0,00E+00	9,37E-01	3,58E+00	0,00E+00	-1,24E+02
PENRM	[MJ]	3,54E+00	3,54E+00	3,54E+00	0,00E+00	0,00E+00	-1,65E+00	0,00E+00	0,00E+00
PENRT	[MJ]	2,08E+02	1,99E+02	1,89E+02	0,00E+00	9,37E-01	1,93E+00	0,00E+00	-1,24E+02
SM	[kg]	1,19E+01	1,19E+01	1,19E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	6,48E-02	6,09E-02	5,68E-02	0,00E+00	1,73E-04	3,77E-03	0,00E+00	-2,28E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water								

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m <sup>2</sup> plank floor – 15 mm oak									
Parameter	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
HWD	[kg]	5,49E-02	5,47E-02	5,45E-02	0,00E+00	2,62E-05	1,01E-01	0,00E+00	-9,77E-03
NHWD	[kg]	2,49E+00	2,47E+00	2,46E+00	0,00E+00	8,01E-02	1,15E-01	0,00E+00	-5,55E-01
RWD	[kg]	3,14E-04	3,08E-04	3,02E-04	0,00E+00	2,82E-07	1,38E-05	0,00E+00	-2,72E-04
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,30E+01	0,00E+00	0,00E+00
EET	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,61E+01	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy								

BIOGENIC CARBON CONTENT PER 1 m <sup>2</sup> plank floor – 15 mm oak		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	kg C	5,51E+00
Biogenic carbon content in accompanying packaging	kg C	5,85E-02

**Plank Oak 20,5 x 140mm**

**Plank Oak 20,5 x 185mm**

ENVIRONMENTAL IMPACTS PER 1 m <sup>2</sup> plank floor – 20,5 mm oak									
Indicator	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq.	-9,17E+00	-9,65E+00	-1,02E+01	0,00E+00	8,30E-02	2,77E+01	0,00E+00	-1,06E+01
GWP-fossil	kg CO <sub>2</sub> eq.	1,78E+01	1,73E+01	1,68E+01	0,00E+00	8,29E-02	7,33E-01	0,00E+00	-1,03E+01
GWP-biogenic	kg CO <sub>2</sub> eq.	-2,70E+01	-2,70E+01	-2,70E+01	0,00E+00	4,44E-05	2,69E+01	0,00E+00	-2,73E-01
GWP-luluc	kg CO <sub>2</sub> eq.	5,38E-02	4,45E-02	6,48E-02	0,00E+00	2,94E-05	3,86E-04	0,00E+00	-1,88E-02
ODP	kg CFC 11 eq.	4,06E-07	3,34E-07	2,81E-07	0,00E+00	1,73E-09	4,67E-09	0,00E+00	-3,43E-07
AP	mol H <sup>+</sup> eq.	1,27E-01	1,25E-01	1,23E-01	0,00E+00	1,96E-04	3,15E-03	0,00E+00	-3,06E-02
EP-freshwater	kg P eq.	1,16E-03	1,13E-03	1,11E-03	0,00E+00	6,70E-07	1,36E-05	0,00E+00	-3,56E-04
EP-marine	kg N eq.	3,09E-02	3,05E-02	3,03E-02	0,00E+00	5,03E-05	1,32E-03	0,00E+00	-5,79E-03
EP-terrestrial	mol N eq.	3,58E-01	3,54E-01	3,50E-01	0,00E+00	5,56E-04	1,41E-02	0,00E+00	-7,43E-02
POCP	kg NMVOC eq.	1,09E-01	1,07E-01	1,06E-01	0,00E+00	3,40E-04	3,61E-03	0,00E+00	-2,54E-02
ADPm <sup>1</sup>	kg Sb eq.	9,20E-05	8,92E-05	8,66E-05	0,00E+00	2,32E-07	6,99E-07	0,00E+00	-1,38E-04
ADPf <sup>1</sup>	MJ	1,18E+02	1,15E+02	1,10E+02	0,00E+00	1,02E-01	2,32E+00	0,00E+00	-5,19E+01
WDP <sup>1</sup>	m <sup>3</sup> world eq. deprived	2,48E+00	2,03E+00	2,25E+00	0,00E+00	5,93E-03	1,34E-01	0,00E+00	-1,28E+00
Caption	GWP-total = Global Warming Potential – total; GWP-fossil = Global Warming Potential – fossil fuels; GWP-biogenic = Global Warming Potential – biogenic; GWP-luluc = Global Warming Potential – land use and land use change; ODP = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use								
Disclaimer	<sup>1</sup> The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.								

ADDITIONAL ENVIRONMENTAL IMPACTS PER 1 m <sup>2</sup> plank floor – 20,5 mm oak									
Parameter	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
PM	[Disease incidence]	1,65E-06	1,63E-06	1,61E-06	0,00E+00	8,06E-09	3,11E-08	0,00E+00	-1,89E-07
IRP <sup>2</sup>	[kBq U235 eq.]	5,32E-01	5,24E-01	5,13E-01	0,00E+00	5,49E-04	2,28E-02	0,00E+00	-6,97E-01
ETP-fw <sup>1</sup>	[CTUe]	7,77E+01	7,07E+01	6,90E+01	0,00E+00	2,95E-01	3,50E+00	0,00E+00	-3,46E+01
HTP-c <sup>1</sup>	[CTUh]	5,06E-08	4,93E-08	4,83E-08	0,00E+00	5,31E-10	5,69E-09	0,00E+00	-2,95E-08
HTP-nc <sup>1</sup>	[CTUh]	2,31E-07	2,40E-07	1,85E-07	0,00E+00	7,99E-10	3,32E-08	0,00E+00	-1,45E-07
SQP <sup>1</sup>	-	3,24E+03	3,24E+03	3,24E+03	0,00E+00	1,25E+00	1,07E+00	0,00E+00	-1,23E+02
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality								
Disclaimers	<sup>1</sup> The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. <sup>2</sup> 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.								

RESOURCE USE PER 1 m <sup>2</sup> plank floor – 20,5 mm oak									
Parameter	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
PERE	[MJ]	5,98E+02	5,98E+02	5,98E+02	0,00E+00	1,92E-02	6,19E-01	0,00E+00	-1,04E+02
PERM	[MJ]	2,32E+02	2,32E+02	2,32E+02	0,00E+00	0,00E+00	-2,30E+02	0,00E+00	0,00E+00
PERT	[MJ]	8,30E+02	8,29E+02	8,29E+02	0,00E+00	1,92E-02	-2,29E+02	0,00E+00	-1,04E+02
PENRE	[MJ]	2,43E+02	2,34E+02	2,24E+02	0,00E+00	1,25E+00	4,75E+00	0,00E+00	-1,64E+02
PENRM	[MJ]	3,35E+00	3,35E+00	3,35E+00	0,00E+00	0,00E+00	-1,65E+00	0,00E+00	0,00E+00
PENRT	[MJ]	2,46E+02	2,37E+02	2,28E+02	0,00E+00	1,25E+00	3,10E+00	0,00E+00	-1,64E+02
SM	[kg]	1,59E+01	1,59E+01	1,59E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	7,62E-02	7,23E-02	6,82E-02	0,00E+00	2,30E-04	4,99E-03	0,00E+00	-3,04E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water								

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m <sup>2</sup> plank floor – 20,5 mm oak									
Parameter	Unit	A1-A3 (L1)	A1-A3 (L2)	A1-A3 (O)	C1	C2	C3	C4	D
HWD	[kg]	6,67E-02	6,65E-02	6,63E-02	0,00E+00	3,49E-05	1,34E-01	0,00E+00	-1,30E-02
NHWD	[kg]	3,22E+00	3,19E+00	3,18E+00	0,00E+00	1,06E-01	1,52E-01	0,00E+00	-7,38E-01
RWD	[kg]	3,67E-04	3,61E-04	3,55E-04	0,00E+00	3,74E-07	1,83E-05	0,00E+00	-3,61E-04
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,38E+01	0,00E+00	0,00E+00
EET	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,80E+01	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy								

BIOGENIC CARBON CONTENT PER 1 m <sup>2</sup> plank floor – 20,5 mm oak		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	kg C	7,34E+00
Biogenic carbon content in accompanying packaging	kg C	5,65E-02

# Additional information

## LCA interpretation

A1 has the largest contribution in GWP-Bio and GWP-luluc, which is caused by the raw wood input from biogenic carbon sequestered in the wood and the land use for cultivation and harvesting of the wood and kiln drying to pre-cut planks. A2 has a high contribution in AP, EP-marine, EP-terrestrial and POCP, which is caused by transportation of the pre-cut planks in container ships from USA and Canada. A3 has the largest contribution to GWP-total in A1-A3. This is primarily caused the use of electricity in the different production processes.

## Technical information on scenarios

### End of life (C1-C4)

Scenario information	Value	Unit
Collected separately	12,06 – 16,02	kg
Collected with mixed waste	-	kg
For reuse	-	kg
For recycling	-	kg
For energy recovery	12,06 – 16,02	kg
For final disposal	-	kg
Assumptions for scenario development	-	As appropriate

### Re-use, recovery and recycling potential (D)

Scenario information/Material	Value	Unit
Displaced material	-	kg
Energy recovery from waste incineration, electrical	33,0 – 43,8	MJ
Energy recovery from waste incineration, thermal	36,1 – 48,0	MJ

#### Indoor air

*The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.1.*

#### Soil and water

*The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.2.*

# References

<p><b>Publisher</b></p>	<p>  <a href="http://www.epddanmark.dk">www.epddanmark.dk</a>  <small>Template version 2024.2</small></p>
<p><b>Programme operator</b></p>	<p>Danish Technological Institute  Gregersensvej  DK-2630 Taastrup  <a href="http://www.teknologisk.dk">www.teknologisk.dk</a></p>
<p><b>LCA-practitioner</b></p>	<p>Nana Lin Rasmussen  Asger Wendt Karl</p> <p>Sweco Danmark A/S  Ørestads Blvd. 41,  2300 København,  Denmark</p> <p></p>
<p><b>LCA software / background data</b></p>	<p><i>SimaPro v. 9.6.0.1</i></p> <p>Ecoinvent database Version 3.10  LCA-method: <i>Cut-off by classification</i>  <i>EF 3.1 is used.</i></p> <p><i>EN 15804 reference package 3.1</i></p>
<p><b>3<sup>rd</sup> party verifier</b></p>	<p>Guangli Du</p> <p>BUILD – Institut for Byggeri, By og Miljø, Aalborg  Universitet København</p> <p>Verified according to Verification Checklist 1 v.  2.7</p>

### **General programme instructions**

General Programme Instructions, version 2.0, spring 2020  
www.epddanmark.dk

#### **EN 15804**

DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

#### **DS/EN 16485**

DS/EN 16485:2014 – "Rundtræ og savet træ – Miljøvaredeklaration – Produktkategoriregler for træ og træbaseret produkter til konstruktionsbrug"

#### **EN 15942**

DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

#### **ISO 14025**

DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

#### **ISO 14040**

DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

#### **ISO 14044**

DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"