epddanmark

ECO PLATFORM EPD VERIFIED

Owner:	Dinesen Floors A/S
No.:	MD-23195-EN_rev1
Issued:	04-07-2024
Revised:	28-05-2025
Valid to:	04-07-2029

3rd PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**

Owner of declaration
Dinesen Floors A/S
Klovtoftvej 2
6630 Rødding, Denmark
CVR-nr: 33920717

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

Declared product(s)
Dinesen Layers Oak/Ash 19 mm thickness
Dinesen Layers Douglas 19 mm thickness

The EPD covers Dinesen Layers Oak, Dinesen Layers Ash, and Dinesen Layers Douglas. Dinesen Layers Oak, and Dinesen Layers Ash is grouped together in 1 declared unit. All Dinesen Layers floors are made up of three layers of wood. The moisture content of Dinesen Layers Oak is 7% ±1%.

Number of declared datasets/products: 2

Production site
Finnmarken 6, 6630 Rødding, Denmark
Finnmarken 2, 6630 Rødding, Denmark

Green Electricity has been utilized for A3 with GO certificates guaranteeing energy generated from Nordic windfarms

Product(s) use
Layered wood floors which are ready to be installed in accordance with the instructions of Dinesen Floors A/S. The floors are intended for indoor use.

Declared unit
1 m^2 of Dinesen Layers Oak/Ash
1 m^2 of Dinesen Layers Douglas

Year of production site data (A3)
2022

EPD version
[2] May 2025: Updated URL's for datasheets

Issued: 04-07-2024
Valid to: 04-07-2029

Basis of calculation
This EPD is developed 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.

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

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

Linda Høibye, Life Cycle Assessment Consulting

Martha Katrine Sørensen
EPD Danmark

Life cycle stages and modules (MND = 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
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

Product information

Product Description

The products assessed in this study are Dinesen Layers Oak, Dinesen Layers Ash, and Dinesen Layers Douglas. The wooden floors, which are ready to be installed in accordance with the instructions from Dinesen Floors A/S.

The datasheet for the declared products can be found here:

Produktblad_Layers_Oak_UK.pdf
Produktblad__Layers_Ash_UK.pdf
Produktblad_Layers_Douglas_UK.pdf

The main product components are shown in the table below. Materials account for 100% of the mass of the declared products.

Material	Weight-% of declared product
Wood	91.15 – 93.28
Adhesive	6.72 – 8.85
Total	**100**

Table 1: Mass distribution of the declared products.

Product Packaging:

The composition of the sales- and transport packaging of the products is shown in the table below. Materials account for 100% of the mass of the declared product packaging.

Material	Weight-% of packaging
Plastic wrapping (PE)	7.21%
Buckle strap (PP)	0.11
Wood	92.32%
Pallet	0.35%
Total	**100%**

Table 2: Mass distribution of product packaging.

Representativity:

This declaration, including data collection and the modelled foreground system including results, represents the production of Dinesen Floors A/S two production sites in Jels, Denmark. The geographical area covered is Europe. Product specific data are based on average values collected at the production sites for the year 2022. Background data is based on Ecoinvent 3.9.1 (published 01-2023) and complies with EN 15804:2012 + A2:2019, section 6.3.8.2. The data is less than 10 years old. Almost all datasets are locally and/or regionally representative (e.g., Denmark, Germany, or Europe), and electricity is country-specific, reflecting GO certification practices for A3. Generally, the datasets utilized are of good quality, with a reference year of 2022 in line with the publication of the Ecoinvent database.

Hazardous Substances

The layered wooden floors by Dinesen Floors A/S do not contain substances listed on the "Candidate List of Substances of Very High Concern for Authorization"

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

Essential Characteristics

Dinesen Floors A/S products do have CE cf. EC declaration regarding wooden floors for indoor use according to EN 14342:2013. In addition to being FSC and PEFC certified, ensuring sustainable forestry.

https://www.dinesen.com/da/certificeringer/

Thermal conductivity, [W/m°K]:
Oak and Ash: 0.17
Douglas: 0.13

Thermal resistance, [m^2°K/W]:
Oak/Ash 19 mm 0.11
Douglas 19 mm 0.08

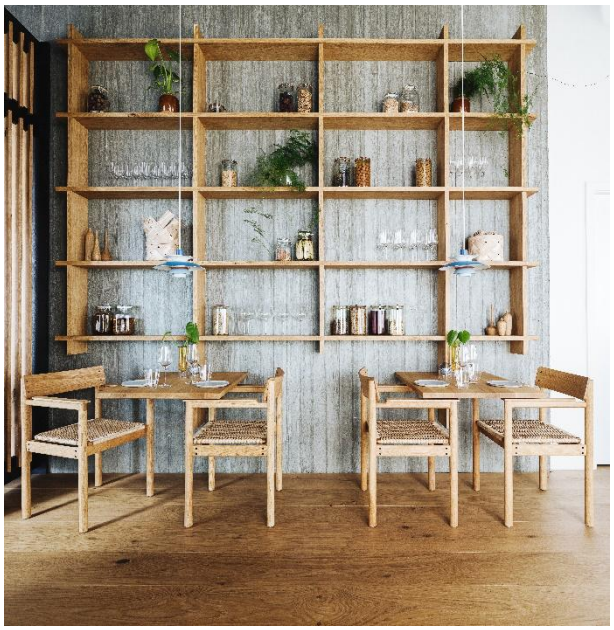
Further technical information can be obtained by contacting the manufacturer, Dinesen Floors A/S, or on the manufacturer's website:

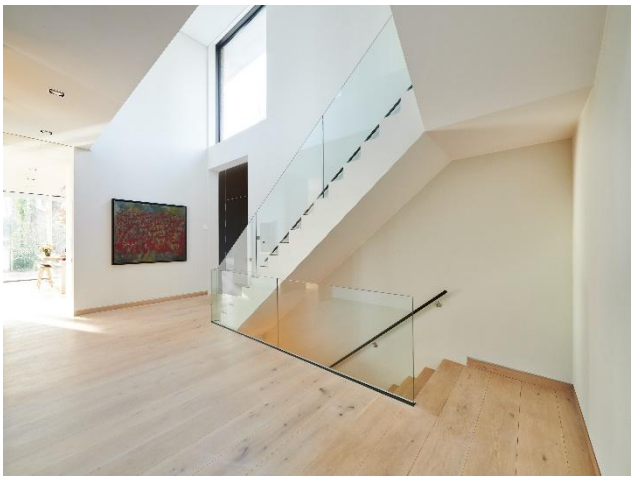
https://www.dinesen.com

Reference Service Life (RSL)

No reference service life (RSL) has been declared since the scope of this EPD is cradle-to-gate with modules C1-C4 and D. As a result, the use stage (B1-B7) of the declared products is not included.

Picture of product(s)





LCA background

Declared unit

The LCI and LCIA results in this EPD relate to 1 m^2 Dinesen Layers Oak/Ash 19 mm, and Dinesen Layers Douglas 19 mm.

Name	Thickness [mm]	Density [kg/m^3]	Moisture content [%]	Wood [kg]	Total weight [kg]	Conversion factor to 1 kg
Dinesen Layers Oak/Ash	19	650	7% ±1%	12.35	13.23	0.076
Dinesen Layers Douglas	19	470	7% ±1%	9.17	10.06	0.109

Table 3: Product properties and scaling factor for each declared product.

The total weight per declared unit (1 m^2) is calculated based on the thickness and density of each floor type, including the content of adhesive. The specific density and moisture content of each floor type is stated in Table 3.

Product Category Rules (PCR)

This EPD is developed according to the core rules for the product category of construction products in EN 15804:2012 + A2:2019, and cPCR EN 16485:2014 concerning wood and wood-based products for use in construction.

Guarantee of Origin - Certificates

The declared products are produced using GO-certificates issued in accordance with the Directive 2009/28 / EC of the European Parliament. The GO guarantees energy generated through Norwegian wind farms, covering the entire energy consumption for the two production sites in Jels, Denmark, and a warehouse located in Vamdrup, Denmark.

Foreground system

The production at Dinesen Floors A/S (A3) is modelled based on site-specific data for the year 2022. The electricity consumption is modelled with green electricity supplied exclusively by wind, as stated per Dinesen Floors A/S contractual GO certificates. The remaining activities are modelled with average supply mixes representing the individual countries (e.g. DE or SE) or regions (e.g. EU).

Background system

The database, Ecoinvent 3.9.1 (published 01-2023) is utilized for the background system. As the results both upstream- and downstream activities are based on average supply mixes for the specific country or region depending on the given dataset.

Flow diagram:

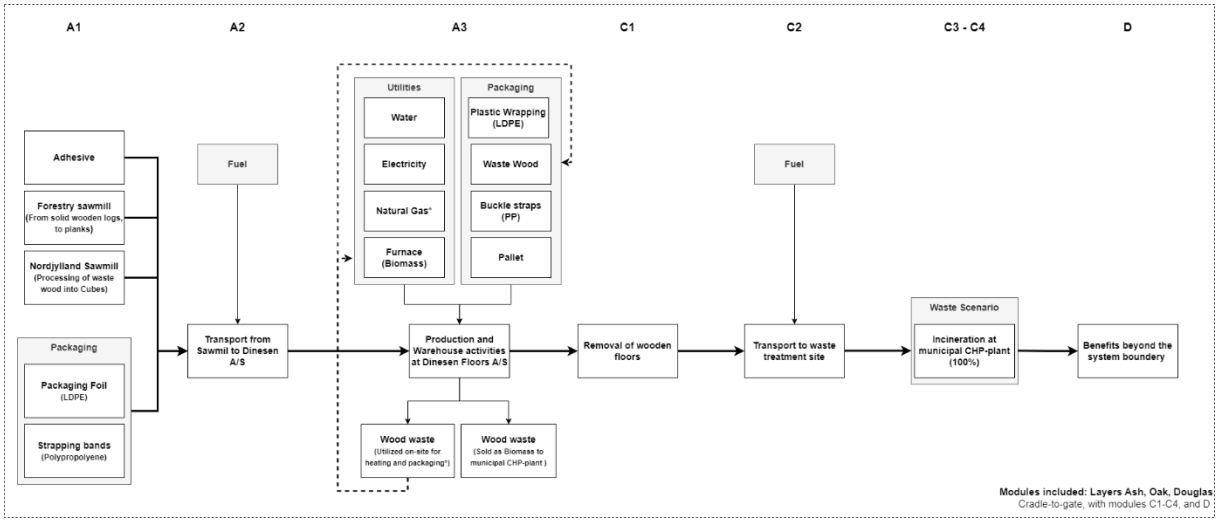


Figure 1: Flow diagram Dinesen Layers Oak/Ash, and Dinesen Layers Douglas.

System Boundary:

This EPD is based on a cradle-to-gate with modules C1-C4 and D, in which 100 weight-% has been accounted for. The general rules for 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. And 1 % of renewable and non-renewable primary energy usage.

Product Stage (A1-A3) includes:

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 modules A1, A2, and A3 are declared as one module A1-A3. Dinesen Layers Oak/Ash, and Dinesen Layers Douglas are all manufactured in three layers, with the top layer consisting of solid Oak, Ash or Douglas. The middle layer is transverse and consists of finger-jointed waste wood, which depending on floor type, is wood waste from either the production of solid Oak, Ash, or Douglas. The underside of the plank is either solid oak or finger-jointed leftover oak or ash, like the middle layer. The solid wood is sourced from the Schwarzwald region in Germany. Whereas the middle layer is processed into recycleable material at a sawmill in Nordjylland, Denmark. As prescribed by 15804:2012 + A2:2019 biogenic carbon has been calculated cf. the methodology stated in EN 16449 to ensure the biogenic carbon balance is maintained. Consequently, upstream co-products (e.g., bark, biomass, and sawdust) remain unchanged from the applied generic datasets, which utilize economic allocation.

Electricity and natural gas are utilized at the warehouse located in Jels, Denmark. Heating at the production sites is utilized for drying planks and maintaining temperature is through local incineration in kilns, utilizing waste wood generated in the production. Dinesen Floors A/S utilizes water to maintain humidity in its intermediate storage facilities and warehouses. Dinesen Floors A/S' production facilities process wood through sawing and planning to produce wooden floors in fixed and curated lengths. Wood waste generated in production is primarily sold as biomass as a co-product and utilized for fuel in local municipal waste incinerators which is credited to Dinesen's final products due to the low value of biomass relative to the main product

End of Life (C1-C4 includes):

The deconstruction/removal of the products covered in this study are assumed to be done manually, without specialized tools, and are therefore not covered by any processes contributing to the environmental impact of the life cycle. 100% of the wood is sent for energy

recovery cf. EN 16485, with 97% being collected separately, and 3% being collected as mixed waste. The wood is transported to a waste energy recovery facility by truck, with an applied distance of 30 km. The energy recovery is achieved through municipal incineration with fly ash extraction. The default attribution of end-of-life of wood and wood-based products does not include landfilling (C4) after energy recovery and is therefore not contributing to module C4.

Re-use, Recovery, & Recycling potential (D)
Module D is a continuation of the 100% incineration scenario, as instructed in cPCR 16485:2014. The combined heat-and-power plant generates energy in a 75/25% split of thermal energy, and electric energy. The plant is modeled with an efficiency of 75%, meaning a 25% average energy loss is assumed to occur in the energy recovery process. The energy recovered is based on an average lower heating value (LHV) for hardwood, and softwood. The EET replaces the heating from an average European natural gas market mix cf. EN16485, while EEE replaces an average European electricity mix. Note that the input [kg/m^2] is wood, excluding adhesive due to its low material contribution (6.72% – 8.85%), and based on a conversative approach.

LCA results

The declared products covered in this EPD are presented in individual datasets. The datasets for each of the declared products can be found on the following pages:

Dinesen Layers Oak/Ash 19 mm

ENVIRONMENTAL IMPACTS PER [m²] Dinesen Layers Oak/Ash 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-1.01E+01	0.00E+00	1.41E-01	2.18E+01	0.00E+00	-4.87E+00
GWP-fossil	[kg CO_2 eq.]	1.13E+01	0.00E+00	7.02E-02	2.81E-01	0.00E+00	-6.17E+00
GWP-biogenic	[kg CO_2 eq.]	-2.15E+01	0.00E+00	1.29E-04	2.15E+01	0.00E+00	-2.27E-01
GWP-luluc	[kg CO_2 eq.]	2.64E-02	0.00E+00	3.47E-05	5.89E-03	0.00E+00	-1.09E-02
ODP	[kg CFC 11 eq.]	3.88E-07	0.00E+00	1.53E-09	4.57E-08	0.00E+00	-5.17E-07
AP	[mol H^+ eq.]	4.73E-03	0.00E+00	1.53E-04	1.05E-02	0.00E+00	-2.83E-02
EP-freshwater	[kg P eq.]	3.43E-03	0.00E+00	4.99E-06	1.12E-04	0.00E+00	-4.01E-03
EP-marine	[kg N eq.]	1.77E-02	0.00E+00	3.87E-05	3.09E-03	0.00E+00	-5.23E-03
EP-terrestrial	[mol N eq.]	1.47E-01	0.00E+00	3.93E-04	5.15E-02	0.00E+00	-4.99E-02
POCP	[kg NMVOC eq.]	5.71E-02	0.00E+00	2.38E-04	9.73E-03	0.00E+00	-2.50E-02
ADPm[1]	[kg Sb eq.]	9.96E-05	0.00E+00	2.30E-07	7.54E-07	0.00E+00	-5.17E-05
ADPf[1]	[MJ]	1.98E+02	0.00E+00	9.97E-01	3.21E+00	0.00E+00	-2.32E+02
WDP[1]	[m^3 world eq. deprived]	6.57E+00	0.00E+00	4.11E-03	2.21E-02	0.00E+00	-1.20E+00
Caption	GWP-total = Globale 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 = Acidifcation; 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 depletion potential						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						
Disclaimer	[1] 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.						

Table 4: Core environmental impact indicators for 1 m² of Dinesen Layers Oak/Ash 19 mm

ADDITIONAL ENVIRONMENTAL IMPACTS PER [m²] Dinesen Layers Oak/Ash 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.81E-06	0.00E+00	5.23E-09	1.45E-07	0.00E+00	-1.15E-07
IRP[2]	[kBq U235 eq.]	6.45E-01	0.00E+00	1.35E-03	8.75E-03	0.00E+00	-2.66E+00
ETP-fw[1]	[CTUe]	8.88E+02	0.00E+00	9.86E-01	8.70E+00	0.00E+00	-4.31E+01
HTP-c[1]	[CTUh]	1.57E-07	0.00E+00	6.40E-11	2.20E-09	0.00E+00	-5.82E-09
HTP-nc[1]	[CTUh]	4.10E-07	0.00E+00	1.42E-09	6.98E-08	0.00E+00	-1.72E-07
SQP[1]	-	1.55E+03	0.00E+00	6.03E-01	1.47E+02	0.00E+00	-1.99E+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 (dimensionless)						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						
Disclaimers	[1] 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.						
	[2] 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.						

Table 5: Additional environmental impact indicators 1 m² of Dinesen Layers Oak/Ash 19 mm

RESOURCE USE PER [m²] Dinesen Layers Oak/Ash 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	3.33E+02	0.00E+00	1.57E-02	7.71E+01	0.00E+00	-2.13E+01

PERM	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.33E+02	0.00E+00	1.57E-02	7.71E+01	0.00E+00	-2.13E+01
PENRE	[MJ]	1.89E+01	0.00E+00	2.21E-02	1.42E-01	0.00E+00	-4.65E+01
PENRM	[MJ]	1.79E+02	0.00E+00	9.75E-01	3.07E+00	0.00E+00	-1.86E+02
PENRT	[MJ]	1.98E+02	0.00E+00	9.97E-01	3.21E+00	0.00E+00	-2.32E+02
SM	[kg]	9.92E+00	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
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.49E+00	0.00E+00	4.09E-03	2.13E-02	0.00E+00	-1.20E+00
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						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						

Table 6: Parameters describing resource use for 1 m^2 of Dinesen Layers Oak/Ash 19 mm

WASTE CATEGORIES AND OUTPUT FLOWS PER [m^2] Dinesen Layers Oak/Ash 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2.43E-02	0.00E+00	1.86E-05	2.44E-02	0.00E+00	-4.77E-03
NHWD	[kg]	2.69E+00	0.00E+00	4.95E-02	1.05E-01	0.00E+00	-5.59E-01
RWD	[kg]	1.67E-04	0.00E+00	3.28E-07	2.04E-06	0.00E+00	-6.81E-04

CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	6.04E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	1.16E+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	3.52E+01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	1.06E+02	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						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						

Table 7: End-of-life (waste categories and output flows) for1 m^2 of Dinesen Layers Oak/Ash 19 mm

BIOGENIC CARBON CONTENT PER [m^2] Dinesen Layers Oak/Ash 19 mm		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	5.86
Biogenic carbon content in accompanying packaging	[kg C]	0.29
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Table 8: Biogenic carbon content at factory gate for 1 m^2 of Dinesen Layers Oak/Ash 19 mm

Dinesen Layers Douglas 19 mm

ENVIRONMENTAL IMPACTS PER [m²] Dinesen Layers Douglas 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-4.55E+00	0.00E+00	1.41E-01	1.95E+01	0.00E+00	-4.87E+00
GWP-fossil	[kg CO_2 eq.]	1.13E+01	0.00E+00	7.02E-02	2.37E-01	0.00E+00	-6.17E+00
GWP-biogenic	[kg CO_2 eq.]	-1.59E+01	0.00E+00	1.29E-04	1.59E+01	0.00E+00	-2.27E-01
GWP-luluc	[kg CO_2 eq.]	2.64E-02	0.00E+00	3.47E-05	4.96E-03	0.00E+00	-1.09E-02
ODP	[kg CFC 11 eq.]	3.88E-07	0.00E+00	1.53E-09	3.85E-08	0.00E+00	-5.17E-07
AP	[mol H^+ eq.]	4.73E-03	0.00E+00	1.53E-04	8.85E-03	0.00E+00	-2.83E-02
EP-freshwater	[kg P eq.]	3.43E-03	0.00E+00	4.99E-06	9.40E-05	0.00E+00	-4.01E-03
EP-marine	[kg N eq.]	1.77E-02	0.00E+00	3.87E-05	2.60E-03	0.00E+00	-5.23E-03
EP-terrestrial	[mol N eq.]	1.47E-01	0.00E+00	3.93E-04	4.33E-02	0.00E+00	-4.99E-02
POCP	[kg NMVOC eq.]	5.71E-02	0.00E+00	2.38E-04	8.19E-03	0.00E+00	-2.50E-02
ADPm[1]	[kg Sb eq.]	9.96E-05	0.00E+00	2.30E-07	6.35E-07	0.00E+00	-5.17E-05
ADPf[1]	[MJ]	1.98E+02	0.00E+00	9.97E-01	2.70E+00	0.00E+00	-2.32E+02
WDP[1]	[m^3 world eq. deprived]	6.57E+00	0.00E+00	4.11E-03	1.86E-02	0.00E+00	-1.20E+00
Caption	GWP-total = Globale 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 = Acidifcation; 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 depletion potential						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						
Disclaimer	[1] 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.						

Table 9: Core environmental impact indicators for 1 m² of Dinesen Layers Douglas 19 mm

ADDITIONAL ENVIRONMENTAL IMPACTS PER [m²] Dinesen Layers Douglas 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.81E-06	0.00E+00	5.23E-09	1.22E-07	0.00E+00	-1.15E-07
IRP[2]	[kBq U235 eq.]	6.45E-01	0.00E+00	1.35E-03	7.37E-03	0.00E+00	-2.66E+00
ETP-fw[1]	[CTUe]	8.88E+02	0.00E+00	9.86E-01	7.32E+00	0.00E+00	-4.31E+01
HTP-c[1]	[CTUh]	1.57E-07	0.00E+00	6.40E-11	1.85E-09	0.00E+00	-5.82E-09
HTP-nc[1]	[CTUh]	4.10E-07	0.00E+00	1.42E-09	5.87E-08	0.00E+00	-1.72E-07
SQP[1]	-	1.55E+03	0.00E+00	6.03E-01	1.24E+02	0.00E+00	-1.99E+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 (dimensionless)						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						
Disclaimers	[1] 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.						
	[2] 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.						

Table 10: Additional environmental impact indicators 1 m² of Dinesen Layers Douglas 19 mm

RESOURCE USE PER [m²] Dinesen Layers Douglas 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**

PERE	[MJ]	3.33E+02	0.00E+00	1.57E-02	6.49E+01	0.00E+00	-2.13E+01
PERM	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.33E+02	0.00E+00	1.57E-02	6.49E+01	0.00E+00	-2.13E+01
PENRE	[MJ]	1.89E+01	0.00E+00	2.21E-02	1.19E-01	0.00E+00	-4.65E+01
PENRM	[MJ]	1.79E+02	0.00E+00	9.75E-01	2.58E+00	0.00E+00	-1.86E+02
PENRT	[MJ]	1.98E+02	0.00E+00	9.97E-01	2.70E+00	0.00E+00	-2.32E+02
SM	[kg]	7.36E+00	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
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.49E+00	0.00E+00	4.09E-03	2.13E-02	0.00E+00	-1.20E+00
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						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						

Table 11: Parameters describing resource use for 1 m^2 of Dinesen Layers Douglas 19 mm

WASTE CATEGORIES AND OUTPUT FLOWS PER [m^2] Dinesen Layers Douglas 19 mm							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2.43E-02	0.00E+00	1.86E-05	2.05E-02	0.00E+00	-4.77E-03
NHWD	[kg]	2.69E+00	0.00E+00	4.95E-02	8.83E-02	0.00E+00	-5.59E-01
RWD	[kg]	1.67E-04	0.00E+00	3.28E-07	1.71E-06	0.00E+00	-6.81E-04

CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	4.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	8.68E-01	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	4.18E+01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	1.25E+02	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						
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.						

Table 12: End-of-life (waste categories and output flows) for1 m^2 of Dinesen Layers Douglas 19 mm

BIOGENIC CARBON CONTENT PER [m^2] Dinesen Layers Douglas 19 mm		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	4.34
Biogenic carbon content in accompanying packaging	[kg C]	0.21
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Table 13: Biogenic carbon content at factory gate for 1 m^2 of Dinesen Layers Douglas 19 mm

Additional information

The LCA results in this EPD indicate that a significant part of the environmental impacts stem from transporting raw materials from Schwarzwald, Germany, to Jels, Denmark. The glue content utilized in the recycling of waste wood for the middle layer also proves significant to the final result.

Reference service life (RSL):

No reference service life (RSL) has been declared since the scope of this EPD is cradle-to-gate with modules C1-C4 and D. As a result, the use stage (B1-B7) of the declared product is not included.

End of life (C1-C4)

Scenario information	Unit	Dinesen Layers Oak/Ash 19 mm	Dinesen Layers Douglas 19 mm
Collected separately	kg	12.85	9.78
Collected with mixed waste	kg	0.40	0.27
For reuse	kg	0	0
For recycling	kg	0	0
For energy recovery	kg	13.23	10.06
For final disposal	kg	0	0

Table 14: Waste collected at end-of-life for 1 m² of Dinesen Layers Oak/Ash 19 mm and Dinesen Layers Douglas

Re-use, recovery and recycling potential (D)

Scenario information/Materiel	Unit	Dinesen Layers Oak/Ash 19 mm	Dinesen Layers Douglas 19 mm
Energy recovery from waste incineration	MJ	167.16	140.68

Table 15: Energy substituted in Module D for Dinesen Layers Oak/Ash 19 mm and Dinesen Layers Douglas

Applied Electricity Mix

The electricity applied in A3 is certified GO-electricity, sourced from Norwegian wind, covering 100% of the production.

Source of electricity	Unit	Amount
Norwegian wind	CO2/kWh	0.0367

Indoor air

Indoor climate labeling in accordance with French VOC regulations, BREEAM International, Leed v4.1, and Indoor Air Comfort can be found in the datasheet of the declared product, or through contact with Dinesen Floors A/S.

Soil and water

The EPD does not give information on the release of dangerous substances to soil and water because the horizontal standards on measurement of the release of regulated dangerous substances from construction products using harmonized test methods according to the provisions of the respective technical committees for European product standards are not available.

References

Publisher	epddanmark www.epddanmark.dk Template version 2023.1
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	ENERGYSOLUTION EnergySolution A/S Jesper Kokborg Lassen True Møllevej 1, 8381 Tilst
LCA software /background data	SimaPro 9.5/Ecoinvent 3.9.1 (2023) EN 15804 reference package 3.1
3rd party verifier	Linda Høibye Life Cycle Assessment Consulting Forupsvej 4 7120 Vejle Øst

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

EcoInvent 3.9.1 (2023) – Allocation, Cut-off by classification

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

EN 16485:2014
Roundsaw and sawn timber – Environmental Product Declarations – Product category rules for wood and wood-based products for use in construction

EN 16449:2014
Wood and wood-based products – Calculation of the biogenic carbon content of wood and conversion to carbon dioxide

EN 14342:2013
Wood flooring – Characteristics, evaluation of conformity and marking

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”