

Owner: Junckers Industrier A/S
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3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration

Junckers Industrier A/S
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DK-4600 Køge
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Programme operator

Danish Technological Institute
www.dti.dk


Programme

EPD Danmark
www.epddanmark.dk


Declared products

Solid hardwood 2-strip parquet 14 x 129 mm (B 3.0)
Solid hardwood 2-strip parquet 22 x 129 mm (B 2.0)

The EPD cover four hardwood types; beech, maple, oak, and ash; and seven surface treatments grouped into three surface treatment groups.

Production site

Production site of Køge in Denmark

Products use

The product is a solid hardwood 2-strip parquet floor, which is ready to be installed in accordance to Junckers Laying Instructions. The 2-strip parquet floor is intended for indoor use.

Declared unit

1 m² of solid hardwood 2-strip parquet floor with surface treatment ready to be installed. Dimensions of the parquet floors and wood type is specified under section Declared products. The products are sold world-wide.

Issued:
28-02-2020

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Basis of calculation

This EPD is developed in accordance with the European standard EN 15804.

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
☐ Cradle-to-gate with options
☐ Cradle-to-grave

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 Høiby, COWI A/S



Henrik Fred Larsen
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	MND	MND	MND	MND	MND

Product information

Product description

The main product components are shown in the table below.

Material	Weight-% of declared product
Wood dry, weight	>90%
Water in wood	8%
Lacquers and oils, dry weight	<2%
Glue, sealers, kit pulver, ink, dry weight	<1%

Representativity

This declaration, including data collection and the modelled foreground system including results, represents the production of 1 m² of Solid hardwood 2-strip parquet from the production site located in Køge in Denmark. Product specific data are based on average values and has been collected for the year 2018. Background data are based on GaBi ts 9.2.0.58 incl. databases 2019 Edition, Ecoinvent 3.5 and CEPE 3.0 and are less than 10 years old.

Dangerous substances

The product does not contain substances listed in the "Candidate List of Substances of Very High Concern for authorization" whose content exceeds 0.1 weight percent.

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

Essential characteristics (CE)

The hardwood 2-strip parquet floors are covered by harmonised technical specification EN 13629 and EN 14342. Furthermore, a DoP (Declaration of Performance) can be found at <https://www.junckers.dk/om-junckers/baeredygtighed-kvalitet-og-miljoe>

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

Solid hardwood 2-strip parquet 14 x 129 mm (B 3.0)

www.junckers.com/2striptechnfo14mm

Solid hardwood 2-strip parquet 22 x 129 mm (B 2.0)

www.junckers.com/2striptechnfo22mm

Reference Service Life (RSL)

The reference service life is not declared, as this EPD is based on a cradle-to-gate assessment where the service life is not relevant.

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to 1 m² of solid hardwood 2-strip parquet in beech, maple, oak and ash, available in 14 and 22 mm thickness.

Product	Declared unit	Weight per m ² (kg/m ²)	Density (kg/m ³)	Conversion factor to 1 kg
2-strip parquet Beech 14 x 129mm (B 3.0)	1 m ²	11	770	0,091
2-strip parquet Beech 22 x 129mm (B 2.0)	1 m ²	16,4	770	0,061
2-strip parquet Maple 22 x 129mm (B 2.0)	1 m ²	14,5	665	0,069
2-strip parquet Oak 14 x 129mm (B 3.0)	1 m ²	10,2	725	0,098
2-strip parquet Oak 22 x 129mm (B 2.0)	1 m ²	15,5	725	0,065
2-strip parquet Ash 14 x 129mm (B 3.0)	1 m ²	9,7	680	0,103
2-strip parquet Ash 22 x 129mm (B 2.0)	1 m ²	14,5	680	0,069

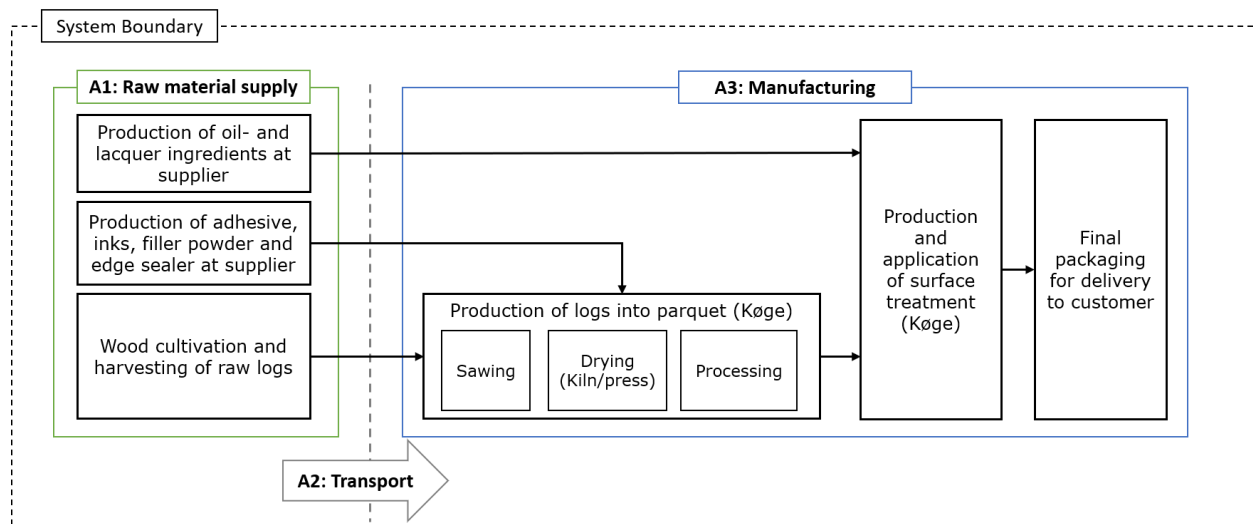
The EPD covers seven surface treatments grouped into three surface treatment groups.

Surface treatment group	Surface treatment
Lacquers 1	Silk matt (Sport) Nordic and ultra matt
Lacquers 2	Silk matt (Commercial/residential) Ultra matt Ultra matt, ammonia treated
Oil	Clear oil Clear oil with UV backside lacquer

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804.

Flow diagram



System boundaries

This EPD is based on a 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.

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.

LCA results – Lacquers 1

Silk matt (Sport) and Nordic and ultra matt.

ENVIRONMENTAL IMPACTS PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
GWP	[kg CO ₂ -eq.] excl. biogenic	6,86E+00	8,17E+00	6,24E+00	7,67E+00	6,14E+00	7,41E+00	7,28E+00
GWP	[kg CO ₂ -eq.]	-1,01E+01	-1,77E+01	-1,20E+01	-1,96E+01	-9,95E+00	-1,68E+01	-1,69E+01
ODP	[kg CFC11-eq.]	9,71E-08	9,56E-08	9,71E-08	9,56E-08	9,71E-08	9,56E-08	9,56E-08
AP	[kg SO ₂ -eq.]	6,82E-02	8,05E-02	5,70E-02	7,58E-02	5,53E-02	6,87E-02	8,70E-02
EP	[kg PO ₄ ³⁻ -eq.]	1,20E-02	1,40E-02	1,08E-02	1,35E-02	1,04E-02	1,24E-02	1,44E-02
POCP	[kg ethene-eq.]	3,04E-02	4,16E-02	2,86E-02	4,00E-02	2,67E-02	3,66E-02	3,32E-02
ADPE	[kg Sb-eq.]	9,38E-06	9,78E-06	9,02E-06	9,70E-06	8,87E-06	9,34E-06	9,96E-06
ADPF	[MJ]	9,52E+01	1,16E+02	8,90E+01	1,11E+02	8,61E+01	1,05E+02	1,02E+02
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources							

RESOURCE USE PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
PERE	[MJ]	1,45E+03	1,95E+03	1,36E+03	1,89E+03	1,25E+03	1,69E+03	1,57E+03
PERM	[MJ]	1,68E+02	2,56E+02	1,82E+02	2,70E+02	1,60E+02	2,39E+02	2,39E+02
PERT	[MJ]	1,62E+03	2,21E+03	1,54E+03	2,16E+03	1,41E+03	1,93E+03	1,81E+03
PENRE	[MJ]	9,48E+01	1,17E+02	8,69E+01	1,10E+02	8,46E+01	1,05E+02	1,00E+02
PENRM	[MJ]	1,02E+01	1,03E+01	1,05E+01	1,07E+01	1,02E+01	1,02E+01	1,06E+01
PENRT	[MJ]	1,05E+02	1,27E+02	9,74E+01	1,21E+02	9,48E+01	1,15E+02	1,11E+02
SM	[kg]	-	-	-	-	-	-	-
RSF	[MJ]	-	-	-	-	-	-	-
NRSF	[MJ]	-	-	-	-	-	-	-
FW	[m ³]	2,39E-01	2,49E-01	2,45E-01	2,70E-01	2,27E-01	2,38E-01	2,77E-01
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 = Use of net fresh water							

WASTE CATEGORIES AND OUTPUT FLOWS PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
HWD	[kg]	3,92E-02	3,92E-02	3,92E-02	3,92E-02	3,92E-02	3,92E-02	3,92E-02
NHWD	[kg]	3,67E-01	4,13E-01	3,28E-01	4,09E-01	3,10E-01	3,64E-01	4,52E-01
RWD	[kg]	3,53E-03	4,10E-03	2,90E-03	3,50E-03	3,07E-03	3,66E-03	3,33E-03
CRU	[kg]	-	-	-	-	-	-	-
MFR	[kg]	-	-	-	-	-	-	-
MER	[kg]	-	-	-	-	-	-	-
EEE	[MJ]	-	-	-	-	-	-	-
EET	[MJ]	-	-	-	-	-	-	-
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							

LCA results – Lacquer group 2

Silk matt (Commercial/residential), Ultra matt, Ultra matt, ammonia treated

ENVIRONMENTAL IMPACTS PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
GWP	[kg CO ₂ -eq.] excl. biogenic	6,44E+00	7,75E+00	5,82E+00	7,25E+00	5,72E+00	6,99E+00	6,86E+00
GWP	[kg CO ₂ -eq.]	-1,05E+01	-1,81E+01	-1,25E+01	-2,01E+01	-1,04E+01	-1,72E+01	-1,73E+01
ODP	[kg CFC11-eq.]	6,97E-08	6,83E-08	6,97E-08	6,83E-08	6,97E-08	6,83E-08	6,83E-08
AP	[kg SO ₂ -eq.]	6,65E-02	7,88E-02	5,53E-02	7,41E-02	5,36E-02	6,69E-02	8,52E-02
EP	[kg PO ₄ ³⁻ -eq.]	1,13E-02	1,32E-02	1,01E-02	1,27E-02	9,68E-03	1,17E-02	1,36E-02
POCP	[kg ethene-eq.]	3,02E-02	4,14E-02	2,84E-02	3,98E-02	2,65E-02	3,64E-02	3,30E-02
ADPE	[kg Sb-eq.]	8,13E-06	8,54E-06	7,77E-06	8,46E-06	7,63E-06	8,09E-06	8,72E-06
ADPF	[MJ]	8,82E+01	1,09E+02	8,21E+01	1,04E+02	7,91E+01	9,82E+01	9,52E+01
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources							

RESOURCE USE PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
PERE	[MJ]	1,45E+03	1,95E+03	1,36E+03	1,89E+03	1,25E+03	1,69E+03	1,57E+03
PERM	[MJ]	1,68E+02	2,56E+02	1,82E+02	2,70E+02	1,60E+02	2,39E+02	2,39E+02
PERT	[MJ]	1,62E+03	2,21E+03	1,54E+03	2,16E+03	1,41E+03	1,93E+03	1,81E+03
PENRE	[MJ]	8,98E+01	1,11E+02	8,18E+01	1,05E+02	7,95E+01	1,00E+02	9,57E+01
PENRM	[MJ]	7,89E+00	7,97E+00	8,18E+00	8,40E+00	7,88E+00	7,95E+00	8,32E+00
PENRT	[MJ]	9,77E+01	1,19E+02	9,00E+01	1,13E+02	8,74E+01	1,08E+02	1,04E+02
SM	[kg]	-	-	-	-	-	-	-
RSF	[MJ]	-	-	-	-	-	-	-
NRSF	[MJ]	-	-	-	-	-	-	-
FW	[m ³]	1,74E-01	1,84E-01	1,80E-01	2,05E-01	1,61E-01	1,73E-01	2,11E-01
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 = Use of net fresh water							

WASTE CATEGORIES AND OUTPUT FLOWS PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
HWD	[kg]	3,91E-02	3,91E-02	3,91E-02	3,91E-02	3,91E-02	3,91E-02	3,91E-02
NHWD	[kg]	3,65E-01	4,12E-01	3,26E-01	4,07E-01	3,09E-01	3,62E-01	4,51E-01
RWD	[kg]	3,50E-03	4,06E-03	2,86E-03	3,46E-03	3,03E-03	3,62E-03	3,29E-03

CRU	[kg]	-	-	-	-	-	-	-
MFR	[kg]	-	-	-	-	-	-	-
MER	[kg]	-	-	-	-	-	-	-
EEE	[MJ]	-	-	-	-	-	-	-
EET	[MJ]	-	-	-	-	-	-	-
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							

LCA results – Oil

Clear oil, Clear oil with UV backside lacquer

ENVIRONMENTAL IMPACTS PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
GWP	[kg CO ₂ -eq.] excl. biogenic	6,14E+00	7,45E+00	5,52E+00	6,95E+00	5,42E+00	6,69E+00	6,56E+00
GWP	[kg CO ₂ -eq.]	-1,08E+01	-1,84E+01	-1,28E+01	-2,03E+01	-1,07E+01	-1,75E+01	-1,76E+01
ODP	[kg CFC11-eq.]	5,91E-08	5,77E-08	5,91E-08	5,77E-08	5,91E-08	5,77E-08	5,77E-08
AP	[kg SO ₂ -eq.]	6,50E-02	7,73E-02	5,38E-02	7,26E-02	5,21E-02	6,55E-02	8,38E-02
EP	[kg PO ₄ ³⁻ -eq.]	1,10E-02	1,30E-02	9,83E-03	1,25E-02	9,45E-03	1,15E-02	1,34E-02
POCP	[kg ethene-eq.]	2,99E-02	4,11E-02	2,81E-02	3,95E-02	2,62E-02	3,61E-02	3,28E-02
ADPE	[kg Sb-eq.]	7,03E-06	7,44E-06	6,67E-06	7,36E-06	6,53E-06	6,99E-06	7,62E-06
ADPF	[MJ]	8,27E+01	1,03E+02	7,66E+01	9,83E+01	7,36E+01	9,27E+01	8,96E+01
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources							

RESOURCE USE PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
PERE	[MJ]	1,45E+03	1,95E+03	1,36E+03	1,89E+03	1,25E+03	1,69E+03	1,57E+03
PERM	[MJ]	1,68E+02	2,56E+02	1,82E+02	2,70E+02	1,60E+02	2,39E+02	2,39E+02
PERT	[MJ]	1,62E+03	2,21E+03	1,54E+03	2,16E+03	1,41E+03	1,93E+03	1,81E+03
PENRE	[MJ]	8,42E+01	1,06E+02	7,63E+01	9,90E+01	7,40E+01	9,44E+01	9,02E+01
PENRM	[MJ]	7,52E+00	7,60E+00	7,82E+00	8,04E+00	7,51E+00	7,58E+00	7,95E+00
PENRT	[MJ]	9,17E+01	1,14E+02	8,41E+01	1,07E+02	8,15E+01	1,02E+02	9,82E+01
SM	[kg]	-	-	-	-	-	-	-
RSF	[MJ]	-	-	-	-	-	-	-
NRSF	[MJ]	-	-	-	-	-	-	-
FW	[m ³]	7,98E-02	9,00E-02	8,59E-02	1,11E-01	6,73E-02	7,91E-02	1,17E-01
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 = Use of net fresh water							

WASTE CATEGORIES AND OUTPUT FLOWS PER M ²								
Parameter	Unit	Oak 14 mm	Oak 22 mm	Beech 14 mm	Beech 22mm	Ash 14mm	Ash 22mm	Maple 22mm
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
HWD	[kg]	3,97E-02	3,97E-02	3,97E-02	3,97E-02	3,97E-02	3,97E-02	3,97E-02
NHWD	[kg]	3,64E-01	4,11E-01	3,25E-01	4,07E-01	3,08E-01	3,62E-01	4,50E-01
RWD	[kg]	3,45E-03	4,02E-03	2,82E-03	3,42E-03	2,99E-03	3,58E-03	3,25E-03

CRU	[kg]	-	-	-	-	-	-	-
MFR	[kg]	-	-	-	-	-	-	-
MER	[kg]	-	-	-	-	-	-	-
EEE	[MJ]	-	-	-	-	-	-	-
EET	[MJ]	-	-	-	-	-	-	-
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							

Indoor air

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

Soil and water

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

References

Publisher	 epddanmark http://www.epddanmark.dk
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup http://www.teknologisk.dk
LCA-practitioner	Sara Tollin and David Lindén Ramboll AB Vådursgatan 6 SE-412 50 Göteborg Email: Sara.tollin@ramboll.se Email: David.linden@ramboll.se
LCA software /background data	GaBi ts 9.2.0.58 incl. databases 2019 Edition
3rd party verifier	Linda Højbye COWI A/S Parallelvej 2 2800 Kgs. Lyngby Email: LAN@cowi.com

General programme instructions

Version 1.9

www.epddanmark.dk

EN 15804

DS/EN 15804:2012 + A1:2013 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

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"