epddanmark

ECO PLATFORM EPD VERIFIED

Owner: Kronospan ApS
No.: MD-25070-EN
Issued: 25-04-2025
Valid to: 25-04-2030

3rd PARTY **VERIFIED**

EPD

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

Owner of declaration
Kronospan ApS
Fabriksvej 2, 8550 Pindstrup
VAT no. 11766110

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☐ Product EPD

☐ Product specific
☒ Average
☐ Worst Case

Declared product(s)
Spaandex particle boards, type P1 8-40 mm, P2 8-40 mm, P4 25 mm, P6 22 and 38 mm

Number of declared datasets/product variations: 1

Production site
Kronospan ApS in Pindstrup, Denmark

Use of Guarantees of Origin
☒ No certificates used
☐ Electricity covered by GoO
☐ Biogas covered by GoO

Declared/ functional unit
1 kg Spaandex particle boards in various dimensions.

Results can be recalculated into m^2 by using information about the specific thickness and density of the products.

Year of production site data (A3)
2024

EPD version
2, updated to newer standard and foreground data updated

Issued: 25-04-2025
Valid to: 25-04-2030

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.

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:

David Althoff Palm, Dalemarken AB

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	X	ND	ND	ND	ND	MD	ND	ND	ND	X	X	X	X	X

Product information

Product description

The main product components are shown in the table below.

Material	Weight-% of declared product
Wood	83-85
Glue	7-9
Water	6-8
Urea	<1
Hardener	<0.5
Paraffin emulsion	<0.5

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
Wood	0.012	98
Cardboard	0.00006	<1
Plastic	0.00014	1
Total	0.012	100

Representativity

This declaration, including data collection and the modeled foreground system and results, represents the specified products from a single Kronospan ApS production site in Denmark. Data is based on a one year average. One distribution scenario in Denmark and one in Sweden is included. The end-of-life represents disposal by incineration in these countries. Background data are based on GaBi ts database content version 2024.2 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 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

Particle boards P1 and P2 are for different interior uses. P4 is particle boards for construction - mainly heated floors, whereas P6 particle boards are both for ordinary floors and heated floors.

Essential characteristics

The products are covered by the standard EN 1991-1-1:2007.

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

https://kronospan-dk.dk

Reference Service Life (RSL)

No RSL is declared. This EPD is based on a cradle-to-gate with options assessment and does not include the use stage.

Picture of product(s)

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to one kilogram of recycled particle boards of varying dimensions:

Name	Value	Unit
Declared unit	1	kg

Functional unit

Not defined

Material properties

Name	Mass factor (kg/DU)	Density (kg/m^3)
Product	1	550-750

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804, and EN 16485:2014.

Energy modelling principles

Foreground system:

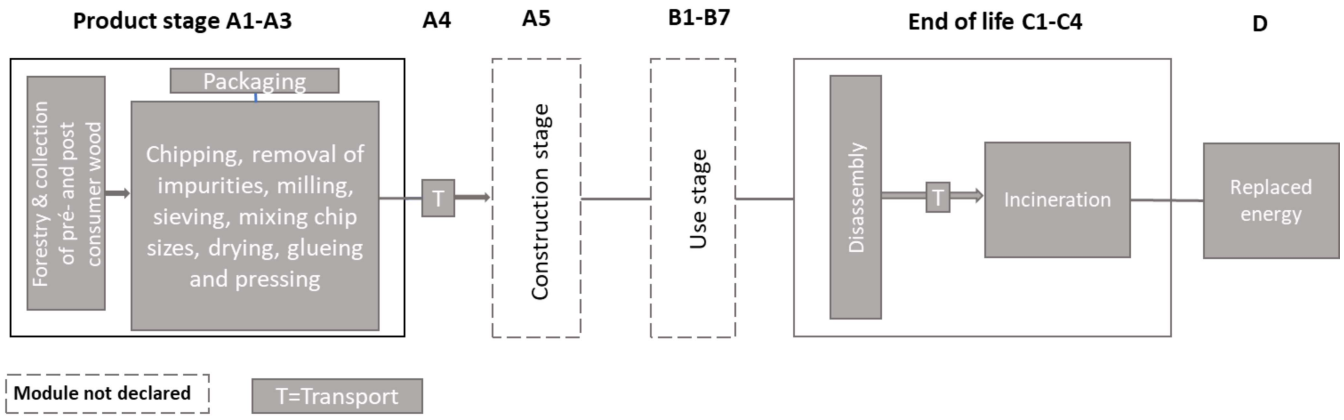
The product is produced using DK residual mix.

The GWP is 0.58 kg CO_2e/kWh.

Background system:

Upstream and downstream processes are modelled using the energy mix applied in the secondary datasets.

Flowdiagram



System boundary

This EPD is based on a cradle-to-gate with options 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 acquisition of wood primarily from post-consumer and to some extend pré-consumer wood. Post-consumer wood comes from recycling centrals and similar. The pré-consumer wood comes from production sites, such as for example furniture producers who cannot use the wood themselves. The product stage also comprises acquisition of other raw materials 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.

Production processes in Denmark include cleaning of the wood, chipping, sieving, milling, mixing, drying, glueing, pressing and packing. Data for production was collected for the year 2024.

The amount of biogenic CO_2 taken up in the packaging in module A3 is 0,022 kg. This amount is relased again in module A5, where the packaging is disposed of. However, module A5 is not declared in this EPD.

Construction process stage (A4) includes:

Transport to the building site, where two distribution scenarios are included – one applicable for Denmark and the other is applicable for Sweden.

End of Life (C1-C4) includes:

A typical scenario for demolition is manual removal using hand tools. Therefore, no impacts are ascribed to module C1.

The end-of-life route scenarios in Denmark and in Sweden are both by 100% collection with mixed construction waste for incineration of the products with energy recovery. Incineration occurs in module C3. In practice, it is known that a part of the products are recycled, but the exact ratio is not known. Transport scenario from building site to incineration is 100km transport distance, which occurs in module C2.

There is no disposal in C4.

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

For the recovered energy during incineration in Module C, Module D includes net impacts and benefits from avoided Danish or Swedish average electricity production and thermal energy recovery.

LCA results

ENVIRONMENTAL IMPACTS PER KG, Particle board											
Parameter	Unit	A1-A3	A4 (DK)	A4 (SE)	C1	C2	C3 (DK)	C3 (SE)	C4	D (DK)	D (SE)
GWP-total	[kg CO_2 eq.]	-1,31E+00	1,68E-02	8,42E-02	0,00E+00	9,96E-03	1,66E+00	1,65E+00	0,00E+00	-1,17E-01	-1,18E-02
GWP-fossil	[kg CO_2 eq.]	2,47E-01	1,65E-02	8,26E-02	0,00E+00	9,67E-03	1,29E-01	1,25E-01	0,00E+00	-1,16E-01	-1,19E-02
GWP-biogenic	[kg CO_2 eq.]	-1,56E+00	4,18E-05	2,09E-04	0,00E+00	1,20E-04	1,53E+00	1,53E+00	0,00E+00	-5,77E-04	2,00E-04
GWP-luluc	[kg CO_2 eq.]	1,38E-04	2,81E-04	1,41E-03	0,00E+00	1,66E-04	2,73E-05	2,19E-05	0,00E+00	-2,80E-05	-5,62E-05
ODP	[kg CFC 11 eq.]	3,17E-10	1,69E-15	8,43E-15	0,00E+00	9,98E-16	2,73E-16	1,74E-16	0,00E+00	-2,19E-12	-1,17E-13
AP	[mol H^+ eq.]	4,14E-04	6,20E-05	3,10E-04	0,00E+00	3,73E-05	3,31E-04	3,06E-04	0,00E+00	-1,60E-04	-2,38E-04
EP-freshwater	[kg P eq.]	1,27E-06	7,14E-08	3,57E-07	0,00E+00	4,23E-08	5,37E-08	4,71E-08	0,00E+00	-6,50E-07	-2,77E-06
EP-marine	[kg N eq.]	2,69E-04	2,89E-05	1,45E-04	0,00E+00	1,74E-05	8,37E-05	7,85E-05	0,00E+00	-5,42E-05	-9,03E-05
EP-terrestrial	[mol N eq.]	1,87E-03	3,24E-04	1,62E-03	0,00E+00	1,95E-04	1,42E-03	1,32E-03	0,00E+00	-5,25E-04	-6,42E-04
POCP	[kg NMVOC eq.]	4,84E-04	5,76E-05	2,88E-04	0,00E+00	3,47E-05	2,24E-04	2,12E-04	0,00E+00	-1,32E-04	-1,73E-04
ADPm[1]	[kg Sb eq.]	4,87E-08	1,42E-09	7,12E-09	0,00E+00	8,43E-10	4,45E-09	3,13E-09	0,00E+00	-3,85E-08	-1,55E-08
ADPf[1]	[MJ]	4,47E+00	2,18E-01	1,09E+00	0,00E+00	1,29E-01	4,16E-01	4,36E-01	0,00E+00	-1,62E+00	-4,18E-01
WDP[1]	[m^3 world eq. deprived]	2,44E-03	2,49E-04	1,25E-03	0,00E+00	1,48E-04	1,84E-01	1,86E-01	0,00E+00	-1,06E-02	-1,92E-02
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.										

Additional environmental impacts, as declared in the project report of this EPD, may be declared in this EPD (if not please state "ND" (Not Declared) as result):

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG, Particle board											
Parameter	Unit	A1-A3	A4 (DK)	A4 (SE)	C1	C2	C3 (DK)	C3 (SE)	C4	D (DK)	D (SE)
PM	[Disease incidence]	6,03E-09	3,91E-10	1,96E-09	0,00E+00	2,45E-10	2,41E-09	2,26E-09	0,00E+00	-1,31E-09	-2,52E-09
IRP[2]	[kBq U235 eq.]	1,14E-02	3,94E-05	1,97E-04	0,00E+00	2,33E-05	1,30E-03	3,88E-03	0,00E+00	-1,08E-02	-1,32E-02
ETP-fw[1]	[CTUe]	9,51E-01	1,61E-01	8,03E-01	0,00E+00	9,52E-02	1,27E-01	1,57E-01	0,00E+00	-2,61E-01	-7,35E-02
HTP-c[1]	[CTUh]	6,09E-11	3,22E-12	1,61E-11	0,00E+00	1,91E-12	2,09E-11	1,61E-11	0,00E+00	-6,64E-11	-3,82E-11
HTP-nc[1]	[CTUh]	1,87E-09	1,44E-10	7,18E-10	0,00E+00	8,50E-11	8,59E-10	9,13E-10	0,00E+00	-5,97E-10	-1,35E-09
SQP[1]	-	2,85E+00	1,08E-01	5,40E-01	0,00E+00	6,40E-02	1,37E-01	1,23E-01	0,00E+00	-1,98E+00	-8,71E+00
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.										

RESOURCE USE PER KG, Particle board											
Parameter	Unit	A1-A3	A4 (DK)	A4 (SE)	C1	C2	C3 (DK)	C3 (SE)	C4	D (DK)	D (SE)
PERE	[MJ]	8,81E-01	1,85E-02	9,23E-02	0,00E+00	1,09E-02	1,35E-01	1,03E-01	0,00E+00	-3,36E+00	-2,44E+00
PERM	[MJ]	1,50E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,48E+01	-1,48E+01	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	1,58E+01	1,85E-02	9,23E-02	0,00E+00	1,09E-02	-1,46E+01	-1,46E+01	0,00E+00	-3,36E+00	-2,44E+00
PENRE	[MJ]	4,47E+00	2,18E-01	1,09E+00	0,00E+00	1,29E-01	4,16E-01	4,36E-01	0,00E+00	-1,62E+00	-4,18E-01
PENRM	[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	0,00E+00	0,00E+00
PENRT	[MJ]	4,47E+00	2,18E-01	1,09E+00	0,00E+00	1,29E-01	4,16E-01	4,36E-01	0,00E+00	-1,62E+00	-4,18E-01
SM	[kg]	1,22E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+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	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	0,00E+00	0,00E+00
FW	[m^3]	8,36E-04	2,07E-05	1,04E-04	0,00E+00	1,23E-05	4,37E-03	4,43E-03	0,00E+00	-1,22E-03	-1,08E-03
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.										

WASTE CATEGORIES AND OUTPUT FLOWS PER KG, Particle board											
Parameter	Unit	A1-A3	A4 (DK)	A4 (SE)	C1	C2	C3 (DK)	C3 (SE)	C4	D (DK)	D (SE)
HWD	[kg]	6,37E-05	7,06E-12	3,53E-11	0,00E+00	4,18E-12	6,98E-10	6,57E-11	0,00E+00	-8,16E-09	-7,05E-10
NHWD	[kg]	1,42E-02	3,40E-05	1,70E-04	0,00E+00	2,01E-05	4,28E-02	4,27E-02	0,00E+00	-4,87E-03	-2,37E-03
RWD	[kg]	1,00E-04	2,82E-07	1,41E-06	0,00E+00	1,67E-07	1,14E-05	3,36E-05	0,00E+00	-9,32E-05	-1,13E-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	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	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	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,10E+01	1,14E+01	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,48E+00	1,14E+00	0,00E+00	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.										

BIOGENIC CARBON CONTENT PER KG, Particle board		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	0.42
Biogenic carbon content in accompanying packagaing	[kg C]	0.006
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Additional information

LCA interpretation

The product stage is the most significant for most environmental impacts. In particular the electricity consumption and the use of glue contributes significantly. The uptake and release of biogenic CO_2 in the wood influences the GWP results greatly, but evens out over the total product life cycle.

Technical information on scenarios

Transport to the building site (A4)

Scenario information	Value	Unit
Fuel type	Diesel	-
Vehicle type	Truck	-
Transport distance	DK: 200, SE: 1000	km
Capacity utilisation (including empty runs)	61	%
Gross density of products transported	550 - 750	kg/m^3
Capacity utilisation volume factor	n/a	-

End of life (C1-C4)

Scenario information	Value	Unit
Collected with mixed waste	1	kg
For energy recovery	1	kg
Assumptions for scenario development	100% incineration in either Denmark or Sweden	As appropriate

Re-use, recovery and recycling potential (D)

Scenario information/Material	Value	Unit
Energy recovery from waste incineration of pré consumer sourced wood	DK: 1.8, SE: 1.6	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

Publisher	www.epddanmark.dk Template version 2024.2
Programme operator	Danish Technological Institute Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Charlotte B. Merlin FORCE Technology Applied Environmental Assessment Park Allé 345 DK-2605 Brøndby https://forcetechnology.com/da
LCA software /background data	*LCA for Experts from Sphera and database content version 2024.2* *EN 15804 reference package 3.1*
3rd party verifier	*David Althoff Palm* *Dalemarken AB* *david@dalemarken.dk* Verified according to Verification Checklist 1 v. 2.7

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"

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

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”