epddanmark

ECO PLATFORM EPD VERIFIED

Owner: Protræ A/S
No.: MD-24098-EN
Issued: 26-11-2024
Valid to: 26-11-2029

3rd PARTY **VERIFIED**

EPD

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

Owner of declaration
Protræ A/S
Skodborg Røddingvej 8,
DK-6630 Rødding

CVR: 15140631

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

Declared product
Profiled wood in Western Red Cedar and Thermo Ash.

Number of declared datasets/product variations: 6
- Cedar (Untreated)
- Cedar (Primed)
- Cedar (Primed & Top Coated)
- Thermo Ash (Untreated)
- Thermo Ash (Primed)
- Thermo Ash (Primed & Top Coated)

Production site
Skodborg Røddingvej 8,
DK-6630 Rødding (Denmark)

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

Declared unit
1 m^3

Year of production site data (A3)
1/9-2021 – 31/8-2022

EPD version
Version 1.0.

Issued: 26-11-2024
Valid to: 26-11-2029

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 data-sets 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	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, 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 product materials are listed below.

Cedar (Untreated)		
Material	**Amount [kg]**	**Weight-% of declared product**
Cedar	350,0	100%
TOTAL	**350,0**	**100%**

Cedar (Primed)		
Material	**Amount [kg]**	**Weight-% of declared product**
Cedar	350,0	99%
Primer	3,9	1%
TOTAL	**353,9**	**100%**

Cedar (Primed & Top Coated)		
Material	**Amount [kg]**	**Weight-% of declared product**
Cedar	350,0	98%
Primer	3,9	1%
Paint	2,9	1%
TOTAL	**356,8**	**100%**

Thermo Ash (Untreated)		
Material	**Amount [kg]**	**Weight-% of declared product**
Thermo Ash	680,0	100%
TOTAL	**680,0**	**100%**

Thermo Ash (Primed)		
Material	**Amount [kg]**	**Weight-% of declared product**
Thermo Ash	680,0	99%
Primer	3,9	1%
TOTAL	**683,9**	**100%**

Thermo Ash (Primed & Top Coated)		
Material	**Amount [kg]**	**Weight-% of declared product**
Thermo Ash	680,0	99%
Primer	3,9	0,6%
Paint	2,9	0,4%
TOTAL	**686,8**	**100%**

The moisture content in Cedar and Thermo Ash is 16% and 8%, respectively. The amounts stated for Cedar and Thermo Ash include moisture.

For primer and paint, it is the dry matter content that is stated.

Sales packaging

Sales packaging is listed below.

Packaging	Amount [kg]	Weight-% of sales packaging
Wood Beams	1,61	96%
Film	0,06	4%
TOTAL	**1,67**	**100%**

Sales packaging does not differ between the six product variations.

Representativity

This EPD covers the declared unit of 1 m^3 of profiled wood in six product variations produced by Protræ in Rødding. Product-specific data is from the period between 1/9-2021 - 31/8-2022.

Background data is from the cut-off by classification ecoinvent database (v.3.9.1). Generally, the used background datasets are of high quality and are only a couple of years old.

Hazardous substances

The product variations do not contain substances listed on the "Candidate List of substances of very high concern for Authorisation" in quantities exceeding 0,1% by weight.

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

Product use

The product variations are used for solid wood panelling and cladding both indoor and outdoor.

Essential characteristics

Technical information can be obtained by contacting Protræ.

https://www.protrae.dk/

Reference Service Life (RSL)

Not defined.

Pictures of the six product variations

Cedar

Thermo Ash

LCA background

Declared unit

The LCI and LCIA results in this EPD cover the declared unit of 1 m^3 of profiled wood in six product variations.

	Amount	Unit
Declared Unit	1	m^3
Cedar (Untreated)	350,0	kg/m^3
Cedar (Primed)	353,9	kg/m^3
Cedar (Primed & Top Coated)	356,8	kg/m^3
Thermo Ash (Untreated)	680,0	kg/m^3
Thermo Ash (Primed)	683,9	kg/m^3
Thermo Ash (Primed & Top Coated)	686,8	kg/m^3

Functional unit

Not defined.

PCR

This EPD is developed in accordance with the core rules for the product category of construction products in EN 15804+A2 and the core rules in EN 16485:2014 (product category rules for wood and wood-based products for use in construction).

Energy modelling principles

Protræ does not purchase guarantees of origin. The LCA study is therefore modelled as described in the following.

The foreground system is modelled using the national electricity residual mix of Denmark, see the table below for further information.

Data	EF	Unit
[Residual grid mix, DK, ref. year 2022]	0,628	kg CO_2e/kWh

The background system is modelled using electricity grid mixes both upstream and downstream.

Flowdiagram

	Flow Diagram: Protræ A/S	
Product	**A1** Raw material supply	Wood (Cedar & Thermo Ash), Primer and Paint
	A2 Transport	Transport to Protræ's production site
	A3 Manufacturing	Production of profiled wood
End-of-Life	**C1** Deconstruction demolition	Building parts are deconstructed/demolished
	C2 Transport	Transport to waste management
	C3 Waste processing	-
	C4 Disposal	Incineration
Beyond system boundary	**D** Reuse- recovery- recycling potential	Energy Recovery

Untreated Cedar and Thermo Ash do not require primer and paint.
Primed Cedar and Thermo Ash do not require paint.

System boundary

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

The cut-off criterium per module is set at a maximum of 5% of energy usage and mass while the cut-off criterium per unit process is set at a maximum of 1% of energy usage and mass. This is in compliance with the rules stated in EN 15804+A2, 6.3.6. Cut-offs, in this EPD, are below the cut-off criteria.

Product stage (A1-A3) includes:

A1 - Extraction and processing of raw materials

A2 - Transport to the production site

A3 - Manufacturing processes

For its profiled wood production, Protræ purchases both Cedar and Thermo Ash. In addition, when surface treatment is applied, primer and paint are also purchased. At Protræ's production site, the purchased wood is planned to desired lengths. If no surface treatment is applied, the planed wood is packaged and sold to customers as untreated wood. If surface treatment is applied, the planed wood is primed or primed and top coated, dried and then packaged.

Economic allocation is used to allocate production inputs in module A3 to the profiled wood and the wood cut offs. The wood cut offs are generated during production and are sold.

The LCA results are presented in aggregated form with A1-A3 declared as a single module.

Construction process stage (A4-5) includes:

The construction process stage is not declared.

Use stage (B1-7) includes:

The use stage is not declared.

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

The End-of-Life is modelled by assuming that the profiled wood (100%) is collected with mixed construction waste and incinerated. A percentage of the profiled wood is expected to be reused/recycled. However, this percentage is unknown. As per EN 16485, waste treatment also includes crushing the wood prior to incineration.

Crushing and incinerating the profiled wood is modelled in module C4 in accordance with EN 16485 as the energy recovery from incineration (R1-value) is below 0,60 for all six product variations. No burdens are therefore allocated to module C3.

Transport to waste treatment (C2) is modelled by assuming a distance of 100 km to incineration in Denmark. The deconstruction/demolition (C1) is modelled by assuming a diesel consumption.

Reuse, recovery and recycling potential (D) includes:

Module D includes benefits from the avoided production of average Danish electricity and heat as the product variations are incinerated.

LCA results

The LCIA results are calculated using the Environmental Footprint (EF 3.1), EN15804+A2 (adapted) v.1.00 impact methodology. This is in accordance with EN15804+A2:2019. It is important to note that the biogenic carbon is not balanced because module A5 is not declared.

Cedar (Untreated)

ENVIRONMENTAL IMPACTS PER 1 m^3 OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-2,65E+02	1,76E+00	6,48E+00	0,00E+00	5,61E+02	-1,29E+02
GWP-fossil	[kg CO_2 eq.]	2,74E+02	1,76E+00	6,47E+00	0,00E+00	2,20E+01	-1,26E+02
GWP-biogenic	[kg CO_2 eq.]	-5,40E+02	4,05E-04	5,92E-03	0,00E+00	5,39E+02	-2,19E+00
GWP-luluc	[kg CO_2 eq.]	7,99E-01	1,99E-04	3,19E-03	0,00E+00	5,18E-02	-1,53E-01
ODP	[kg CFC 11 eq.]	5,67E-06	2,81E-08	1,41E-07	0,00E+00	3,33E-07	-4,13E-06
AP	[mol H^+ eq.]	2,85E+00	1,64E-02	1,41E-02	0,00E+00	1,47E-01	-3,49E-01
EP-freshwater	[kg P eq.]	5,16E-02	5,42E-05	4,60E-04	0,00E+00	5,95E-03	-5,49E-02
EP-marine	[kg N eq.]	9,95E-01	7,58E-03	3,57E-03	0,00E+00	6,05E-02	-7,18E-02
EP-terrestrial	[mol N eq.]	1,08E+01	8,24E-02	3,62E-02	0,00E+00	6,10E-01	-6,72E-01
POCP	[kg NMVOC eq.]	3,17E+00	2,44E-02	2,19E-02	0,00E+00	1,77E-01	-2,76E-01
ADPm[1]	[kg Sb eq.]	5,60E-04	6,16E-07	2,11E-05	0,00E+00	5,22E-05	-1,41E-04
ADPf[1]	[MJ]	3,52E+03	2,31E+01	9,18E+01	0,00E+00	2,79E+02	-2,35E+03
WDP[1]	[m^3 world eq. deprived]	2,25E+01	4,98E-02	3,79E-01	0,00E+00	-2,93E+00	-1,63E+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 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 PER 1 m^3 OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4,23E-05	4,56E-07	4,82E-07	0,00E+00	2,10E-06	-1,28E-06
IRP[2]	[kBq U235 eq.]	1,09E+01	1,10E-02	1,24E-01	0,00E+00	1,14E+00	-3,89E+01
ETP-fw[1]	[CTUe]	3,45E+03	2,21E+01	9,08E+01	0,00E+00	3,51E+02	-4,26E+02
HTP-c[1]	[CTUh]	4,09E-07	1,08E-09	5,90E-09	0,00E+00	5,21E-08	-5,60E-08
HTP-nc[1]	[CTUh]	4,50E-06	7,51E-09	1,30E-07	0,00E+00	1,74E-06	-1,20E-06
SQP[1]	-	1,26E+05	1,56E+00	5,55E+01	0,00E+00	1,65E+02	-2,20E+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 (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 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2,05E+04	1,32E-01	1,45E+00	0,00E+00	1,33E+01	-2,64E+02
PERM	[MJ]	5,07E+03	0,00E+00	0,00E+00	0,00E+00	-5,04E+03	0,00E+00
PERT	[MJ]	2,56E+04	1,32E-01	1,45E+00	0,00E+00	-5,03E+03	-2,64E+02
PENRE	[MJ]	3,52E+03	2,31E+01	9,18E+01	0,00E+00	2,79E+02	-2,35E+03
PENRM	[MJ]	2,55E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	3,52E+03	2,31E+01	9,18E+01	0,00E+00	2,79E+02	-2,35E+03
SM	[kg]	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
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m^3]	1,03E+00	1,81E-03	1,32E-02	0,00E+00	-1,28E-02	-1,12E+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.						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,83E-02	1,56E-04	5,84E-04	0,00E+00	1,39E-03	-6,12E-03
NHWD	[kg]	4,97E+01	3,31E-02	4,56E+00	0,00E+00	1,45E+01	-5,14E+00
RWD	[kg]	2,67E-03	2,53E-06	3,02E-05	0,00E+00	2,84E-04	-9,95E-03
CRU	[kg]	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
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	1,18E+00	0,00E+00	0,00E+00	0,00E+00	6,09E+02	0,00E+00
EET	[MJ]	2,30E+00	0,00E+00	0,00E+00	0,00E+00	1,22E+03	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 1 m³ OF PROFILED WOOD		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	147,00
Biogenic carbon content in accompanying packaging	[kg C]	0,72
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Cedar (Primed)

ENVIRONMENTAL IMPACTS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-2,19E+02	1,80E+00	6,60E+00	0,00E+00	5,78E+02	-7,22E+01
GWP-fossil	[kg CO_2 eq.]	3,21E+02	1,80E+00	6,59E+00	0,00E+00	3,88E+01	-6,96E+01
GWP-biogenic	[kg CO_2 eq.]	-5,40E+02	4,13E-04	6,04E-03	0,00E+00	5,39E+02	-2,51E+00
GWP-luluc	[kg CO_2 eq.]	8,18E-01	2,02E-04	3,26E-03	0,00E+00	5,28E-02	-1,15E-01
ODP	[kg CFC 11 eq.]	6,50E-06	2,86E-08	1,44E-07	0,00E+00	3,43E-07	-3,72E-06
AP	[mol H^+ eq.]	3,07E+00	1,67E-02	1,44E-02	0,00E+00	1,50E-01	-1,66E-01
EP-freshwater	[kg P eq.]	6,19E-02	5,52E-05	4,69E-04	0,00E+00	6,05E-03	-2,88E-02
EP-marine	[kg N eq.]	1,03E+00	7,73E-03	3,64E-03	0,00E+00	6,17E-02	-4,53E-02
EP-terrestrial	[mol N eq.]	1,11E+01	8,40E-02	3,70E-02	0,00E+00	6,23E-01	-5,10E-01
POCP	[kg NMVOC eq.]	3,31E+00	2,49E-02	2,24E-02	0,00E+00	1,80E-01	-1,35E-01
ADPm[1]	[kg Sb eq.]	7,27E-04	6,28E-07	2,16E-05	0,00E+00	5,34E-05	-2,56E-04
ADPf[1]	[MJ]	4,28E+03	2,36E+01	9,37E+01	0,00E+00	2,85E+02	-1,17E+03
WDP[1]	[m^3 world eq. deprived]	3,69E+01	5,08E-02	3,86E-01	0,00E+00	-2,99E+00	-1,06E+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 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 PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4,42E-05	4,65E-07	4,91E-07	0,00E+00	2,14E-06	-1,08E-06
IRP[2]	[kBq U235 eq.]	1,59E+01	1,12E-02	1,27E-01	0,00E+00	1,17E+00	-1,35E+01
ETP-fw[1]	[CTUe]	3,83E+03	2,25E+01	9,26E+01	0,00E+00	3,68E+02	-2,76E+02
HTP-c[1]	[CTUh]	4,39E-07	1,10E-09	6,01E-09	0,00E+00	9,37E-08	-4,09E-08
HTP-nc[1]	[CTUh]	5,26E-06	7,66E-09	1,33E-07	0,00E+00	1,87E-06	-1,08E-06
SQP[1]	-	1,26E+05	1,59E+00	5,66E+01	0,00E+00	1,68E+02	-8,28E+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 (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 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2,06E+04	1,34E-01	1,47E+00	0,00E+00	1,36E+01	-5,91E+02
PERM	[MJ]	5,07E+03	0,00E+00	0,00E+00	0,00E+00	-5,04E+03	0,00E+00
PERT	[MJ]	2,56E+04	1,34E-01	1,47E+00	0,00E+00	-5,03E+03	-5,91E+02
PENRE	[MJ]	4,28E+03	2,36E+01	9,37E+01	0,00E+00	2,85E+02	-1,17E+03
PENRM	[MJ]	2,55E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	4,29E+03	2,36E+01	9,37E+01	0,00E+00	2,85E+02	-1,17E+03
SM	[kg]	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
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m³]	1,65E+00	1,85E-03	1,35E-02	0,00E+00	-1,04E-02	-1,18E+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.						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2,07E-02	1,59E-04	5,96E-04	0,00E+00	1,44E-03	-3,24E-03
NHWD	[kg]	5,26E+01	3,37E-02	4,65E+00	0,00E+00	1,50E+01	-3,65E+00
RWD	[kg]	3,92E-03	2,58E-06	3,08E-05	0,00E+00	2,90E-04	-3,16E-03
CRU	[kg]	4,20E-01	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
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	1,18E+00	0,00E+00	0,00E+00	0,00E+00	6,09E+02	0,00E+00
EET	[MJ]	2,30E+00	0,00E+00	0,00E+00	0,00E+00	1,22E+03	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 1 m³ OF PROFILED WOOD		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	147,00
Biogenic carbon content in accompanying packaging	[kg C]	0,72
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Cedar (Primed & Top Coated)

ENVIRONMENTAL IMPACTS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-1,46E+02	1,84E+00	6,73E+00	0,00E+00	5,95E+02	-1,32E+02
GWP-fossil	[kg CO_2 eq.]	3,83E+02	1,83E+00	6,73E+00	0,00E+00	5,62E+01	-1,29E+02
GWP-biogenic	[kg CO_2 eq.]	-5,40E+02	4,21E-04	6,16E-03	0,00E+00	5,39E+02	-2,24E+00
GWP-luluc	[kg CO_2 eq.]	1,06E+01	2,06E-04	3,32E-03	0,00E+00	5,39E-02	-1,57E-01
ODP	[kg CFC 11 eq.]	8,28E-06	2,92E-08	1,46E-07	0,00E+00	3,52E-07	-4,23E-06
AP	[mol H^+ eq.]	3,72E+00	1,70E-02	1,47E-02	0,00E+00	1,53E-01	-3,57E-01
EP-freshwater	[kg P eq.]	7,79E-02	5,63E-05	4,78E-04	0,00E+00	6,14E-03	-5,62E-02
EP-marine	[kg N eq.]	1,10E+00	7,88E-03	3,71E-03	0,00E+00	6,30E-02	-7,34E-02
EP-terrestrial	[mol N eq.]	1,17E+01	8,57E-02	3,77E-02	0,00E+00	6,37E-01	-6,88E-01
POCP	[kg NMVOC eq.]	3,54E+00	2,54E-02	2,28E-02	0,00E+00	1,84E-01	-2,82E-01
ADPm[1]	[kg Sb eq.]	9,53E-04	6,40E-07	2,20E-05	0,00E+00	5,46E-05	-1,44E-04
ADPf[1]	[MJ]	5,19E+03	2,40E+01	9,55E+01	0,00E+00	2,91E+02	-2,40E+03
WDP[1]	[m^3 world eq. deprived]	6,49E+01	5,18E-02	3,94E-01	0,00E+00	-3,04E+00	-1,67E+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 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 PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4,78E-05	4,74E-07	5,01E-07	0,00E+00	2,19E-06	-1,32E-06
IRP[2]	[kBq U235 eq.]	2,18E+01	1,14E-02	1,29E-01	0,00E+00	1,19E+00	-3,98E+01
ETP-fw[1]	[CTUe]	5,96E+03	2,30E+01	9,44E+01	0,00E+00	3,84E+02	-4,36E+02
HTP-c[1]	[CTUh]	5,03E-07	1,12E-09	6,13E-09	0,00E+00	1,37E-07	-5,73E-08
HTP-nc[1]	[CTUh]	6,48E-06	7,81E-09	1,36E-07	0,00E+00	2,01E-06	-1,23E-06
SQP[1]	-	1,27E+05	1,62E+00	5,78E+01	0,00E+00	1,72E+02	-2,25E+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 (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 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2,07E+04	1,37E-01	1,50E+00	0,00E+00	1,38E+01	-2,70E+02
PERM	[MJ]	5,07E+03	0,00E+00	0,00E+00	0,00E+00	-5,04E+03	0,00E+00
PERT	[MJ]	2,58E+04	1,37E-01	1,50E+00	0,00E+00	-5,03E+03	-2,70E+02
PENRE	[MJ]	5,19E+03	2,40E+01	9,55E+01	0,00E+00	2,91E+02	-2,40E+03
PENRM	[MJ]	2,55E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	5,19E+03	2,40E+01	9,55E+01	0,00E+00	2,91E+02	-2,40E+03
SM	[kg]	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
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m³]	2,82E+00	1,89E-03	1,38E-02	0,00E+00	-7,93E-03	-1,15E+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.						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2,38E-02	1,62E-04	6,08E-04	0,00E+00	1,49E-03	-6,27E-03
NHWD	[kg]	7,15E+01	3,44E-02	4,75E+00	0,00E+00	1,55E+01	-5,26E+00
RWD	[kg]	5,43E-03	2,63E-06	3,14E-05	0,00E+00	2,96E-04	-1,02E-02
CRU	[kg]	8,20E-01	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
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	1,18E+00	0,00E+00	0,00E+00	0,00E+00	6,09E+02	0,00E+00
EET	[MJ]	2,30E+00	0,00E+00	0,00E+00	0,00E+00	1,22E+03	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 1 m³ OF PROFILED WOOD		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	147,00
Biogenic carbon content in accompanying packaging	[kg C]	0,72
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Thermo Ash (Untreated)

ENVIRONMENTAL IMPACTS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-8,93E+02	3,43E+00	1,26E+01	0,00E+00	1,19E+03	-2,50E+02
GWP-fossil	[kg CO_2 eq.]	2,54E+02	3,43E+00	1,26E+01	0,00E+00	4,28E+01	-2,45E+02
GWP-biogenic	[kg CO_2 eq.]	-1,15E+03	7,87E-04	1,15E-02	0,00E+00	1,15E+03	-4,25E+00
GWP-luluc	[kg CO_2 eq.]	1,73E+00	3,86E-04	6,20E-03	0,00E+00	1,01E-01	-2,97E-01
ODP	[kg CFC 11 eq.]	5,49E-06	5,45E-08	2,74E-07	0,00E+00	6,47E-07	-8,02E-06
AP	[mol H^+ eq.]	3,03E+00	3,18E-02	2,75E-02	0,00E+00	2,85E-01	-6,78E-01
EP-freshwater	[kg P eq.]	5,86E-02	1,05E-04	8,93E-04	0,00E+00	1,16E-02	-1,07E-01
EP-marine	[kg N eq.]	8,35E-01	1,47E-02	6,93E-03	0,00E+00	1,17E-01	-1,39E-01
EP-terrestrial	[mol N eq.]	9,09E+00	1,60E-01	7,04E-02	0,00E+00	1,18E+00	-1,31E+00
POCP	[kg NMVOC eq.]	2,95E+00	4,74E-02	4,26E-02	0,00E+00	3,43E-01	-5,36E-01
ADPm[1]	[kg Sb eq.]	5,12E-04	1,20E-06	4,11E-05	0,00E+00	1,01E-04	-2,73E-04
ADPf[1]	[MJ]	3,35E+03	4,49E+01	1,78E+02	0,00E+00	5,42E+02	-4,56E+03
WDP[1]	[m^3 world eq. deprived]	2,27E+01	9,68E-02	7,36E-01	0,00E+00	-5,70E+00	-3,17E+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 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 PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4,66E-05	8,86E-07	9,36E-07	0,00E+00	4,08E-06	-2,50E-06
IRP[2]	[kBq U235 eq.]	1,03E+01	2,13E-02	2,42E-01	0,00E+00	2,22E+00	-7,55E+01
ETP-fw[1]	[CTUe]	3,28E+03	4,29E+01	1,76E+02	0,00E+00	6,83E+02	-8,27E+02
HTP-c[1]	[CTUh]	3,40E-07	2,10E-09	1,15E-08	0,00E+00	1,01E-07	-1,09E-07
HTP-nc[1]	[CTUh]	4,77E-06	1,46E-08	2,53E-07	0,00E+00	3,38E-06	-2,33E-06
SQP[1]	-	1,26E+05	3,02E+00	1,08E+02	0,00E+00	3,20E+02	-4,27E+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 (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 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2,70E+04	2,56E-01	2,81E+00	0,00E+00	2,58E+01	-5,13E+02
PERM	[MJ]	9,85E+03	0,00E+00	0,00E+00	0,00E+00	-9,79E+03	0,00E+00
PERT	[MJ]	3,68E+04	2,56E-01	2,81E+00	0,00E+00	-9,77E+03	-5,13E+02
PENRE	[MJ]	3,35E+03	4,49E+01	1,78E+02	0,00E+00	5,42E+02	-4,56E+03
PENRM	[MJ]	2,55E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	3,35E+03	4,49E+01	1,78E+02	0,00E+00	5,42E+02	-4,56E+03
SM	[kg]	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
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m³]	1,02E+00	3,52E-03	2,57E-02	0,00E+00	-2,49E-02	-2,18E+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.						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,65E-02	3,02E-04	1,14E-03	0,00E+00	2,71E-03	-1,19E-02
NHWD	[kg]	7,15E+01	6,42E-02	8,86E+00	0,00E+00	2,82E+01	-9,99E+00
RWD	[kg]	2,52E-03	4,92E-06	5,87E-05	0,00E+00	5,51E-04	-1,93E-02
CRU	[kg]	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
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	5,10E-01	0,00E+00	0,00E+00	0,00E+00	1,18E+03	0,00E+00
EET	[MJ]	9,96E-01	0,00E+00	0,00E+00	0,00E+00	2,37E+03	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 1 m³ OF PROFILED WOOD		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	312,80
Biogenic carbon content in accompanying packaging	[kg C]	0,72
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Thermo Ash (Primed)

ENVIRONMENTAL IMPACTS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-8,47E+02	3,46E+00	1,27E+01	0,00E+00	1,21E+03	-2,51E+02
GWP-fossil	[kg CO_2 eq.]	3,00E+02	3,46E+00	1,27E+01	0,00E+00	5,96E+01	-2,47E+02
GWP-biogenic	[kg CO_2 eq.]	-1,15E+03	7,95E-04	1,16E-02	0,00E+00	1,15E+03	-4,28E+00
GWP-luluc	[kg CO_2 eq.]	1,75E+00	3,90E-04	6,27E-03	0,00E+00	1,02E-01	-2,99E-01
ODP	[kg CFC 11 eq.]	6,32E-06	5,51E-08	2,76E-07	0,00E+00	6,57E-07	-8,07E-06
AP	[mol H^+ eq.]	3,25E+00	3,21E-02	2,77E-02	0,00E+00	2,88E-01	-6,82E-01
EP-freshwater	[kg P eq.]	6,90E-02	1,06E-04	9,02E-04	0,00E+00	1,17E-02	-1,07E-01
EP-marine	[kg N eq.]	8,67E-01	1,49E-02	7,00E-03	0,00E+00	1,19E-01	-1,40E-01
EP-terrestrial	[mol N eq.]	9,42E+00	1,62E-01	7,11E-02	0,00E+00	1,20E+00	-1,31E+00
POCP	[kg NMVOC eq.]	3,09E+00	4,79E-02	4,31E-02	0,00E+00	3,47E-01	-5,39E-01
ADPm[1]	[kg Sb eq.]	6,79E-04	1,21E-06	4,15E-05	0,00E+00	1,03E-04	-2,75E-04
ADPf[1]	[MJ]	4,11E+03	4,54E+01	1,80E+02	0,00E+00	5,48E+02	-4,59E+03
WDP[1]	[m^3 world eq. deprived]	3,70E+01	9,77E-02	7,43E-01	0,00E+00	-5,76E+00	-3,19E+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 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 PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	4,84E-05	8,95E-07	9,46E-07	0,00E+00	4,13E-06	-2,51E-06
IRP[2]	[kBq U235 eq.]	1,53E+01	2,15E-02	2,44E-01	0,00E+00	2,24E+00	-7,60E+01
ETP-fw[1]	[CTUe]	3,66E+03	4,33E+01	1,78E+02	0,00E+00	6,99E+02	-8,32E+02
HTP-c[1]	[CTUh]	3,71E-07	2,12E-09	1,16E-08	0,00E+00	1,43E-07	-1,09E-07
HTP-nc[1]	[CTUh]	5,53E-06	1,47E-08	2,56E-07	0,00E+00	3,51E-06	-2,34E-06
SQP[1]	-	1,27E+05	3,06E+00	1,09E+02	0,00E+00	3,24E+02	-4,30E+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 (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 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2,70E+04	2,58E-01	2,84E+00	0,00E+00	2,61E+01	-5,16E+02
PERM	[MJ]	9,85E+03	0,00E+00	0,00E+00	0,00E+00	-9,79E+03	0,00E+00
PERT	[MJ]	3,69E+04	2,58E-01	2,84E+00	0,00E+00	-9,77E+03	-5,16E+02
PENRE	[MJ]	4,11E+03	4,54E+01	1,80E+02	0,00E+00	5,48E+02	-4,59E+03
PENRM	[MJ]	2,55E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	4,12E+03	4,54E+01	1,80E+02	0,00E+00	5,48E+02	-4,59E+03
SM	[kg]	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
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m³]	1,63E+00	3,56E-03	2,60E-02	0,00E+00	-2,25E-02	-2,19E+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.						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	1,89E-02	3,05E-04	1,15E-03	0,00E+00	2,76E-03	-1,20E-02
NHWD	[kg]	7,44E+01	6,49E-02	8,95E+00	0,00E+00	2,87E+01	-1,01E+01
RWD	[kg]	3,78E-03	4,97E-06	5,93E-05	0,00E+00	5,57E-04	-1,95E-02
CRU	[kg]	4,20E-01	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
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	5,10E-01	0,00E+00	0,00E+00	0,00E+00	1,18E+03	0,00E+00
EET	[MJ]	9,96E-01	0,00E+00	0,00E+00	0,00E+00	2,37E+03	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 1 m³ OF PROFILED WOOD		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	312,80
Biogenic carbon content in accompanying packaging	[kg C]	0,72
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Thermo Ash (Primed & Top Coated)

ENVIRONMENTAL IMPACTS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	-7,74E+02	3,50E+00	1,28E+01	0,00E+00	1,22E+03	-2,53E+02
GWP-fossil	[kg CO_2 eq.]	3,63E+02	3,50E+00	1,28E+01	0,00E+00	7,69E+01	-2,48E+02
GWP-biogenic	[kg CO_2 eq.]	-1,15E+03	8,03E-04	1,17E-02	0,00E+00	1,15E+03	-4,31E+00
GWP-luluc	[kg CO_2 eq.]	1,15E+01	3,94E-04	6,33E-03	0,00E+00	1,03E-01	-3,01E-01
ODP	[kg CFC 11 eq.]	8,10E-06	5,57E-08	2,79E-07	0,00E+00	6,66E-07	-8,12E-06
AP	[mol H^+ eq.]	3,90E+00	3,24E-02	2,80E-02	0,00E+00	2,91E-01	-6,86E-01
EP-freshwater	[kg P eq.]	8,49E-02	1,07E-04	9,11E-04	0,00E+00	1,18E-02	-1,08E-01
EP-marine	[kg N eq.]	9,44E-01	1,50E-02	7,07E-03	0,00E+00	1,20E-01	-1,41E-01
EP-terrestrial	[mol N eq.]	9,94E+00	1,63E-01	7,19E-02	0,00E+00	1,21E+00	-1,32E+00
POCP	[kg NMVOC eq.]	3,32E+00	4,84E-02	4,35E-02	0,00E+00	3,51E-01	-5,43E-01
ADPm[1]	[kg Sb eq.]	9,05E-04	1,22E-06	4,19E-05	0,00E+00	1,04E-04	-2,76E-04
ADPf[1]	[MJ]	5,02E+03	4,58E+01	1,82E+02	0,00E+00	5,54E+02	-4,62E+03
WDP[1]	[m^3 world eq. deprived]	6,50E+01	9,87E-02	7,51E-01	0,00E+00	-5,81E+00	-3,21E+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 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 PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	5,21E-05	9,04E-07	9,55E-07	0,00E+00	4,17E-06	-2,53E-06
IRP[2]	[kBq U235 eq.]	2,12E+01	2,17E-02	2,47E-01	0,00E+00	2,27E+00	-7,64E+01
ETP-fw[1]	[CTUe]	5,79E+03	4,38E+01	1,80E+02	0,00E+00	7,16E+02	-8,37E+02
HTP-c[1]	[CTUh]	4,35E-07	2,14E-09	1,17E-08	0,00E+00	1,86E-07	-1,10E-07
HTP-nc[1]	[CTUh]	6,76E-06	1,49E-08	2,58E-07	0,00E+00	3,65E-06	-2,36E-06
SQP[1]	-	1,27E+05	3,09E+00	1,10E+02	0,00E+00	3,27E+02	-4,32E+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 (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 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2,72E+04	2,61E-01	2,87E+00	0,00E+00	2,64E+01	-5,20E+02
PERM	[MJ]	9,85E+03	0,00E+00	0,00E+00	0,00E+00	-9,79E+03	0,00E+00
PERT	[MJ]	3,70E+04	2,61E-01	2,87E+00	0,00E+00	-9,77E+03	-5,20E+02
PENRE	[MJ]	5,02E+03	4,58E+01	1,82E+02	0,00E+00	5,54E+02	-4,62E+03
PENRM	[MJ]	2,55E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	5,02E+03	4,58E+01	1,82E+02	0,00E+00	5,54E+02	-4,62E+03
SM	[kg]	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
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m³]	2,80E+00	3,60E-03	2,62E-02	0,00E+00	-2,00E-02	-2,20E+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.						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m³ OF PROFILED WOOD							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	2,20E-02	3,08E-04	1,16E-03	0,00E+00	2,81E-03	-1,20E-02
NHWD	[kg]	9,32E+01	6,56E-02	9,05E+00	0,00E+00	2,92E+01	-1,01E+01
RWD	[kg]	5,28E-03	5,02E-06	5,99E-05	0,00E+00	5,64E-04	-1,96E-02
CRU	[kg]	8,20E-01	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
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	5,10E-01	0,00E+00	0,00E+00	0,00E+00	1,18E+03	0,00E+00
EET	[MJ]	9,96E-01	0,00E+00	0,00E+00	0,00E+00	2,37E+03	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 1 m³ OF PROFILED WOOD		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	312,80
Biogenic carbon content in accompanying packaging	[kg C]	0,72
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Additional information

Technical information on scenarios

End-of-Life (C1-C4)

Scenario information	Value	Unit
Collected with mixed waste	1	m^3
For energy recovery	1	m^3
Assumptions for scenario development		As appropriate

The End-of-Life does not differ between the six product variations.

Reuse, recovery and recycling potential (D)

Scenario information/Materiel	Value	Unit
Energy recovery from waste incineration (**electricity**)	609,00 616,01 623,25 1.183,20 1.190,21 1.197,45	MJ
Energy recovery from waste incineration (**heat**)	1.221,50 1.236,01 1.250,98 2.373,20 2.387,71 2.402,68	MJ

Stated in the following order: Cedar (Untreated), Cedar (Primed), Cedar (Primed & Top Coated), Thermo Ash (Untreated), Thermo Ash (Primed) & Thermo Ash (Primed & Top Coated).

Indoor air

The EPD does not give information on the release of dangerous substances to indoor air because the horizontal standards of 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 the release of dangerous substances to soil and water because the horizontal standards of the relevant measurements are not available.

Read more in EN15804+A1 Chapter 7.4.2.

References

Publisher	www.epddanmark.dk Template version 2024.1
Programme operator	Danish Technological Institute Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Transition ApS Regnbuepladsen 7, 1550 København V Emma Ekebjærg, Lasse Langstrup Hägerstrand
LCA software/background data	SimaPro 9.6.0.1 ecoinvent v.3.9.1 (cut-off by classification)
3rd party verifier	David Althoff Palm Dalemarken AB, david@dalemarken.se

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
DS/EN 16485:2014 - "Product category rules for wood and wood-based products for use in construction”.

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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”.

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DS/EN ISO 14044:2008 - ”Environmental management - Life cycle assessment - Requirements and guidelines”.

The Danish Environmental Protection Agency 2022
Selektiv nedrivning i byggebranchen: Livscyklusvurdering (LCA) af konsekvenser ved selektiv nedrivning.