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3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration

TCM Group
Skautrupvej 16, Tvis
7500 Holstebro,
Denmark



CVR: 37291269

Issued:
26-06-2023

Valid to:
26-06-2028

Programme

EPD Danmark
www.epddanmark.dk



- Industry EPD
- Product EPD

Declared product(s)

Kitchen cabinet corpus:
- Chipboard corpus
- Painted MDF corpus

Kitchen cabinet front:
- Melamine front
- Laminate front
- Veneer front
- Painted MDF front

Number of declared datasets/product variations: 6

Production site

Skautrupvej 16, 7500 Holstebro, Denmark
Vævervej 33, 7490 Aulum, Denmark

Certificates of green electricity are used in module A3.

Product(s) use

Furniture for kitchens, bathrooms and storage. Primary use as kitchen cabinets.

Functional unit

1 piece of kitchen cabinet corpus or 1 piece of kitchen cabinet front with a reference service life of 30 years.

Year of production site data (A3)

2021

EPD version

Version 1

Basis of calculation

This EPD is developed in accordance with the European standard EN 15804+A2 and the complementary product category rules (c-PCR) for furniture published by EPD Norway.

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-gate 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
<input type="checkbox"/> internal <input checked="" type="checkbox"/> 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	X	X	X	X	X	X	X	X	X	X	X	X	X	

Product information

Product description

The main product components presented in the table below are representative of a typical 60 cm wide kitchen cabinet.

Material weight-% of declared product						
	Chipboard corpus	MDF corpus	Melamine front	Laminate front	Veneer front	MDF front
Chipboard	89	19	91	95	92	
MDF		76				95
Melamine	4	1	4			2
HDF	5	3				
ABS	1		1	1		
Glue	<1		<1	<1	<1	
Dowels	<1	<1				
Hinges	<1	<1	3	3	3	2
Screws	<1	<1				
Shelf brackets	<1	<1				
Paint		<1			<1	<1
Laminate				1		
Veneer					4	

Product packaging:

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

Material	Weight-% of packaging
Straps, PET	18
Cardboard	82

Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of the kitchen cabinets described as the declared products with the product descriptions presented above on the production sites located in Tvis and Aulum, Denmark. Product specific data are based on average values collected for the year 2021. Background data are based on GaBi Professional 2023 and Ecoinvent v3.9 and are mostly less than

3 years old. All background processes are based on reference data from 2018 or newer or reviewed to be valid. Generally, the used background datasets are of high quality.

Hazardous substances

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

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

Essential characteristics

This EPD is representative of a typical 60 cm wide kitchen cabinet. The results can be converted to m² floor area or m² front based on the dimensions illustrated in the figure below.

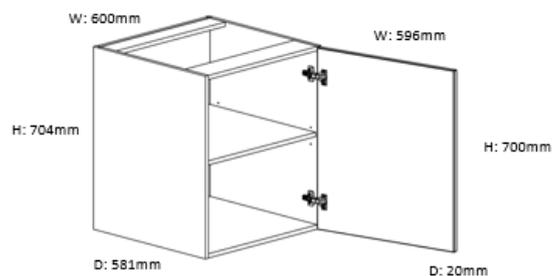
Further technical information can be obtained by contacting the manufacturer or on the manufacturers website:

<https://www.tcmgroup.dk/>

Reference Service Life (RSL)

The reference service life is 30 years.

Picture of product(s)



LCA background

Functional unit

The LCI and LCIA results in this EPD relates to 1 piece of corpus or 1 piece of front of a typical 60 cm wide kitchen cabinet.

The functional unit is 1 piece of product with a reference service life of 30 years. The RSL is a standard service life for kitchen cabinets constructed from laminated wood and veneer and based on data from BUILD. This is in alignment with the c-PCR from EPD Norway, which specifies how to develop EPDs for furniture products.

The EPD is a specific EPD and the LCI and LCIA results relates to the specific products.

Name	Value	Unit
Functional unit	1	piece

Name	Density [kg/piece]	Conversion factor to 1 kg.
Chipboard corpus	20.7	0.048
MDF corpus	27.2	0.037
Melamine front	4.6	0.22
Laminate front	5.2	0.19
Veneer front	4.4	0.23
MDF front	6.5	0.15

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804, and NPCR 026 PCR - Part B for Furniture version 2.0 (related to EN 15804 +A2).

Guarantee of Origin – certificates

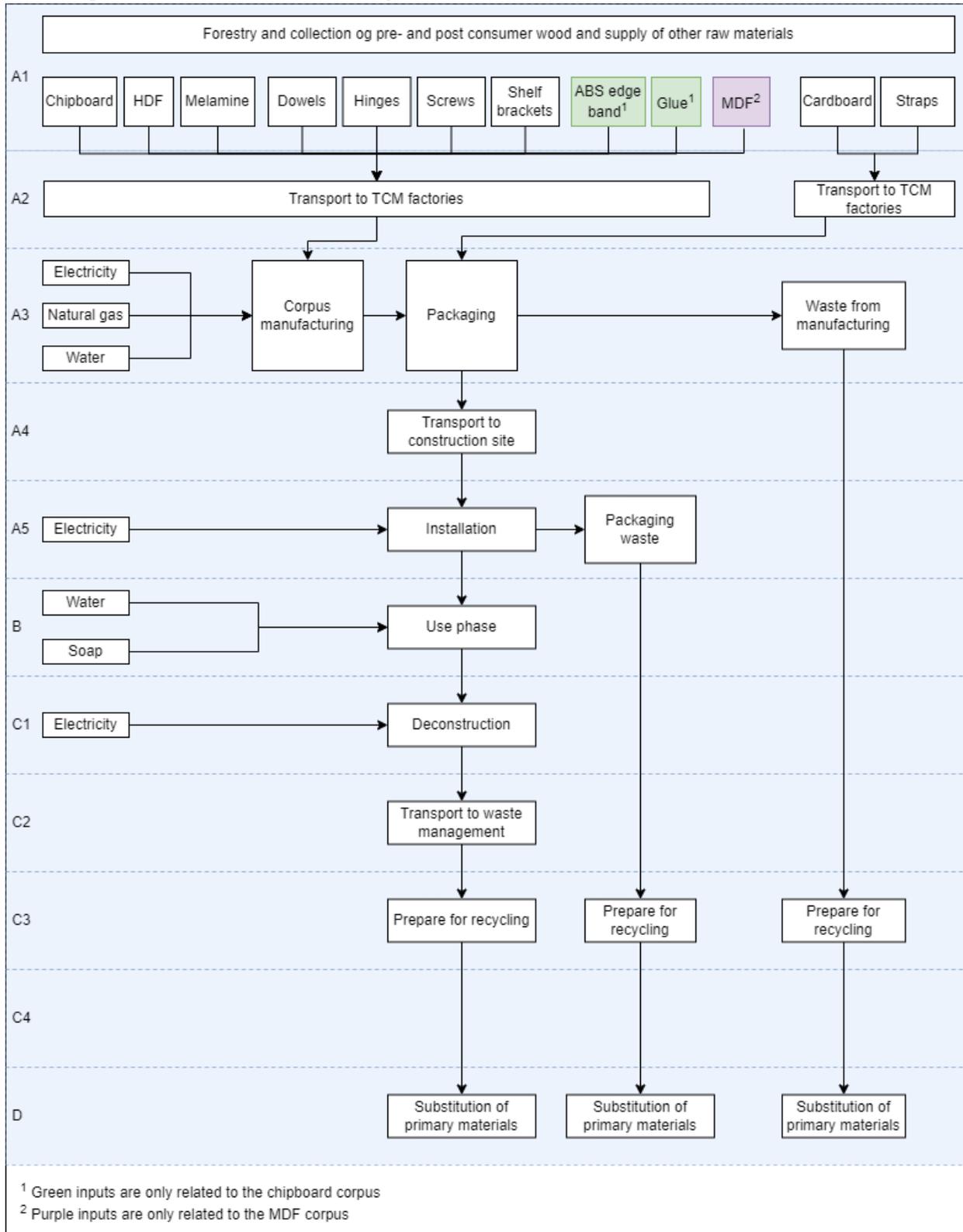
Foreground system:

The product is produced using electricity from solar and wind in production.

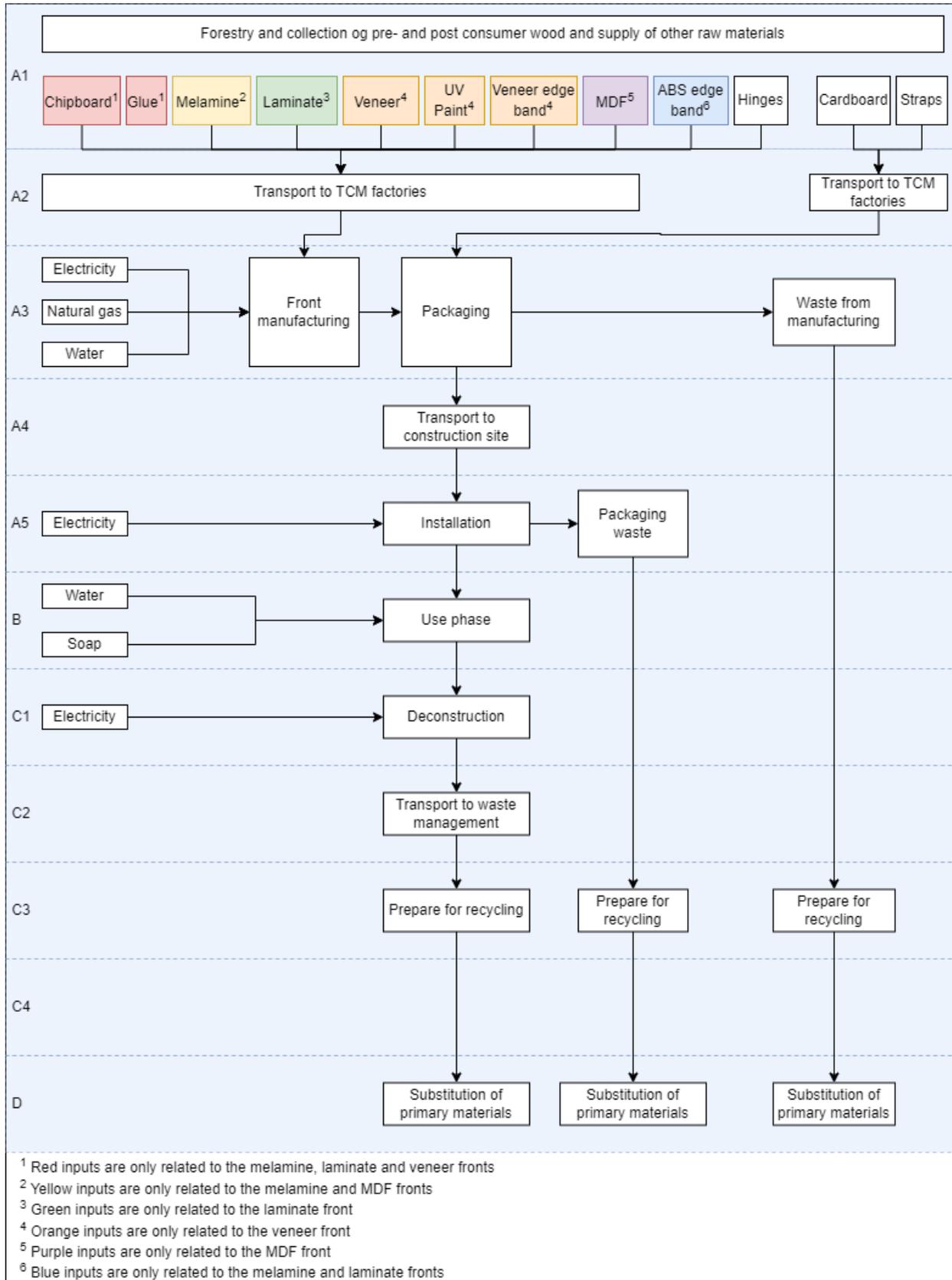
Background system:

Upstream and downstream processes are modelled using electricity grid mix.

Flowdiagram for kitchen cabinet corpus



Flowdiagram for kitchen cabinet fronts



System boundary

This EPD is based on a cradle-to-grave 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 modules A1-A3 are aggregated and comprise the acquisition of all raw materials including forestry and collection of pre- and post-consumer wood, products and energy, transport to the production site, packaging and waste processing of both waste from manufacturing and treatment of raw material packaging waste up to the “end-of-waste” state or final disposal. The production waste from manufacturing is sent to recycling. MDF production waste is incinerated.

The chipboard inputs consist of 90% post-consumer wood.

No benefits from recycling of waste or energy recovery from A3 is credited in module D.

The production process consists of the following steps: Sawing of chipboard (not relevant for MDF front) and HDF (only relevant for corpus), gluing of laminate or veneer (for relevant fronts), gluing edge bands (not relevant for MDF products), applying lacquer (for veneer front), drilling, and assembly.

Construction process stage (A4-A5) includes:

The products are transported to the consumer by truck and ferry. An average distance of 191 km by truck and 17 km by ferry to consumers in Scandinavia is used.

There is no waste associated with installation. It is assumed that there is consumption of electricity associated with the installation.

Use stage (B1-B7) includes:

All use stages are included, but there are only environmental impacts associated with module B2 where soap and water is consumed for cleaning of surfaces. It is assumed a kitchen cabinet is cleaned with 1 g of soap and 0.1 L of water per m² of interior and exposed exterior surfaces 2 times per year which is modelled for the 30-year reference service life.

End of Life (C1-C4) includes:

It is assumed that there is electricity consumption associated with the deconstruction of the product.

The product is transported 60 km by truck to a waste management facility in Scandinavia.

MDF and plastic components are incinerated and non-MDF wood and metal components are recycled. LCA standards for wood dictate that an uptake in A1 must be emitted in C3 irrespective of whether the wood is recycled or not, which has been implemented accordingly.

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

Module D includes material credits and thermal and electrical energy credits from waste handling of product packaging and product waste from the modules A5 and C3.

Because the wood products contain a high share of additives, only the wood content of the wood products is credited in module D, and water and additives are excluded.

LCA results

All results presented below are per functional unit and the B2 modules cover all 30 years.

Chipboard corpus:

ENVIRONMENTAL IMPACTS PER FU (PIECE, 30 years) – Chipboard corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	-1.04E+01	3.45E-01	1.33E-01	5.73E-01	0.00E+00	4.26E-03	1.06E-01	3.04E+01	0.00E+00	-2.96E+01
GWP-fossil	[kg CO ₂ eq.]	1.71E+01	3.41E-01	9.06E-02	2.45E-01	0.00E+00	4.26E-03	1.05E-01	2.80E+00	0.00E+00	-1.98E+00
GWP-biogenic	[kg CO ₂ eq.]	-2.76E+01	0.00E+00	4.28E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E+01	0.00E+00	-2.76E+01
GWP-Juluc	[kg CO ₂ eq.]	3.54E-02	3.16E-03	1.02E-05	3.29E-01	0.00E+00	4.59E-07	9.72E-04	5.88E-05	0.00E+00	-1.17E-02
ODP	[kg CFC 11 eq.]	4.44E-07	4.43E-14	1.68E-13	2.37E-08	0.00E+00	7.78E-14	1.37E-14	9.41E-11	0.00E+00	-1.52E-08
AP	[mol H ⁺ eq.]	8.83E-02	5.44E-04	4.60E-05	3.05E-03	0.00E+00	8.98E-06	1.55E-04	3.74E-04	0.00E+00	-5.74E-03
EP-freshwater	[kg P eq.]	4.83E-03	1.25E-06	3.85E-08	1.08E-04	0.00E+00	1.58E-08	3.84E-07	4.71E-06	0.00E+00	-2.67E-04
EP-marine	[kg N eq.]	2.30E-02	2.04E-04	1.33E-05	3.26E-03	0.00E+00	2.15E-06	5.61E-05	9.92E-05	0.00E+00	-1.91E-03
EP-terrestrial	[mol N eq.]	2.62E-01	2.40E-03	1.73E-04	1.12E-02	0.00E+00	2.25E-05	6.64E-04	1.64E-03	0.00E+00	-1.96E-02
POCP	[kg NMVOC eq.]	9.14E-02	5.05E-04	3.57E-05	1.59E-03	0.00E+00	5.74E-06	1.35E-04	2.85E-04	0.00E+00	-8.63E-03
ADPm ¹	[kg Sb eq.]	1.14E-04	2.24E-08	1.48E-09	3.79E-06	0.00E+00	6.53E-10	6.91E-09	1.62E-08	0.00E+00	-1.90E-06
ADPf ¹	[MJ]	3.41E+02	4.64E+00	2.21E-01	2.84E+00	0.00E+00	8.84E-02	1.43E+00	1.38E+00	0.00E+00	-2.92E+01
WDP ¹	[m ³ world eq. deprived]	1.94E+01	4.12E-03	1.76E-02	1.24E+00	0.00E+00	9.27E-04	1.27E-03	2.69E-01	0.00E+00	-3.40E-01
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-Juluc = 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 FU (PIECE, 30 years) – Chipboard corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	1.17E-06	5.81E-09	3.12E-10	4.65E-08	0.00E+00	7.55E-11	1.33E-09	4.36E-09	0.00E+00	-6.30E-08
IRP ²	[kBq U235 eq.]	1.59E+00	1.30E-03	4.94E-03	1.44E-02	0.00E+00	2.33E-03	4.00E-04	9.35E-03	0.00E+00	-3.26E-01
ETP-fw ¹	[CTUe]	3.90E+02	3.30E+00	1.02E-01	3.78E+01	0.00E+00	3.90E-02	1.02E+00	8.31E-01	0.00E+00	-1.81E+01
HTP-c ¹	[CTUh]	1.12E-07	6.74E-11	3.87E-12	9.65E-10	0.00E+00	1.30E-12	2.08E-11	4.86E-11	0.00E+00	-1.09E-09
HTP-nc ¹	[CTUh]	3.06E-07	3.61E-09	1.12E-10	2.61E-08	0.00E+00	3.20E-11	1.11E-09	4.26E-09	0.00E+00	-2.49E-08
SQP ¹	-	3.58E+02	1.94E+00	8.43E-02	2.41E+01	0.00E+00	3.49E-02	5.97E-01	3.16E-01	0.00E+00	-8.83E+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 FU (PIECE, 30 years) – Chipboard corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
PERE	[MJ]	1.65E+02	3.38E-01	1.14E-01	1.35E+01	0.00E+00	5.29E-02	1.04E-01	3.21E-01	0.00E+00	-2.06E+02
PERM	[MJ]	3.50E+02	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
PERT	[MJ]	5.16E+02	3.38E-01	1.14E-01	1.35E+01	0.00E+00	5.29E-02	1.04E-01	3.21E-01	0.00E+00	-2.06E+02
PENRE	[MJ]	3.41E+02	4.66E+00	2.21E-01	2.84E+00	0.00E+00	8.85E-02	1.43E+00	1.38E+00	0.00E+00	-2.93E+01
PENRM	[MJ]	1.18E+02	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]	4.59E+02	4.66E+00	2.21E-01	2.84E+00	0.00E+00	8.85E-02	1.43E+00	1.38E+00	0.00E+00	-2.93E+01
SM	[kg]	1.68E+01	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]	4.53E-01	3.70E-04	4.57E-04	2.88E-02	0.00E+00	4.26E-05	1.14E-04	6.40E-03	0.00E+00	-1.06E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										
	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 FU (PIECE, 30 years) – Chipboard corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
HWD	[kg]	7.39E-08	1.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.44E-12	9.92E-12	0.00E+00	-1.05E-10
NHWD	[kg]	3.09E-01	7.10E-04	2.59E-03	2.20E-02	0.00E+00	6.49E-05	2.19E-04	2.54E-01	0.00E+00	-3.31E-02
RWD	[kg]	2.03E-04	8.72E-06	2.98E-05	1.12E-05	0.00E+00	1.40E-05	2.69E-06	4.47E-05	0.00E+00	-1.53E-03
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]	3.09E+00	0.00E+00	1.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E+01	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	2.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.08E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	4.89E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.09E+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 FU (PIECE, 30 years) – Chipboard corpus		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	7.51
Biogenic carbon content in accompanying packaging	[kg C]	0.1
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

MDF corpus:

ENVIRONMENTAL IMPACTS PER FU (PIECE, 30 years) – MDF Corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	-7.10E+00	4.52E-01	1.33E-01	5.73E-01	0.00E+00	4.26E-03	1.39E-01	4.66E+01	0.00E+00	-1.37E+01
GWP-fossil	[kg CO ₂ eq.]	2.90E+01	4.48E-01	9.06E-02	2.45E-01	0.00E+00	4.26E-03	1.37E-01	1.06E+01	0.00E+00	-1.36E+01
GWP-biogenic	[kg CO ₂ eq.]	-3.61E+01	0.00E+00	4.28E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E+01	0.00E+00	-3.95E-02
GWP-Juluc	[kg CO ₂ eq.]	4.83E-02	4.14E-03	1.02E-05	3.29E-01	0.00E+00	4.59E-07	1.27E-03	3.00E-04	0.00E+00	-1.63E-03
ODP	[kg CFC 11 eq.]	6.89E-07	5.81E-14	1.68E-13	2.37E-08	0.00E+00	7.78E-14	1.79E-14	5.39E-12	0.00E+00	-1.26E-10
AP	[mol H ⁺ eq.]	1.66E-01	7.13E-04	4.60E-05	3.05E-03	0.00E+00	8.98E-06	2.02E-04	6.93E-03	0.00E+00	-2.72E-02
EP-freshwater	[kg P eq.]	9.46E-03	1.63E-06	3.85E-08	1.08E-04	0.00E+00	1.58E-08	5.02E-07	1.49E-06	0.00E+00	-6.19E-05
EP-marine	[kg N eq.]	4.63E-02	2.68E-04	1.33E-05	3.26E-03	0.00E+00	2.15E-06	7.34E-05	1.97E-03	0.00E+00	-7.58E-03
EP-terrestrial	[mol N eq.]	5.24E-01	3.14E-03	1.73E-04	1.12E-02	0.00E+00	2.25E-05	8.69E-04	2.93E-02	0.00E+00	-7.84E-02
POCP	[kg NMVOC eq.]	1.74E-01	6.62E-04	3.57E-05	1.59E-03	0.00E+00	5.74E-06	1.77E-04	5.45E-03	0.00E+00	-2.00E-02
ADPm ¹	[kg Sb eq.]	1.74E-04	2.94E-08	1.48E-09	3.79E-06	0.00E+00	6.53E-10	9.04E-09	4.96E-08	0.00E+00	-1.22E-06
ADPf ¹	[MJ]	5.26E+02	6.08E+00	2.21E-01	2.84E+00	0.00E+00	8.84E-02	1.87E+00	1.32E+01	0.00E+00	-2.07E+02
WDP ¹	[m ³ world eq. deprived]	2.96E+01	5.40E-03	1.76E-02	1.24E+00	0.00E+00	9.27E-04	1.66E-03	4.76E+00	0.00E+00	-2.06E+00
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-Juluc = 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 FU (PIECE, 30 years) – MDF Corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	2.65E-06	7.62E-09	3.12E-10	4.65E-08	0.00E+00	7.55E-11	1.74E-09	5.34E-08	0.00E+00	-2.23E-07
IRP ²	[kBq U235 eq.]	4.74E+00	1.70E-03	4.94E-03	1.44E-02	0.00E+00	2.33E-03	5.24E-04	1.01E-01	0.00E+00	-3.19E+00
ETP-fw ¹	[CTUe]	7.88E+02	4.32E+00	1.02E-01	3.78E+01	0.00E+00	3.90E-02	1.33E+00	6.80E+00	0.00E+00	-7.54E+01
HTP-c ¹	[CTUh]	2.09E-07	8.84E-11	3.87E-12	9.65E-10	0.00E+00	1.30E-12	2.72E-11	5.23E-10	0.00E+00	-2.97E-09
HTP-nc ¹	[CTUh]	4.70E-07	4.73E-09	1.12E-10	2.61E-08	0.00E+00	3.20E-11	1.45E-09	3.94E-08	0.00E+00	-1.10E-07
SQP ¹	-	1.94E+03	2.54E+00	8.43E-02	2.41E+01	0.00E+00	3.49E-02	7.81E-01	3.71E+00	0.00E+00	-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 FU (PIECE, 30 years) – MDF Corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PERE	[MJ]	4.35E+02	4.43E-01	1.14E-01	1.35E+01	0.00E+00	5.29E-02	1.36E-01	3.24E+00	0.00E+00	-1.32E+02
PERM	[MJ]	3.90E+02	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
PERT	[MJ]	8.25E+02	4.43E-01	1.14E-01	1.35E+01	0.00E+00	5.29E-02	1.36E-01	3.24E+00	0.00E+00	-1.32E+02
PENRE	[MJ]	5.26E+02	6.11E+00	2.21E-01	2.84E+00	0.00E+00	8.85E-02	1.88E+00	1.32E+01	0.00E+00	-2.08E+02
PENRM	[MJ]	1.43E+02	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]	6.69E+02	6.11E+00	2.21E-01	2.84E+00	0.00E+00	8.85E-02	1.88E+00	1.32E+01	0.00E+00	-2.08E+02
SM	[kg]	4.80E+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	[m³]	6.90E-01	4.85E-04	4.57E-04	2.88E-02	0.00E+00	4.26E-05	1.49E-04	1.12E-01	0.00E+00	-8.00E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										
	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 FU (PIECE, 30 years) – MDF Corpus											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
HWD	[kg]	6.31E-08	1.89E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.81E-12	2.32E-10	0.00E+00	-8.88E-10
NHWD	[kg]	1.14E+00	9.31E-04	2.59E-03	2.20E-02	0.00E+00	6.49E-05	2.86E-04	1.59E+00	0.00E+00	-4.01E-01
RWD	[kg]	3.85E-04	1.14E-05	2.98E-05	1.12E-05	0.00E+00	1.40E-05	3.51E-06	6.52E-04	0.00E+00	-1.92E-02

CRU	[kg]	0.00E+00									
MFR	[kg]	4.29E+00	0.00E+00	1.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-02	0.00E+00	0.00E+00
MER	[kg]	0.00E+00									
EEE	[MJ]	5.42E+00	0.00E+00	2.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.64E+01	0.00E+00	0.00E+00
EET	[MJ]	9.76E+00	0.00E+00	4.89E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E+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.										

BIOGENIC CARBON CONTENT PER FU (PIECE, 30 years) – MDF Corpus		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	9.84
Biogenic carbon content in accompanying packaging	[kg C]	0.1
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

Melamine front:

ENVIRONMENTAL IMPACTS PER FU (PIECE, 30 years) – Melamine front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	-1.83E+00	7.58E-02	1.69E-02	1.27E-01	0.00E+00	8.52E-03	2.33E-02	6.48E+00	0.00E+00	-6.54E+00
GWP-fossil	[kg CO ₂ eq.]	4.00E+00	7.51E-02	2.59E-02	5.43E-02	0.00E+00	8.52E-03	2.30E-02	6.28E-01	0.00E+00	-6.93E-01
GWP-biogenic	[kg CO ₂ eq.]	-5.84E+00	0.00E+00	-9.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.85E+00	0.00E+00	-5.84E+00
GWP-Juluc	[kg CO ₂ eq.]	3.09E-03	6.94E-04	2.87E-06	7.28E-02	0.00E+00	9.18E-07	2.13E-04	1.30E-05	0.00E+00	-2.59E-03
ODP	[kg CFC 11 eq.]	9.87E-08	9.76E-15	1.58E-13	5.26E-09	0.00E+00	1.56E-13	2.99E-15	2.00E-11	0.00E+00	-3.24E-09
AP	[mol H ⁺ eq.]	1.91E-02	1.20E-04	2.39E-05	6.76E-04	0.00E+00	1.80E-05	3.39E-05	8.35E-05	0.00E+00	-1.84E-03
EP-freshwater	[kg P eq.]	8.90E-04	2.74E-07	3.30E-08	2.39E-05	0.00E+00	3.16E-08	8.41E-08	1.00E-06	0.00E+00	-5.70E-05
EP-marine	[kg N eq.]	5.03E-03	4.50E-05	6.21E-06	7.24E-04	0.00E+00	4.30E-06	1.23E-05	2.22E-05	0.00E+00	-5.60E-04
EP-terrestrial	[mol N eq.]	5.76E-02	5.28E-04	7.21E-05	2.48E-03	0.00E+00	4.50E-05	1.46E-04	3.67E-04	0.00E+00	-5.82E-03
POCP	[kg NMVOC eq.]	2.00E-02	1.11E-04	1.66E-05	3.52E-04	0.00E+00	1.15E-05	2.97E-05	6.38E-05	0.00E+00	-2.35E-03
ADPm ¹	[kg Sb eq.]	3.45E-05	4.94E-09	1.34E-09	8.41E-07	0.00E+00	1.31E-09	1.51E-09	3.50E-09	0.00E+00	-4.16E-07
ADPf ¹	[MJ]	7.66E+01	1.02E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.13E-01	3.07E-01	0.00E+00	-8.56E+00
WDP ¹	[m ³ world eq. deprived]	4.32E+00	9.06E-04	5.19E-03	2.74E-01	0.00E+00	1.85E-03	2.78E-04	6.02E-02	0.00E+00	-7.74E-02
Caption	GWP-total = Globale Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-Juluc = 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 FU (PIECE, 30 years) – Melamine front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	2.43E-07	1.28E-09	1.85E-10	1.03E-08	0.00E+00	1.51E-10	2.92E-10	9.77E-10	0.00E+00	-2.23E-08
IRP ²	[kBq U235 eq.]	3.62E-01	2.86E-04	4.73E-03	3.19E-03	0.00E+00	4.67E-03	8.78E-05	2.06E-03	0.00E+00	-7.32E-02
ETP-fw ¹	[CTUe]	8.01E+01	7.25E-01	8.30E-02	8.37E+00	0.00E+00	7.80E-02	2.23E-01	1.85E-01	0.00E+00	-4.39E+00
HTP-c ¹	[CTUh]	2.54E-08	1.48E-11	2.87E-12	2.14E-10	0.00E+00	2.60E-12	4.55E-12	1.08E-11	0.00E+00	-5.87E-10
HTP-nc ¹	[CTUh]	7.05E-08	7.95E-10	7.42E-11	5.79E-09	0.00E+00	6.40E-11	2.43E-10	9.54E-10	0.00E+00	-8.58E-09
SQP ¹	-	4.67E+01	4.27E-01	7.28E-02	5.34E+00	0.00E+00	6.97E-02	1.31E-01	7.05E-02	0.00E+00	-1.88E+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 FU (PIECE, 30 years) – Melamine front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PERE	[MJ]	3.12E+01	7.43E-02	1.08E-01	3.00E+00	0.00E+00	1.06E-01	2.28E-02	7.17E-02	0.00E+00	-4.42E+01
PERM	[MJ]	6.30E+01	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
PERT	[MJ]	9.41E+01	7.43E-02	1.08E-01	3.00E+00	0.00E+00	1.06E-01	2.28E-02	7.17E-02	0.00E+00	-4.42E+01
PENRE	[MJ]	7.66E+01	1.03E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.15E-01	3.07E-01	0.00E+00	-8.58E+00
PENRM	[MJ]	2.40E+01	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]	1.01E+02	1.03E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.15E-01	3.07E-01	0.00E+00	-8.58E+00
SM	[kg]	3.78E+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]	1.01E-01	8.14E-05	1.64E-04	6.39E-03	0.00E+00	8.52E-05	2.50E-05	1.43E-03	0.00E+00	-2.64E-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 FU (PIECE, 30 years) – Melamine front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
HWD	[kg]	1.32E-07	3.17E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.74E-13	2.22E-12	0.00E+00	-8.58E-11
NHWD	[kg]	1.31E-01	1.56E-04	6.50E-04	4.88E-03	0.00E+00	1.30E-04	4.79E-05	5.69E-02	0.00E+00	-1.06E-02
RWD	[kg]	1.46E-04	1.92E-06	2.84E-05	2.49E-06	0.00E+00	2.81E-05	5.89E-07	1.00E-05	0.00E+00	-3.53E-04

CRU	[kg]	0.00E+00									
MFR	[kg]	7.13E-01	0.00E+00	2.42E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.31E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00									
EEE	[MJ]	0.00E+00	0.00E+00	5.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	1.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E+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 FU (PIECE, 30 years) – Melamine front		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	1.59
Biogenic carbon content in accompanying packaging	[kg C]	0.02
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

Laminate front:

ENVIRONMENTAL IMPACTS PER FU (PIECE, 30 years) – Laminate front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	-3.26E+00	8.57E-02	3.50E-02	1.27E-01	0.00E+00	8.52E-03	2.63E-02	7.17E+00	0.00E+00	-7.46E+00
GWP-fossil	[kg CO ₂ eq.]	3.57E+00	8.49E-02	2.59E-02	5.43E-02	0.00E+00	8.52E-03	2.61E-02	3.41E-01	0.00E+00	-6.15E-01
GWP-biogenic	[kg CO ₂ eq.]	-6.84E+00	0.00E+00	9.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.83E+00	0.00E+00	-6.84E+00
GWP-Juluc	[kg CO ₂ eq.]	3.23E-03	7.85E-04	2.87E-06	7.28E-02	0.00E+00	9.18E-07	2.41E-04	8.73E-06	0.00E+00	-3.00E-03
ODP	[kg CFC 11 eq.]	7.10E-08	1.10E-14	1.58E-13	5.26E-09	0.00E+00	1.56E-13	3.39E-15	2.34E-11	0.00E+00	-3.79E-09
AP	[mol H ⁺ eq.]	1.68E-02	1.35E-04	2.39E-05	6.76E-04	0.00E+00	1.80E-05	3.84E-05	4.87E-05	0.00E+00	-1.75E-03
EP-freshwater	[kg P eq.]	8.42E-04	3.10E-07	3.30E-08	2.39E-05	0.00E+00	3.16E-08	9.52E-08	1.15E-06	0.00E+00	-6.59E-05
EP-marine	[kg N eq.]	4.79E-03	5.08E-05	6.21E-06	7.24E-04	0.00E+00	4.30E-06	1.39E-05	1.26E-05	0.00E+00	-5.47E-04
EP-terrestrial	[mol N eq.]	5.08E-02	5.97E-04	7.21E-05	2.48E-03	0.00E+00	4.50E-05	1.65E-04	2.04E-04	0.00E+00	-5.67E-03
POCP	[kg NMVOC eq.]	1.99E-02	1.26E-04	1.66E-05	3.52E-04	0.00E+00	1.15E-05	3.36E-05	3.64E-05	0.00E+00	-2.45E-03
ADPm ¹	[kg Sb eq.]	2.72E-05	5.58E-09	1.34E-09	8.41E-07	0.00E+00	1.31E-09	1.71E-09	3.41E-09	0.00E+00	-4.72E-07
ADPf ¹	[MJ]	6.67E+01	1.15E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.55E-01	1.84E-01	0.00E+00	-7.36E+00
WDP ¹	[m ³ world eq. deprived]	2.65E+00	1.02E-03	5.19E-03	2.74E-01	0.00E+00	1.85E-03	3.15E-04	3.32E-02	0.00E+00	-6.73E-02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-Juluc = 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 FU (PIECE, 30 years) – Laminate front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	2.51E-07	1.45E-09	1.85E-10	1.03E-08	0.00E+00	1.51E-10	3.31E-10	5.43E-10	0.00E+00	-2.21E-08
IRP ²	[kBq U235 eq.]	3.54E-01	3.23E-04	4.73E-03	3.19E-03	0.00E+00	4.67E-03	9.93E-05	1.54E-03	0.00E+00	-5.09E-02
ETP-fw ¹	[CTUe]	7.62E+01	8.20E-01	8.30E-02	8.37E+00	0.00E+00	7.80E-02	2.52E-01	1.10E-01	0.00E+00	-4.23E+00
HTP-c ¹	[CTUh]	2.91E-08	1.68E-11	2.87E-12	2.14E-10	0.00E+00	2.60E-12	5.15E-12	6.59E-12	0.00E+00	-5.90E-10
HTP-nc ¹	[CTUh]	6.92E-08	8.98E-10	7.42E-11	5.79E-09	0.00E+00	6.40E-11	2.75E-10	5.30E-10	0.00E+00	-8.26E-09
SQP ¹	-	5.88E+01	4.82E-01	7.28E-02	5.34E+00	0.00E+00	6.97E-02	1.48E-01	4.07E-02	0.00E+00	-2.18E+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 FU (PIECE, 30 years) – Laminate front											
Parameter	Unit	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
PERE	[MJ]	3.44E+01	8.40E-02	1.08E-01	3.00E+00	0.00E+00	1.06E-01	2.58E-02	4.18E-02	0.00E+00	-5.02E+01
PERM	[MJ]	7.38E+01	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
PERT	[MJ]	1.08E+02	8.40E-02	1.08E-01	3.00E+00	0.00E+00	1.06E-01	2.58E-02	4.18E-02	0.00E+00	-5.02E+01
PENRE	[MJ]	6.67E+01	1.16E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.56E-01	1.84E-01	0.00E+00	-7.38E+00
PENRM	[MJ]	4.91E+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]	7.16E+01	1.16E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.56E-01	1.84E-01	0.00E+00	-7.38E+00
SM	[kg]	4.42E+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	[m³]	6.28E-02	9.20E-05	1.64E-04	6.39E-03	0.00E+00	8.52E-05	2.83E-05	7.89E-04	0.00E+00	-2.16E-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 FU (PIECE, 30 years) – Laminate front											
Parameter	Unit	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
HWD	[kg]	1.57E-07	3.59E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-12	1.20E-12	0.00E+00	-7.88E-11
NHWD	[kg]	1.23E-01	1.77E-04	6.50E-04	4.88E-03	0.00E+00	1.30E-04	5.43E-05	3.08E-02	0.00E+00	-7.54E-03
RWD	[kg]	2.01E-04	2.17E-06	2.84E-05	2.49E-06	0.00E+00	2.81E-05	6.66E-07	5.43E-06	0.00E+00	-2.03E-04

CRU	[kg]	0.00E+00									
MFR	[kg]	8.01E-01	0.00E+00	2.42E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00									
EEE	[MJ]	0.00E+00	0.00E+00	5.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.17E-01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	1.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E+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 FU (PIECE, 30 years) – Laminate front		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	1.86
Biogenic carbon content in accompanying packaging	[kg C]	0.02
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

Veneer front:

ENVIRONMENTAL IMPACTS PER FU (PIECE, 30 years) – Veneer front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	-2.74E+00	7.38E-02	3.50E-02	1.27E-01	0.00E+00	8.52E-03	2.26E-02	5.77E+00	0.00E+00	-6.20E+00
GWP-fossil	[kg CO ₂ eq.]	2.96E+00	7.32E-02	2.59E-02	5.43E-02	0.00E+00	8.52E-03	2.24E-02	7.58E-02	0.00E+00	-4.94E-01
GWP-biogenic	[kg CO ₂ eq.]	-5.70E+00	0.00E+00	9.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E+00	0.00E+00	-5.70E+00
GWP-Juluc	[kg CO ₂ eq.]	3.21E-03	6.76E-04	2.87E-06	7.28E-02	0.00E+00	9.18E-07	2.07E-04	3.95E-06	0.00E+00	-2.62E-03
ODP	[kg CFC 11 eq.]	5.77E-08	9.50E-15	1.58E-13	5.26E-09	0.00E+00	1.56E-13	2.91E-15	2.04E-11	0.00E+00	-3.31E-09
AP	[mol H ⁺ eq.]	1.41E-02	1.17E-04	2.39E-05	6.76E-04	0.00E+00	1.80E-05	3.30E-05	1.49E-05	0.00E+00	-1.46E-03
EP-freshwater	[kg P eq.]	7.00E-04	2.67E-07	3.30E-08	2.39E-05	0.00E+00	3.16E-08	8.19E-08	9.96E-07	0.00E+00	-5.73E-05
EP-marine	[kg N eq.]	4.17E-03	4.38E-05	6.21E-06	7.24E-04	0.00E+00	4.30E-06	1.20E-05	3.54E-06	0.00E+00	-4.54E-04
EP-terrestrial	[mol N eq.]	4.47E-02	5.14E-04	7.21E-05	2.48E-03	0.00E+00	4.50E-05	1.42E-04	5.16E-05	0.00E+00	-4.71E-03
POCP	[kg NMVOC eq.]	1.69E-02	1.08E-04	1.66E-05	3.52E-04	0.00E+00	1.15E-05	2.89E-05	1.03E-05	0.00E+00	-2.09E-03
ADPm ¹	[kg Sb eq.]	2.47E-05	4.81E-09	1.34E-09	8.41E-07	0.00E+00	1.31E-09	1.48E-09	2.59E-09	0.00E+00	-4.06E-07
ADPf ¹	[MJ]	5.47E+01	9.95E-01	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.05E-01	6.13E-02	0.00E+00	-5.52E+00
WDP ¹	[m ³ world eq. deprived]	2.04E+00	8.82E-04	5.19E-03	2.74E-01	0.00E+00	1.85E-03	2.71E-04	7.91E-03	0.00E+00	-4.75E-02
Caption	GWP-total = Globale Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-Juluc = 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 FU (PIECE, 30 years) – Veneer front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	2.85E-07	1.25E-09	1.85E-10	1.03E-08	0.00E+00	1.51E-10	2.85E-10	1.36E-10	0.00E+00	-1.92E-08
IRP ²	[kBq U235 eq.]	3.75E-01	2.79E-04	4.73E-03	3.19E-03	0.00E+00	4.67E-03	8.55E-05	8.61E-04	0.00E+00	-2.55E-02
ETP-fw ¹	[CTUe]	6.37E+01	7.07E-01	8.30E-02	8.37E+00	0.00E+00	7.80E-02	2.17E-01	3.61E-02	0.00E+00	-3.32E+00
HTP-c ¹	[CTUh]	2.43E-08	1.45E-11	2.87E-12	2.14E-10	0.00E+00	2.60E-12	4.43E-12	2.34E-12	0.00E+00	-5.49E-10
HTP-nc ¹	[CTUh]	6.18E-08	7.74E-10	7.42E-11	5.79E-09	0.00E+00	6.40E-11	2.36E-10	1.33E-10	0.00E+00	-7.03E-09
SQP ¹	-	1.57E+02	4.16E-01	7.28E-02	5.34E+00	0.00E+00	6.97E-02	1.27E-01	1.19E-02	0.00E+00	-1.89E+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 FU (PIECE, 30 years) – Veneer front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PERE	[MJ]	3.81E+01	7.24E-02	1.08E-01	3.00E+00	0.00E+00	1.06E-01	2.22E-02	1.27E-02	0.00E+00	-4.31E+01
PERM	[MJ]	6.50E+01	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
PERT	[MJ]	1.03E+02	7.24E-02	1.08E-01	3.00E+00	0.00E+00	1.06E-01	2.22E-02	1.27E-02	0.00E+00	-4.31E+01
PENRE	[MJ]	5.47E+01	9.99E-01	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.06E-01	6.13E-02	0.00E+00	-5.54E+00
PENRM	[MJ]	1.08E+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]	5.58E+01	9.99E-01	1.86E-01	6.29E-01	0.00E+00	1.77E-01	3.06E-01	6.13E-02	0.00E+00	-5.54E+00
SM	[kg]	3.69E+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	[m³]	4.89E-02	7.93E-05	1.64E-04	6.39E-03	0.00E+00	8.52E-05	2.43E-05	1.88E-04	0.00E+00	-1.46E-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 FU (PIECE, 30 years) – Veneer front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
HWD	[kg]	1.34E-07	3.09E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.48E-13	2.65E-13	0.00E+00	-7.23E-11
NHWD	[kg]	2.40E-01	1.52E-04	6.50E-04	4.88E-03	0.00E+00	1.30E-04	4.67E-05	6.78E-03	0.00E+00	-4.66E-03
RWD	[kg]	2.11E-04	1.87E-06	2.84E-05	2.49E-06	0.00E+00	2.81E-05	5.73E-07	1.19E-06	0.00E+00	-6.40E-05

CRU	[kg]	0.00E+00									
MFR	[kg]	8.15E-01	0.00E+00	2.42E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00									
EEE	[MJ]	0.00E+00	0.00E+00	5.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	1.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-01	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy										
	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 FU (PIECE, 30 years) – Veneer front		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	1.55
Biogenic carbon content in accompanying packaging	[kg C]	0.02
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

MDF front:

ENVIRONMENTAL IMPACTS PER FU (PIECE, 30 years) – MDF front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	1.00E-01	1.08E-01	3.50E-02	1.27E-01	0.00E+00	8.52E-03	3.34E-02	1.09E+01	0.00E+00	-3.51E+00
GWP-fossil	[kg CO ₂ eq.]	8.34E+00	1.07E-01	2.59E-02	5.43E-02	0.00E+00	8.52E-03	3.31E-02	2.68E+00	0.00E+00	-3.50E+00
GWP-biogenic	[kg CO ₂ eq.]	-8.25E+00	0.00E+00	9.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E+00	0.00E+00	-8.36E-03
GWP-Juluc	[kg CO ₂ eq.]	8.94E-03	9.93E-04	2.87E-06	7.28E-02	0.00E+00	9.18E-07	3.06E-04	7.34E-05	0.00E+00	-4.82E-04
ODP	[kg CFC 11 eq.]	1.94E-07	1.40E-14	1.58E-13	5.26E-09	0.00E+00	1.56E-13	4.29E-15	1.29E-12	0.00E+00	-2.97E-11
AP	[mol H ⁺ eq.]	4.58E-02	1.71E-04	2.39E-05	6.76E-04	0.00E+00	1.80E-05	4.86E-05	1.63E-03	0.00E+00	-7.07E-03
EP-freshwater	[kg P eq.]	2.42E-03	3.92E-07	3.30E-08	2.39E-05	0.00E+00	3.16E-08	1.21E-07	3.58E-07	0.00E+00	-1.49E-05
EP-marine	[kg N eq.]	1.27E-02	6.43E-05	6.21E-06	7.24E-04	0.00E+00	4.30E-06	1.76E-05	4.64E-04	0.00E+00	-1.95E-03
EP-terrestrial	[mol N eq.]	1.46E-01	7.55E-04	7.21E-05	2.48E-03	0.00E+00	4.50E-05	2.09E-04	6.91E-03	0.00E+00	-2.02E-02
POCP	[kg NMVOC eq.]	4.69E-02	1.59E-04	1.66E-05	3.52E-04	0.00E+00	1.15E-05	4.26E-05	1.28E-03	0.00E+00	-5.26E-03
ADPm ¹	[kg Sb eq.]	5.80E-05	7.06E-09	1.34E-09	8.41E-07	0.00E+00	1.31E-09	2.17E-09	1.19E-08	0.00E+00	-3.00E-07
ADPf ¹	[MJ]	1.48E+02	1.46E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	4.49E-01	3.15E+00	0.00E+00	-5.14E+01
WDP ¹	[m ³ world eq. deprived]	8.70E+00	1.30E-03	5.19E-03	2.74E-01	0.00E+00	1.85E-03	3.99E-04	1.12E+00	0.00E+00	-4.93E-01
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-Juluc = 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 FU (PIECE, 30 years) – MDF front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	7.15E-07	1.83E-09	1.85E-10	1.03E-08	0.00E+00	1.51E-10	4.19E-10	1.27E-08	0.00E+00	-6.15E-08
IRP ²	[kBq U235 eq.]	1.35E+00	4.09E-04	4.73E-03	3.19E-03	0.00E+00	4.67E-03	1.26E-04	2.38E-02	0.00E+00	-7.60E-01
ETP-fw ¹	[CTUe]	2.11E+02	1.04E+00	8.30E-02	8.37E+00	0.00E+00	7.80E-02	3.19E-01	1.64E+00	0.00E+00	-1.84E+01
HTP-c ¹	[CTUh]	5.43E-08	2.12E-11	2.87E-12	2.14E-10	0.00E+00	2.60E-12	6.53E-12	1.25E-10	0.00E+00	-1.05E-09
HTP-nc ¹	[CTUh]	1.28E-07	1.14E-09	7.42E-11	5.79E-09	0.00E+00	6.40E-11	3.48E-10	9.48E-09	0.00E+00	-2.92E-08
SQP ¹	-	5.31E+02	6.10E-01	7.28E-02	5.34E+00	0.00E+00	6.97E-02	1.88E-01	8.84E-01	0.00E+00	-5.23E+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.										

RESOURCE USE PER FU (PIECE, 30 years) – MDF front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
PERE	[MJ]	1.14E+02	1.06E-01	1.08E-01	3.00E+00	0.00E+00	1.06E-01	3.27E-02	7.75E-01	0.00E+00	-3.15E+01
PERM	[MJ]	8.90E+01	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
PERT	[MJ]	2.03E+02	1.06E-01	1.08E-01	3.00E+00	0.00E+00	1.06E-01	3.27E-02	7.75E-01	0.00E+00	-3.15E+01
PENRE	[MJ]	1.48E+02	1.47E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	4.51E-01	3.15E+00	0.00E+00	-5.15E+01
PENRM	[MJ]	3.66E+01	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]	1.85E+02	1.47E+00	1.86E-01	6.29E-01	0.00E+00	1.77E-01	4.51E-01	3.15E+00	0.00E+00	-5.15E+01
SM	[kg]	1.32E-01	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	[m³]	2.03E-01	1.16E-04	1.64E-04	6.39E-03	0.00E+00	8.52E-05	3.58E-05	2.65E-02	0.00E+00	-1.93E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water										
	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 FU (PIECE, 30 years) – MDF front											
Parameter	Unit	A1-A3	A4	A5	B2	B1. B3-B7	C1	C2	C3	C4	D
HWD	[kg]	1.29E-07	4.54E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-12	5.46E-11	0.00E+00	-2.73E-10
NHWD	[kg]	1.22E+00	2.24E-04	6.50E-04	4.88E-03	0.00E+00	1.30E-04	6.88E-05	3.89E-01	0.00E+00	-9.85E-02
RWD	[kg]	2.16E-04	2.74E-06	2.84E-05	2.49E-06	0.00E+00	2.81E-05	8.44E-07	1.55E-04	0.00E+00	-4.58E-03

CRU	[kg]	0.00E+00									
MFR	[kg]	1.09E+00	0.00E+00	2.42E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-01	0.00E+00	0.00E+00
MER	[kg]	0.00E+00									
EEE	[MJ]	1.63E+00	0.00E+00	5.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E+01	0.00E+00	0.00E+00
EET	[MJ]	2.94E+00	0.00E+00	1.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.84E+01	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy										
	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 FU (PIECE, 30 years) – MDF front		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	2.25
Biogenic carbon content in accompanying packaging	[kg C]	0.02
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

Additional information

LCA interpretation

The results of the current EPD refer to the functional unit of 1 piece of kitchen cabinet corpus or front. The calculated environmental impacts show that raw material module A1 has the largest contribution to the total impact in 16 out of the 19 environmental impact categories. In particular, the production of the main wood material of each product (chipboard or MDF) is generally the process with the highest contribution. however, melamine production contributes significantly for the chipboard corpus and melamine front.

Technical information on scenarios

Transport to the building site (A4)

Scenario information	Value	Unit
Road transport		
Fuel type	Diesel	-
Vehicle type	EURO 6	-
Weighted transport distance	191	km
Capacity utilization (including empty runs)	28 - 32t gross weight / 22t payload capacity/utilization factor 61%	%
Sea transport		
Fuel type	Diesel	-
Weighted transport distance	17	km
Capacity utilization (including empty runs)	3.500t payload /utilization factor 65%	
Gross density of products transported⁷		
Front. average (min – max)	760 (624 – 980)	kg / m ³
Corpus. average (min – max)	98 (84 - 111)	kg / m ³

Installation of the product in the building (A5)

Scenario information	Value	Unit
Ancillary materials	0	kg
Water use	0	m ³
Other resource use	0	kg
Energy type and consumption. electricity	0.098	MJ
Waste materials	0	kg
Output materials	0	kg
Direct emissions to air, soil or water	0	kg

Reference service life

RSL information		Unit
Reference service Life	30	Years

Use (B1-B7)

Scenario information	Value	Unit
B2 - Maintenance		
Maintenance process	Cleaning with water and detergent	-
Maintenance cycle	2	times/year
Ancillary materials for maintenance (soap)	0.001	kg/m ² /cycle
Waste materials resulting from maintenance (specify which)	0.101	kg/m ² /cycle
Net freshwater consumption during maintenance	0.100	L/m ² /cycle
Energy input during maintenance	0	kWh

End of life (C1-C4)

Scenario information	Chipboard corpus	MDF corpus	Melamine front	Laminate front	Veneer front	MDF front	Unit
Collected separately	0	0	0	0	0	0	kg
Collected with mixed waste	2.08E+01	2.72E+01	4.56E+00	5.16E+00	4.44E+00	6.54E+00	kg
For reuse	0	0	0	0	0	0	kg
For recycling	1.96E+01	6.80E-02	4.31E+00	5.02E+00	4.41E+00	1.42E-01	kg
For energy recovery through incineration	1.12E+00	2.72E+01	2.51E-01	1.36E-01	2.99E-02	6.40E+00	kg
For final disposal	0	0	0	0	0	0	kg

Re-use, recovery and recycling potential (D)

Scenario information/Materiel	Chipboard corpus	MDF corpus	Melamine front	Laminate front	Veneer front	MDF front
From installation (A5)						
Plastic waste from packaging						
MFR (kg)	0.00759	0.00759	0.00161	0.00161	0.00161	0.00161
EET (MJ)	0.302	0.302	0.0639	0.0639	0.0639	0.0639
EEE (MJ)	0.17	0.17	0.036	0.036	0.036	0.036
Cardboard waste from packaging						
MFR (kg)	0.016	0.016	0.00339	0.00339	0.00339	0.00339
EET (MJ)	0.028	0.028	0.00593	0.00593	0.00593	0.00593
EEE (MJ)	0.0155	0.0155	0.00327	0.00327	0.00327	0.00327
Product credits, end of life (C3)						
Wood						
MFR (kg)	16.5	0	3.5	4.1	3.58	0
EET (MJ)	0	87.1	0	0	0	20.2
EEE (MJ)	0	48.3	0	0	0	11.2
Plastic						
MFR (kg)	0	0	0	0	0	0
EET (MJ)	9.09	32.4	2.04	1.1	0.243	8.26
EEE (MJ)	5.08	18.1	1.14	0.617	0.136	4.61
Metal						
MFR (kg)	0.068	0.068	0.142	0.142	0.142	0.142
EET (MJ)	0	0	0	0	0	0
EEE (MJ)	0	0	0	0	0	0

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+A2 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+A2 chapter 7.4.2.

References

Publisher	 epddanmark www.epddanmark.dk <small>Template version 2022.2</small>
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
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3rd party verifier	David Althoff Palm Dalemarken AB Beryllvägen 25 442 60 Kode Sweden

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"

cPCR

NPCR 026 PCR - Part B for Furniture version 2.0 ([related to EN 15804 +A2](#))

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"

BUILD service life table November 2022 <https://build.dk/Pages/BUILD-levetidstabel.aspx>