

## Environmental Product Declaration (EPD)

In accordance with NF EN 15804+A1 and NF EN 15804/CN



### Melamine faced P2 chipboard (panels for interior fitments for use in dry conditions)

Declared thickness: 28 mm

Thicknesses covered by the scope of validity: up to 38 mm



#### Collective EPD

INIES verification programme registration number

2-100:2018

#### Date of publication

Publication of the collective EPD

15/10/2019

Produced by



INSTITUT  
TECHNOLOGIQUE

With the support  
of



comité professionnel de développement  
des industries françaises de l'ameublement et du bois

At the

initiative of



## Notes

Abbreviations > **LCA** > Life Cycle Analysis  
**ADP** > Abiotic Depletion Potential  
**NHWSF** > Non-Hazardous Waste Storage Facility  
**EPD** > Environmental Product Declaration

**STD** > Standardised Technical Document  
**PCR** > Product Category Rules  
**FU** > Functional Unit  
**HWIP** > Household Waste Incineration Plant

## General information

Manufacturer > The manufacturers are companies that make engineered panels in France which correspond to the elements in the description below. Explanatory information on this EPD can be obtained from the following trade union:  
 Union des industries de panneaux de process, 120 avenue Ledru-Rollin 75011 Paris, [www.uipp.fr](http://www.uipp.fr), [contact@uipp.fr](mailto:contact@uipp.fr).

Declarant > Institut technologique FCBA, 10 rue Galilée 77420 Champs-sur-Marne, [www.fcba.fr](http://www.fcba.fr)

Produced by > Institut technologique FCBA, 10 rue Galilée 77420 Champs-sur-Marne, [www.fcba.fr](http://www.fcba.fr)

Type of EPD > "Cradle-to-grave" collective EPD (modules A1 to C4 + D)

Verification > Independent verification of declaration and data in compliance with EN ISO 14025:2010:

☐ internal

☒ external

Third-party verifier of the EPD according to the INIES verification program: Étienne LEES-PERASSO, Bureau Veritas LCIE

Programme > INIES programme for the environmental and sanitary declaration of construction products

[www.inies.fr](http://www.inies.fr)

Date of publication > 15/10/2019

End of validity > 15/10/2024

Note on > Comparison of EPDs for construction products is only possible if:

- comparability - the EPDs are compliant with NF EN 15804:2012+A1:2014;
- the same functional requirements defined in the two EPDs are fulfilled;
- the environmental and technical performance of all excluded systems, components or assembled products are identical;
- the quantities of excluded material are the same;
- the excluded processes or life cycle stages are the same;
- the influence of the product systems on the aspect and impacts of the building in use is taken into account.



## Product description

Name and identification > Melamine faced P2 chipboard (panels for interior fitments for use in dry conditions)

Visual representation >



Main components > The following table describes the main components of the installed product and the quantities per functional unit:

Component	Material	Moisture (% of dry)	Density (kg/m³)	Volume (m³ / FU)	Mass (kg / FU)
Panels	Wood particles, binder, melamine paper	6.4%	669	0.028	18.7
Screws	Stainless steel				0.024
<b>TOTAL</b>				<b>0.028</b>	<b>18.8</b>

Other characteristics > 85% of the mass of the panels is composed of anhydrous wood chips from the following sources: 20% roundwood (twigs, branches, decommissioned logs), 37% related products (chips, particles) from other woodworking industries (sawmills, joineries, furniture makers, etc.), 43% secondary raw materials for recycling (chips from wood waste shredding).

Use > Non-structural uses (coverings)

Proof of aptitude > Design and manufacture are compliant with NF EN 312.  
 for use

Average lifespan > The table below shows the average lifespan and the scenario (properties and conditions of use) on which it is based.

Parameter	Value
Average lifespan	50 years
Product properties declared at the factory and finishes	Design and manufacture are compliant with NF EN 312.

Environment Suitable for structures in use class 1 as defined in NF EN 335. Use class 1 is characterised by conditions in which the wood is indoors, fully protected from the weather and not exposed to wetting.

Use conditions Suitable for structures in service class 1 as defined in Eurocode 5. Service class 1 is characterised by conditions in which the ambient air temperature is around 20°C and the humidity only exceeds 65% a few weeks per year, which corresponds to wood with a humidity of between 7% and 13%.

Maintenance No maintenance is required during the lifespan.

Content declaration > The product contains no substances identified in the European Chemicals Agency's Candidate List of Substances of Very High Concern.

Carbon storage > and biobased content The table below provides additional environmental information about the product's biogenic carbon storage and biobased content

Parameter	Unit	Value
Amount of biogenic carbon stored	kg CO <sub>2</sub> eq. / FU	28.9
Storage duration	years	50
Contribution to climate change mitigation (see EN 16485 and PAS 2050)	kg CO <sub>2</sub> eq. / FU	-12.3
Mass of biobased material	kg / FU	16.0

Manufacturing > The main manufacturing stages are: chipping (debarking and shredding of logs, sawmill by-products and secondary raw materials); drying the chips at low moisture level; sorting the chips; preparing the adhesive and adding it to the chips; screening and layering the particles to form the mat; hot pressing; sizing and finishing (squaring, sanding, surfacing, etc.)

Distribution and installation > The distribution packaging is comprised of:

Packaging	Material	Mass (kg / FU)
Boxes	Cardboard	0.027
Battens	Chipboard	0.126
PET strap	Polyethylene terephthalate	0.002
LDPE film	Low density polyethylene	0.000
<b>TOTAL</b>		<b>0.155</b>

An 8% offcut ratio (in relation to the installed product) has been considered during installation in the building.

Representativeness > and variability The present EPD is a collective declaration that is representative of all melamine faced P2 chipboard manufactured in France, within the limits of the scope of validity of the sensitive parameters (see corresponding section at the end of the EPD). When this scope of validity is complied with, the results for the total life cycle do not exceed the declared values for the control environmental aspects (global warming potential, non-renewable primary energy use excluding non-renewable primary energy resources used as feedstock, non-hazardous waste disposed of) by more than 40%.

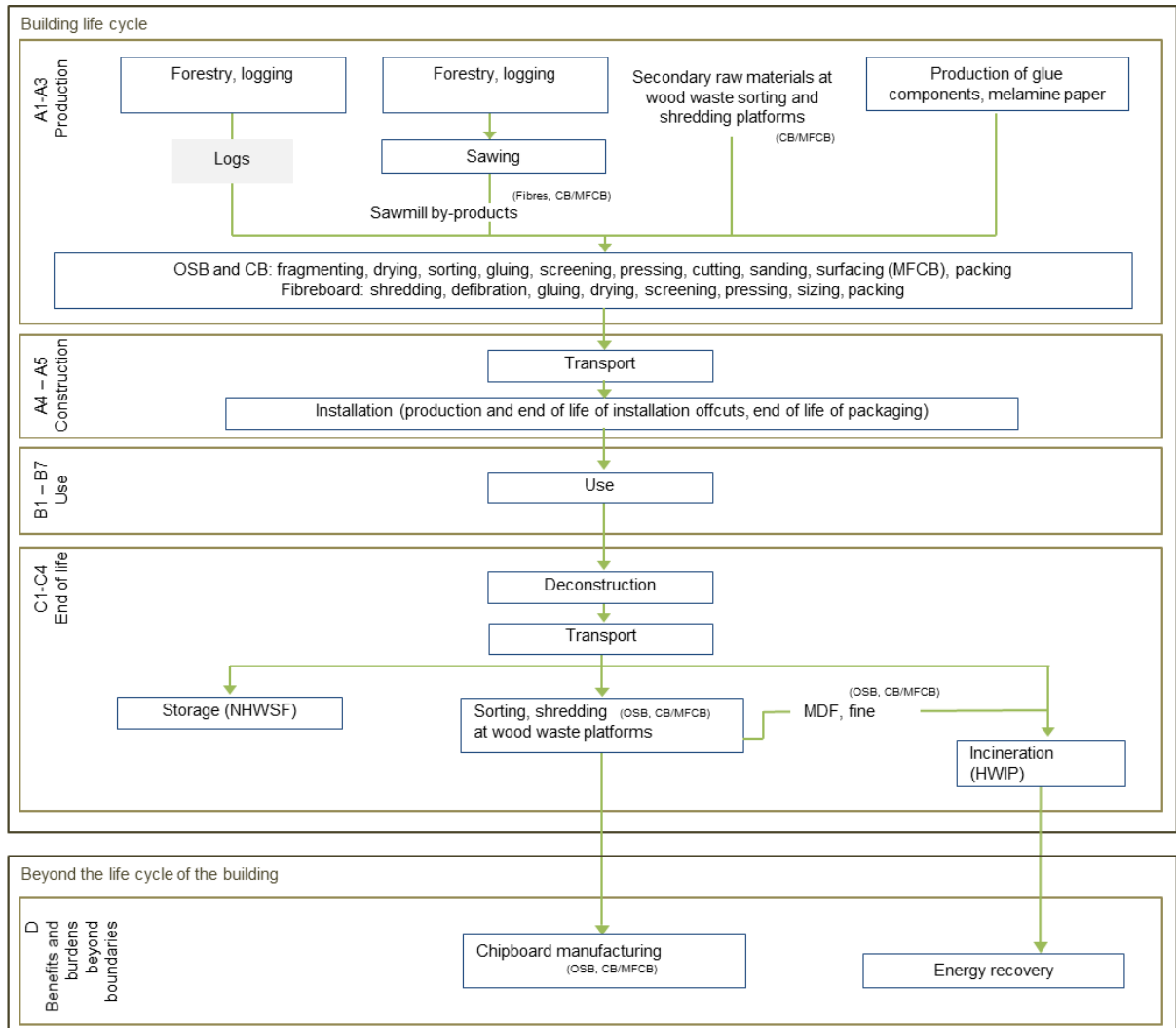
## LCA rules

PCR > The PCR are the following: NF EN 15804:2012+A1:2014, NF EN 15804/CN:2016 and NF EN 16485:2014

Functional unity > Guarantee the non load-bearing functions (coverings) for 1m<sup>2</sup> of melamine faced P2 chipboard (panels for interior fittings for use in dry conditions), of a thickness of 28mm, manufactured in France with an average lifespan of 50 years. The scope of validity of this collective EPD includes all melamine faced P2 chipboard (non load-bearing panels for use in humid environments) manufactured in France within the limit of a maximum thickness of 38 mm (see corresponding section at the end of the EPD).

LCA process diagram

This diagram shows the LCA processes for the three main groups of engineered panels (OSB, fibreboard, chipboard). The stages indicated in superscript are specific to certain groups of panels (raw material supply, manufacturing and end of life). Some of these stages are therefore not covered in this EPD.



Stages not > All the stages of the product life cycle were included.  
included

Cut rule > All material and energy flows known to be likely to cause significant emissions to air, water or land were included. Raw materials not included in the life cycle inventory account for 0.02% of the reference flow and correspond to non modelled packaging for the supply of melamine paper and to non-modelled flows in the case of some of the background data used.

Allocation > The decisions on impact allocation between co-products were made in accordance with the requirements of NF EN 15804+A1, NF EN 15804/CN and NF EN 16485. In terms of manufacturing, the losses generated were counted as waste and all sources of impact were entirely assigned to the evaluated product. In accordance with NF EN 16485:2014, the energy content and biogenic carbon content were assigned to reflect physical flows.

Data quality > Specific data is derived from the averages of data collected on site and by electronic survey from a sample of manufacturers weighted by production volume (base year 2016). The generic data is taken from the Ecoinvent database version 3.4 dated 2017 and the LCA database developed by FCBA (explained in the DHUP/CODIFAB/FBF/CTB/FCBA 2012 study report).

## Environmental parameters from the LCA

		Production	Construction			Use				
		Raw materials, transport and manufacturing	Transport	Plant	Subtotal	Use	Maintenance	Repair	Replacement	Renovation
Parameters describing environmental impacts		A1-A3	A4	A5	A4-A5	B1	B2	B3	B4	B5
Global warming potential	kg CO <sub>2</sub> eq. / FU	-26.8	0.504	2.53	3.04					
Stratospheric ozone depletion potential	kg CFC-11 eq. / FU	6.78 E-07	9.22 E-08	2.11 E-08	1.13 E-07					
Soil and water acidification potential	kg SO <sub>2</sub> eq. / FU	0.0204	0.00131	0.00134	0.00265					
Eutrophication potential	kg PO <sub>4</sub> <sup>3-</sup> eq. / FU	0.00753	0.000214	0.000181	0.000395					
Tropospheric ozone formation potential	kg ethene eq. / FU	0.00118	6.23 E-05	0.000104	0.000167					
Non-fossil resources abiotic depletion potential (ADP-elements)	kg Sb eq. / FU	5.63 E-06	1.18 E-09	3.76 E-06	3.76 E-06					
Fossil resources abiotic depletion potential (ADP-fossil fuels)	MJ / FU	104	7.58	2.98	10.6					
Air pollution	m <sup>3</sup> / FU	640	41.3	56.2	97.5					
Water pollution	m <sup>3</sup> / FU	2.59	0.149	0.0749	0.224					
Parameters describing the use of resources										
Use of renewable primary energy, excluding renewable primary energy resources used as feedstock	MJ / FU	86	0.021	-22.7	-22.7					
Use of renewable primary energy resources as feedstock	MJ / FU	296		8.55	8.55					
Total use of renewable primary energy resources	MJ / FU	382	0.021	-14.2	-14.2					
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as feedstock	MJ / FU	126	7.63	2.39	10					
Use of non-renewable primary energy resources as feedstock	MJ / FU	30.1		0.819	0.819					
Total use of non-renewable primary energy resources	MJ / FU	156	7.63	3.21	10.8					
Use of secondary materials	kg / FU	9.25								
Use of renewable secondary fuels	MJ / FU	28.5								
Use of non renewable secondary fuels	MJ / FU									
Net freshwater use	m <sup>3</sup> / FU	0.00565		0.000526	0.000526					
Parameters describing waste										
Hazardous waste disposed of	kg / FU	0.0633	0.000239	0.14	0.14					
Non-hazardous waste disposed of	kg / FU	0.551	0.00461	0.494	0.498					
Radioactive waste disposed of	kg / FU	0.0008	5.19 E-05	9.70 E-06	6.16 E-05					
Parameters describing outflows										
Components for reuse	kg / FU									
Materials for recycling	kg / FU	0.0361		1.04	1.04					
Materials for energy recovery	kg / FU									
Energy supplied externally (heat)	MJ / FU			1.41	1.41					
Energy supplied externally (electricity)	kWh / FU			0.203	0.203					

		Use			End of life					Life cycle	Benefits and burdens beyond boundaries
		Energy use	Water use	Subtotal	Deconstruction	Transport	Waste treatment	Disposal	Subtotal	Subtotal	Reuse, recovery and/or recycling
Parameters describing environmental impacts		B6	B7	B1-B7	C1	C2	C3	C4	C1-C4	A-C	D
Global warming potential	kg CO <sub>2</sub> eq. / FU				5.65 E-05	0.118	16.7	9.94	26.7	2.99	-5.69
Stratospheric ozone depletion potential	kg CFC-11 eq. / FU				9.63 E-11	1.82 E-08	2.04 E-08	1.99 E-08	5.87 E-08	8.50 E-07	-6.09 E-07
Soil and water acidification potential	kg SO <sub>2</sub> eq. / FU				3.33 E-07	0.000663	0.00121	0.00142	0.0033	0.0264	-0.014
Eutrophication potential	kg PO <sub>4</sub> <sup>3-</sup> eq. / FU				5.31 E-08	0.000149	0.000256	0.000376	0.00078	0.0087	-0.00017
Tropospheric ozone formation potential	kg ethene eq. / FU				1.44 E-08	1.91 E-05	3.40 E-05	0.000445	0.000498	0.00184	-0.000707
Non-fossil resources abiotic depletion potential (ADP-elements)	kg Sb eq. / FU				6.00 E-10	1.26 E-07	1.94 E-07	1.38 E-07	4.59 E-07	9.85 E-06	-8.93 E-07
Fossil resources abiotic depletion potential (ADP-fossil fuels)	MJ / FU				0.000684	1.75	2.48	1.38	5.62	120	-83.1
Air pollution	m <sup>3</sup> / FU				0.00687	8.63	20.2	54.5	83.3	821	-86.5
Water pollution	m <sup>3</sup> / FU				2.05 E-05	0.0384	0.0754	0.0888	0.203	3.02	-0.532
Parameters describing the use of resources											
Use of renewable primary energy, excluding renewable primary energy resources used as feedstock	MJ / FU				0.00075	0.0113	0.561	0.0232	0.596	63.9	38.3
Use of renewable primary energy resources as feedstock	MJ / FU						-168		-168	137	
Total use of renewable primary energy resources	MJ / FU				0.00075	0.0113	-167	0.0232	-167	201	38.3
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as feedstock	MJ / FU				0.0131	1.81	19.5	1.53	22.9	159	-108
Use of non-renewable primary energy resources as feedstock	MJ / FU						-17		-17	14	
Total use of non-renewable primary energy resources	MJ / FU				0.0131	1.81	2.56	1.53	5.91	173	-108
Use of secondary materials	kg / FU									9.25	
Use of renewable secondary fuels	MJ / FU									28.5	
Use of non renewable secondary fuels	MJ / FU										
Net freshwater use	m <sup>3</sup> / FU					0.000257	0.000319	0.00545	0.00602	0.0122	-0.016
Parameters describing waste											
Hazardous waste disposed of	kg / FU				1.92 E-06	0.000616	0.00309	0.0629	0.0666	0.27	-0.0407
Non-hazardous waste disposed of	kg / FU				4.41 E-05	0.00665	0.00783	3.54	3.56	4.61	-0.625
Radioactive waste disposed of	kg / FU				1.77 E-07	7.24 E-07	1.01 E-06	5.67 E-06	7.58 E-06	0.00087	-0.000355
Parameters describing outflows											
Components for reuse	kg / FU										
Materials for recycling	kg / FU						11.9	0.000122	11.9	13	0.308
Materials for energy recovery	kg / FU										
Energy supplied externally (heat)	MJ / FU							14.6	14.6	16	
Energy supplied externally (electricity)	kWh / FU							2.11	2.11	2.31	

## Scenarios and additional technical information

Stage	Parameter		Value
Production	A1 Raw materials A2 Transport	Type of panels	Melamine faced P2 chipboard (panels for interior fitments for use in dry conditions)
	A3 Manufacturing	Thickness	28 mm
Construction process	A4 Transport to construction site	Vehicle and fuel used	Semi-trailer truck with diesel consumption: 0.43 l / km full, 0.26 l / km empty.
		Distance	459 km by road
		Capacity utilisation (including empty returns)	Load rate: 89% Empty return rate: 15%
		Actual volume transported per truck	36 m³
		Mass transported per truck	24 t
	A5 Installation in the building	Volume capacity utilisation coefficient	0.37
		Auxiliary inputs	Stainless steel screws: 0.024 kg / FU
		Water use	None
		Use of other resources	None
		Energy consumed	Electricity: 0.001 kWh / FU
		On-site waste before treatment	- Product losses during installation: 1.498 kg / FU. -Packaging waste: boxes 0.029 kg / FU, battens 0.136 kg / FU, PET strap 0.002 kg / FU, LDPE film 0.000 kg / FU
		Output materials from waste treatment	- Recycling: 0.964 kg / FU - Incineration in a HWIP 0.418 kg / FU - Storage in a NHWSF 0.284 kg / FU
		Direct emissions to ambient air, soil and water	Not
Use related to the structure of the building	B2 Maintenance B3 Repair B4 Replacement B5 Renovation	No maintenance, repair, replacement or renovation is required during the product lifetime.	
Use related to function	B6 Energy use B7 Water use	The product uses no energy or water during the use of the building.	

Stage	Parameter		Value
End of life of the product	C1 Deconstruction C2 Transport C3 Waste treatment C4 Disposal	End of life scenario	The end of life of the product is based on the average scenario for construction wood waste in France: 67% of wood waste goes to a sorting platform (with subsequent recycling into chipboard and incineration of shredder fines), 16% is incinerated with energy recovery, 17% is buried. This scenario is described in more detail in the report by FCBA CSTB DHUP CODIFAB FBF: <i>Convention DHUP CSTB 2009 Action 33 Sous-action 6 – ACV &amp; DEP pour des produits et composants de la construction bois – Volet 2 Prise en compte de la fin de vie des produits bois – Phase 3 Modélisation ACV et calculs d'impacts pour le recyclage matière et la réutilisation</i> , 2012.
		Separate Collection Process	12.628 kg / FU (67%)
		Mixed collection with other waste	6.124 kg / FU (33%)
		Recovery system	Reuse Recycling Energy recovery
		Incineration in a HWIP	4.775 kg / FU (25%)
		Storage in a NHWSF	3.240 kg / FU (17%)
	Disposal		
Benefits and burdens beyond system boundaries	D Potential for reuse, recovery, recycling	In accordance with Annex H of NF EN 15804/CN, the benefits and burdens beyond the system boundaries include: -in terms of recycling, the transport and processing of shredded wood as secondary raw material for manufacturing chipboard and substitution of virgin raw material (forestry, logging, transport, shredding, drying); -in terms of incineration with energy recovery, substitution of thermal and electrical energy. The different processes involved are described in more detail in the aforementioned report.	

## Emissions of hazardous substances to indoor air, soil and water during use

Stage	Parameter		Value
Use related to the structure of the building	B1 Use of the installed product in terms of environmental emissions	Emissions to indoor air	Regulatory emissions of volatile pollutants in indoor air according to the Decree of 19 April 2011. Other emissions of volatile pollutants to indoor air beyond the regulatory label Natural radioactive emissions Other information on the sanitary quality of indoor spaces
			A+ or A rating (source: Yrieix C, <i>Caractérisation des émissions de COV et de formaldéhyde par des panneaux à base de bois représentatifs des productions françaises</i> , FCBA, CODIFAB, UIPP, 2013).
			No other hazardous substance emissions.
			No tests carried out.
	Emissions to water	Water for human consumption	Not applicable because the product is not in contact with water intended for human consumption.
		Runoff, seepage, surface water or groundwater	Not applicable as the product is not in contact with runoff, seepage, surface water or groundwater.
	Emissions to soil		Not applicable because the product is not in contact with soil.

## Contribution of the product to the quality of life inside buildings

Stage	Parameter		Value
Use related to the structure of the building	B1 Use of the installed product in terms of environmental emissions	Hygrothermal comfort	The following characteristics have been extrapolated for untreated panels from the values given in the harmonised standard NF EN 13986 and from the density in question: - thermal conductivity coefficient λ: 0.14 W / m.K; - water vapour diffusion resistance coefficient μ (dry): 50; - water vapour diffusion resistance coefficient μ (wet): 17.
		Quality of life	The sound absorption coefficient, when the panels are intended to be used as sound insulation, is 0.10 for a frequency range of 250 to 500 Hz (source: NF EN 13986).
		Acoustic comfort	
		Visual comfort	Melamine faced chipboard contributes to the harmony and ambience of the building thanks to the wide range of colours, patterns and textures available.
	Olfactory comfort		No odour intensity measurements were carried out.
		Other information on comfort	Not applicable.

## Environmental scope of validity

The environmental scope of validity of this EPD has been established in accordance with annex L of NF EN 15804/CN, based on the severity and sensitivity analyses carried out on the modelling parameters for the following indicators: global warming potential, non-renewable primary energy use excluding non-renewable primary energy resources used as feedstock, non-hazardous waste disposed of.

The scope of validity is defined as not exceeding 40% of the results declared in this EPD for the total life cycle for these control environmental aspects. A product remains within this scope of validity if the following criteria are respected for the sensitive parameters.

Stage		Parameter	Value
Production	A1 Raw materials A2 materials A3 Transport Manufacturing	Thickness of panels	38 mm maximum