



# ENVIROMENTAL PRODUCT DECLARATION (EPD)

## Environmental Product Declaration (EPD) for Marchand Limited wood flooring products:

This document highlights key environmental performance indicators and product characteristics relevant to building design and material selection.

### 1. Introduction

An EPD is a standardised, third-party verified document that communicates the environmental impacts of a product throughout its life cycle. This EPD provides information on the environmental performance, based on ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 standards.

### 2. Product Information

- Product: Engineered Wood Flooring
- Types: Three-layer and Multi-layer
- Surface Material: Oak
- Core/Back Layer: Poplar
- Typical Use: Indoor floor decoration
- Declared Unit: 1 m<sup>2</sup> of 15mm multi-layer wood flooring

### 3. Product Characteristics

The following table summarises the key properties of the engineered wood flooring products:

Properties	Values	Test Methods
Reaction to fire	Dfl-s1	EN14342
Release of formaldehyde	E1	EN717-2
Content of pentachlorophenol	<5 ppm	CEN/TR 14823
Breaking strength	0.46 KN	EN1533
Slip resistance	USRV70	CEN/TS15676
Thermal properties	0.18 W/m·K	EN ISO 10456
Biological durability	Class 1	EN335



## ENVIROMENTAL PRODUCT DECLARATION (EPD)

### 4. Material Composition

The table below shows the material composition of the representative product.

Product Components	Weight (kg)	Post-Consumer Material (%)	Biogenic Material (kg C/product)
Surface (oak)	2.423	0.00%	1.197
Plywood (poplar)	6.492	0.00%	3.062
PVAc Adhesive	0.166	0.00%	0.000
UV oil	0.363	0.00%	0.000
Natural oil	0.177	0.00%	0.084
Putty (Epoxy resin)	0.010	0.00%	0.000
TOTAL	9.630	0.00%	4.343

### 5. Packaging Materials

Packaging Materials	Weight (kg)	Weight % (versus product)	Weight biogenic carbon (kg C/product)
Corrugated Box	0.151	1.57%	0.063
PE film	0.010	0.10%	0.000
Plastic belt	0.008	0.08%	0.000
Wood pallet	0.835	8.67%	0.491
TOTAL	1.005	10.43%	0.554



# ENVIROMENTAL PRODUCT DECLARATION (EPD)

## 6. Life Cycle Assessment (LCA) Summary:

LCA Standard: ISO 14040:2006, ISO 14044:2006

PCR: PCR 2019:14 Construction products Version 1.3.4, c-PCR-006 Wood and wood-based products for use in construction (EN 16485), Version 2024-04-30

System Boundaries: Cradle-to-gate with options (A1-A5, B, C + D)

- A1-A3: Raw material supply and manufacturing
- A4: Transportation to construction site
- A5: Installation
- B: Use stage
- C: End-of-life stage
- D: Benefits and loads beyond the system boundary

Reference Service Life: 50 years

The product has FSC Standard for Chain of Custody Certification and CE mark.

No wastewater was generated during the manufacturing processes.

## 7. Environmental Performance Indicators

The following table presents a summary of key environmental performance indicators. For detailed results, please refer to the complete EPD.

Indicator	Unit	A1-A3	A4	A5	B1	C2	C3	D
Global Warming Potential (GWP <sub>total</sub> )	kg CO <sub>2</sub> eq.	9.69E+00	3.10E+00	2.47E+00	1.50E-01	6.51E-02	2.24E+01	-4.88E+00
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	9.74E-06	1.84E-13	-	2.62E-13	8.20E-18	1.88E-12	-3.90E-11
Acidification Potential (AP)	mol H <sup>+</sup> eq.	4.42E-02	9.57E-02	3.47E-04	9.47E-04	7.19E-05	8.03E-03	-7.89E-03
Eutrophication Potential (EP <sub>marine</sub> )	kg N eq.	1.21E-02	2.28E-02	1.07E-04	4.07E-04	2.39E-05	3.69E-03	-2.26E-03
Resource Use (PERE)	MJ	2.94E+02	4.40E-01	-	1.68E-01	4.77E-02	1.02E+00	3.91E+01
Use of net fresh water (FW)	m <sup>3</sup>	9.48E-02	5.29E-04	5.83E-03	6.83E-01	5.45E-05	3.93E-02	-2.90E-02



# ENVIROMENTAL PRODUCT DECLARATION (EPD)

## 8. Manufacturing Process

The production process involves the following steps:

1. Raw material (oak veneer, poplar board, poplar plywood) input
2. Pasting with adhesive
3. Lamination
4. Sanding
5. Cutting
6. Surface coating
7. Inspection
8. Packaging

Key energy sources include electricity and diesel. The main waste generated is sawdust, which is sold.

## 9. Electricity Mix

The electricity mix used in the LCA is specific to where the products are manufactured:

Electricity Generation Sources	Dataset Used in the Model	GWP-GHG (CO2 eq./kWh)	Percentage
Electricity from fossil fuel	CN: Electricity from hard coal	1.11	80.77%
Electricity from hydro power	CN: Electricity from hydro power	0.00745	0.53%
Electricity from nuclear power	CN: Electricity from nuclear power	0.00446	8.28%
Electricity from wind power	CN: Electricity from wind power	0.0171	7.09%
Electricity from photovoltaic	CN: Electricity from photovoltaic	0.0288	3.32%
GWP-GHG of electricity mix		0.902	

## 10. Allocation and Cut-off

- Co-product allocation was not applied.
- A 95% cut-off criterion was used.

## 11. Additional Information

- The EPD is valid until 2029-08-13.
- The products comply with FSC Chain of Custody, CARB & EPA, and CE mark standards.