Type III Environmental Product Declaration No. 867/2025

Issuance date: 08.12.2025
Validity date: 08.12.2030

Laminated particleboard type P2

Owner of the EPD:

Woodeco sp. z o. o.
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Production plants:
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EPD Program Operator:

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ITB is the verified member of The European Platform for EPD program operators and LCA practitioner www.eco-platform.org

Basic information

This declaration is the Type III Environmental Product Declaration (EPD) based on EN 15804 + A2 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment and their aspects verified by the independent body according to ISO 14025. Basically, comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804 + A2.

Life cycle analysis (LCA): A1-A3, C1-C4 and D modules in accordance with EN 15804 + A2 (Cradle-to-Gate with options)

The year of preparing the EPD: 2025

Product standard: EN 14322 and EN 312

Service Life: > 40 years

PCR: ITB-PCR A, v. 1.6

Declared unit: 1 m^2

Reasons for performing LCA: B2B

Representativeness: Polish, European, 2024

MANUFACTURER

Fig.1 A view of Woodeco production plants.

Woodeco is a provider of solutions based on wood-based materials for the furniture, construction and interior finishing industries. The company offers full service to furniture companies, carpenter's workshops, architects and designers as well as companies in the construction industry. On the Polish market, the company's products are available, among others, which includes more than 80 retail outlets, in selected DIY chains or building materials distribution outlets. The company's offer includes a wide range of products in line with the latest trends in the design, construction, finishing and equipment of both private and public buildings.

PRODUCTS DESCRIPTION AND APPLICATION

Laminated particleboard type P2 - board manufactured by applying a papersheets impregnated with uncured amino resin into both sides of the particleboard type P2 and connecting them as well hardening of resin in the same process of hotpressing without using any additional adhesive. The surfaces can be smooth or structured, one- or two-sided, covered with a selected pattern or colour depending on the order.
The board is available in a standard laminated version as well as in a fire resistant variant manufactured with a fire resistant core.
For the purposes of this declaration, both versions are referred to as **Laminated board P2.**
Thickness range: 8 – 38 mm.

Fig.2 Laminated boards P2 produced by Woodeco.

Product intended for furniture manufacturing and interior design. Suitable for use in permanent human dwellings. The boards are CE marked in accordance with EN 13986, demonstrating compliance with European construction regulations. They are designed for indoor use in dry conditions.

Physical and chemical properties

Requirements provided in the EN 14322 and EN 312 for chipboard type P2. Density depends on the thickness between 570-730 kg/m^3. The colour depends on the decorative finish colouring. Formaldehyde content meets the requirements of class E1 (compliant E1 E05).

Table. 1 The requirements for laminated boards P2 produced by Woodeco.

Properties / test standard	Requirements	
	Standard core	Fire resistant core
Thickness (EN 14323)	8 – 38 mm	18 – 38 mm
Tolerance on thickness (EN 14323)	± 0.5 mm	± 0.5 mm
Tolerance on length (EN 14323)	± 5 mm	± 5 mm
Tolerance on width (EN 14323)	± 2 mm	± 2 mm
Resistance to scratching (EN 14323)	≥ 1.5 N	≥ 1.5 N
Resistance to staining (EN 14323)	≥ 3	≥ 3
Resistance to cracking (EN 14323)	≥ 3	≥ 3
Flatness (EN 14323, range of thickness ≥ 15 mm)	≤ 2 mm/m (only for balanced surfaces)	≤ 2 mm/m (only for balanced surfaces)
Class, formaldehyde release (EN 717-1)	E1 (compliant E1 E05) max. 0,05 ppm	E1 (compliant E1 E05), max. 0,05 ppm
Classification of reaction to fire (EN 13501-1:2018)	Thickness range [mm] 8 - 10 D-s2, d0 EN 13986:2004+A1:2015	B-s1, d0 EN 13986:2004+A1:2015
	Thickness range [mm] 12 - 38 D-s1, d0	

More information can be found on Woodeco sp. z o. o. website: https://www.woodeco.eu

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Declared Unit

The declaration refers to declared unit (DU) – 1 m^2 of laminated standard core board P2 based on average thickness and density

Allocation

The allocation rules used for this EPD are based on general ITB PCR A, v. 1.6. Laminated board P2 production is a line process conducted in two manufacturing plants located in Grajewo and Wieruszów (Poland). Input and output data from the production is inventoried and allocated to the production on the mass basis. All impacts from raw materials extraction and processing are allocated in A1 module of EPD. 99% of impacts from production were inventoried and allocated to all laminated board P2 production. Water and energy consumption, associated emissions and generated wastes are allocated to module A3. Energy supply was inventoried for whole production process. Packaging materials were taken into consideration. They are mainly recycled in a closed loop.

System boundary

The life cycle analysis (LCA) of the declared products covers product stage – modules A1-A3, end of life – modules C1-C4 and benefits and loads beyond the system boundary – module D (cradle-to-gate with options) in accordance with EN 15804 + A2 and ITB PCR A, v. 1.6. All materials and energy consumption inventoried in factory were included in calculation. Office impacts were also taken into consideration. In the assessment, all significant parameters from gathered production data are considered, i.e. all material used per formulation, utilised thermal energy, internal fuel and electric power consumption, direct production waste, and all available emission measurements. It can be assumed that the total sum of omitted processes does not exceed 5% of all impact categories. In accordance with EN 15804 + A2, machines and facilities (capital goods) required for the production as well as transportation of employees were not included in LCA.

Modules A1 and A2: *Raw materials supply and transport*

Raw materials such as wood raw materials, papers, melamine, urea, different agents or hardeners come from local and foreign suppliers. Based on data provided by the manufacturer, all input of transport resources was inventoried in details. Means of transport include small (>10 t), average (10 – 16 t), big (>16 t) EURO 6 trucks and container ship (decorative paper). European standards for fuel and average combustion were used for calculations.

Module A3: *Production*

The Fig. 3 shows scheme of laminated board P2 process production by Woodeco. Wood materials, including roundwood, recycled wood, and sawmill residues (e.g., chips, shavings, sawdust), are delivered to the factories in Grajewo and Wieruszów, where they are sorted and sifted, cleaned, shredded, dried and mixed with resins and other additives before being formed and pressed into raw boards. The boards are then laminated, packaged, and stored prior to shipment. The facility is ISO 14001 and 9001 certified.

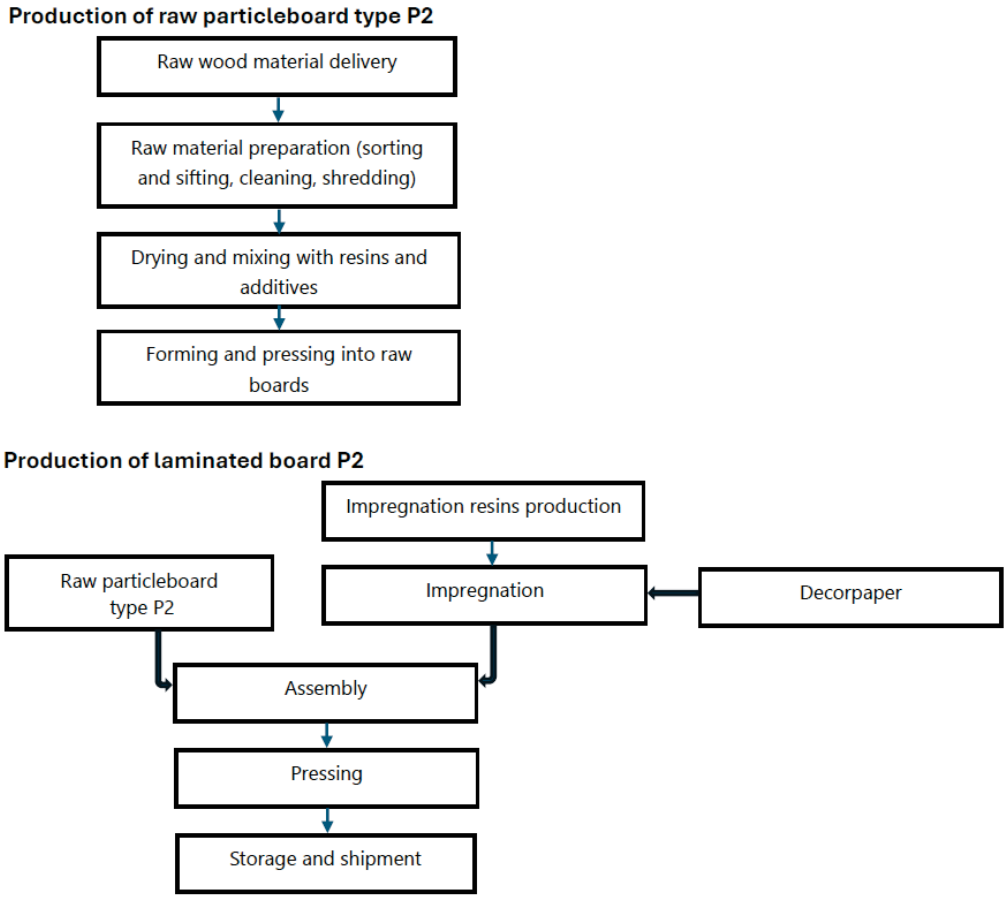

Fig. 3. A scheme of laminated - board P2 process production by Woodeco (Poland).

Modules C1-C4 and D: *End-of-life (EoL)*

In the adapted scenario, deconstruction of the laminated boards is performed with the use of electrical tools (module C1). The resulting waste is transported to a waste processing plant distant about 60 km, on 16-32 t lorry EURO 6 (module C2). It is assumed that at the EoL cycle 90% of the laminated board P2 is recovered in municipal incineration (module C3) while 10% undergo landfilling (module C4). Module D presents credits resulting from the benefits from avoided thermal energy production in exchange for using waste from plant which were used for own production line. Utilization of packaging material which constitute less than 1 % of the total system flows was not taken into consideration.

Data quality

The data selected for LCA originate from ITB-LCI questionnaires completed by Woodeco Grajewo sp. z o. o and Woodeco Wieruszów sp. z o.o. using the inventory data, ITB database, Ecoinvent database v. 3.10 and KOBiZE. No specific data collected is older than five years and no generic datasets used are older than ten years. The representativeness, completeness, reliability, and consistency are judged as good. Polish electricity was calculated based on Ecoinvent v 3.10 supplemented by actual national KOBiZE data. KOBiZE data is supplemented with Ecoinvent v. 3.10 data on the national electricity mix impact where no specific indicator data is provided. Polish electricity mix used (production) is 0.597 kg CO_2/kWh (KOBiZE 2023).

Data collection period

Primary data provided by Woodeco covers a period of 01.01.2024 – 31.12.2024 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

Assumptions and estimates

The impacts of the representative of laminated board P2 were aggregated using average. Impacts were inventoried and calculated for all products in laminated board P2 product group and they were presented in Tables 3-6. Impacts were inventoried and calculated for production sites located in Grajewo and Wieruszów (Poland). The results provided in the EPD are presented for an average value (from the formulation and average plant loads, as declared by the Woodeco in the LCI). No mass balance approach was used. Biogenic content of product is 97,6% and biogenic carbon content in product is 52,7 %.

Calculation rules

LCA was performed using ITB-LCA tool developed in accordance with EN 15804 + A2.

Databases

The data for the processes comes from Ecoinvent v. 3.10 and ITB-Database. Specific data quality analysis was a part of external audit.

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 m^2 of laminated standard core board P2 manufactured by Woodeco Grajewo sp. z o. o. and Woodeco Wieruszów sp. z o.o.

Table 2. System boundaries for the environmental characteristic of laminated board P2 manufactured by Woodeco Grajewo sp. z o. o. and Woodeco Wieruszów sp. z o.o.

Environmental assessment information (MD – Module Declared, MND – Module Not Declared, INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MD	MD	MD	MD	MD

Table 3. LCA results for 1 m^2 of laminated board P2 - environmental impacts

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential - total	eq. kg CO_2	1.18E+01	1.42E-01	1.39E+00	1.33E+01	4.57E-02	1.30E-01	1.58E+00	5.57E-01	-4.74E+00
Greenhouse gas potential - fossil	eq. kg CO_2	1.35E+01	1.41E-01	1.38E+00	1.50E+01	4.54E-02	1.30E-01	1.67E-01	7.89E-02	-5.07E-02
Greenhouse gas potential - biogenic	eq. kg CO_2	-1.89E+00	4.78E-04	9.41E-03	-1.88E+00	2.90E-04	1.13E-04	1.41E+00	4.78E-01	-4.69E+00
Global warming potential - land use and land use change	eq. kg CO_2	1.51E-01	5.61E-05	4.81E-04	1.51E-01	1.60E-05	6.42E-05	4.32E-05	4.31E-05	-1.31E-05
Stratospheric ozone depletion potential	eq. kg CFC 11	9.94E-07	3.24E-08	2.13E-08	1.05E-06	2.74E-10	2.83E-09	2.80E-09	3.40E-10	-8.50E-10
Soil and water acidification potential	eq. mol H+	2.13E-01	6.12E-04	1.50E-02	2.28E-01	4.30E-04	2.84E-04	1.71E-03	7.52E-04	-5.18E-04
Eutrophication potential - freshwater	eq. kg P	1.88E-02	9.46E-06	2.44E-03	2.12E-02	7.10E-05	9.24E-06	7.16E-05	8.88E-06	-2.18E-05
Eutrophication potential - seawater	eq. kg N	3.55E-02	1.82E-04	2.17E-03	3.79E-02	6.22E-05	7.17E-05	9.11E-04	1.96E-03	-2.77E-04
Eutrophication potential - terrestrial	eq. mol N	4.45E-01	1.99E-03	1.90E-02	4.66E-01	5.44E-04	7.28E-04	8.73E-03	4.62E-03	-2.65E-03
Potential for photochemical ozone synthesis	eq. kg NMVOC	1.44E-01	6.05E-04	5.53E-03	1.50E-01	1.56E-04	4.41E-04	2.22E-03	1.28E-03	-6.74E-04
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	2.25E-04	4.99E-07	1.66E-06	2.27E-04	4.81E-08	4.34E-07	3.25E-07	5.43E-08	-9.86E-08
Abiotic depletion potential - fossil fuels	MJ	5.77E+02	2.09E+00	2.47E+01	6.03E+02	6.94E-01	1.86E+00	1.40E+00	2.80E-01	-4.26E-01
Water deprivation potential	eq. m^3	3.71E+01	9.66E-03	4.50E-01	3.76E+01	1.31E-02	9.24E-03	7.05E-01	1.09E-02	-2.14E-01

Table 4. LCA results for 1 m^2 of laminated board P2 - the resource use

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	8.25E+01	2.99E-02	2.57E+00	8.51E+01	7.53E-02	2.90E-02	-1.48E+02	-1.28E+01	-4.48E+01
Consumption of renewable primary energy resources used as raw materials	MJ	3.85E+02	0.00E+00	1.63E-02	3.85E+02	0.00E+00	0.00E+00	1.48E+02	1.28E+01	-4.49E+01
Total consumption of renewable primary energy resources	MJ	4.68E+02	2.99E-02	2.59E+00	4.70E+02	7.53E-02	2.90E-02	3.17E-02	4.69E-03	-9.62E-03
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	4.96E+02	2.09E+00	2.40E+01	5.22E+02	6.94E-01	1.86E+00	1.40E+00	-1.85E+00	-4.26E-01
Consumption of non-renewable primary energy resources used as raw materials	MJ	7.86E+01	0.00E+00	0.00E+00	7.86E+01	0.00E+00	0.00E+00	0.00E+00	2.13E+00	0.00E+00
Total consumption of non-renewable primary energy resources	MJ	5.78E+02	2.09E+00	2.48E+01	6.05E+02	6.94E-01	1.86E+00	1.40E+00	2.80E-01	-4.26E-01
Consumption of secondary materials	kg	6.74E-01	7.06E-04	2.59E-02	7.00E-01	7.31E-05	8.49E-04	3.39E-03	1.65E-04	-1.03E-03
Consumption of renewable secondary fuels	MJ	6.94E-01	7.70E-06	1.33E-05	6.94E-01	3.53E-07	1.08E-05	7.91E-06	1.55E-06	-2.40E-06
Consumption of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	9.36E-07	9.36E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net consumption of freshwater resources	m^3	1.10E+00	2.62E-04	6.30E-02	1.16E+00	1.80E-03	2.25E-04	-2.37E-03	-8.51E-05	7.20E-04

Table 5. LCA results for 1 m^2 of laminated board P2 – additional impacts indicators

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Particulate matter	disease incidence	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA	INA	INA	INA	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA	INA	INA	INA	INA	INA	INA

INA – Indicator Not Assessed

Table 6. LCA results for 1 m^2 of laminated board P2 – waste categories

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste neutralized	kg	2.93E+00	2.34E-03	2.50E-01	3.18E+00	7.28E-03	1.26E-03	1.90E-02	1.94E-03	-5.77E-03
Non-hazardous waste neutralised	kg	9.99E+01	4.16E-02	1.19E+01	1.12E+02	3.46E-01	3.84E-02	1.02E-01	1.39E+00	-3.11E-02
Radioactive waste	kg	3.47E-04	1.43E-05	2.31E-05	3.84E-04	5.29E-07	6.07E-07	4.07E-07	6.20E-08	-1.24E-07
Components for re-use	kg	2.58E-06	0.00E+00	1.24E-03	1.25E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	1.08E-02	8.45E-06	5.21E-02	6.29E-02	3.50E-05	1.38E-05	1.47E-05	2.13E-06	-4.47E-06
Materials for energy recovery	kg	6.37E-05	5.23E-08	2.68E-02	2.69E-02	7.90E-09	1.16E-07	2.05E-07	1.80E-08	-6.23E-08
Energy exported	MJ	1.13E+00	2.31E-03	3.08E-02	1.16E+00	8.92E-04	7.01E-04	4.67E-04	7.36E-05	-1.42E-04

Verification

The process of verification of this EPD is in accordance with ISO 14025 and ISO 21930.
After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years, if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804 + A2 and ITB PCR A
Independent verification corresponding to ISO 14025 (subclause 8.1.3) [x] external [ ] internal
External verification of EPD: Halina Prejzner, PhD Eng LCA, LCI audit and input data verification: Mateusz Kozicki, PhD Verification of LCA: Michał Piasecki, PhD, D.Sc. Eng

Note 1: The declaration owner has the sole ownership, liability and responsibility for the information provided and contained in EPD. Declarations within the same product category but from different programs may not be comparable. Declarations of construction products may not be comparable if they do not comply with EN 15804 + A2. For further information about comparability, see EN 15804 + A2 and ISO 14025. Depending on the application, a corresponding conversion factor such as the specific weight per surface area must be taken into consideration.

Note 2: ITB is a public Research Organization and Notified Body (EC Reg. no 1488) to the European Commission and to other Member States of the European Union designated for the tasks concerning the assessment of building products' performance. ITB acts as the independent, third-party verification organization (17065/17025 certified). ITB-EPD program is recognized and registered member of The European Platform – Association of EPD program operators and ITB-EPD declarations are registered and stored in the international ECO-PORTAL.

Normative references

- ITB PCR A v. 1.6 General Product Category Rules for Construction Products
- EN 14322 Wood-based boards – Laminated boards for interior applications – Definition, requirements and classification
- EN 312 Particleboards – Technical requirements for P2 type boards
- EN 13986:2004+A1:2015 - Wood-based panels for use in construction. Characteristics, evaluation of conformity and marking.
- EN 622-1:2003 Fibreboards - Specifications - Part 1: General requirements
- ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets – Service life planning – Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets – Service life planning – Part 8: Reference service life and service-life estimation
- EN 15804 + A2: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- ISO 14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification
- PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- KOBiZE Emissions (CO_2, SO_2, NO_x, CO and total dust) from electricity, December 2023

LCA, LCI audit and input data verification
Mateusz Kozicki, PhD

qualified electronic signature

On behalf of Head of the Thermal Physic, Acoustics and Environment Department
Michał Piasecki, Prof. ITB

qualified electronic signature

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Thermal Physics, Acoustics and Environment Department
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CERTIFICATE № 867/2025
of TYPE III ENVIRONMENTAL DECLARATION

Products:

Laminated particleboard P2

Manufacturer:

Woodeco sp. z o.o.
ul. Strzegomska 42AB, 53-611 Wrocław, Poland

confirms the correctness of the data included in the development of
Type III Environmental Declaration and accordance with the requirements of the standard

EN 15804+A2

Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.

This certificate, issued on 28th November 2025 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics and Environment Department
Agnieszka Winkler-Skalna, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, November 2025