Type III Environmental Product Declaration No. 783/2025

Issuance date: 14.03.2025
Validity date: 14.03.2030

DREWEKO WOODEN ENGINEERED FLOORS

Owner of the EPD:

DREWEKO Sp. z o.o.
Producent Parkietów
i Podłóg

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Tel.: +48 17 222 10 47

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Contact: info@dreweko.pl

EPD Program Operator:

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Type III Environmental Product Declaration No.783/2025

ITB is the verified member of The European Platform for EPD program operators and LCA practitioner
http://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:	2024
Product standard:	EN 13489:2017-11
Service Life:	30 years
PCR:	ITB-PCR A, v. 1.6
Declared unit:	$1m^2$
Reasons for performing LCA:	B2B
Representativeness:	Polish, European

MANUFACTURER

Dreweko Sp. z o.o. is a manufacturer of engineered flooring. In response to changing needs and trends, Dreweko continuously diversifies its wide range of products and colors with new designs. Dreweko floors have already reached customers on every continent. The company operates two large production facilities equipped with modern machinery, and a highly qualified, trusted team, allowing it to meet the demands of clients from around the world. Dreweko's commitment to ecology is evident in its use of natural, legally sourced materials, and its fully closed production process that generates no waste harmful to the environment.

PRODUCTS DESCRIPTION AND APPLICATION

The EPD covers Dreweko's engineered wood flooring range including diverse collections tailored to the aesthetic and functional needs of modern interiors. Each product is crafted with precision to highlight the natural beauty and texture of oak, available in various :
- Dimensions : thickness 10-20 mm, widths 70-300 mm, lengths 350-3000 mm, with a density of 685 kg/m³ per board,
- Finishes: smooth, brushed, aged, oiled and varnished,
- Colour options: stained with either color oils or through chemical reactions that alter the wood's chemical and physical properties.

These floors are available in multiple grades, including rustic and prime, to suit both residential and commercial applications.

Dreweko's engineered floors are ideal for interior applications, providing stability and durability suitable for both high-traffic and private spaces. The multi-layered construction, featuring a plywood base between 6-15 mm thick and a solid wood top layer, ensures resilience in varied climates.
Each product meets environmental standards, addressing the needs of eco-conscious consumers and fulfilling sustainable building requirements.

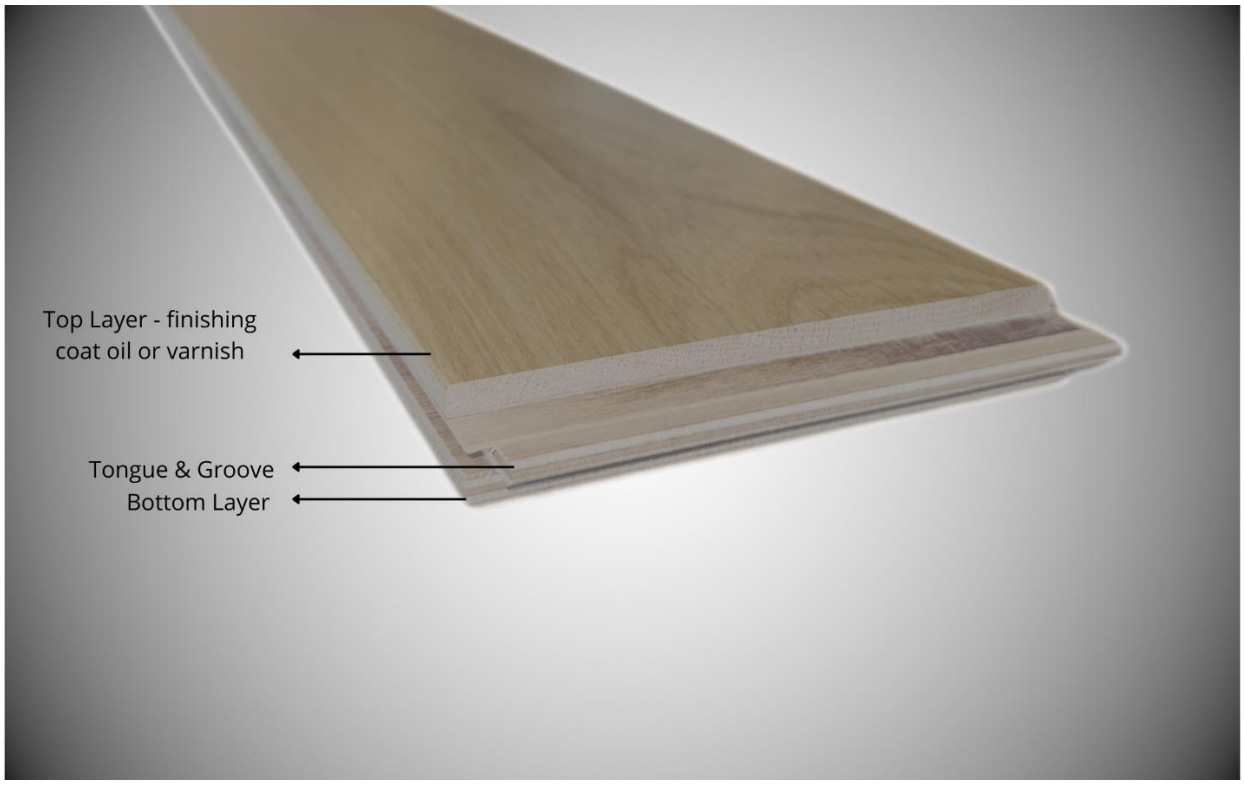


Fig. 1 Construction of a wooden engineered floorboard offered by Dreweko Sp. z o.o.

Product details and technical properties	
Construction	2-Layered Engineered
Spiece	European Oak
Pattern	Plank, Herringbone, Chevron 45° & 60°
Process	Sanded, Light Smoked, Fully Smoked
Finish	Unfinished, UV oiled, UV lacquered
Profile	Tongue & Groove
Edge Profile	2/4 Sided Bevelled Edge, Square Edge
Top Layer	3 mm/ 4 mm/ 6 mm
Backing	Exterior Birch Plywood
Glue	Water based white glue
Thickness	10 mm-20 mm
Width	70 mm-300 mm
Lenghts	350 mm-3000 mm
Grade	Prime / 1-Bis / Rustic A / Rustic B
Maintance	Comprehensive maintenance instructions and materials are available from Dreweko for all floors.
Origin	Europe
Responsible Certification	Yes, FSC NC-COC-013842
Formaldehyde Emission	Class E1
Content of PCP	PCP < 5×10^{-6}
CE Certificate	Yes, BOD-20-04-01-02
Reaction to fire	Cfl-s1 : 6 mm top layer / Dfl-s1 : 3 mm & 4mm top layer
Density	685 kg/m^3

Table 1. Product details and technical properties of Dreweko Sp. z o.o. wooden engineered floorboards.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Unit

The declared unit is 1 m^2 of wooden engineered floors

System boundary

The life cycle analysis of the declared products covers “Product Stage” A1-A3, C1-C4 and D modules in accordance with EN 15804+A2 and ITB PCR A, v 1.6 (cradle to gate with options). Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculation. 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.

Allocation

The allocation rules used for this EPD are based on general ITB’s document PCR A, v. 1.6. Input and output data from the production is inventoried and allocated to the production based on the surface area basis of the finished product. The declaration covers a family of wooden engineered floors. Their production resources and processing stages are basicly similar, so it is possible to average the production by product weigh so production is averaged for all products. Avoided burden approach is applied in the use of recycled and/or secondary raw materials, as well as loads and benefits beyond the system boundary from material recycling. No loads and benefits beyond the system boundary from energy recovery from the end of life of the product or packaging is included.

System limits

In the assessment, all available data from production have been considered, i.e. all raw materials/elements used as per assembly process, utilized thermal energy, and electric power consumption. Thus material and energy flows contributing less than 1 % of mass or energy have been considered. It can be assumed that the total sum of neglected processes does not exceed 5 % of energy usage and mass per module A, C or D. Machines and facilities required during production are neglected. The production of etiquettes, tape and glue was also not considered.

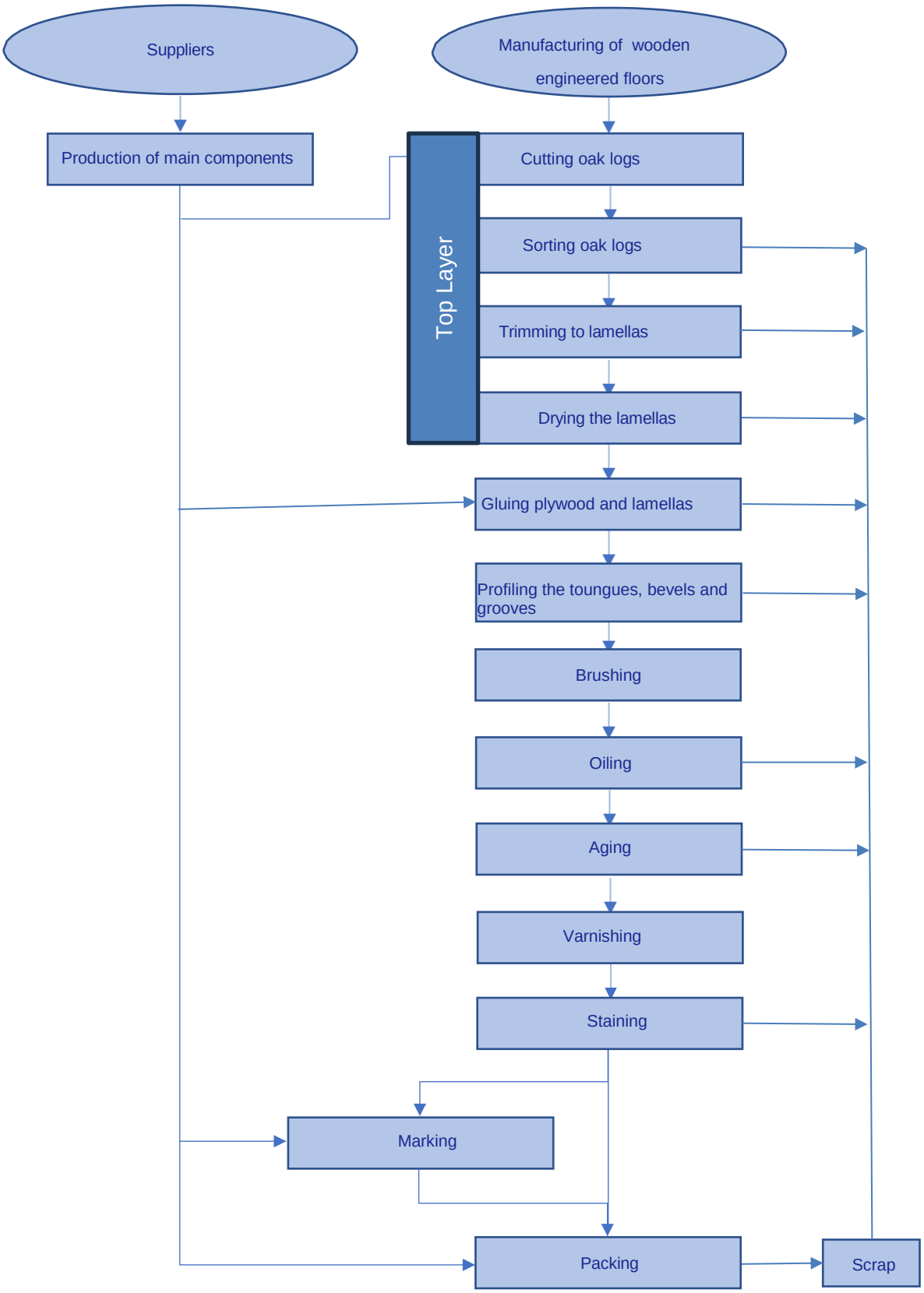
Modules A1 and A2: *Raw materials supply and transport*

Wooden semi-finished oak logs and plywood are products used for the production of the wooden engineered floors come from various sawmills. Ancillary materials such as water glue, putty, wood oil and packaging materials come from local Polish suppliers. Data on transport of the different products to the manufacturing plants is collected and modelled for factory by assessor. The wood used comes from domestic suppliers producing wood with FSC certificates. Data on transport of the different products to the manufacturing plants is collected and modelled for factory by assessor. Module A2 (transport) includes truck transport and uses European averages for fuel data.

Module A3: *Production*

Oak logs are purchased and sorted by quality and diameter, then cut to the required lengths and crowned. Then the logs are cut and wet sawn timber is obtained. The sawn timber is sorted into classes and width groups. Then the width of the sawn timber is trimmed and manipulated and it is cut into lamellas. The lamellas are dried to air-dry humidity and in drying chambers and sorted according to their classes. Purchased bases - plywood are cut to width, thickness and length. The base and lamellas are conditioned and glued with water glue. Then the base of the glued laminate is cut crosswise to the appropriate depth in order to give it elasticity. The gaps in the oak glued laminate are filled, the filler is dried and sanded. Then the tongues, grooves and bevels of the glued laminate are profiled and the final floorboard is obtained. Finally, the surface finish depends on the demand. You can choose a smooth surface, brushed, aged, oiled, varnished, stained with coloring stains, stained through a chemical reaction with the chemical and physical composition of the wood, refined with ammonia reacting with the chemical and physical composition of the wood. Finally, packaging in heat shrink film and loading onto euro pallets. The production processes carried out at **Dreweko Sp. z o. o.** are shown in Figure 2.

Figure 2. A basic scheme of **Dreweko Sp. z o. o.** wooden engineered floors manufacturing process.



Modules C1-C4 end-of-life (EOL) and D:

The declaration covers a wide range of wooden products for various purposes and usage scenarios and it is possible to directly specify the de-construction technology and the amount of energy for disassembly in C1 module. In the adapted end-of-life scenario, the de-constructed wooden products are transported to a sawmill distant by 30 km on > 16t lorry EURO 4 where are used as wooden scrap to produce a new wooden products. The recycling potential of C3 module is 90% and it is assumed that 10% of the products will end up in a landfill – C4 module (Table 2). Module D presents credits resulting from the recycling of the wooden scrap (used for wooden products production).

Table 2. End-of-life scenario for the product components.

Material	Recycling [%]	Landfilling [%]
Wooden scrap	90	10

Electricity at end-of-life (module C) has been modelled using an average European electricity mix as the location where the product reaches end-of-life is unknown.

Data collection period

The data for manufacture of the declared products refer to period between 01.01.2023 – 31.12.2023 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

Data quality

The data selected for LCA originate from ITB-LCI questionnaires completed by **Dreweko Sp. z o.o.** and verified during data audit. No data collected is older than five years and no generic datasets used are older than ten years. The representativeness, completeness, reliability, and consistency is judged as good. The background data for the processes come from the following resources database Ecoinvent v.3.9.1 and specific suppliers (EPDs for wood). Specific (LCI) data quality analysis was a part of the input data verification.

Assumptions and estimates

The impacts of the representative of the products were aggregated using weighted average.

Calculation rules

LCA was performed using openLCA tool developed in accordance with EN15804+A2. Emission of greenhouse gases was calculated using the IPCC 2021 GWP method with a 100-year horizon. Emission of acidifying substances, emission of substances to water contributing to oxygen depletion, emission of gases that contribute to the creation of ground-level ozone, abiotic depletion, and ozone depletion emissions where all calculated with the CML-IA baseline method.

Additional information

Polish electricity (Ecoinvent v 3.9.1 supplemented by actual national KOBiZE data) emission factor used is 0.698 kg CO_2/kWh. As a general rule, no particular environmental or health protection measures other than those specified by law are necessary.

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 m^2 of the averaged wooden engineered floors manufactured by **Dreweko Sp. z o.o.**.

The following life cycle modules (Table 3) were included in the analysis.

Table 3. System boundaries for the environmental characteristic of the 1 m^2 of the averaged wooden engineered floors manufactured by Dreweko Sp. z o.o. – environmental impacts (DU: 1 m^2).

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**

The declaration refers to declared unit (DU) – 1 m^2 of the wooden floors produced by **Dreweko Sp. z o.o.**.

The following life cycle modules (Table 3) were included in the analysis. The following tables 4-7 show the environmental impacts of the life cycle of declared modules (A1-A3, C1-C4, D).

Table 4. Life cycle assessment (LCA) results of the 1 m^2 of averaged wooden engineered floors manufactured by Dreweko Sp. z o.o. – environmental impacts (DU: 1 m^2).

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential - total	eq. kg CO_2	-2.79E+01	3.28E+00	2.10E+01	-3.70E+00	2.52E-01	3.93E-02	7.83E+00	3.59E-01	-7.81E+00
Greenhouse potential - fossil	eq. kg CO_2	5.10E+00	3.28E+00	7.51E+00	1.59E+01	2.50E-01	3.93E-02	7.84E+00	1.35E-02	-7.82E+00
Greenhouse potential - biogenic	eq. kg CO_2	-3.31E+01	2.88E-03	1.35E+01	-1.96E+01	1.37E-03	3.46E-05	-1.11E-02	3.46E-01	1.12E-02
Global warming potential - land use and land use change	eq. kg CO_2	4.16E-02	1.60E-03	1.66E-03	4.49E-02	7.42E-05	1.92E-05	1.53E-03	6.09E-06	-1.53E-03
Stratospheric ozone depletion potential	eq. kg CFC 11	1.37E-07	7.17E-08	3.24E-08	2.41E-07	1.04E-09	8.60E-10	5.80E-08	2.65E-10	-5.71E-08
Soil and water acidification potential	eq. mol H+	4.80E-02	1.36E-02	5.24E-02	1.14E-01	1.80E-03	1.60E-04	6.18E-02	1.30E-04	-6.02E-02
Eutrophication potential - freshwater	eq. kg P	2.97E-03	2.30E-04	8.72E-03	1.19E-02	3.00E-04	2.77E-06	3.23E-03	4.31E-06	-3.23E-03
Eutrophication potential - seawater	eq. kg N	1.77E-02	5.17E-03	2.20E-03	2.50E-02	2.60E-04	6.20E-05	8.49E-03	2.20E-04	-7.71E-03
Eutrophication potential - terrestrial	eq. mol N	1.94E-01	5.52E-02	5.94E-02	3.08E-01	2.26E-03	6.60E-04	9.11E-02	6.20E-04	-8.21E-02
Potential for photochemical ozone synthesis	eq. kg NMVOC	6.22E-02	1.99E-02	1.88E-02	1.01E-01	6.50E-04	2.40E-04	2.77E-02	2.50E-04	-2.53E-02
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	3.01E-05	1.08E-05	3.80E-06	4.47E-05	8.14E-08	1.30E-07	1.63E-06	3.30E-08	-1.59E-06
Abiotic depletion potential - fossil fuels	MJ	1.09E+02	4.71E+01	9.29E+01	2.49E+02	2.87E+00	5.64E-01	7.71E+01	1.86E-01	-7.67E+01
Water deprivation potential	eq. m^3	9.69E+00	2.31E-01	1.79E+00	1.17E+01	5.39E-02	2.77E-03	5.46E-01	1.33E-02	-4.34E-01

Table 5. Life cycle assessment (LCA) results of the 1 m^2 of averaged wooden engineered floors manufactured by Dreweko Sp. z o.o. – environmental impacts (DU: 1 m^2).

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Particulate matter	disease incidence	1.13E-06	2.68E-07	7.95E-08	1.48E-06	2.97E-09	3.22E-09	6.64E-07	2.92E-09	-6.51E-07
Potential human exposure efficiency relative to U235	eg. kBq U235	1.58E+00	6.26E-02	2.54E-01	1.90E+00	8.24E-03	7.50E-04	1.01E-01	2.50E-04	-1.00E-01
Potential comparative toxic unit for ecosystems	CTUe	2.63E+01	2.31E+01	2.28E+01	7.22E+01	7.06E-01	2.76E-01	2.26E+01	1.42E-01	-2.25E+01
Potential comparative toxic unit for humans (cancer effects)	CTUh	5.19E-08	1.50E-09	5.04E-09	5.85E-08	9.04E-11	1.80E-11	3.92E-09	3.71E-10	-2.24E-09
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	1.00E-07	3.32E-08	1.30E-07	2.63E-07	4.02E-09	3.98E-10	7.26E-08	1.29E-09	-7.24E-08
Potential soil quality index	dimensionless	2.74E+03	2.78E+01	-2.57E+02	2.51E+03	6.05E-01	3.34E-01	5.79E+01	2.94E-01	-5.78E+01

Table 6. Life cycle assessment (LCA) results of the 1 m^2 of averaged wooden engineered floors manufactured by Dreweko Sp. z o.o..– environmental impacts (DU: 1 m^2).

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	5.66E+02	7.25E-01	-9.86E+01	4.69E+02	2.65E-01	8.69E-03	1.29E+01	3.21E-03	-1.29E+01
Consumption of renewable primary energy resources used as raw materials	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
Total consumption of renewable primary energy resources	MJ	5.66E+02	7.25E-01	-9.86E+01	4.69E+02	2.65E-01	8.69E-03	1.29E+01	3.21E-03	-1.29E+01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.05E+02	4.30E+01	9.15E+01	2.40E+02	2.85E+00	5.15E-01	7.44E+01	1.71E-01	-7.41E+01
Consumption of non-renewable primary energy resources used as raw materials	MJ	3.97E+00	4.09E+00	1.36E+00	9.42E+00	1.97E-02	4.90E-02	2.65E+00	1.51E-02	-2.63E+00
Total consumption of non-renewable primary energy resources	MJ	1.09E+02	4.71E+01	9.29E+01	2.49E+02	2.87E+00	5.64E-01	7.71E+01	1.86E-01	-7.67E+01
Consumption of secondary materials	kg	1.68E+00	5.10E-02	4.54E-01	2.18E+00	1.55E-02	6.10E-04	5.01E-02	2.60E-04	-4.97E-02
Consumption of renew. secondary fuels	MJ	4.35E-01	1.38E-02	2.67E-01	7.15E-01	8.90E-03	1.60E-04	1.99E-02	4.37E-05	-1.97E-02
Consumption of non-renewable secondary fuels	MJ	5.47E-01	2.70E-02	8.83E-01	1.46E+00	2.97E-02	3.20E-04	1.38E+01	1.20E-04	-1.38E+01
Net consumption of freshwater	m^3	2.28E-01	5.62E-03	2.31E-01	4.65E-01	7.63E-03	6.73E-05	5.18E-02	3.12E-05	-4.93E-02

Table 7. Life cycle assessment (LCA) results of the 1 m^2 of averaged wooden engineered floors manufactured by Dreweko Sp. z o.o..– environmental impacts (DU: 1 m^2).

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste	kg	1.57E-01	4.36E-02	1.53E-01	3.54E-01	8.35E-03	5.20E-04	1.44E-01	1.15E-03	-1.38E-01
Non-hazardous waste	kg	9.35E-01	2.24E+00	1.00E-01	3.28E+00	7.19E-03	2.69E-02	9.17E-02	2.32E-01	-9.08E-02
Radioactive waste	kg	4.00E-04	1.52E-05	6.24E-05	4.78E-04	0.00E+00	1.82E-07	2.44E-05	5.95E-08	-2.43E-05
Components for re-use	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
Materials for recycling	kg	7.47E-01	4.62E-02	4.45E-01	1.24E+00	1.50E-02	5.50E-04	3.99E-02	1.90E-04	-3.95E-02
Materials for energy recovery	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
Exported Energy	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

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, v 1.6
Independent verification corresponding to ISO 14025 (sub clause 8.1.3) [x] external [ ] internal
External verification of EPD: Mateusz Kozicki, PhD. LCA, LCI audit and input data verification: Bartosz Żymańczyk, M.Eng; Radosław Andrulewicz, M.Eng LCA verification: Michał Piasecki, PhD., D.Sc., Eng.

Note: The declaration owner has the sole ownership, liability, and responsibility for the declaration. Declarations within the same product category but from different programmes may not be comparable. Declarations of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Normative references

- ITB PCR A, v 1.6 General Product Category Rules for Construction Products
- EN 1090-2:2018 - Execution of steel structures and aluminium structures - Technical requirements for steel structures
- 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 15804:2012+A2:2019 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
- Ozkan, Elif & Elginoz, Nilay & Germirli Babuna, Fatos. (2018). Life cycle assessment of a printed circuit board manufacturing plant in Turkey. Environmental Science and Pollution Research, 2018
- KOBiZE Wskaźniki emisyjności CO_2, SO_2, NO_x, CO i pyłu całkowitego dla energii elektrycznej, 2023
- PN-EN 13489:2017-11 - Wood-flooring and parquet - Multi-layer parquet elements

Instytut Techniki Budowlanej
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Thermal Physics, Acoustics and Environment Department
02-656 Warsaw, Ksawerów 21

CERTIFICATE № 783/2025
of TYPE III ENVIRONMENTAL DECLARATION

Products:

DREWEKO wooden engineered floors

Manufacturer:

DREWEKO Sp. z o.o. Producent Parkietów i Podłóg
ul. Iwierzyce 35, 39-124 Iwierzyce, 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 14th March 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, March 2025