

ENVIRONMENTAL PRODUCT DECLARATION

EPD Ref. No. 2024-0053 - 2

SOLID WOOD GLUED PANELS

In accordance with EN 15804+A2



OWNER OF THE EPD:

Pol-Kres Edwood Sp. z o.o.
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Declared unit (DU): 1 m³

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1. GENERAL INFORMATION


This Environmental Product Declaration (EPD) is developed in accordance with the European standard EN 15804 and ISO 14025. It contains the information on the impacts of the declared construction materials on the environment.

EPDs may not be comparable if they do not comply with the EN 15804 standard and if the core systems are not based on the same database.

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Declared products	Solid wood glued panels: - edge panels - finger-joint panels - oil preserved finger-joint panels
Declaration reference numer	EPD Ref. No.: 2024-0053-2
PCR	PCR in accordance with EN 15804:2012+A2:2019
Date of issue	01-07-2024
Validity date	01-07-2029
Declared unit	1 m ³
Life cycle analysis (LCA)	Modules A1-A3, C1-C4, D
Service Life	Depending of application type, up to 30 years
Reason for performing LCA	Business-to-business
Representativeness	Polish product, 2023

2. VERIFICATION

This Environmental Product Declaration (EPD) has been verified in accordance with ISO14025 and is valid for 5 years from the date of issue if the underlying data have not changed significantly.

CEN EN 15804 standard serves as the main PCR document.
Independent verification corresponding to ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
Third party verifier:  Monika Kotkiewicz, CERTBUD Sp. z o.o.
External verification of EPD: Monika Kotkiewicz, CERTBUD Sp. z o. o. Input data verification, LCA: Krzysztof Bałkowiec, TBF Systemy Jakości Verification of LCA: Dominika Młot, CERTBUD Sp. z o. o.

Note: CERTBUD Sp. z o. o. is a notified body (No. 2310) of the European Commission and Member States designated for the tasks specified in the Regulation (EU) No 305/2011 of the European Parliament and of the Council laying down harmonised conditions for the marketing of construction products. In addition, CERTBUD Sp. z o.o. is a unit accredited by the Polish Centre for Accreditation - in the field of certification of construction products (accreditation number AC 158). CERTBUD Sp. z o.o. acts as an independent, third-party verification organization (17065/17025 certified).



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3. MANUFACTURER

Pol-Kres Edwood Sp. z o.o. is family based company specializing especially in oak processing since 1999, localized in Biała Podlaska, Poland.

Pol-Kres Edwood sp. z o.o. is one of the leading European manufacturer of hardwood solid wood edge glued panels. Company works on 4 independent facilities (sawmill, finger-joint panels, solid wood edge panels, solid wood surfaced furniture components). Pol-Kres Edwood sp. z o.o. is known for highly repetitive quality and deliveries on time. Thanks to this Edwood has convinced lots of customers at more than 28 markets, including West and Central Europe, Baltic countries, Scandinavia, South Korea, Japan, Israel, Malaysia and USA.

Constant investments in the expansion of facilities, modernization of technological lines and improvement of production processes increase the added value of the products manufactured by the company. The comprehensive nature of the production process enables quality and cost control in each link of the chain, and guarantees short and reliable lead times.

Social responsibility is an important aspect for Pol-Kres Edwood sp. z o.o. Since the beginning of the plant's existence, company has attached great importance to environmental and health and safety aspects, supports lots of social, sports and cultural initiatives on a local and national scale.

The company's portfolio consists mainly of products made of 100% solid wood, including:

- Table tops, table legs, furniture panels, cut to size panels;
- Stair components: treads, posts, spindles, handrails, risers, stringers;
- Cut to size, surfaces (S4S) furniture components;
- Window scantlings, door frames;
- Decorative acoustic wall panels
- DIN+ Oak pellets 6mm
- 5-axis CNC services.

The products are available in various colors and types of raw material, including:

- Oak;
- Smoked oak;
- Ash
- Thermo ash;
- Beech
- Thermo Beech;
- European Walnut;
- American Black Walnut;
- Thermo pine;
- Maple.

4. DESCRIPTION AND CLASSIFICATION OF PRODUCTS

Solid wood glued panels is made of lamellas of various lengths. There are two types of panels: edge glued panels and finger-joint panels. Edge glued panels are made of long lamellas and finger-joint are made of shorter lamellas. Glued panels has a wide range of applications, including kitchen board production or staircase components.

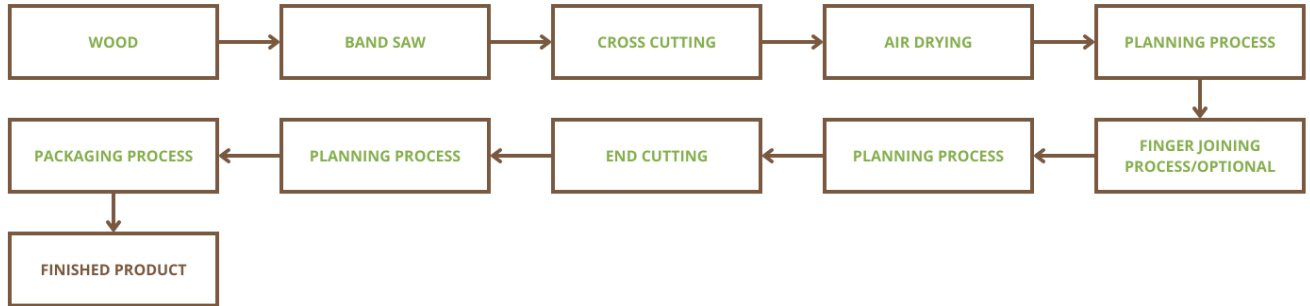


Figure 4.1: Glued panels production scheme



5. LIFE CYCLE ASSESSMENT (LCA) - RULES

5.1. DECLARED UNIT (DU)

The declaration refers do declared unit – 1 m³ of the solid wood glued panel manufactured by Pol-Kres Edwood sp. z o.o.

5.2. ALLOCATION

The allocation rules used for this EPD are based on EN 15804+A2. Glued panels are manufacture in two of Pol-Kres Edwood sp. z o.o. production plants - Łomaska 86 and Łomaska 92, Biała Podlaska, Poland. Allocation was done on product mass basis.

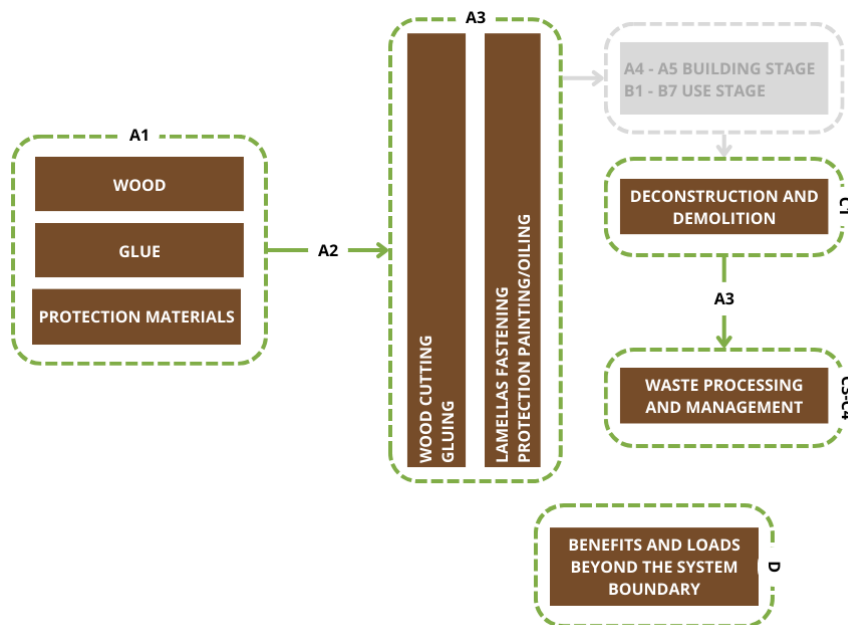
5.3. BIOGENIC CARBON CONTENT

The content of biogenic carbon in the product is determined quantitatively and results from the carbon dioxide removed from the atmosphere through the photosynthesis reaction. It is assumed that 50% of the dry mass of wood is carbon, 44% oxygen and hydrogen. Each kilogram of stored biogenic carbon is approximately 3.67 kg of CO₂ effectively removed from the atmosphere.

Biogenic carbon content	Unit
CO ₂ equivalent	44/12
Biogenic carbon content in product	≈ 291 kg C/m ³

5.4. SYSTEM BOUNDARY

The system limits for the environmental characteristics of glued panels are shown in figure 5.1. Data used in LCA calculation were declared by manufacturer and reflected the actual status of the year 2023.



Legend:

----- module defined

----- module not declared

Figure 5.2: System boundary

This Environmental Product Declaration includes a life cycle assessment (LCA) for the Cradle-to-Gate with modules C1-C4, D according to EN 15804+A2.

Impacts from the two production plant Pol-Kres Edwood Sp. z o. o. in Łomaska 86 and Łomaska 92 global line were inventoried and respectively 54,5% were allocated to the production of solid wood glued panels. All-important parameters from collected production data, i.e. all materials used by recipe, electricity consumed, internal fuel consumption and thermal energy, direct production waste, and the results of all available emission measurements were included in the calculations. In accordance with EN 15804, machinery and equipment (capital assets) needed for and during production, as well as the transportation of production facility employees, were not included.

The sum of omitted total flows does not exceed 1% and excluded consumption of renewable and non-renewable primary energy is no more than 1% according to EN 15804+A2.

5.4.1. A1 – RAW MATERIALS SUPPLY

This module takes into account the extraction and processing of all raw materials, as well as Energy consumption. The extraction and consumption of raw materials refers to specific mass shares in the production process per unit of declared product. Raw materials for the production of components of glued panels come from Polish and foreign suppliers.

5.4.2. A2 – TRANSPORT TO THE PRODUCTION SITE

Raw materials are transported to the production plant from Polish and foreign suppliers. Distances from the place of obtaining raw materials to the production plant are individual for each raw material. The means of transport were diversified depending on the method of delivery of raw materials. The adopted model includes road transport (average values) for each raw material. For calculation purposes European fuel averages are applied in module A2.

5.4.3. A3 – PRODUCTION

Module A3 covers all production-related process – including the production of edge glued panels and finger-joint components, their packaging and internal transport.

A schematic of the production line for glued panels at Pol-Kres Edwood is shown in Fig.4.1.

This module takes into account energy consumption and wastages generated in the production plant, as well as losses generated in the production process.

5.4.4. C1-C2 – DEMOLITION AND TRANSPORT

The end of life stage commence with demolition. C1 module covers object's deconstruction within selective waste collection at deconstruction location (tab. 5.1.).

C2 module is the beginning of waste treatment and describe waste transport. It was assumed that waste transport carried out to waste management plant and landfill (tab. 5.1.). For calculation purposes European fuel averages are applied.

5.4.5. C3-C4 – WASTE PROCESSING AND MANAGEMENT

For the purpose of life cycle analysis, scenarios were developed for modules C3 and C4. In C3 module was assumed that 100% of waste wood is use as biomass in energy recovery process. Waste wood would not undergo on a landfill – no emission included (tab.5.1.).

Table 5.1: The end-of-life stage assumption

Module	Assumption
C1	• Diesel consumption 240l
C2	• 50 km to the waste management plant
C3	• 100% wood – energy recovery
C4	• 0% - landfilling

5.4.6. D – LOADS AND BENEFITS BEYOND THE SYSTEM BOUNDRY

Module D describe the environmental benefits and loads of energy recovery of wood at the end of life cycle. In the adapted scenario, 100% of waste wood is thermally transformed as biomass in municipal incineration to produce energy.

DATA COLLECTION PERIOD	The data regarding the production of products refer to period from 01.01.2023r. to 31.12.2023r.
DATA QUALITY	The values determined to calculate the LCA originate from verified Pol-Kres Edwood Sp. z o.o. inventory data. The LCA analysis uses data prepared based on actual consumption at the production site. The details collected are no more than two years old.
CALCULATION RULES	The impacts of the representative Pol-Kres Edwood products were aggregated using weighted average. The weighted average method was used according to the percentage of each product in wall panels based on the relations to whole production quantity. Impacts were calculated for all glued panels and are shown in Tables 6.3, 6.4, 6.5. The LCA analysis was conducted in accordance with the EN 15804+A2.
BACKGROUND DATA	The main source of general and auxiliary data is the Ecoinvent 3.9 database.

6. LIFE CYCLE ASSESSMENT (LCA) - RESULTS

Life cycle assessment (LCA) of this environmental declaration covers A1-A3, C1-C4, D modules („cradle to gate” with modules C1-C4, D). Tabel 6.1. shows the LCA modules considered in calculating the environmental impact categories for the products covered by this declaration.

Table 6.1: Defined and not declared modules

Product stage			Construction process stage		Use stage							End of life stage				
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use stage	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse, recovery, recycling potential
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

X – modules defined

MND – modules not declared

Indicators describing environmental impact of product can be categorized as general environmental impacts, additional impacts and environmental aspects related to resources. The abbreviations and its explanations used to describe the environmental impact of glued panels are shown below (tab. 6.2).

The tables 6.3, 6.4, 6.5 present the results of the LCA analysis for Pol-Kres Edwood sp. z o.o. products.

Table 6.2: Abbreviations and its explanations used in LCA analysis

ENVIRONMENTAL IMPACT INDICATORS	
GWP-total	Global Warming Potential – total
GWP-fossil	Greenhouse potential - fossil
GWP-biogenic	Greenhouse potential - biogenic
GWP-luluc	Global warming potential - land use and land use change
ODP	Stratospheric ozone depletion potential
AP	Soil and water acidification potential

EP-freshwater	Eutrophication potential - freshwater
EP-marine	Eutrophication potential - seawater
EP-terrestrial	Eutrophication potential - terrestrial
POCP	Potential for photochemical ozone synthesis
ADP-minerals & metals*	Potential for depletion of abiotic resources - non-fossil resources
ADP-fossil*	Abiotic depletion potential – fossil fuels
WDP	Water deprivation potential

ADDITIONAL ENVIRONMENTAL IMPACTS INDICATORS

PM	Particulate matter
IRP**	Potential human exposure efficiency relative to U235
ETP-fw*	Potential comparative toxic unit for ecosystems
HTP-c*	Potential comparative toxic unit for humans (cancer effects)
HTP-nc*	Potential comparative toxic unit for humans (non-cancer effects)
SQP*	Potential soil quality index

ENVIRONMENTAL ASPECTS RELATED TO RESOURCE INDICATORS

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
PEN-RE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
RE	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	Use of net fresh water

ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES INDICATORS

HWD	Hazardous waste disposed
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NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for reuse
MFR	Materials for recycling
MER	Materials for energy recovery
EEE	Exported electrical energy
EET	Exported thermal energy

*The results should be used with caution because there is high uncertainty or limited experience with this indicators.

**Apply mainly the possible impact of the nuclear fuel cycle on human resulting from low ionizing radiation

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Table 6.3: Solid wood edge panels LCA analysis results

Results per 1 m ³ : edge panels										
ENVIRONMENTAL IMPACTS										
PARAMETER	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-total	eq. kg CO2	-5.57E+02	1.96E+01	4.89E+02	-4.86E+01	7.26E-02	3.41E+00	1.00E+03	0.00E+00	-3.09E+03
GWP-fossil	eq. kg CO2	1.52E+02	1.96E+01	4.86E+02	6.58E+02	7.26E-02	3.40E+00	1.06E+01	0.00E+00	-3.08E+03
GWP-biogenic	eq. kg CO2	-7.10E+02	1.73E-02	2.63E+00	-7.08E+02	1.57E-05	2.61E-03	9.93E+02	0.00E+00	-1.66E+01
GWP-luluc	eq. kg CO2	1.07E+00	9.72E-03	1.48E-01	1.22E+00	8.17E-06	1.66E-03	2.93E-03	0.00E+00	-9.40E-01
ODP	eq. kg CFC 11	2.42E-06	4.26E-07	2.40E-06	5.25E-06	1.15E-09	7.73E-08	1.95E-07	0.00E+00	-1.47E-05
AP	mol H+	9.50E-01	4.27E-02	3.59E+00	4.58E+00	6.73E-04	8.43E-03	1.12E-01	0.00E+00	-2.28E+01
EP-freshwater	eq. kg P	5.37E-02	1.40E-03	5.88E-01	6.43E-01	2.23E-06	2.51E-04	4.68E-03	0.00E+00	-3.73E+00
EP-marine	eq. kg N	3.19E-01	1.07E-02	5.07E-01	8.37E-01	3.12E-04	2.30E-03	5.88E-02	0.00E+00	-3.21E+00
EP-terrestrial	eq. mol N	3.43E+00	1.09E-01	4.45E+00	7.98E+00	3.39E-03	2.36E-02	5.65E-01	0.00E+00	-2.82E+01
POCP	eq. kg NMVOC	1.27E+00	6.62E-02	1.29E+00	2.62E+00	1.00E-03	1.38E-02	1.44E-01	0.00E+00	-8.13E+00
ADP-minerals & metals	eq. kg Sb.	5.64E-04	6.63E-05	1.98E-03	2.61E-03	2.60E-08	9.75E-06	2.27E-05	0.00E+00	-1.26E-02
ADP-fossil	MJ	3.58E+03	2.80E+02	5.59E+03	9.45E+03	9.58E-01	5.21E+01	9.24E+01	0.00E+00	-3.52E+04
WDP	eq. m3	8.71E+01	1.40E+00	1.06E+02	1.94E+02	2.37E-03	2.67E-01	4.54E+01	0.00E+00	-6.71E+02
ADDITIONAL IMPACTS										
PM	Disease incidence	5.25E-05	1.44E-06	6.44E-06	6.04E-05	1.88E-08	3.37E-07	1.21E-06	0.00E+00	-4.04E-05
IRP	eq. kBq U235	2.33E+01	3.82E-01	1.61E+01	3.98E+01	4.51E-04	6.52E-02	1.12E-01	0.00E+00	-1.02E+02
ETP-fw	CTUe	7.98E+02	1.38E+02	1.62E+03	2.55E+03	4.55E-01	2.49E+01	3.15E+02	0.00E+00	-1.01E+04
HTTP-c	CTUh	1.66E-07	8.99E-09	2.07E-07	3.82E-07	2.23E-11	1.52E-09	1.93E-06	0.00E+00	-1.31E-06
HTTP-nc	CTUh	1.79E-06	1.98E-07	9.56E-06	1.15E-05	1.56E-10	3.72E-08	1.35E-06	0.00E+00	-6.07E-05
SQP	dimensionless	1.03E+05	1.66E+02	1.22E+03	1.04E+05	6.38E-02	5.24E+01	2.59E+01	0.00E+00	-7.72E+03

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ENVIRONMENTAL ASPECTS RELATED TO RESOURCE

PERE	MJ	1.77E+04	4.43E+00	5.31E+02	1.83E+04	5.41E-03	7.56E-01	2.31E+00	0.00E+00	-3.37E+03
PERM	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
PERT	MJ	1.77E+04	4.43E+00	5.31E+02	1.83E+04	5.41E-03	7.56E-01	2.31E+00	0.00E+00	-3.37E+03
PEN-RE	MJ	3.29E+03	2.56E+02	5.55E+03	9.09E+03	8.70E-01	4.75E+01	8.80E+01	0.00E+00	-3.49E+04
PENRM	MJ	2.90E+02	2.42E+01	4.40E+01	3.59E+02	8.74E-02	4.52E+00	4.37E+00	0.00E+00	-2.51E+02
PENRT	MJ	3.58E+03	2.80E+02	5.59E+03	9.45E+03	9.58E-01	5.21E+01	9.24E+01	0.00E+00	-3.52E+04
SM	MJ	3.53E+01	3.11E-01	3.04E+01	6.60E+01	5.53E-04	5.21E-02	4.06E-01	0.00E+00	-1.90E+02
RSF	MJ	6.34E+00	8.48E-02	1.71E+01	2.35E+01	6.10E-05	1.27E-02	1.55E-02	0.00E+00	-1.08E+02
NRSF	MJ	6.97E+00	1.80E-01	5.89E+01	6.61E+01	1.65E-04	2.64E-02	7.03E-02	0.00E+00	-3.74E+02
FW	m3	1.92E+00	3.40E-02	1.48E+01	1.67E+01	5.13E-05	6.95E-03	-1.49E-01	0.00E+00	-9.32E+01

ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

HWD	kg	3.86E+00	2.63E-01	1.67E+01	2.08E+01	7.96E-04	4.88E-02	5.02E+00	0.00E+00	-1.05E+02
NHWD	kg	3.16E+01	1.34E+01	1.87E+01	6.37E+01	5.90E-04	4.48E+00	9.67E+00	0.00E+00	-1.18E+02
RWD	kg	5.95E-03	9.30E-05	3.95E-03	9.99E-03	1.04E-07	1.57E-05	2.78E-05	0.00E+00	-2.50E-02
CRU	kg	-3.63E-19	-1.09E-20	4.84E-19	1.10E-19	-7.30E-24	-9.89E-22	2.06E-21	0.00E+00	-3.09E-18
MFR	kg	1.14E+01	2.82E-01	2.92E+01	4.08E+01	4.55E-04	4.49E-02	2.33E-01	0.00E+00	-1.85E+02
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
EEE	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
EET	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

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Table 6.4: Solid wood finger-joint panels LCA analysis results

Results per 1 m ³ : finger-joint panels										
ENVIRONMENTAL IMPACTS										
PARAMETER	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-total	eq. kg CO2	-5.57E+02	1.96E+01	2.36E+02	-3.02E+02	7.26E-02	3.41E+00	1.00E+03	0.00E+00	-3.09E+03
GWP-fossil	eq. kg CO2	1.52E+02	1.96E+01	2.34E+02	4.06E+02	7.26E-02	3.40E+00	1.06E+01	0.00E+00	-3.08E+03
GWP-biogenic	eq. kg CO2	-7.10E+02	1.73E-02	1.27E+00	-7.09E+02	1.57E-05	2.61E-03	9.93E+02	0.00E+00	-1.66E+01
GWP-luluc	eq. kg CO2	1.07E+00	9.73E-03	7.14E-02	1.15E+00	8.17E-06	1.66E-03	2.93E-03	0.00E+00	-9.40E-01
ODP	eq. kg CFC 11	2.42E-06	4.26E-07	1.20E-06	4.04E-06	1.15E-09	7.73E-08	1.95E-07	0.00E+00	-1.47E-05
AP	mol H+	9.50E-01	4.28E-02	1.73E+00	2.72E+00	6.73E-04	8.43E-03	1.12E-01	0.00E+00	-2.28E+01
EP-freshwater	eq. kg P	5.37E-02	1.40E-03	2.82E-01	3.37E-01	2.23E-06	2.51E-04	4.68E-03	0.00E+00	-3.73E+00
EP-marine	eq. kg N	3.19E-01	1.08E-02	2.44E-01	5.74E-01	3.12E-04	2.30E-03	5.88E-02	0.00E+00	-3.21E+00
EP-terrestrial	eq. mol N	3.43E+00	1.09E-01	2.14E+00	5.68E+00	3.39E-03	2.36E-02	5.65E-01	0.00E+00	-2.82E+01
POCP	eq. kg NMVOC	1.27E+00	6.63E-02	6.23E-01	1.96E+00	1.00E-03	1.38E-02	1.44E-01	0.00E+00	-8.13E+00
ADP-minerals & metals	eq. kg Sb.	5.65E-04	6.63E-05	9.52E-04	1.58E-03	2.60E-08	9.75E-06	2.27E-05	0.00E+00	-1.26E-02
ADP-fossil	MJ	3.59E+03	2.80E+02	2.71E+03	6.57E+03	9.58E-01	5.21E+01	9.24E+01	0.00E+00	-3.52E+04
WDP	eq. m3	8.72E+01	1.40E+00	5.08E+01	1.39E+02	2.37E-03	2.67E-01	4.54E+01	0.00E+00	-6.71E+02
ADDITIONAL IMPACTS										
PM	Disease incidence	5.25E-05	1.44E-06	3.14E-06	5.71E-05	1.88E-08	3.37E-07	1.21E-06	0.00E+00	-4.04E-05
IRP	eq. kBq U235	2.33E+01	3.83E-01	7.73E+00	3.15E+01	4.51E-04	6.52E-02	1.12E-01	0.00E+00	-1.02E+02
ETP-fw	CTUe	7.98E+02	1.38E+02	7.92E+02	1.73E+03	4.55E-01	2.49E+01	3.15E+02	0.00E+00	-1.01E+04
HTTP-c	CTUh	1.66E-07	8.99E-09	9.99E-08	2.75E-07	2.23E-11	1.52E-09	1.93E-06	0.00E+00	-1.31E-06
HTTP-nc	CTUh	1.79E-06	1.99E-07	4.60E-06	6.58E-06	1.56E-10	3.72E-08	1.35E-06	0.00E+00	-6.07E-05
SQP	dimensionless	1.03E+05	1.66E+02	5.89E+02	1.04E+05	6.38E-02	5.24E+01	2.59E+01	0.00E+00	-7.72E+03

**ENVIRONMENTAL PRODUCT DECLARATION
SOLID WOOD GLUED PANELS**

ENVIRONMENTAL ASPECTS RELATED TO RESOURCE

PERE	MJ	1.77E+04	4.43E+00	2.55E+02	1.80E+04	5.41E-03	7.56E-01	2.31E+00	0.00E+00	-3.37E+03
PERM	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
PERT	MJ	1.77E+04	4.43E+00	2.55E+02	1.80E+04	5.41E-03	7.56E-01	2.31E+00	0.00E+00	-3.37E+03
PEN-RE	MJ	3.30E+03	2.56E+02	2.69E+03	6.24E+03	8.70E-01	4.75E+01	8.80E+01	0.00E+00	-3.49E+04
PENRM	MJ	2.91E+02	2.43E+01	2.34E+01	3.39E+02	8.74E-02	4.52E+00	4.37E+00	0.00E+00	-2.51E+02
PENRT	MJ	3.59E+03	2.80E+02	2.71E+03	6.58E+03	9.58E-01	5.21E+01	9.24E+01	0.00E+00	-3.52E+04
SM	MJ	3.53E+01	3.12E-01	1.48E+01	5.04E+01	5.53E-04	5.21E-02	4.06E-01	0.00E+00	-1.90E+02
RSF	MJ	6.34E+00	8.50E-02	8.21E+00	1.46E+01	6.10E-05	1.27E-02	1.55E-02	0.00E+00	-1.08E+02
NRSF	MJ	6.97E+00	1.80E-01	2.83E+01	3.55E+01	1.65E-04	2.64E-02	7.03E-02	0.00E+00	-3.74E+02
FW	m3	1.92E+00	3.40E-02	7.14E+00	9.09E+00	5.13E-05	6.95E-03	-1.49E-01	0.00E+00	-9.32E+01

ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

HWD	kg	3.86E+00	2.63E-01	8.03E+00	1.22E+01	7.96E-04	4.88E-02	5.02E+00	0.00E+00	-1.05E+02
NHWD	kg	3.16E+01	1.34E+01	9.08E+00	5.41E+01	5.90E-04	4.48E+00	9.67E+00	0.00E+00	-1.18E+02
RWD	kg	5.95E-03	9.31E-05	1.90E-03	7.95E-03	1.04E-07	1.57E-05	2.78E-05	0.00E+00	-2.50E-02
CRU	kg	-3.63E-19	-1.09E-20	2.31E-19	-1.44E-19	-7.30E-24	-9.89E-22	2.06E-21	0.00E+00	-3.09E-18
MFR	kg	1.14E+01	2.82E-01	1.40E+01	2.57E+01	4.55E-04	4.49E-02	2.33E-01	0.00E+00	-1.85E+02
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
EEE	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
EET	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

**ENVIRONMENTAL PRODUCT DECLARATION
SOLID WOOD GLUED PANELS**

Table 6.5: Solid wood oil preserved finger-joint panels LCA analysis results

Results per 1 m ³ : oil preserved finger-joint panels										
ENVIRONMENTAL IMPACTS										
PARAMETER	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-total	eq. kg CO2	-5.24E+02	2.44E+01	2.36E+02	-2.64E+02	7.26E-02	3.41E+00	1.00E+03	0.00E+00	-3.09E+03
GWP-fossil	eq. kg CO2	1.85E+02	2.43E+01	2.34E+02	4.44E+02	7.26E-02	3.40E+00	1.06E+01	0.00E+00	-3.08E+03
GWP-biogenic	eq. kg CO2	-7.10E+02	2.13E-02	1.27E+00	-7.09E+02	1.57E-05	2.61E-03	9.93E+02	0.00E+00	-1.66E+01
GWP-luluc	eq. kg CO2	1.08E+00	1.25E-02	7.14E-02	1.17E+00	8.17E-06	1.66E-03	2.93E-03	0.00E+00	-9.40E-01
ODP	eq. kg CFC 11	3.41E-06	5.30E-07	1.20E-06	5.14E-06	1.15E-09	7.73E-08	1.95E-07	0.00E+00	-1.47E-05
AP	mol H+	1.97E+00	5.29E-02	1.73E+00	3.74E+00	6.73E-04	8.43E-03	1.12E-01	0.00E+00	-2.28E+01
EP-freshwater	eq. kg P	6.43E-02	1.80E-03	2.82E-01	3.48E-01	2.23E-06	2.51E-04	4.68E-03	0.00E+00	-3.73E+00
EP-marine	eq. kg N	3.56E-01	1.31E-02	2.44E-01	6.14E-01	3.12E-04	2.30E-03	5.88E-02	0.00E+00	-3.21E+00
EP-terrestrial	eq. mol N	3.75E+00	1.33E-01	2.14E+00	6.02E+00	3.39E-03	2.36E-02	5.65E-01	0.00E+00	-2.82E+01
POCP	eq. kg NMVOC	1.43E+00	8.12E-02	6.23E-01	2.13E+00	1.00E-03	1.38E-02	1.44E-01	0.00E+00	-8.13E+00
ADP-minerals & metals	eq. kg Sb.	7.43E-04	8.77E-05	9.52E-04	1.78E-03	2.60E-08	9.75E-06	2.27E-05	0.00E+00	-1.26E-02
ADP-fossil	MJ	3.97E+03	3.48E+02	2.71E+03	7.02E+03	9.58E-01	5.21E+01	9.24E+01	0.00E+00	-3.52E+04
WDP	eq. m3	1.40E+02	1.78E+00	5.08E+01	1.92E+02	2.37E-03	2.67E-01	4.54E+01	0.00E+00	-6.71E+02
ADDITIONAL IMPACTS										
PM	Disease incidence	5.62E-05	1.70E-06	3.14E-06	6.10E-05	1.88E-08	3.37E-07	1.21E-06	0.00E+00	-4.04E-05
IRP	eq. kBq U235	2.62E+01	5.16E-01	7.73E+00	3.44E+01	4.51E-04	6.52E-02	1.12E-01	0.00E+00	-1.02E+02
ETP-fw	CTUe	1.31E+03	1.73E+02	7.92E+02	2.27E+03	4.55E-01	2.49E+01	3.15E+02	0.00E+00	-1.01E+04
HTTP-c	CTUh	1.94E-07	1.14E-08	9.99E-08	3.05E-07	2.23E-11	1.52E-09	1.93E-06	0.00E+00	-1.31E-06
HTTP-nc	CTUh	2.23E-06	2.46E-07	4.60E-06	7.07E-06	1.56E-10	3.72E-08	1.35E-06	0.00E+00	-6.07E-05
SQP	dimensionless	1.03E+05	1.94E+02	5.89E+02	1.04E+05	6.38E-02	5.24E+01	2.59E+01	0.00E+00	-7.72E+03

**ENVIRONMENTAL PRODUCT DECLARATION
SOLID WOOD GLUED PANELS**

ENVIRONMENTAL ASPECTS RELATED TO RESOURCE

PERE	MJ	1.78E+04	5.89E+00	2.55E+02	1.80E+04	5.41E-03	7.56E-01	2.31E+00	0.00E+00	-3.37E+03
PERM	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
PERT	MJ	1.78E+04	5.89E+00	2.55E+02	1.80E+04	5.41E-03	7.56E-01	2.31E+00	0.00E+00	-3.37E+03
PEN-RE	MJ	3.66E+03	3.18E+02	2.69E+03	6.66E+03	8.70E-01	4.75E+01	8.80E+01	0.00E+00	-3.49E+04
PENRM	MJ	3.08E+02	3.00E+01	2.34E+01	3.62E+02	8.74E-02	4.52E+00	4.37E+00	0.00E+00	-2.51E+02
PENRT	MJ	3.97E+03	3.48E+02	2.71E+03	7.02E+03	9.58E-01	5.21E+01	9.24E+01	0.00E+00	-3.52E+04
SM	MJ	3.79E+01	4.15E-01	1.48E+01	5.31E+01	5.53E-04	5.21E-02	4.06E-01	0.00E+00	-1.90E+02
RSF	MJ	7.09E+00	1.19E-01	8.21E+00	1.54E+01	6.10E-05	1.27E-02	1.55E-02	0.00E+00	-1.08E+02
NRSF	MJ	2.59E+01	3.33E-01	2.83E+01	5.45E+01	1.65E-04	2.64E-02	7.03E-02	0.00E+00	-3.74E+02
FW	m3	3.13E+00	4.35E-02	7.14E+00	1.03E+01	5.13E-05	6.95E-03	-1.49E-01	0.00E+00	-9.32E+01

ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

HWD	kg	1.08E+01	3.30E-01	8.03E+00	1.92E+01	7.96E-04	4.88E-02	5.02E+00	0.00E+00	-1.05E+02
NHWD	kg	6.27E+01	1.54E+01	9.08E+00	8.72E+01	5.90E-04	4.48E+00	9.67E+00	0.00E+00	-1.18E+02
RWD	kg	6.67E-03	1.26E-04	1.90E-03	8.70E-03	1.04E-07	1.57E-05	2.78E-05	0.00E+00	-2.50E-02
CRU	kg	-4.64E-19	-1.47E-20	2.31E-19	-2.48E-19	-7.30E-24	-9.89E-22	2.06E-21	0.00E+00	-3.09E-18
MFR	kg	1.27E+01	3.75E-01	1.40E+01	2.71E+01	4.55E-04	4.49E-02	2.33E-01	0.00E+00	-1.85E+02
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
EEE	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
EET	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

7. REFERENCES

- EN 15804:2012+A2:2019 Sustainability of construction works -- Environmental product declarations -- Core rules for the product category of construction products;
- ISO 14025:2006 Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures
- ISO 14044:2006 Environmental management -- Life cycle assessment -- Requirements and guidelines
- ISO 14067:2018 Greenhouse gases -- Carbon footprint of products -- Requirements and guidelines for quantification
- EN 15942:2021 Sustainability of construction works -- Environmental product declarations -- Communication format business-to-business
- EN 16485:2014 Round and sawn timber -- Environmental Product Declarations -- Product category rules for wood and wood-based products for use in construction
- EN 16449:2014 Wood and wood-based products -- Calculation of the biogenic carbon content of wood and conversion to carbon dioxide
- Ecoinvent 3.9 database



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CERTIFICATE No. EPD-2024-0053-2 **of TYPE III ENVIRONMENTAL DECLARATION**

Product:

SOLID WOOD GLUED PANELS

- edge panels
- finger-joint panels
- oiled finger-joint panels

Manufacturer:

Pol-Kres Edwood Sp. z o.o.
Łomaska 86
21-500 Biała Podlaska
Poland

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

EN 15804:2012+A2:2019

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

This certificate, issued for the first time on 01/07/2024 and is valid for 5 years or until amendment of mentioned Environmental Declaration.



**Director of the Certification
Department
CERTBUD Sp. z o.o.**

K. Pawłowski

Kamil PAWŁOWSKI

Warsaw, 01/07/2024 r.