ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Fritz EGGER GmbH & Co. OG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-EGG-20250488-IBA1-EN
Issue date	24.10.2025
Valid to	23.10.2030

EGGER P5 Structural Flooring Boards

EGGER UK Ltd

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

www.ibu-epd.com | https://epd-online.com

1. General Information

EGGER UK Ltd

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-EGG-20250488-IBA1-EN

This declaration is based on the product category rules:

Wood-based panels, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

24.10.2025

Valid to

23.10.2030

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

EGGER P5 Structural Flooring Boards

Owner of the declaration

Fritz EGGER GmbH & Co. OG
Weiberndorf 20
6380 St. Johann in Tirol
Austria

Declared product / declared unit

1 cubic meter average EGGER P5 Structural flooring boards (677 kg/m³)

Scope:

This document refers to unlaminated EGGER P5 chipboards produced at the site in Hexham, UK. The declaration applies to an average product in regard of thicknesses, edge processing (tongue & grooved, square edge) and cutting.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally

Florian Gehring,
(Independent verifier)

2. Product

2.1 Product description/Product definition

EGGER P5 structural flooring boards are the core element of the EGGER Advanced Structural Flooring system. Complying with *European Standard (EN) 312* standards, these P5-grade boards are used in domestic and commercial, load-bearing applications in humid conditions and are resistant to moisture.

Each board is machine profiled with a unique diamond-tipped tool to achieve a precise tongue and groove profile, for a tighter, more consistent board joint, which is easier and quicker to lay. Lightweight and able to be manually handled by one person.

Produced using locally sourced timber, recycled wood, and sawmill by-products . EGGER P5 boards are certified by the Forest Stewardship Council FSC®. At the end of their service life, the boards can be recycled through a dedicated waste-wood recycling service.

The *KIWA BDA Agrément® BAF-19-129-S-A-UK* confirms that EGGER panels are produced in accordance with established standards. It ensures that appropriate quality management, production quality systems, and procedures are implemented. Furthermore, it validates that the EGGER Advanced Structural Flooring System, when installed with EGGER Joint & Joist Adhesive and mechanical fixings, is suitable for its designated use as an internal joisted floor structure.
For placing the product on the market in the European Union/European Free Trade Associaction (EU/EFTA) (with the exception of Switzerland) the Regulation (EU) no. 305/2011 (CPR) and the following other provisions for harmonisation apply:

- *EN 13986:2004+A1:2015, Wood based panels for use in construction – Characteristics, evaluation of conformity and marking*

The product needs a declaration of performance in accordance with the CPR taking into consideration *EN 13986:2004+A1:2015, Wood based panels for use in construction – Characteristics, evaluation of conformity and marking*.

The CE-marking for the product takes into account the Declaration of Performance in accordance with the CPR and the proof of conformity with the following harmonised standards or based on the other provisions for harmonisation:

- *EN 13986:2004+A1:2015, Wood based panels for use in construction – Characteristics, evaluation of conformity and marking*

EGGER P5 has been assesses and certified as meeting the requirements of the standard *ISO 38200* and has demonstrated the implementation of a Due Diligence System in accordance with the United Kingdom Timber Regulation (UKTR).

Relevant national regulations apply to use.

2.2 Application

EGGER P5 boards are designed to be used as a load-bearing timber floor deck for use in joisted floor construction. Suitable for domestic flooring, refurbishments and new build projects, including modular and timber frame construction.

Suitable for use in damp and humid environments, such as kitchens, loft spaces and bathrooms. Its smooth surface and stable structure make it an ideal substrate for different types of floor coverings, including laminates, carpet and vinyl.

Tested in accordance with *British Standard (BS) 7976-2*, the boards are classified as moderate slip potential, in accordance with HSE guidelines.

EGGER P5 has a confirmed fire resistance of 30 minutes, tested in accordance with *BS EN 1365-2:2014*.

The system is classified as European Classification D-s2, d0 or D-s2, d2, dependent on the air gap, in accordance with *BS EN 13501-1*.

The expected lifespan of EGGER P5, when installed as per the EGGER Advanced Structural Flooring, is for the lifetime of the building, without the need for planned maintenance or repair in this period.

EGGER P5, when installed as per our fitting instructions, qualify for the EGGER Advanced Lifetime Guarantee, which covers the structural integrity of the boards when laid by a professional installer, using EGGER Joint & Joist Adhesive and mechanical fixings.

2.3 Technical Data

Structural engineering data The mechanical properties of EGGER P5 comply with the standard for P5 board types of *EN 312*.

Technical data sheets and UKCA & CE declarations of performance are available for further technical details on www.egger.com

Mechanical Properties	18mm	22mm	Unit
Gross Density according to EN 323 (Avg 2023)	691	674	kg/m³
Internal bond EN319	0.45	0.4	N/mm²
Bending strength EN 310	16	14	N/mm²
Bending modulus of elasticity EN 310	2,400	2,150	N/mm²
Thickness swelling 24 h EN 31	10	10	%
Swelling in thickness after cyclic test EN 321	12	11	%
Internal bond after cyclic test EN 321	0.22	0.2	N/mm²
Board moisture* EN 322	*4-13	*4-13	%
Formaldehyde emission class(es)**	E1	E1	-
Thermal conductivity EN 13986			-
Mean bulk density 600 kg/m³	0.12	0.12	W/(m*K)
Mean bulk density 900 kg/m³	0.18	0.18	W/(m*K)
Water vapour diffusion resistance value	15 -50	15-50	-
Air sound insulation EN 13986	R = 13 x lg(mA) + 14 (mA = board weight per unit area kg/m²)	R = 13 x lg(mA) + 14 (mA = board weight per unit area kg/m²)	kg/m²
Sound Abssorption EN 13986			
250 Hz bis 500 Hz	0.1	0.1	-
1000 Hz bis 2000Hz	0.25	0.25	-
Biological durability EN 13986			
EN 335-3	Hazard class 1 (without earth contact, dry 20°C / 65% relative humidity)	Hazard class 1 (without earth contact, dry 20°C / 65% relative humidity)	-
PCP content EN 13986	<5	<5	ppm

Performance values of the product as stated in the declaration of performance in relation to its essential characteristics according to:

EN 13986:2004+A1:2015, Wood-based panels for use in construction – Characteristics, evaluation of conformity and marking (UKCA / CE Marking)

EN 13986+A1:2015-04, Formaldehyde class E1, a limit value of 8 mg HCHO/100 g absolutely dry board may not be exceeded by the perforator method according to *ISO 12460-5*

Voluntary data: see "Technical datasheets" at www.egger.com (not part of CE-marking).

2.4 Delivery status

EGGER P5 is manufactured in a standard format with dimensions of 2400 x 600 mm, featuring a Tongue & Groove (T&G4) profile. It is available in two thicknesses: 18 mm and 22 mm.

EGGER P5 panels comply with *EN 324* tolerance standards with respect to length, width, squareness, edge straightness, and thickness.

18 mm boards are packaged in 80 per pack
22 mm boards are package in 64 per pack

For those requiring larger sizes or different T&G profiles, these options can be made available upon request.

EGGER P5 should be stored flat in a well-ventilated, dry area to prevent degradation and deformation.

2.5 Base materials/Ancillary materials

The component materials of raw chipboard comply in terms of their proportions to those of the basic material composition described in section 2.6. During compression, the aminoplast Melamine Urea Formaldehyde resin (MUF) is cross-linked three-dimensionally by an irreversible polycondensation reaction under the application of heat. The bonding agents are chemically stable and permanently bonded to the wood.

Component	Description
General Info.	Raw Chipboards with a thickness between 18 and 22 mm have an average density of 691 kg/m³ for 18mm and 674 kg/m³ for 22mm.
Wood Weight	Approximately 84–86% of the board is made up of fresh wood from sustainable thinning and clear fell measures and sawmill residues, mainly spruce and (>15% pine, larch and fir). Up to 50% of the raw material is covered by recycled wood.
Water	The board contains approximately 4–7% water.
MUF Glue	Approximately 8–10% of the board is made up of melamine urea formaldehyde resin. This aminoplastic adhesive hardens completely in the pressing process.
PMDI Glue	Less than 1% of the board is made up of polymer diphenylmethane diisocyanate, a polyurea precursor that is converted into PUR (polyurethane) and polyurea during board production. These serve the purpose of bonding the wood fibres.
Paraffin Wax Emulsion	Less than 1% of the board is made up of a paraffin wax emulsion, which is added to the recipe during application as a water repellent (improves moisture resistance).
ECHA List Substances	The product does not contain substances on the ECHA List of substances of very high concern (16.01.2020) above 0.1% by weight.
Other CMR Substances	The product does not contain other CMR substances of category 1A or 1B that are not on the candidate list, above 0.1% by weight % in at least one sub-product.
Biocidal Products	No biocidal products have been added to this building product or it has been treated with biocidal products (this refers to treated goods within the meaning of the Biocidal Products Regulation (EU) No. 528/2012).
Density Average*	The average density is taken from 2023 data.

Production scheme

This product/article/at least one partial article contains substances listed in the *SVHC candidate list* (date: 27.06.2024) exceeding 0.1 percentage by mass: no.

This product/article/at least one partial article contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no.

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): no.

2.6 Manufacture

The production process of EGGER P5 takes place at Hexham, UK and is manufactured according to the following steps:

1. Wood preparation - roundwood chipping - chip preparation - residual wood preparation
2. Drying the chips to approximately 2 – 3 % residual moisture
3. Sorting the chips
4. Applying glue to the chips
5. Spreading the glue-coated chips onto a forming belt
6. Pressing the "chip mat" in a continuously operating hot press
7. Formatting of the raw boards
8. Cooling the rawboards in star coolers
9. Sanding the upper and lower sides
10. Stacking into large stacks.
11. (T&G) Profile applied
12. Packaging and Banding

All wood scraps produced during production (trimming, cutting and milling scraps) are processed and fed back into the production process.

All sites maintain a certified quality management system according to *ISO 9001*.

2.7 Environment and health during manufacturing

Employee training on environmental and health aspects takes place on a regular basis. Emissions are kept well below the thresholds prescribed by law by means of the latest exhaust air treatment facilities. Waste water from production and waste water from the exhaust air treatment process are treated internally and returned to production. Noise protection measurements show that all readings from inside and outside the production plant fall below UK limit levels. Noise intensive plant components, such as the debarker and chopper, are appropriately encapsulated by structural measures. All waste streams are collected separately as far as possible and fed to a downstream use or recycling facility.

The *KIWA BDA Agrément® BAF-19-129-S-A-UK* confirms that EGGER P5 panels are produced in accordance with established standards. It ensures that appropriate quality management, production quality systems, and procedures are implemented.

2.8 Product processing/Installation

EGGER P5 can be manually sawn and drilled or worked on using electrical machinery. For optimal results, particularly with circular saws, tools with hard metal tips are recommended.

When utilizing hand tools without a dust extraction device, wear a respiratory mask for personal safety. Additionally, when applying the adhesive, wearing gloves is necessary to protect the skin from potential irritation or harm. Adhesive training is required for all professional and industrial users.

To get a complete walkthrough on the product installation process, using the EGGER Joint & Joist adhesive and mechanical fixings, consider referring to our Advanced Structural Flooring System Fitting Guide.

For more detailed information and specific processing recommendations, please visit www.egger.com/building

2.9 Packaging

Materials used for packaging can be classified and recycled by type. The subsequent list provides the corresponding *EWC* (European Waste Catalogue) waste code numbers:

Card Edge Protector: EWC 15 01 01
Paper Ticket: EWC 20 01 01
Polythene Envelope: EWC 15 01 04
End Cap (Printed Cardboard): EWC 15 01 01
Thick Wooden Block: EWC 15 01 03
Thin Wooden Block: EWC 15 01 03
Plastic Strap: EWC 15 01 04

2.10 Condition of use

The component materials of raw chipboard comply in terms of their proportions with those of the basic material composition described in section 2.5. During compression, the aminoplast, Melamine-Urea-Formaldehyde (MUF) resin is cross-linked three-dimensionally by an irreversible polycondensation reaction under the application of heat. The bonding agents are chemically stable and permanently bonded to the wood.

2.11 Environment and health during use

Environmental protection: When the described products are used properly in accordance with the area of application, there is no risk of water, air or ground contamination according to the current state of knowledge.

Health aspects: According to the current state of knowledge, no health hazards or adverse effects are to be expected from normal use of chipboard in accordance with its intended purpose. Natural wood constituents may be released in small quantities. With the exception of minor amounts of formaldehyde in quantities that are harmless to health, no emissions of hazardous substances can be detected (see section 7).

2.12 Reference service life

The service life of raw chipboard depends on the area of application in the specific project, taking into account the use class according to *EN 1995-1-1, DIN 68800-2* and appropriate maintenance. Resistance in use is defined by the use classes (P1 - P7).

If not all modules of the use stage are declared and no use stage scenario covering the full lifetime of the product is described, then the indication of the RSL (according to *ISO 15686*) is voluntary.

The service life in accordance with the *Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) table "Service lives of components for life cycle assessment"* according to BNB is declared as:

BBSR table, section 351 ceiling constructions, line 351.411 wooden ceiling constructions: ≥ 50 years

This service life is not a remaining service life (RSL) according to *ISO 15686*.

All boards are manufactured in accordance with *EN 312*. This standard ensures the manufacture of quality chipboard flooring. It stipulates the use of high-grade materials and assures moisture resistance, an adequate load-bearing capacity, and optimal performance characteristics. Complying with these standards assures the durability and extended lifespan of chipboard flooring.

2.13 Extraordinary effects

Fire

Raw chipboard has the following fire behaviour according to *EN 13501-1*. Change of the aggregate state (burning drip off/fall off): Chipboard does not become liquid when heated, therefore, burning/dripping is not possible.

Fire resistance

EGGER P5, when tested as part of the EGGER Advanced Structural Flooring System, has a confirmed fire resistance of 30 minutes, tested in accordance with *EN 1365-2*.

Fire protection

Name	Value
Building material class	D (normal flammability)
Burning droplets	d0 (non-dripping)
Smoke gas development	s2 (normal smoke development)

Water

No hazardous water contaminants are washed out. Chipboard is not resistant to continuous water influence, damaged parts, however, can easily be locally replaced.

Mechanical destruction

The fracture pattern of a chipboard shows a relatively brittle behaviour, whereby sharp edges can occur at the fracture edges of the boards (risk of injury). The resistance to mechanical impact corresponds to the respective board type P5.

2.14 Re-use phase

EGGER P5 chipboard can easily be collected separately in the case of selective dismantling when a building is converted or ends its use phase and can be re-used or recycled for purposes other than its original application. Exceptions to this are boards that have been bonded over their surface.

Reclamation for energy generation (in approved facilities): With the high calorific value of approx. 16.72 MJ/kg, energy recovery for the generation of process energy and electricity (combined heat and power plants) of chipboard residues accumulating on the construction site and chipboard from demolition measures is preferable to landfilling.

2.15 Disposal

Residues of EGGER P5 chipboard accumulating on the construction site, as well as those from demolition measures should primarily be recycled. If this is not possible, they must be sent for energy recovery instead of landfilling (waste code according to the *European Waste Catalogue EWC: 17 02 01 or 03 01 05*).

2.16 Further information

Extensive information and recommendations are available under www.egger.com

3. LCA: Calculation rules

3.1 Declared Unit

This EPD refers to a declared unit of 1 m³ of EGGER P5 structural flooring boards produced by EGGER. The declared unit refers to an average density of 677 kg/m³ and a wood moisture at delivery of app. 6 %.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m^3
Layer thickness	0.021	m
Gross density	677	kg/m^3
Wood moisture at delivery	6	%

The EPD includes a declaration of an average product from a manufacturer's factory. Input and output data are collected for the whole product group of P5 structural flooring boards produced at the production site in Hexham (United Kingdom) and are based on the annual quantities. It is not possible to allocate the input and output flows to the individual products in the production process.

EGGER P5 structural flooring boards are sold on the market with a thickness of 18 mm and 22 mm. The raw density of the different products shows minor variations compared to the average.

The EPD declares an average thickness and density of the P5 structural flooring boards and is valid for 100 % of the quantities produced at the Hexham site. The calculation of the declared density of the P5 structural flooring boards is volume-weighted. Production conditions are the same for all products considered. The products have a homogeneous structure and solely differ in their product thickness.

As a result, the variance of the average product is considered to be low. A linear correlation between the environmental impacts and the product weight is to be expected. Thus, the conversion of the declared unit into a specific product is possible using a mass-related scaling factor (surface weight of 12.4 kg/m² for the 18 mm board and 14.8 kg/m² for the 22 mm board).

3.2 System boundary

The life cycle assessment of average P5 structural flooring boards produced by EGGER refers to a cradle-to-gate analysis of the environmental impacts with modules C1–C4 and module D (A1–A3 + C + D). The following life cycle phases are part of the analysis:

Module A1–A3 | Production stage
The production stage includes the upstream burdens of raw material supply (roundwood, recycling wood, wood chips, adhesive system, auxiliary materials, etc.), their transport and the manufacturing at the production site in Hexham (United Kingdom). The chipboard production, the provision of the adhesive system, tongue and groove, as well as packaging are considered. The adhesive system is manufactured at the Hexham site. Associated material and energy flows are therefore based on primary data. Thermal energy is provided by the company's own biomass power plant. Additionally, natural gas is used at site and electricity is purchased from the UK grid (considered based on the UK residual mix: 0.42 kg CO_2eq/kWh). Production of product packaging is also included in module A1-A3.

Module C1 | Deconstruction and demolition
Manual removal was assumed for EGGER structural flooring boards. Referring energy demand is considered to be negligible, resulting in a declaration of '0' in module C1.

Module C2 | Transport to disposal
Module C2 includes the transport to waste treatment. In this case, transport by truck over a transport distance of 50 km is assumed.

Module C3 | Waste processing
Module C3 declares the biogenic carbon dioxide emissions from energy recovery at the end of the product's life. Additionally, the chipping after the removal of the products is considered. The wooden products and with them the material inherent properties leave the product system as secondary combustibles in module C3.

Module C4 | Disposal
The applied scenario declares the energetic recovery of the wooden products, therefore no environmental impacts are to be expected from waste processing of the products in C4.

Module D | Benefits and loads beyond the system boundary
Applying a European average scenario, module D describes the energetic recovery of the product at the end of life, including the corresponding energy substitution potentials.

3.3 Estimates and assumptions

Assumptions and approximations are applied in the case of a lack of representative data. All assumptions and approximations are documented precisely and represent a best-guess representation of reality.

A generic data set from the *MLC*-database for spruce roundwood was used as background data set for roundwood. A large part of the wood processed by EGGER represents coniferous fibrewood. For other wood types used, the data set for spruce roundwood should be considered as an approximation.

Regional applicability of the used background data refers to average data under European or British conditions. German

data were used for the British market whenever European or British average data were not available.

3.4 Cut-off criteria

The LCA model covers all available input and output flows, which can be represented based on robust data and from which a significant contribution can be expected. Data gaps are filled with conservative assumptions of average data or generic data if available and are documented accordingly. Only data with a contribution of less than 1 % were cut off. Thus, no data were neglected, of which a substantial impact is to be expected. All relevant data were collected comprehensively. Cutoff material- and energy flows were chosen carefully based on their expected quantitative contribution as well as potential environmental impacts. Thus, it can be assumed that the sum of all neglected input flows does not account for more than 5 % of the total material, water and energy flows. Environmental impacts of machines, plant and infrastructure were not included.

3.5 Background data

This study uses generic background data for the evaluation of upstream environmental impacts from *MLC* 2024.2 database in the *LCA FE*-software version 10, as well as recognised literature such as *Rüter & Diederichs (2012)*.

3.6 Data quality

The data was collected via spreadsheets specifically created by EGGER. Data collection follows an iterative process of clarifying questions via email, telephone calls or in personal/web meetings. Intensive discussions between EGGER and Daxner & Merl result in an accurate mapping of product-related material and energy flows. This leads to a high quality of foreground data collected.

Data collection relies on a consistent process according to *ISO 14044*.
The technological, geographical and time-related representativeness of the database was kept in mind when selecting background data. Whenever specific data were missing, either generic datasets or representative average data were used instead. The implemented *MLC*-background datasets refer to the latest versions available and are carefully chosen. The assessment of the robustness of the average can be found in Section 3.1.

3.7 Period under review

Foreground data were collected for the calendar year 2023, and the data are based on the volumes produced on an annual basis.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: United Kingdom

3.9 Allocation

Chippings and wood chips are used for the board production. A price allocation according to *Rüter & Diederichs (2012)* was used to calculate the environmental impact of these by-products from the sawing line. The carbon content and primary energy content of the products were excluded from the price allocation and balanced according to the material-inherent properties.

In addition to EGGER P5 structural flooring boards, the Hexham site also produces chipboards with other recipes, laminates and sells impregnated paper. The allocation of material and energy flows between product groups is based on evaluations from EGGER's controlling system.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The *MLC* 2024.2 background database in the *LCA FE*-software-version 10 was used to calculate the LCA.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

During tree growth, the wood assimilates carbon dioxide and stores biogenic carbon. The carbon stored in the product is declared in the following table.

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	290	kg C
Biogenic carbon content in accompanying packaging	1.2	kg C
Stored biogenic carbon dioxide in product	1064	kg CO2

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Installation into the building (A5)

The end of life of the product packaging is not declared in module A5.

Name	Value	Unit
Packaging (wood)	1.87	kg
Packaging (paper)	0.86	kg
Packaging (polyethylene)	0.25	kg
Packaging (polyethylene terephthalate)	0.02	kg

The end-of-life scenario used in this LCA study is based on the following assumptions:

End of life (C1-C4)

Name	Value	Unit
Energy recovery	677	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Net flow	676.67	kg/m³
Processing rate	100	%
Efficiency of power plant	68	%

The product reaches the end-of-waste status after removal from the building, transport to processing and chipping of the product. For the end of life of the wooden product, energy recovery as secondary fuel in a biomass powerplant is assumed. As the main sales market for the wooden products is

concentrated in the European region, plant-specific characteristic values correspond to a European average scenario (EU). The scenario considers a reprocessing rate of 100 % for the wooden products after removal from the building. This assumption has to be adjusted accordingly when applying the results in the building context. At the end of life of the product, the equilibrium moisture is comparable to the moisture content at delivery. This value can vary depending on the storage of the product before energy recovery.

5. LCA: Results

The following table contains the LCA results for a declared unit of 1 m³ of average EGGER P5 structural flooring boards (677 kg/m³).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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
X	X	X	MND	MND	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m³ EGGER P5 structural flooring boards (677 kg/m³)

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Global Warming Potential total (GWP-total)	kg CO_2 eq	-7.4E+02	0	2.62E+00	1.07E+03	0	-1.84E+03
Global Warming Potential fossil fuels (GWP-fossil)	kg CO_2 eq	3.21E+02	0	2.57E+00	4.05E+00	0	-3.64E+02
Global Warming Potential biogenic (GWP-biogenic)	kg CO_2 eq	-1.06E+03	0	7.38E-03	1.06E+03	0	-4.35E-02
Global Warming Potential luluc (GWP-luluc)	kg CO_2 eq	3.85E-01	0	4.31E-02	6.15E-04	0	-1.48E+03
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11 eq	1.24E-09	0	3.78E-13	9.18E-11	0	-5.5E-09
Acidification potential of land and water (AP)	mol H^+ eq	1.21E+00	0	9.09E-03	7.83E-03	0	5.75E-01
Eutrophication potential aquatic freshwater (EP-freshwater)	kg P eq	4.11E-04	0	1.1E-05	1.68E-05	0	-1.02E-03
Eutrophication potential aquatic marine (EP-marine)	kg N eq	7.22E-01	0	4.22E-03	1.95E-03	0	1.14E-01
Eutrophication potential terrestrial (EP-terrestrial)	mol N eq	6.14E+00	0	4.73E-02	2.05E-02	0	1.35E+00
Formation potential of tropospheric ozone photochemical oxidants (POCP)	kg NMVOC eq	2.03E+00	0	8.69E-03	5.17E-03	0	4.5E-01
Abiotic depletion potential for non fossil resources (ADPE)	kg Sb eq	1.59E-04	0	2.23E-07	7.58E-07	0	-5.1E-05
Abiotic depletion potential for fossil resources (ADPF)	MJ	6.93E+03	0	3.38E+01	8.5E+01	0	-9.32E+03
Water use (WDP)	m^3 world eq deprived	1.69E+01	0	3.97E-02	1.12E+00	0	-2.09E+01

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m³ EGGER P5 structural flooring boards (677 kg/m³)

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier (PERE)	MJ	1.07E+04	0	2.91E+00	1.08E+04	0	-3.69E+03
Renewable primary energy resources as material utilization (PERM)	MJ	1.08E+04	0	0	-1.07E+04	0	0
Total use of renewable primary energy resources (PERT)	MJ	2.15E+04	0	2.91E+00	6.14E+01	0	-3.69E+03
Non renewable primary energy as energy carrier (PENRE)	MJ	5.84E+03	0	3.38E+01	1.16E+03	0	-9.32E+03
Non renewable primary energy as material utilization (PENRM)	MJ	1.09E+03	0	0	-1.08E+03	0	0
Total use of non renewable primary energy resources (PENRT)	MJ	6.93E+03	0	3.38E+01	8.5E+01	0	-9.32E+03
Use of secondary material (SM)	kg	3.29E+02	0	0	0	0	0
Use of renewable secondary fuels (RSF)	MJ	1.34E+01	0	0	0	0	1.07E+04
Use of non renewable secondary fuels (NRSF)	MJ	0	0	0	0	0	1.08E+03
Use of net fresh water (FW)	m^3	9.14E-01	0	3.24E-03	4.7E-02	0	-1.74E+00

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m³ EGGER P5 structural flooring boards (677 kg/m³)

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	9.86E-07	0	1.29E-09	1.23E-07	0	-7.44E-06
Non hazardous waste disposed (NHWD)	kg	3.93E+00	0	5.52E-03	7.01E-02	0	1.32E+01
Radioactive waste disposed (RWD)	kg	1.94E-01	0	6.16E-05	1.36E-02	0	-8.17E-01
Components for re-use (CRU)	kg	0	0	0	0	0	0
Materials for recycling (MFR)	kg	0	0	0	0	0	0
Materials for energy recovery (MER)	kg	0	0	0	6.77E+02	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m³ EGGER P5 structural flooring boards (677 kg/m³)

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Incidence of disease due to PM emissions (PM)	Disease	ND	ND	ND	ND	ND	ND

	incidence						
Human exposure efficiency relative to U235 (IR)	kBq U235 eq	ND	ND	ND	ND	ND	ND
Comparative toxic unit for ecosystems (ETP-fw)	CTUe	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (carcinogenic) (HTP-c)	CTUh	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (noncarcinogenic) (HTP-nc)	CTUh	ND	ND	ND	ND	ND	ND
Soil quality index (SQP)	SQP	ND	ND	ND	ND	ND	ND

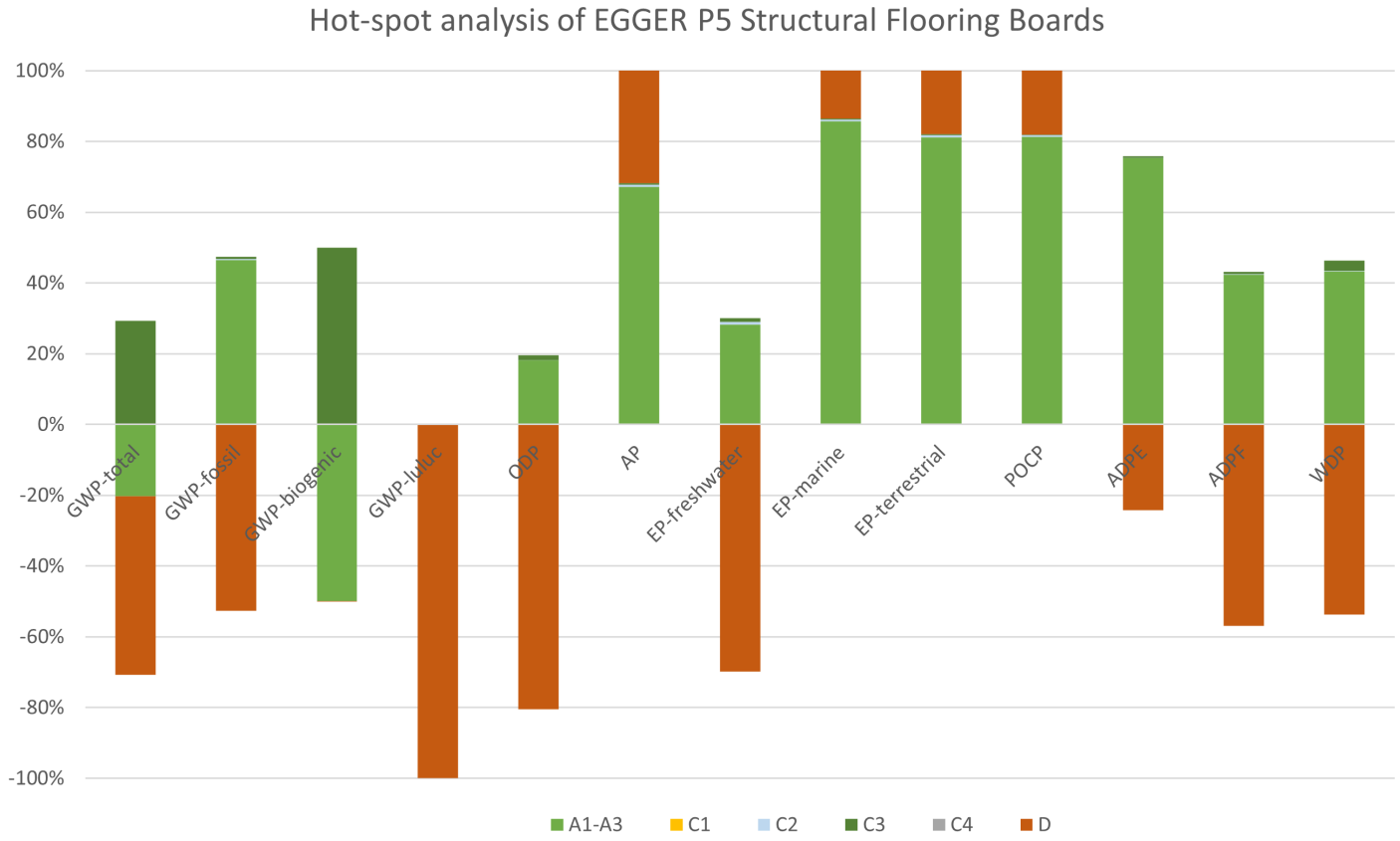
The additional and optional impact categories according to *EN 15804+*A2 are not declared, as the uncertainty of these indicators is to be classified as high.

Disclaimer 1 – for the indicators 'abiotic depletion potential for non-fossil resources', 'abiotic depletion potential for fossil resources', 'water (user) deprivation potential, deprivation- weighted water consumption'. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high, as there is limited experience with the indicator.

6. LCA: Interpretation

The following interpretation contains a summary of the LCA results referenced to a declared unit of 1 m³ of EGGER P5 structural flooring boards.

The global warming potential (GWP) of P5 structural flooring boards shows negative values in the production phase (**modules A1–A3**). These negative impacts result from the use of wood as a raw material. Wood sequesters biogenic carbon during tree growth. The sequestered carbon does not contribute to global warming as long as it is stored in the biomass.
After its use in the building, the product is assumed to be incinerated with energy recovery. As a result, the incorporated carbon is emitted again to the atmosphere, representing biogenic carbon dioxide emissions (**module C3**).
The energy use of waste wood was modelled to be CO_2-neutral.
The negative values in the end-of-life (**module D**) result from the energetic treatment of the product. As the energy produced can substitute (mainly fossil) fuels, an environmental net benefit is generated.



Potential global warming (GWP) from the production of EGGER P5 structural flooring boards (module A1–A3) mainly results from the supply chain of the used chemicals. In addition, direct emissions from production, represent an important driver in the environmental profile of the products.

The products have a homogeneous structure and solely differ in their product thickness. EGGER P5 structural flooring boards are delivered in thicknesses of 18 mm and 22 mm. The raw density of the different products shows minor variations compared to the average.

As a result, the variance of the average product is considered to be low. A linear correlation between the environmental impacts and the product weight is to be expected. Thus, the conversion of the declared unit into a specific product is possible using a mass-related scaling factor (surface weight of 12.4 kg/m² for the 18 mm board and 14.8 kg/m² for the 22 mm board).

7. Requisite evidence

7.1 Formaldehyde

Formaldehyde release according to test chamber method EN 717-1
Particleboard P5 acc. *EN 312*; faced
Test report no. 2121099/E1-2020/PB-11/2023/1, Testing Institute: EPH Dresden
Date: June 09 2023

Test pieces (TP) 2 TP ä 200x280 [mm] Temperature (T): 23°C ± 0.5K
Test chamber: KT-41 (0.225 m³) Rel. air humidity (RH); 45 ± 3%
Test period: 10/05/2023 - 07/06/2023 Air exchange ratio: 1.0 ± 0.05/h
Start tests: 11/05/2023 Loading ratio: 1.0 ± 0.02 m²/m³
Edge sealing: ratio; 1.5 m/m² Parameter recording; T; RH
Cancellation criteria *EN 717-1*: IV (672 h)
Result: Formaldehyde release measured values: 0.02 ppm, 27 µg/m³; measured values multiplied with factor two: 0.04 ppm, 54 µg/m³

Formaldehyde measurement performed according to ISO 12460-5

Name	Value	Unit
Perforator value acc. to ISO 12460-5 rel. to H = 6,5%	5.3	mg HCOH/ 100g dry bd

Test Report no. 2121099/2024/Ü1/PB/E1
Testing institute: EPH Dresden
Date: June 20 2024

7.2 VOC emissions

Unspecified as optional with shortened validity of EPD.

8. References

Standards

BS 7976-2
BS 7976-2, for building — Methods of measurement of buildings and building products.

DIN 68800-2
DIN 68800-2:2012-02, Wood preservation - Part 2: Preventive constructional measures in buildings.

EN 310
EN 310:1993, Wood-based panels — determination of modulus of elasticity in bending and of bending strength.

EN 312
EN 312:2011, Particleboards — Specifications.

EN 317
EN 317:1993, Particleboards and fibreboards — determination of swelling in thickness after immersion in water.

EN 319
EN 319:1993, Particleboards and fibreboards — determination of tensile strength perpendicular to the plane of the board.

EN 322
EN 322:1994, Wood-based panels — Determination of moisture content.

EN 324
DIN EN 324-1:1993-08, Wood-based panels — determination of dimensions of boards — part 1: determination of thickness, width and length.

EN 1365-2
BS EN 1365-2:2014, Fire resistance tests for loadbearing elements — Floors and roofs.

EN 1995
EN 1995-1-1:2010, Eurocode 5: Design of timber structures - Part 1-1: General - Common rules and rules for buildings.

EN 12664
EN 12664:2001, Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Dry and moist products of medium and low thermal resistance.

EN 13501-1
EN 13501-1:2018, Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests.

EN 13986
EN 13986:2004+A1:2015, Wood-based panels for use in construction — Characteristics, evaluation of conformity and marking.

EN 15804
EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

ISO 12460-5
ISO 12460-5:2015, Wood-based panels — Determination of formaldehyde release. Part 5: Extraction method (called the perforator method)

ISO 354
EN ISO 354:2003: Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:2003).

ISO 9001
DIN EN ISO 9001:2008-11, Quality Management Systems – Requirements.

ISO 12460-5
ISO 12460-5:2015, Wood-based panels — Determination of formaldehyde release. Part 5: Extraction method (called the perforator method)

ISO 14025
EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 14044
DIN EN ISO 14044:2006--10, Environmental management – Lifecycle assessment – Requirements and guidelines.

ISO 15686
ISO 15686:2011, Buildings and constructed assets — Service life planning.

ISO 38200
ISO 38200:2018, Chain of custody of wood and wood-based products.

Further References

BBSR
BBSR 2017, Useful lives of building components for life cycle analyses according to the Sustainable Building Assessment System, 2017, BBSR Germany 2017.

Biocidal Products Regulation (EU) No. 528/2012
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products.

CPR Regulation (EU) No 305/2011
CPR Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC.

ECHA-Candidate List
Candidate List of substances of very high concern for Authorisation (published in accordance with Article 59(10) ofthe REACH Regulation, 25.06.2025), see https://echa.europa.eu/de/candidate-list-table

EWC
European Waste Catalogue, Ordinance on the European Waste Catalogue (Waste Catalogue Ordinance AVV), reference Federal Official Journal I 2001, 3379.

IBU 2021
Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021
www.ibu-epd.com

KIWA BDA
KIWA BDA Agrément® BAF-19-129-S-A-UK, available at https://www.kiwa.com/gb/en-gb/services/certification/bda-agrement/

LCA FE
LCA FE 10, LCA for Experts Software System and Database for Life Cycle Engineering. Version 10.7.1.28. Sphera, 1992-2024.

MLC
MLC 2024.2, Database for Life Cycle Engineering implementedin LCA for Experts software system. DB 2024.2. Sphera, 1992-2024. Available at:
https://lcadatabase.sphera.com/

PCR Part A
Product category rules for building-related products andservices. Part A: Calculation rules for the life cycle assessmentand requirements for the project report in accordance with EN15804+A2:2019. Version 1.4. Berlin: Institut Bauen undUmwelte.V. (eds.), 2024.

PCR: Wood-based panels
Product category rules for building-related products and services. Part B: EPD requirements for wood-based panels.Berlin: Institut Bauen und Umwelt e.V., 01.08.2021.

Rüter & Diederichs (2012)
Rüter, S.; Diederichs, S.: Basic life cycle assessment data for construction products made of wood. Working report from the Institut für Holztechnologie und Holzbiologie No. 2012/1.Hamburg: Johann Heinrich von Thünen -Institut.

Publisher

Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Programme holder

Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Author of the Life Cycle Assessment

Daxner & Merl GmbH
Schleifmühlgasse 13/24
1040 Wien
Austria

+43 676 849477826
office@daxner-merl.com
www.daxner-merl.com

Owner of the Declaration

Fritz EGGER GmbH & Co. OG
Weiberndorf 20
6380 St. Johann in Tirol
Austria

+43 (0)50 600-0
info-sjo@egger.com
www.egger.at