ENVIRONMENTAL PRODUCT DECLARATION

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

Owner of the Declaration	Fritz EGGER GmbH & Co. OG Holzwerkstoffe
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
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Valid to	09.05.2026

EGGER timber kiln dried, rough sawn and planed
EGGER Sägewerk Brilon GmbH

Institut Bauen und Umwelt e.V.

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1. General Information

EGGER Sägewerk Brilon GmbH

Programme holder
IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-EGG-20200248-IBC1-EN

This declaration is based on the product category rules:
Solid wood products, 12.2018
(PCR checked and approved by the SVR)

Issue date
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Valid to
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Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.))

EGGER timber kiln dried, rough sawn and planed

Owner of the declaration
Fritz EGGER GmbH & Co. OG Holzwerkstoffe
Weiberndorf 20
6380 St. Johann in Tyrol
Austria

Declared product / declared unit
1 m³ kiln dried, rough sawn and planed timber (503 kg/m³) with a moisture content of 15%

Scope:
This environmental product declaration is based on a declared unit of 1 m³ kiln dried timber with an average density of 503 kg/m³ produced in the plant of Brilon, Germany. It depicts the two qualities rough sawn and planed.

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 14025:2010*
☐ internally ☒ externally

Matthias Klingler
(Independent verifier)

2. Product

2.1 Product description/Product definition

Kiln dried and planed EGGER timber is made from fresh spruce and pine logs (*Picea abies* and *Pinus sylvestris*). The logs are split along the grain to rectangular timber cross sections with at least 12 mm thickness. This is followed by the drying process and, in the case of *planed timber*, the planing process. Different ranges and qualities are differentiated by defined grading criteria. Essentially, there is grading by the strength, visually and by machine, and grading by optical and aesthetic aspects. The dry board raw density is 430 kg/m³ on average for spruce and 490 kg/m³ for pine.

The declared product is representative of the ranges produced.

Regulation (EU) no. 305/2011 (CPR) applies to bringing the product into circulation in the EU/EFTA (with the exception of Switzerland). The products require a declaration of performance according to *EN 14081-1:2005+A1:2011*, *Timber structures. Strength graded structural timber with rectangular cross section - Part 1: General requirements* and the CE marking.

Visual strength-grading takes place pursuant to *DIN 4074-1* or the *BS 4978*. Grading classes are assigned to European strength classes in line with *EN 338* pursuant to *EN 1912*. Machine strength-grading is carried out in accordance with *EN 14081-2, EN 14081-3 and EN 14081-4*. Additional product certifications are based on national requirements or application rules, and are available for EGGER timber for the Australian and North-American market, among others. Relevant national regulations apply to use.

2.2 Application

EGGER timber is used in construction for both decorative and constructive purposes. Strength-graded timber may be used for load-bearing building elements, e.g., in structural engineering, both as individual element or as lamella in a glued element, such as e.g. glue-laminated timber, plywood, or finger-jointed solid structural timber.

2.3 Technical Data

Structural engineering data

Name	Value	Unit
Wood types by trade names according to EN 1912	Spruce and pine	-
Wood moisture according to EN 13183-1	12 - 18	%
Use of wood preservatives (the test rating of the wood preservative according to DIN 68800-3 must be stated)	-	-
Compressive strength parallel according to EN 1995	17 - 26	N/mm²
Compressive strength rectangular according to EN 1995	-	N/mm²
Tensile strength parallel according to EN 1995	10 - 24	N/mm²
Tensile strength rectangular according to EN 1995	4	N/mm²
Modulus of elasticity according to EN 1995	8 - 14	N/mm²
Shear strength according to EN 1995	32 - 4	N/mm²
Shear modulus according to EN 1995	5 - 88	N/mm²
Dimensional deviation according to EN 336	Dimension tolerance 2	mm
Length (min. - max.)	2 - 54	m
Width (min. - max.)	3 - 35	m
Height (min. - max.)	12 - 15	m
Gross density load-bearing components according to EN 338, non-load-bearing components: according to DIN 68364	310 - 420	kg/m³
Surface quality (possible manifestations are to be mentioned)	rough sawn and planed	-
Risk class according to 68800-3	5	-
Thermal conductivity according to EN 12664	13	W/(mK)
Specific heat capacity according to EN 12664	16	kJ/kgK

The use of wood preservatives is not declared, given that no wood preservatives are used according to *DIN 68800-3*.

Performance values of the product according to the declaration of performance in relation to its essential characteristics in accordance with *EN 14081-1:2005+A1:2011*, *Timber structures. Strength graded structural timber with rectangular cross section - Part 1: General requirements* (not part of the CE marking).

2.4 Delivery status

EGGER timber is produced according to customer-specific quality requirements. The following dimensions, surfaces, and edge profiles can be executed:

Dimensions

	Minimum [mm]	Maximum [mm]
Thickness	12	150
Width	30	350
Length	2000	5400

Surface/edging profile

Product	Surface	Edging profile
Timber – kiln dried	rough sawn	sharp-edged
Timber – planed	planed	sharp-edged, rounded, bevelled

2.5 Base materials/Ancillary materials

Technically dried and planed EGGER timber consists of 100 % spruce (Picea abies) or pine (Pinus sylvestris). Excipients and additives are not used.

The product contains substances on the *ECHA List* of substances of very high concern (16.01.2020) above 0.1% by weight: no.

The product contains 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: 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): no.

2.6 Manufacture

The logs are delivered at the production site in Brilon and graded by quality. After debarking the logs are graded in the windrow. In the sawing line, the logs are machined, profiled and separated with boaters into main and sideboards. After separation, the fresh timber is visually graded and packaged. Technical drying in drying chambers to a defined final moisture content takes place subsequently. This is followed by visual or machine strength grading, which precedes the planing. The production takes place therefore in the following partial steps:

1. Log sorting
2. Debarking
3. Machining, profiling, sawing
4. Timber
5. Packetization
6. Technical drying
7. Planing (only timber - planed)
8. Visual/machine strength grading
9. Packetization/packaging

The Brilon site has a quality management system certified according to *ISO 9001.*

2.7 Environment and health during manufacturing

Due to the manufacturing conditions no measures for health protection are necessary over and above the legislative and other regulations. Values are well below the occupational exposure limit (OEL) in accordance with the Hazardous Substances Ordinance (GefStoffV) at any point of the plant. The exhaust air created during production is purified according to the legislative

stipulations. There is no impact on water or soil. All noise levels inside and outside the production plant are far below the applicable requirements within Germany. Sections of the plant where high noise levels are produced have been shielded by suitable construction measures.

The Brilon site has an environmental management system certified according to *ISO 14001* and an energy management system certified according to *ISO 50001*.

2.8 Product processing/Installation

EGGER timber can be sawed, milled, planed and drilled with all common woodworking machines, stationary machines and (electric) manual machines. Wear a respiratory mask if using hand tools without a dust extraction device. When processing or installing EGGER timber, the usual protective equipment, suitable work clothing, safety goggles, dust mask (for dust) must be used. Observe all liability insurance association regulations for commercial processing operations.

2.9 Packaging

The packages are fitted with solid wood underlays on request (waste code number according to *EWC*: 15 01 03). Strapping is carried out with plastic straps (waste code number according to *EWC:* 15 01 02). Kiln dried ranges are additionally packed with recyclable plastic film (waste code number according to *EWC:* 15 01 02).

2.10 Condition of use

The material composition also corresponds to the composition of the basic materials declared under 2.5 during the period of use.

2.11 Environment and health during use

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. There are no health hazards or effects to be expected from normal use, i.e. in accordance with the intended uses.

2.12 Reference service life

The service life of timber 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.

For structural applications, the reference useful life according to *ISO 15686* is at least 50 years.

According to the *BBSR Table 2017*, the average service life is 50 years indoors and 30 years outdoors or untreated.
The values given are assumed average service lives of building components as input values for life cycle calculations. They are based on the experience of experts. They do not represent guarantee periods from which warranty claims can be derived.

2.13 Extraordinary effects

Fire

Fire protection

Name	Value
Building material class	D
Burning droplets	d0
Smoke gas development	s2

Water

No hazardous water contaminants are washed out. EGGER timber is not resistant to permanent exposure to water (standing water).

Mechanical destruction

The fracture pattern of EGGER timber has a typical solid wood appearance. The deformation is initially elastic, later plastic. A failure / breakdown is signalled by cracking and splintering of the fibres. There is no impact on the environment.

2.14 Re-use phase

In case of renovation or demolition, EGGER timber can be selectively removed and used for the same application or a different one. Given the high calorific value of about 16 MJ / kg, energy utilization in approved plants for the generation of process energy and electricity as part of cascading use is reasonable.

2.15 Disposal

Resulting material waste as well as those from demolition activities are to be reused primarily as material. If this is not possible, they must be channelled into energy recovery. Disposal is not permitted. The waste code according to the European Waste Catalogue *EWC* is 17 02 01.

2.16 Further information

Further information on EGGER timber can be found on the Internet at: www.egger.com/schnittholz

3. LCA: Calculation rules

3.1 Declared Unit

This environmental product declaration is based on a declared unit of 1 m³ kiln dried, rough sawn and planed EGGER timber with an average density of 503 kg/m³ and a delivery moisture of approximately 15 %.

Specification of the declared unit

Name	Value	Unit
Gross density	503	kg/m³
Declared unit	1	m³
Conversion factor [mass/declared unit]	503	
Wood moisture at delivery	15	%

EGGER timber is made at the Brilon (DE) plant. The calculation of the declared density of the timber was carried out on a volume-weighted basis. This Environmental Product Declaration refers to kiln dried timber. It depicts the two qualities rough sawn and planed. Due to the small deviations in the results, this update refers to a joint declaration for timber dried and/or planed.
In the sense of a conservative approach, the planing process is included accordingly, which leads to a slight

overestimation of the results for dried, unplaned timber.

3.2 System boundary

The LCA of the average kiln dried, rough sawn and planed EGGER timber includes a cradle-to-gate consideration of the occurring environmental impacts with the modules C1-C4 and module D (A1-A3,+C,+D). The following life cycle phases are taken into account in the analysis:

Module A1– A3 | Production stage

The production stage includes the expenses of the raw material supply (logs, auxiliary materials, etc.) as well as the associated transports to the production site in Brilon. Within the plant boundaries, the timber yard, sorting, sawing as well as drying and planing including packaging are taken into account. Thermal and electrical energy, compressed air and water are provided by central suppliers at the Brilon site. The majority of the electrical energy used is obtained from the German power grid. Both internal wood waste and scrap wood sourced externally are used in the in-house biomass power plant. The system boundary for the scrap wood used in the production is set after sorting and chopping. It is assumed that the end of the waste status has been reached. The system boundary for secondary raw materials according to *EN 15804* applies.

Module C1 | Dismantling / Demolition

Manual dismantling was assumed for the timber. The associated efforts are negligible, which means that no environmental impact from the dismantling of the products is declared.

Module C2 | Transport to waste treatment

Module C2 includes transport to waste treatment. For this purpose, transport by lorry over a distance of 50 km is used as a representative scenario.

Module C3 | Waste processing

Chopping after product disassembly is considered in module C3. The wood products and with them the material-inherent properties leave the product system as secondary fuel in module C3.

Module C4 | Disposal

The scenario used declares the energy recovery of the wood products, which means that no environmental impact from the waste treatment of the products in C4 are to be expected.

Module D | Credits and charges outside the System limit

The energy utilisation of the product at the end of its life cycle is described in Module D, including energetic substitution potentials as a European average scenario.

3.3 Estimates and assumptions

In the absence of a representative background data set for mapping the environmental impact of certain raw materials, assumptions
and estimates are used. All assumptions are supported with detailed documentation and correspond to the best possible representation of reality given the available data.

A generic data set from the *GaBi* 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.

At the Brilon site, timber is kiln dried. Since no measurements are available for the drying emissions, these values are estimated based on the publication by *Rüter & Diederichs 2012*.

3.4 Cut-off criteria

All inputs and outputs for which data are available and from which a significant contribution can be expected are included in the LCA model. Missing data are populated when a data basis is available using conservative assumptions for average data or generic data and are documented accordingly. Only data with a contribution of less than 1% were removed. Neglecting these data can be justified by the limited effect to be expected. Thus, no processes, materials or emissions were neglected that are expected to make a significant contribution to the environmental impact of the products under consideration. It can be assumed that the data were recorded in full and that the total sum of the neglected input flows does not exceed 5 % of the energy and mass input. Expenses for machinery and infrastructure were not taken into account.

3.5 Background data

Secondary data are included to represent the background system in the LCA model. These are taken, on the one hand, from the *GaBi* database 2020, SP40 and, on the other hand, from recognised literature sources (such as *Rüter & Diederichs 2012)*.

3.6 Data quality

The data is collected via data collection sheets especially adapted for EGGER. Questions were answered through an iterative process in writing via e-mail, phone, or in person. Given the intense discussion concerning a representation of material and energy flows in the company that is as close as possible to reality, led by EGGER and Daxner & Merl, the high quality of collected foreground data can be assumed. A consistent and uniform calculating procedure was applied in line with *ISO 14044*.
When selecting the background data, the technological, geographical, and time-related representativeness of the data basis was taken into consideration. When specific data was missing, generic data sets or a representative average were used. The *GaBi* background data sets are not older than ten years.

3.7 Period under review

As part of the collection of the foreground data, the life cycle was recorded for the production year 2018. The data are based on the annual volumes used and produced.

3.8 Allocation

At the Brilon site, other products are produced in addition to the declared product. Thermal and electrical energy as well as auxiliary materials for all process steps are related by volume to the product to be

declared, with the exception of the sorting process, which is based on mass allocation. The environmental impacts are allocated to the declared product by means of a price allocation.

The carbon dioxide content and primary energy content of the products have been balanced on the basis of their inherent material characteristics in line with underlying physical relationships. Allocation within the forestry chain is based on the publication of *Hasch 2002* and its update by *Rüter & Albrecht 2007*.

By-product allocation is applied to the by-products of timber production, i.e. wood chips, cap timber, bark, sawdust and needle fibre wood, as these by-products can be sold with a market value but the production process cannot be further subdivided.

The thermal and electrical energy generated in the cogeneration plants is allocated according to exergy.

To calculate the net flows, the mass that could be used in A1-A3 as recycled wood to provide energy is subtracted from the total mass of the product (timber kiln dried, rough sawn and planed 503 kg/m³). For dried and planed timber, this results in a total input of 22.5 kg absolutely dry recycled wood in the production phase. Theoretically, this mass can be recycled into module A1-A3 at the end of the product's life. As a result, only the net flow of 465 kg/m³ with an assumed equilibrium moisture content of 12 % reaches module D.

3.9 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.

4. LCA: Scenarios and additional technical information

Characteristic product properties
Information on biogenic Carbon
The biogenic carbon content quantifies the amount of biogenic carbon in the declared building product.

Information describing the biogenic carbon content at the plant gate

Name	Value	Unit
Biogenic carbon content (in the product)	219	kg C/m³
Stored carbon dioxide (in the product)	802	kg CO2-Äq./m³

Since the end-of-life of the product packaging is not declared in module A5, its carbon uptake is not included in modules A1-A3.

The following technical information represents the basis for the declared module or can be used for the development of specific scenarios in the context of a building evaluation if modules are not declared (MND).

Integration into building (A5)

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

Name	Value	Unit
Packaging (PET)	0.054	kg/m³
Packaging (PE)	0.154	kg/m³
Packaging (wood)	11	kg/m³

Reference utilisation duration
The product is tested according to the normative product requirements. When used according to the rules and the state of the art, the reference service life corresponds to 30-50 years. These periods are to be used for further calculations and do not constitute manufacturer's guarantees.

Name	Value	Unit
Reference service life indoors	50	a
Reference service life outdoors or untreated	30	a
Life Span (according to BBSR)	30 - 50	a
Life Span (according to BBSR)	30 - 50	a
Declared product properties (at the gate) and finishes	European strength classes according to EN 338	-
Design application parameters (if instructed by the manufacturer), including the references to the appropriate practices and application codes	Service life depending on intended use	-
An assumed quality of work, when installed in accordance with the manufacturer's instructions	Preventive wood preservation according to DIN 68800-2 depending on the area of application	-
Outdoor environment, (for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature	in compliance with DIN 68800-2 and EN 1995-1-1 no restrictions	-
Indoor environment (for indoor applications), e.g. temperature, moisture, chemical exposure	in compliance with DIN 68800-2 and EN 1995-1-1 no restrictions	-
Usage conditions, e.g. frequency of use, mechanical exposure	depending on the use	-

	class according to EN 1995-1-1	
Maintenance e.g. required frequency, type and quality and replacement of components	regular visual inspection and replacement in case of damage	-

End of life cycle (C1-C4)

Name	Value	Unit
For energy recovery [balance moisture 12%]	490	kg/m³

Reuse, recovery and recycling potential (D), relevant scenarios

Name	Value	Unit
Net flow in module D [balance moisture 12 %]	465	kg/m³
Moisture during thermal reuse	12	%
Calorific value wood [balance moisture 12 %]	16	MJ/kg
Efficiency of the system	61	%

The product reaches the end of the waste status after it is removed from the building, transported for preparation, and the chopping of the product. For the end of life of EGGER timber, energy recovery as secondary fuel is assumed. Energetic utilisation takes place in a biomass power plant. System-specific figures correspond to a European average scenario (EU28), given that the sales market of EGGER timber is focussed on Europe. The scenario foresees a processing rate of the timber after removal from the building of 100%. This assumption must be adapted accordingly after using the results in the context of the building. A balance moisture of 12% must be assumed at the product's end of life. This value may fluctuate significantly depending on the storage of the product prior to energetic utilisation.

5. LCA: Results

The following table contains the LCA results for a declared unit of 1 m³ average kiln dried and planed EGGER timber with an average raw density of 503 kg/m³ (approximately 15 % moisture).

Important remark:
EP-freshwater: This indicator has been calculated as "kg P eq" as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe;http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

Disclaimer:
EP-freshwater: This indicator has been calculated as “kg P eq” as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = 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	ND	ND	ND	ND	MNR	MNR	MNR	ND	ND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m³ timber kiln dried and planed (503 kg/m³)

Core Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Global warming potential - total	[kg CO_2-Eq.]	-6.96E+2	0.00E+0	1.48E+0	8.06E+2	0.00E+0	-4.05E+2
Global warming potential - fossil fuels	[kg CO_2-Eq.]	1.01E+2	0.00E+0	1.47E+0	3.95E+0	0.00E+0	-4.04E+2
Global warming potential - biogenic	[kg CO_2-Eq.]	-7.98E+2	0.00E+0	-2.45E-3	8.02E+2	0.00E+0	-1.01E+0
GWP from land use and land use change	[kg CO_2-Eq.]	3.53E-1	0.00E+0	1.18E-2	5.72E-3	0.00E+0	-3.29E-1
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	5.56E-10	0.00E+0	2.68E-16	8.68E-14	0.00E+0	-4.93E-12
Acidification potential, accumulated exceedance	[mol H^+-Eq.]	4.33E-1	0.00E+0	4.96E-3	8.71E-3	0.00E+0	2.71E-1
Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg P-Eq.]	3.97E-4	0.00E+0	4.44E-6	1.05E-5	0.00E+0	-6.04E-4
Eutrophication, fraction of nutrients reaching marine end compartment	[kg N-Eq.]	1.72E-1	0.00E+0	2.24E-3	1.93E-3	0.00E+0	6.86E-2
Eutrophication, accumulated exceedance	[mol N-Eq.]	1.90E+0	0.00E+0	2.50E-2	2.03E-2	0.00E+0	8.16E-1
Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	6.53E-1	0.00E+0	4.39E-3	5.30E-3	0.00E+0	2.90E-1
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	9.03E-5	0.00E+0	1.18E-7	1.14E-6	0.00E+0	-7.41E-5
Abiotic depletion potential for fossil resources	[MJ]	1.29E+3	0.00E+0	1.95E+1	6.94E+1	0.00E+0	-6.95E+3
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m³ world-Eq deprived]	2.61E+0	0.00E+0	1.42E-2	8.60E-1	0.00E+0	-2.27E+1

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m³ timber kiln dried and planed (503 kg/m³)

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	3.72E+2	0.00E+0	1.13E+0	8.12E+3	0.00E+0	-1.75E+3
Renewable primary energy resources as material utilization	[MJ]	8.20E+3	0.00E+0	0.00E+0	-8.09E+3	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	8.58E+3	0.00E+0	1.13E+0	3.07E+1	0.00E+0	-1.75E+3
Non-renewable primary energy as energy carrier	[MJ]	1.28E+3	0.00E+0	1.95E+1	6.94E+1	0.00E+0	-6.95E+3
Non-renewable primary energy as material utilization	[MJ]	7.91E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	1.29E+3	0.00E+0	1.95E+1	6.94E+1	0.00E+0	-6.95E+3
Use of secondary material	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	4.16E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.08E+3
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m³]	3.05E-1	0.00E+0	1.31E-3	3.55E-2	0.00E+0	-1.42E+0

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m³ timber kiln dried and planed (503 kg/m³)

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	[kg]	3.83E-5	0.00E+0	9.03E-7	2.87E-8	0.00E+0	-2.35E-6
Non-hazardous waste disposed	[kg]	2.76E+0	0.00E+0	3.10E-3	4.92E-2	0.00E+0	2.54E-1
Radioactive waste disposed	[kg]	5.87E-2	0.00E+0	3.60E-5	1.05E-2	0.00E+0	-5.98E-1
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for energy recovery	[kg]	0.00E+0	0.00E+0	0.00E+0	4.90E+2	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 m³ timber kiln dried and planed (503 kg/m³)

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Potential incidence of disease due to PM emissions	[Disease Incidence]	7.68E-6	0.00E+0	2.80E-8	7.31E-8	0.00E+0	-1.46E-6
Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	6.09E+0	0.00E+0	5.31E-3	1.73E+0	0.00E+0	-9.81E+1
Potential comparative toxic unit for ecosystems	[CTUe]	7.11E+2	0.00E+0	1.46E+1	2.97E+1	0.00E+0	-1.70E+3
Potential comparative toxic unit for humans - cancerogenic	[CTUh]	6.94E-8	0.00E+0	3.01E-10	8.20E-10	0.00E+0	-6.73E-9
Potential comparative toxic unit for humans - not cancerogenic	[CTUh]	1.10E-6	0.00E+0	1.73E-8	3.02E-8	0.00E+0	1.97E-6
Potential soil quality index	[-]	9.46E+4	0.00E+0	6.83E+0	2.21E+1	0.00E+0	-1.28E+3

Limitation note 1 - applies to the indicator Potential effect from human exposure to U235:
This impact category mainly addresses the possible effect of low dose ionising radiation on human health in the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents and occupational exposure, nor does it consider the disposal of radioactive waste in underground facilities. Potential ionising radiation from soil, radon and some building materials is also not measured by this indicator.

Limitation note 2 - applies to the indicators Potential for Abiotic Resource Depletion - Non-Fossil Resources, Potential for Abiotic Resource Depletion - Fossil Fuels, Water Depletion Potential (User), Potential Ecosystem Toxicity Comparison Unit, Potential Human Toxicity Comparison Unit - Carcinogenic Effect, Potential Human Toxicity Comparison Unit - Non-Carcinogenic Effect, Potential Soil Quality Index:
The results of this environmental impact indicator need to be used with caution as the uncertainties in these results are high or as there is limited experience with the indicator.

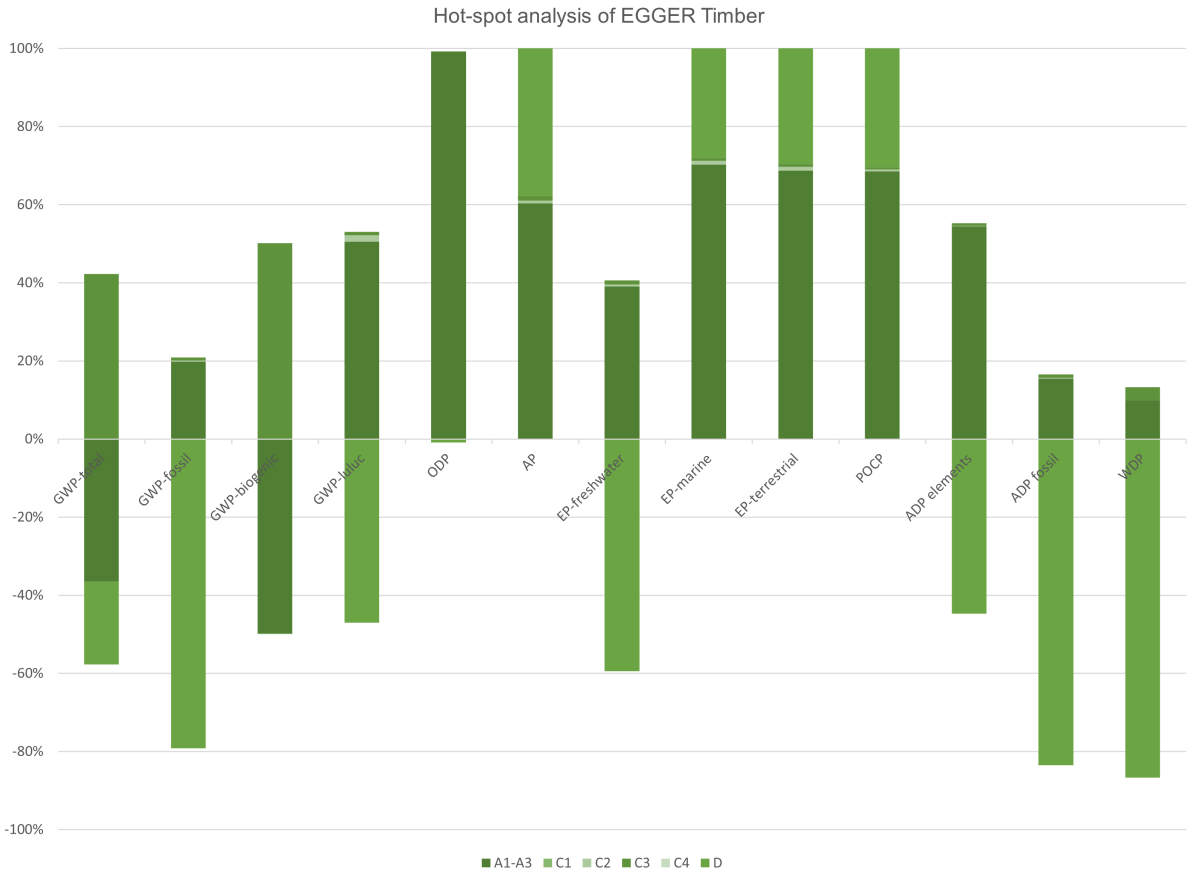
6. LCA: Interpretation

The following interpretation includes a summary of the LCA results relative to a declared unit of 1m³ average kiln dried and planed timber.

For the global warming potential (GWP) during the production phase (Module A1-A3) of the EGGER timber, the total is a negative value. This is due to the material use of wood in the production. While the tree is growing, the wood stores carbon dioxide as biogenic carbon (negative greenhouse potential) and does therefore not have a greenhouse effect as long as it is stored in the product. It is only during energy recovery at the end of the product's life (module C3) that the stored carbon leaves the product system as a material-inherent property of the secondary fuel. The energy utilisation of scrap wood was modelled CO2 neutral.

The negative values in Module D can be explained through the fact that the energy generated by the energetic utilisation of the product is able to replace the combustion of fossil fuels. In this way, more emissions of (mainly fossil) fuels are avoided than those emitted through the use of the energy stored in the wood.

Environmental impacts (acidification potential (AP), eutrophication potential (EP), formation potential for tropospheric ozone (POCP)) in module D arise primarily from emissions from the combustion of biomass.



The potential environmental impacts from forestry and the provision of electricity from the German grid represent the most significant influencing factors in timber production (modules A1-A3) in almost all of the impact indicators considered.
The potential formation of ground-level ozone (POCP) is strongly influenced by the direct emissions from the drying of timber (estimate according to Rüter & Diederichs).

The use of renewable primary energy (PERT) is due to the material utilisation of the biomass in the product, as well as the use of biomass for the production of electric as well as thermal energy.
If we look at the use of non-renewable primary energy (PENRT), this is also mainly used for the provision of energy from the German electricity mix, steam production at the site and transport.

The results of the previous EPD for EGGER timber (EPD-EGG-20140248-IBA1-DE) are not directly comparable with the present, updated version due to the update of the underlying methodology according to *EN 15804+A2.*

7. Requisite evidence

7.1 Formaldehyde

Not relevant, no use of formaldehyde containing adhesives.

7.2 MDI

Not relevant, no use of MDI-based adhesives.

7.3 Toxicity of the fire gases

The toxicity of the fire gases produced by burning timber corresponds to the toxicity of the fire gases produced by burning untreated wood.

7.4 VOC emissions

Proof is currently not required by the building authorities.

AgBB result overview (28 days [µg/m³])

Name	Value	Unit
TVOC (C6 - C16)	-	µg/m³
Sum SVOC (C16 - C22)	-	µg/m³
R (dimensionless)	-	-
VOC without NIK	-	µg/m³
Carcinogenic Substances	-	µg/m³

AgBB result overview (3 days [µg/m³])

Name	Value	Unit
TVOC (C6 - C16)	-	µg/m³
Sum SVOC (C16 - C22)	-	µg/m³
R (dimensionless)	-	-
VOC without NIK	-	µg/m³
Carcinogenic Substances	-	µg/m³

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