



Environmental product information for **BREEAM®** building certification

**Glued laminated timber, glued solid timber,
block glued glulam and special components
according to EN 14080**

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This document aims at the identification of linkages between environmental product information covered by EPDs and the requirements of the BREEAM® (Building Research Establishment's Environmental Assessment Method) building certification. It provides an overview of product related features based on the BREEAM® technical manual for International New Construction Version 6.0, Reference SD250 [<https://bregroup.com/products/breeam/breeam-technical-standards/breeam-new-construction/http://www.breeam.com/new-construction>]

.product description

Glued laminated timber (the term also includes glued solid timber, block glued glulam and special components throughout this document) from HASSLACHER Group is a solid, rod-shaped timber element consisting of at least two dried softwood lamellas bonded parallel to the fibres. The glued laminated timber is manufactured according to *EN 14080*.

.application

Glued laminated timber is used in all structural areas of modern timber construction, i.e. from engineering-based residential and industrial construction to bridge building.

.technical data

Structural data for glued laminated timber according to *EN 14080* are given. The products are being delivered to the market with the appropriate CE mark and Declaration of Performance.

Name	Value	Unit
Wood species according to <i>EN 1912</i> and letter codes, if any, in accordance with <i>EN 13556</i>	PCAB (Norway spruce) ABAL (Silver fir) PNSY (Scots pine) LADC (Europ. Larch)	
Mean humidity acc. to <i>EN 13183-1</i>	12 ± 2	%
Use of wood preservatives (the test rating of the wood preservative according to <i>DIN 68800-3</i> must be stated) ¹⁾	Iv, P and W	-
Characteristic value of compressive strength parallel to grain acc. to <i>EN 14080</i>	18.5 - 36	N/mm ²
Characteristic value of compressive strength perpendicular to grain acc. to <i>EN 14080</i>	2.5	N/mm ²
Characteristic value of tensile strength parallel to grain acc. to <i>EN 14080</i>	15 – 28.8	N/mm ²
Characteristic value of tensile strength perpendicular to grain acc. to <i>EN 14080</i>	0.5	N/mm ²
Mean value of modulus of elasticity parallel to grain acc. to <i>EN 14080</i>	10400 – 15750	N/mm ²
Characteristic value of shear strength acc. to <i>EN 14080</i>	3.5	N/mm ²
Mean value of shear modulus acc. to <i>EN 14080</i>	650	N/mm ²
Dimensional deviation acc. to <i>EN 14080</i>	Width: +/- 2 mm; Heights (< 400 mm): + 4 mm /- 2 mm; Heights (> 400 mm): 1 % /- 0,5 %; Lengths (< 2 m): +/- 2 mm; Lengths (> 2 m /< 20 m): +/- 0,1 %; Lengths (> 20 m): +/- 20 mm	mm or %
Average raw density of load-bearing elements acc. to <i>EN 14080</i>	470	kg/m ³
Surface quality	Visual quality, industrial visual quality	-
Thermal conductivity (perpendicular to grain) acc. to <i>ISO 10456</i>	0.12	W/(mK)
Specific heat capacity acc. to <i>ISO 10456</i>	1600	J/(kgK)
Water vapour diffusion resistance factor acc. to <i>ISO 10456</i>	μ = 50 (dry) to 20 (wet)	-

¹⁾ According to *DIN 68800-1*, wood preservative treatment is only permissible if structural measures have been exhausted and is therefore unusual.

5.0 Management

Man 02 Life cycle cost and service life planning

Aim

To deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation, and through the dissemination of capital cost reporting to promote economic sustainability. (BREEAM, 2021)

Product information for HASSLACHER glued laminated timber within this credit:

Service life	Glued laminated timber has been used for over 100 years. When used as intended, no end to its durability is known or to be expected. The service life of glued laminated timber is therefore the same as the service life of the building when used as intended.
End of life	<p>Re-use: In the case of selective deconstruction, glued laminated timber can be reused or reutilised without any problems after the end of the utilisation phase in the sense of cascading utilisation ("reuse") due to its monolithic layout.</p> <p>Disposal: If it is not possible to reuse or reutilise structural finger jointed solid timber, it can be thermally recycled to generate process heat and electricity due to its high calorific value of approx. 19 MJ/kg. It is impermissible to dispose of waste wood via landfills some in European countries.</p> <p>Waste classification: Classification code 17218 (Wood waste, organically treated) according to the Waste Catalogue in accordance with Annex 5 of the Austrian Waste Catalogue Ordinance; Waste Code according to the European Waste Catalogue (EWC): 17 02 01.</p>

Man 03 Responsible construction practices

Aim

To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner. (BREEAM, 2021)

Product information for HASSLACHER glued laminated timber relevant to this issue:

Specific information	Evidence (quality)
Prerequisite: All timber and timber-based products are 'Legally harvested and traded timber'? YES	Site Kleinheubach (Germany): Forest Stewardship Council (FSC) Certificate Number TUEV-COC-000166 (Chain-of-Custody) Date of issuance: 2018-06-08 Valid to: 2023-06-07 Programme for the Endorsement of Forest Certification Schemes (PEFC) Certificate Registration Number 44 702 107269 (Chain-of-Custody) Date of first issuance: 2011 Date of issuance: 2018-06-08 Valid to: 2023-06-07 Site Magdeburg (Germany): Programme for the Endorsement of Forest Certification Schemes (PEFC) Certificate Number DC-COC-000310 (Chain-of-Custody) Date of issuance: 01.08.2018 Valid to: 28.02.2023 Sites Sachsenburg and Hermagor (both Austria): Programme for the Endorsement of Forest Certification Schemes (PEFC) Certificate Number HFA-COC-0209 (Multisite) Date of first issuance: 21.06.2001 Date of issuance: 01.12.2021 Valid to: 30.06.2025

Man 04 Commissioning and handover

Aim

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants. (BREEAM, 2021)

Glued laminated timber can be processed with suitable tools commonly used in solid timber processing. On request, the products can also be processed in the factory and provided with fasteners or (glued-in) Steel parts. Occupational safety instructions must also be observed during processing/assembly.

Further information can be downloaded from the website <https://www.hasslacher.com/glue-laminated-timber>.

6.0 Health and wellbeing

Hea 02 Indoor air quality

Aim

To recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes. (BREEAM, 2021)

Reference to EPD (Glued laminated timber, glued solid timber, block glued glulam and special components according to EN 14080), chapter 2.11, environment and health during use, and chapter 7, requisite evidence:

Glued laminated timber is used in all structural areas of modern timber construction, i.e. from engineering-based residential and industrial construction to bridge building.

When bonding glued laminated timber, the MDI contained in the PUR and EPI adhesives (e.g. used for finger joint bonding) used reacts out completely, making the detection of MDI emissions in the cured glued laminated timber impossible.

Testing entity	Holzforschung Austria – Österreichische Gesellschaft für Holzforschung
Place of test	Franz-Grill-Straße 7, A-1030 Vienna
Test report no.	1096/2021-HC
Test period	06.04.2021 to 18.05.2021
Test method	Measurement of the emissions of a sample with respect to VOC, formaldehyde and short-chain carbonyl compounds according to <i>EN 16516</i> .

Specific information	Evidence (quality)
AgBB result overview (28 days):	
TVOC (C6-C16) (substance spec.)	184 µg/m ³
TVOC (Toluene eq.)	160 µg/m ³
R (dimensionless)	0.14
Formaldehyde	4.4 µg/m ³
AgBB result overview (3 days):	
TVOC (C6-C16) (substance spec.)	181 µg/m ³
TVOC (Toluene eq.)	170 µg/m ³
Formaldehyde	7.3 µg/m ³

According to EPD chapter 2.5 all ingredients comply with REACH requirements (date 19.01.2021), no other cancerogenic, mutagenic, reprotoxic (CMR) substances of category 1A or 1B that are on the *ECHA candidate list*, above 0.1 % by mass.

Hea 04 Thermal comfort

Aim

To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building. (BREEAM, 2021)

EPD chapter 2.3 product, table constructional data of the EPD:

Specific information	Value and evidence (quality)
Thermal conductivity (perpendicular to grain) acc. to <i>ISO 10456</i>	0.12 W/(mK)
Specific heat capacity acc. to <i>ISO 10456</i>	1600 J/(kgK)

Ranges for product specific constructional data for glued laminated timber are indicated in the table of technical data. For project specific information, please contact HASSLACHER Group directly (www.hasslacher.com Fehler! Linkreferenz ungültig.).

10.0 Materials

Mat 01 Life cycle impacts

Aim

To recognise and encourage the use of robust and appropriate life cycle assessment tools and consequently the specification of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building. (BREEAM, 2021)

General information of environmental product declarations of HASSLACHER glued laminated timber:

Material category	1. Timber or timber-based products acc. to table 46 of Mat03 Responsible sourcing of construction products (<i>BREEAM, 2021</i>)
Owner of the declaration	HASSLACHER Holding GmbH
Programme holder & publisher Mutual recognition with BRE ECO-EPD at ECO platform	Institut Bauen und Umwelt e.V. (IBU) yes yes
Author of the LCA Software & database	Daxner & Merl GmbH GaBi software-system and database for life cycle engineering GaBi 10, database 2020.2 [see documentation]
Third-party verification	Completed; Type III declaration in compliance with <i>ISO 14025</i>
External verifier	Matthias Klingler
Declaration number	EPD-HAS-20210171-IBD1-EN (Glued laminated timber, glued solid timber, block glued glulam and special components according to <i>EN 14080</i>)
System boundaries PCR	Cradle-to-gate with modules (A1-A3; C1-C4 and D) Solid wood products
Issue date	10.09.2021
Valid to	02.08.2026
Declaration type	Manufacturer's declaration of an average product according to <i>EN 15804</i>
Declared unit	1 m ³ HASSLACHER glued laminated timber with an average density of 470 kg/m ³ at 13 % moisture at delivery, manufactured by the HASSLACHER group at the production sites in Sachsenburg (Austria), Hermagor (Austria), Kleinheubach (Germany) and Magdeburg (Germany).
Conversion factor [mass/declared unit]	HASSLACHER glued laminated timber: 470
Reference period	Glued laminated timber has been used for over 100 years. When used as intended, no end to its durability is known or to be expected. The service life of glued laminated timber is therefore the same as the service life of the building when used as intended.
End of life scenario	The product reaches the end of its waste status after removal from the building, transport to processing and chipping of the product. For the end of life of the HASSLACHER solid wood products, energy recovery as secondary fuel in a biomass power plant is assumed. As the main sales market for

HASSLACHER products is concentrated in the European region, plant-specific characteristic values correspond to a European average scenario (EU28). The scenario considers a reprocessing rate of 100 % for the solid wood 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.

.results of the LCA – environmental impacts acc. to EN 15804+A2

Declared unit: 1m ³ glued laminated timber (470 kg/m ³)							
Declared life cycle stage		Product stage		End of life stage			Benefits and loads beyond the system boundary
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ -eq.]	-6.08E+02	0.00E+00	1.42E+00	7.53E+02	0.00E+00	-4.10E+02
GWP-fossil	[kg CO ₂ -eq.]	1.44E+02	0.00E+00	1.41E+00	3.74E+00	0.00E+00	-4.08E+02
GWP-biogenic	[kg CO ₂ -eq.]	-7.53E+02	0.00E+00	-1.67E-03	7.50E+02	0.00E+00	-1.42E+00
GWP-luluc	[kg CO ₂ -eq.]	7.81E-01	0.00E+00	1.15E-02	5.29E-03	0.00E+00	-3.19E-01
ODP	[kg CFC11-eq.]	6.84E-08	0.00E+00	2.77E-16	8.95E-14	0.00E+00	-5.32E-12
AP	[mol H ⁺ - eq.]	6.67E-01	0.00E+00	4.66E-03	7.78E-03	0.00E+00	3.05E-01
EP-freshwater ¹	[kg P- eq.]	1.64E-03	0.00E+00	4.17E-06	1.00E-05	0.00E+00	-6.05E-04
EP-marine	[kg N- eq.]	2.95E-01	0.00E+00	2.14E-03	1.85E-03	0.00E+00	5.77E-02
EP-terrestrial	[mol N- eq.]	3.01E+00	0.00E+00	2.39E-02	1.94E-02	0.00E+00	6.98E-01
POCP	[kg NMVOC-eq.]	8.47E-01	0.00E+00	4.20E-03	5.01E-03	0.00E+00	2.62E-01
ADPE	[kg Sb-eq.]	3.81E-05	0.00E+00	1.25E-07	1.10E-06	0.00E+00	-7.47E-05
ADPF	[MJ]	2.09E+03	0.00E+00	1.87E+01	6.65E+01	0.00E+00	-7.17E+03
WDP	[m ³ World- eq. deprived]	1.17E+01	0.00E+00	1.30E-02	6.00E-01	0.00E+00	-1.05E+01

Caption

GWP – total = Global warming potential – total; GWP-fossil - Global warming potential - fossil fuels; GWP-biogenic - Global warming potential – biogenic; GWP-luluc - GWP from land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential; accumulated exceedance; EP-freshwater - Eutrophication, fraction of nutrients reaching freshwater end compartment; EP-marine - Eutrophication, fraction of nutrients reaching marine end compartment; EP-terrestrial - Eutrophication, accumulated exceedance; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE - Abiotic depletion potential for non-fossil resources; ADPF - Abiotic depletion potential for fossil resources; WDP - Water (user) deprivation potential, deprivation-weighted water consumption (WDP)

¹ Disclaimer: This indicator has been calculated as [kg P-equiv.] according to the characterization model of the JRC and Environmental Footprint Initiative.

.results of the LCA – resource use acc. to EN 15804+A2

Declared unit: 1m ³ glued laminated timber (470 kg/m ³)							
Declared life cycle stage		Product stage		End of life stage			Benefits and loads beyond the system boundary
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	[MJ]	1.70E+03	0.00E+00	1.08E+00	7.68E+03	0.00E+00	-1.83E+03
PERM	[MJ]	7.66E+03	0.00E+00	0.00E+00	-7.65E+03	0.00E+00	0.00E+00
PERT	[MJ]	9.36E+03	0.00E+00	1.08E+00	3.06E+01	0.00E+00	-1.83E+03
PENRE	[MJ]	2.00E+03	0.00E+00	1.88E+01	6.65E+01	0.00E+00	-7.17E+03
PENRM	[MJ]	8.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	2.09E+03	0.00E+00	1.88E+01	6.65E+01	0.00E+00	-7.17E+03
SM	[kg]	3.02E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.65E+03
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m ³]	8.04E-01	0.00E+00	1.23E-03	2.98E-02	0.00E+00	-1.20E+00

Caption

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; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = 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

.results of the LCA – output flows acc. to EN 15804+A2

Declared unit: 1m ³ glued laminated timber (470 kg/m ³)							
Declared life cycle stage		Product stage		End of life stage			Benefits and loads beyond the system boundary
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HWD	[kg]	1.98E-06	0.00E+00	9.90E-10	1.76E-08	0.00E+00	-1.61E-06
NHWD	[kg]	1.99E+00	0.00E+00	2.95E-03	4.72E-02	0.00E+00	2.72E-01
RWD	[kg]	7.30E-02	0.00E+00	3.41E-05	9.90E-03	0.00E+00	-5.89E-01
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	0.00E+00	4.70E+02	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
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Caption

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electric energy, EET = Exported energy, thermal energy

Mat 03 Responsible sourcing of construction products

Aim

To recognise and encourage the specification and procurement of responsibly sourced construction products. (BREEAM, 2021)

HASSLACHER glued laminated timber matches the BREEAM material category **1. Timber or timber-based products**² in accordance with table 46 (BREEAM, 2021).

Type of scheme	Specification of implemented scheme	Scope by material category
RSCS ²	<p>Site Kleinheubach (Germany): Forest Stewardship Council (FSC) Certificate Number TUEV-COC-000166 (Chain-of-Custody) Date of issuance: 2018-06-08 Valid to: 2023-06-07</p> <p>Programme for the Endorsement of Forest Certification Schemes (PEFC) Certificate Registration Number 44 702 107269 (Chain-of-Custody) Date of first issuance: 2011 Date of issuance: 2018-06-08 Valid to: 2023-06-07</p> <p>Site Magdeburg (Germany): Programme for the Endorsement of Forest Certification Schemes (PEFC) Certificate Number DC-COC-000310 (Chain-of-Custody) Date of issuance: 01.08.2018 Valid to: 28.02.2023</p> <p>Sites Sachsenburg and Hermagor (both Austria): Programme for the Endorsement of Forest Certification Schemes (PEFC) Certificate Number HFA-COC-0209 (Multisite) Date of first issuance: 21.06.2001 Date of issuance: 01.12.2021 Valid to: 30.06.2025</p>	<p>FSC -STD-40-004, V3-0; FSC -STD-50-001, V2-0; FSC -STD-40-003, V2-1 Chain-of-Custody. Purchase of softwood and hardwood lumber as well as construction elements (FSC 100 %, FSC Mix); Production and sale of glued laminated timber, cross laminated timber, laminated veneer lumber and construction elements; Transfer system (FSC 100 %, FSC Mix)</p> <p>PEFC ST 2002:2013 Chain of Custody. Production and distribution of glued laminated timber and construction elements; Percentage based method</p> <p>PEFC ST 2002:2013 Chain of Custody of Forest Based Products. Glued laminated timber, wood chips, wood fibre; Percentage based method (certified material, other material, neutral material)</p> <p>PEFC ST 2002:2013 Chain of Custody of Forest Based Products. Round timber, sawn timber, sawmill by-products, glued wood construction products, wood fuels, pallets: Percentage based method, physical separation (certified material, other material, neutral material)</p>

² BREEAM recognised responsible sourcing certification scheme

Mat 05 Designing for durability and resilience

Aim

To recognise and encourage adequate protection of exposed elements of the building and landscape, therefore minimising the frequency of replacement and maximising materials optimisation. (BREEAM, 2021)

According to table 47 (BREEAM, 2021) of 'Mat 05 Designing for durability and resilience', depending on project specific situation HASSLACHER glued laminated timber may be applicable to the following building elements for which material degradation effects are to consider:

1. Foundation, substructure, lowest floor, retaining walls
2. External walls
3. Roof or balconies
6. Railings or balusters (where exposed to external environment)
7. Cladding (where exposed to external environment)
8. Staircases or ramps (where exposed to external environment)

Section 2 of the environmental product declaration describes the prefabricated product:

A high degree of dimensional stability and loadbearing capacity is achieved through visual or mechanical strength grading of the board lamellas and homogenisation of the visual and physical material properties.

Glued laminated timber is usually made from spruce, fir, pine or larch. The standard strength classes are GL24h, GL24c to GL32h and GL32c.

Glued laminated timber is available as standard or commissioned goods as well as in special dimensions and special constructions or in the form of special components.

Due to the existing joinery and surface finishing options integrated in the production plants, a high degree of prefabrication and thus a shortened construction time can be achieved.

Production is subject to inhouse and external monitoring in accordance with *EN 14080*.

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *ÖNORM EN 14080:2013-08-01, Timber structures – glued laminated timber and glued solid timber – Requirements* (not part of CE-marking).

Section 2.12 indicates the service life of glued laminated timber that has been used for over 100 years. When used as intended, no end to its durability is known or to be expected. The service life of glued laminated timber is therefore the same as the service life of the building when used as intended.

Section 2.13 lists the technical data regarding fire (D, s2, d0, according to *EN 13501-1*), water (no risk) and mechanical deconstruction (the break pattern of glued laminated timber therefore also has an appearance typical of solid wood).

Further project specific technical information of the products as well as specifications for dimensioning, planning and construction are available at www.hasslacher.com.

Mat 06 Material Efficiency

Aim

To recognise and encourage measures to optimise material efficiency in order to minimise the environmental impact of material use and waste without compromising on structural stability, durability or service life of the building. (BREEAM, 2021)

Characteristics of HASSLACHER glued laminated timber when it comes to material efficiency:

Recycled content	No secondary wood is used to produce HASSLACHER glued laminated timber.
Replacement	Glued laminated timber has been used for over 100 years. When used as intended, no end to its durability is known or to be expected. The service life of glued laminated timber is therefore the same as the service life of the building when used as intended.
End of life	Re-use: In the case of selective deconstruction, glued laminated timber can be reused or reutilised Without any problems after the end of the utilisation phase in the sense of cascading utilisation ("reuse") due to its monolithic layout. If it is not possible to reuse or reutilise structural finger jointed solid timber, it can be thermally recycled to generate process heat and electricity due to its high calorific value of approx. 19 MJ/kg. Disposal: It is impermissible to dispose of waste wood via landfills in some European countries. Waste classification: Classification code 17218 (Wood waste, organically treated) according to the Waste Catalogue in accordance with Annex 5 of the Austrian Waste Catalogue Ordinance; Waste Code according to the European Waste Catalogue (EWC): 17 02 01.

11.0 Waste

Wst 01 Construction waste management

Aim:

To promote resource efficiency via the effective and appropriate management of construction waste. (BREEAM, 2021)

HASSLACHER glued laminated timber represents a suitable target for diversion of resources from landfill, as it is impermissible to dispose of waste wood via landfills in some European countries, see section 2.15 of the environmental product declaration.

HASSLACHER glued laminated timber may contribute to the BREEAM target rates for diversion from landfill, applying re-use or thermal recycling according to chapter 2.14.

Section 2.8 of the environmental product declaration of HASSLACHER glued laminated timber presents details for the product's construction phase. In addition, section 2.14 indicates the product's re-use phase.

Referring information are compliant with the intent to promote resource efficiency via the effective and appropriate management of construction waste. According to table 49 (BREEAM, 2021), HASSLACHER glued laminated timber may contribute to target rates for diversion from landfill. The following aspects described in the EPDs should be considered:

EPD | chapter 2.8 | product processing/installation

Glued laminated timber can be processed with suitable tools commonly used in solid timber processing. On request, the products can also be processed in the factory and provided with fasteners or (glued-in) Steel parts.

EPD | chapter 2.14 | re-use phase

In the case of selective deconstruction, glued laminated timber can be reused or reutilised Without any problems after the end of the utilisation phase in the sense of cascading utilisation ("reuse") due to its monolithic layout. If it is not possible to reuse or reutilise structural finger jointed solid timber, it can be thermally recycled to generate process heat and electricity due to its high calorific value of approx. 19 MJ/kg.

Disclaimer: The content of, and results shown in this fact sheet are based on data and information submitted by the client. Therefore, Daxner & Merl GmbH makes no representation or warranty in regard of the correctness or completeness of the content of this document or the results shown.

.references

AgBB, board for the health evaluation of building products, German Federal Environmental Agency, Wörlitzer Platz 1, 06844 Dessau-Roßlau.

BREEAM, 2021. BREEAM® technical manual for International New Construction SD250 (December 2021).

DIN 68800-1:2019-06, Wood preservation – Part 1: General. Wood preservation – Part 2: Preventive constructional measures in buildings.

DIN 68800-3:2020-03, Wood preservation – Part 3: Preventive protection of wood with wood preservatives.

ECHA Candidate List: List of substances of very high concern considered for approval (status 19.01.2021) according to Article 59 para. 10 of the REACH Regulation. European Chemicals Agency.

EN 1912: ÖNORM EN 1912:2013-10-15, Structural timber – Strength classes – Assignment of visual grades and species.

EN 13183-1: ÖNORM EN 13183-1:2004-02-01, Moisture content of a piece of sawn timber – Part 1: Determination by oven dry method.

EN 13501-1: ÖNORM EN 13501-1:2020-01-15, Fire classification of construction products and building elements Part 1: Classification using data from reaction to fire tests.

EN 13556: ÖNORM EN 13556:2003-09-01, Round and sawn timber. Nomenclature of timbers used in Europe.

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EN 15804: DIN EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

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