

ENVIRONMENTAL PRODUCT DECLARATION

Glued laminated timber from Mayr-Melnhof Holz Reuthe GmbH

In accordance with: ISO 14025:2006 and
EN 15804:2012+A2:2019/AC:2021

Products included in the EPD:
Glued laminated timber by Mayr-Melnhof Holz Holding AG

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

Type of EPD: EPD of multiple products from a company based on the average results of the product group.

EPD owner
Mayr-Melnhof Holz Holding AG

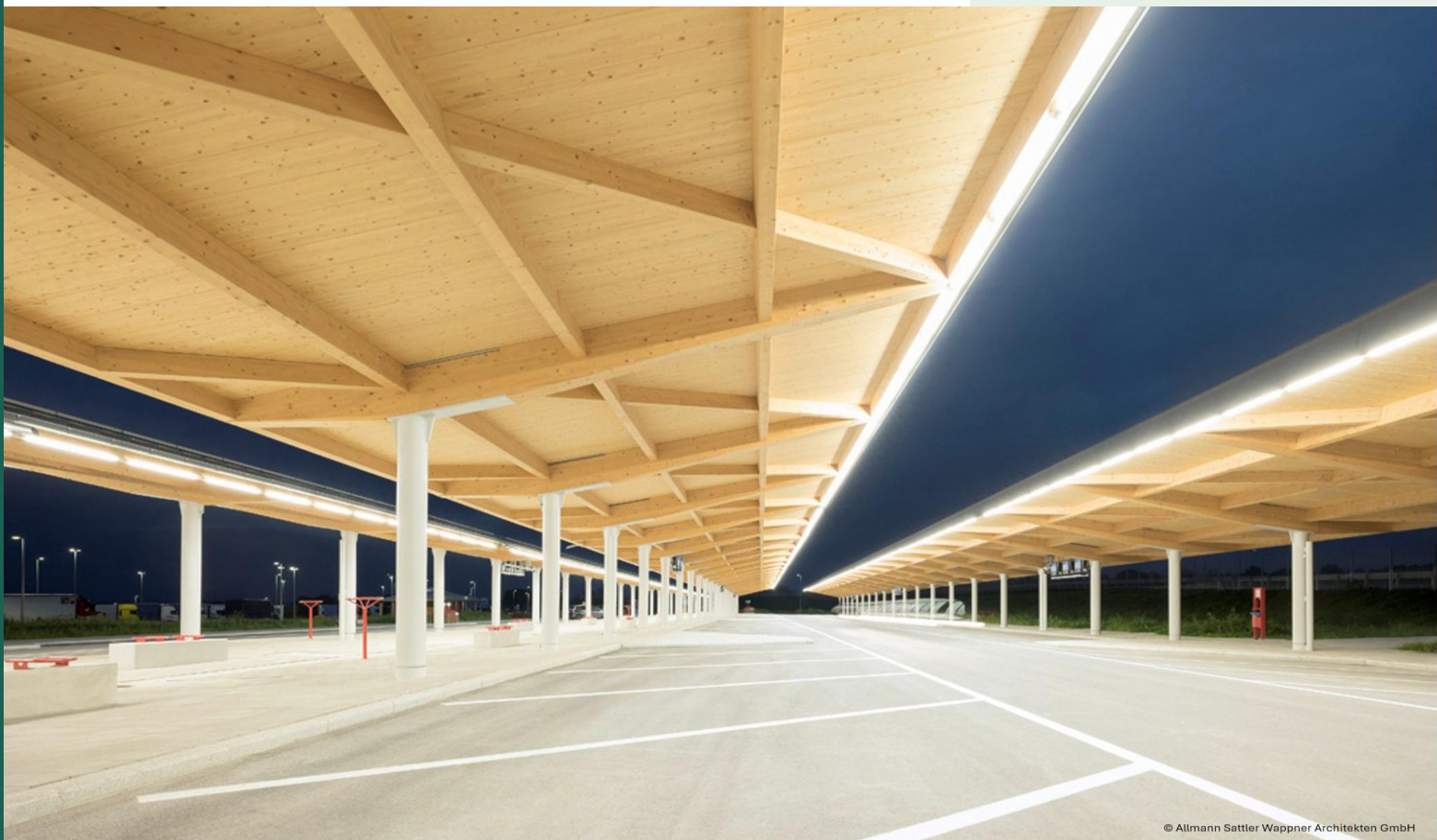
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The International EPD
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GENERAL INFORMATION

Programme information

Programme	The International EPD System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)	
Product Category Rules (PCR)	PCR 2019:14 Construction products (EN 15804+A2) (version 2.0.0)
PCR review was conducted by	PCR review was conducted by: The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com . The review panel may be contacted via support@environdec.com . Review chair: Rob Rouwette (start2see)
Complementary Product Category Rules (c-PCR)	PCR 2019:14-c-PCR-006 Being updated - Wood and wood-based products for use in construction (EN 16485) (1.0.0) Version: 1.0.0 (2025-04.08)
c-PCR review was conducted by	The Technical Committee of the International EPD System

Third-party verification

LCA accountability	Mayr-Melnhof Holz Holding AG and Therese Daxner (Daxner & Merl GmbH)
External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via	☒ Individual EPD verification without a pre-verified LCA/EPD tool ☐ Individual EPD verification with a pre-verified LCA/EPD tool ☐ EPD process certification* without a pre-verified LCA/EPD tool ☐ EPD process certification* with a pre-verified LCA/EPD tool ☐ Fully pre-verified EPD tool
Third-party verifier	Matthias Schulz (Schulz Sustainability Consulting)
Approved by	International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier	☐ Yes ☒ No
*EPD Process Certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envIRONDEC.com . International EPD System.	

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

EPD Owner	Mayr-Melnhof Holz Holding AG
Contact person name	Markus Grabner
Contact person e-mail	markus.grabner@mm-holz.com
Organisation address	Turm-gasse 67 8700 Leoben Austria
LCA practitioner commissioned by the EPD owner	Daxner & Merl GmbH Schleifmühl-gasse 13/24 1040 Vienna Austria office@daxner-merl.com

Description of the organisation of the EPD Owner

Mayr-Melnhof Holz Holding AG is an Austrian sawmill company headquartered in Leoben. The company produces and sells timber construction products and wood pellets.

The company is divided into the sawn timber and processing divisions. Wood processing takes place at four locations in Gaishorn (AT), Reuthe (AT), Wismar (DE), and Olsberg (DE). Mayr-Melnhof Holz Holding AG's timber construction production program includes glued laminated timber (glulam, block glued glulam, glulam with large fingerjoints) glued solid timber, cross laminated timber, multi-layered solid wood panel, timber concrete composite elements and concrete formwork panels and beams.

PRODUCT INFORMATION

Product name	Glued laminated timber by Mayr-Melnhof Holz Reuthe GmbH
Product identification	Glued laminated timber by Mayr-Melnhof Holz Reuthe GmbH is produced and placed on the market according to EN 14080 Timber structures - Glued laminated timber and glued solid timber - Requirements and the Construction Product Regulation (EU) No. 305/2011 of the European Parliament and the Council of 9 March 2012 laying down harmonised conditions for the marketing of the construction products and on repealing Directive 89/106/EEC of the Council. For the application and use the respective national provisions apply.
Product description	Glued laminated timber is a dimensionally stable, homogeneously glued product, which is used for load-bearing structures. Glued laminated timber consists of at least two laminations and is manufactured from kiln-dried softwood in accordance with EN 14080 and includes also glued solid timber, block glued glulam and glulam with large finger joints and glulam with special forms. Glued laminated timber is usually made from spruce, pine, fir or larch. The standard strength classes are: GL24c, GL24h, GL28c, GL28h, GL30c, GL30h. 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.
Product information from external sources	www.mm-holz.com
Technical purpose of product	Glued laminated timber is primarily used as a load-bearing component in residential and industrial buildings, as well as in timber engineering projects.
Manufacturing or service provision description	The manufacture of glued laminated timber involves kiln-drying conventional sawn timber to $12 \pm 2\%$ moisture content, rough-planed and visually or automatically strength-graded. Depending on the requisite strength class, any board sections of lower strength are cut out and the remaining board sections bonded via finger joints to form laminations of infinite length. The subsequent rough-planing process involves planing the laminations to the required thicknesses for pressing at least 2-layer blanks after applying adhesive to the wide face in a straight or curved press bed. After hardening, the blanks are planed, bevelled, bound and packed. If necessary, they can be treated with weatherproof or, in exceptional cases, wood preservative.
Material properties	Volumetric mass density (kg/m^3), 465 Conversion factor to mass (LCA results per 1 kg), 0.00215054
Production site	Mayr-Melnhof Holz Reuthe GmbH Austria Reuthe 6870 Vorderreuthe 57
UN CPC code	31. Products of wood, cork, straw and plaiting materials
Geographical scope(s)	Austria
Geographical scope description	The declared product is manufactured in Reuthe, Austria.
Actual or technical lifespan	100 Years

Hazardous and toxic substances	The product does not contain any substances from the SVHC candidate list in concentrations exceeding 0.1% of its weight.
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Product images



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MM masterline
Glued laminated timber



MM masterline
Engineered glulam



MM profideck
Glulam ceiling elements



MM HBE
Glulam house building elements



MM vistaline
Duo & Trio Beams



MM blockdeck
Glulam floor and wall beams

Technical characteristics and performance

c-PCR-006: Wood and wood-based products for use in construction

Product name	Density	Moisture content
Glued laminated timber (GL24 to GL32) according to EN 14080	400 to 490 kg/m ³	12 ± 2%

Technical performance

Product name	Bending strength $f_{m,g,k}$	Tensile strength parallel to grain $f_{t,0,g,k}$	Tensile strength perpendicular to grain $f_{t,90,g,k}$	Compressive strength parallel to grain $f_{c,0,g,k}$	Compressive strength perpendicular to grain $f_{c,90,g,k}$	Shear strength $f_{v,g,k}$
Glued laminated timber (GL24 to GL32) according to EN 14080	24 - 32 N/mm ²	17 - 25.6 N/mm ²	0.5 N/mm ²	21.5 - 32 N/mm ²	2.5 N/mm ²	3.5 N/mm ²

Product name	Mean modulus of elasticity parallel to grain $E_{0,g,mean}$	Characteristic modulus of elasticity parallel to grain $E_{0,g,05}$	Mean modulus of elasticity perpendicular to grain $E_{90,g,mean}$	Characteristic modulus of elasticity $E_{0,g,05}$	Mean shear modulus $G_{g,mean}$	Characteristic shear modulus $G_{g,05}$
Glued laminated timber (GL24 to GL32) according to EN 14080	11 000 - 14 200 N/mm ²	9 100 - 11 800 N/mm ²	300 N/mm ²	250 N/mm ²	650 N/mm ²	540 N/mm ²

Product name	Wood types according to EN 1912	Surface quality	Use of wood preservatives according to DIN 68800-3	Thermal conductivity according to EN 12664	Specific thermal capacity according to EN 12664	Water vapour diffusion resistance factor according to ISO 10456 5	Formaldehyde emissions according to EN 14080	Dimensional deviation
Glued laminated timber (GL24 to GL32) according to EN 14080	Spruce (common), Pine, Fir, Larch	visual quality (VI), non-visual quality (NVI)	Iv, P and W	0.12 W/(mK)	1.6 kJ/kgK	$\mu = 50$ (dry) to 20 (wet)	< E1 $\mu\text{g}/\text{m}^3$	Width: +/- 2 mm; height ≤ 400 mm: + 4 mm / - 2 mm; height > 400 mm: + 1 % / - 0,5 %; length (≤ 2 m): +/- 2 mm; length (2 m < ≤ 20 m): +/- 0,1 %; length (> 20 m): +/- 20 mm

CONTENT DECLARATION

The average proportions of ingredients per m³ glued laminated timber by Mayr-Melnhof Holz Reuthe GmbH for the environmental product declaration are:

- softwood, mainly spruce approx. 88 to 90 %
- water approx. 9 to 10 %
- adhesives approx. 0.5 to 2.0 %

The product has an average density of 465 kg/m³.

PRODUCT CONTENT					
Content name	Weight, kg	Post-consumer recycled material, weight-% of product	Biogenic material, weight-% of product	Biogenic material ¹ , kg C/declared unit	Biogenic material, kg CO ₂ /declared unit
Softwood, mainly spruce + water + adhesive	465	0	44	207	757
Total	465	0	44	207	757
Note 1	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂				

PACKAGING MATERIALS			
Material name	Weight, kg	Weight-% (versus the product)	Biogenic material ¹ , kg C/declared unit
Polyethylene	1.92	0.41	0
Polyethylene terephthalate	0.18	0.04	0
Polypropylene	0.14	0.03	0
Total	2.1	0.44	0
Note 1	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂		

LCA INFORMATION

EPD based on declared or functional unit	Declared unit
Declared unit and reference flow	Glued laminated timber Volume (m ³), 1
Conversion factor to mass	0.00215054
Data sources used for this EPD	MLC database (general) Sphera MLC (fka GaBi) CUP 2024.02
LCA Software	LCA for Experts (formerly GaBi Software) N/A
Additional information about the underlying LCA-based information	Estimates and assumptions: All assumptions are verified through detailed documentation and correspond to the best possible representation of reality based on the available data. Background data for wood logs refer to generic data for spruce logs in bark derived from MLC-database. Spruce represents the majority of wood processed at Mayr-Melnhof Holz Holding AG. The used dataset represents an approximation for all other species. Regional applicability of the used background data refers to average data under European or German conditions taken from the MLC-database. Emissions from wood drying were included in the calculations according to Rüter & Diederichs 2012. 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. Cut-off 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. 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. The analysis of the major amount of adhesives used for glued laminated timber production is based on primary data from Mayr-Melnhof Holz Holding AG's suppliers.

	Data quality: Data collection is based on product-specific questionnaires. It follows an iterative process of clarifying questions via email, telephone calls or in personal/web meetings. Intensive discussions between Mayr-Melnhof Holz Holding AG 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 representation of the main raw materials used for the production of glued laminated timber is based on supplier specific primary data (adhesive systems) leading to a high data quality. 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. Allocation: At the Reuthe site glued laminated timber as well as 3-ply concrete formwork panels and concrete formwork beams are produced. Main material flows are reported separately for the different product groups. Energy flows were allocated based on the production quantities (cubic meters). All residues are incinerated in the biomass power plant at site. No co-products are sold for material use. As a result, no co-product allocation was applied.
Version of the EN 15804 reference package	EF Reference Package 3.1
Characterisation methods	The calculation of environmental impacts follows the method according to the Joint Research Center issued in the publication 3.1 of the European Commission (JRC, 2019 and Valente et al., 2022).
Technology description including background system	The product considered is glued laminated timber with an average density of 465 kg/m ³ and a wood moisture of app. 11% at delivery.
Scrap (recycled material) inputs contribution level	The product does not contain any recycled material.
Infrastructure and capital goods	Excluded

Data quality assessment and reference years

Foreground data were collected in the 2024 production year and the data are based on the volumes produced on an annual basis.

DATA QUALITY ASSESSMENT AND REFERENCE YEARS					
Process name	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Energy for manufacturing	Collected data + database	Mayr-Melnhof Holz	2024-01-01 - 2024-12-31	Primary data	2%
Transports to the production site	Collected data + database	Mayr-Melnhof Holz	2024-01-01 - 2024-12-31	Primary data	14%
Production of adhesives	Collected data	Supplier	2024-01-01 - 2024-12-31	Primary data	23%
Total share of primary data, of GWP-GHG results for A1-A3					39%
Note	The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that do not capture all relevant aspects of data quality. The indicator is not comparable across product categories.				

ELECTRICITY USED IN THE MANUFACTURING PROCESS IN A3

Type of electricity mix	Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a contractual instrument	
Energy sources	Hydro	3.76%
	Wind	32.13%
	Solar	62.35%
	Biomass	0%
	Geothermal	0.18%
	Waste	0.75%
	Nuclear	0%
	Natural gas	0%
	Coal	0%
	Oil	0%
	Peat	0%
	Other	0.69%
Climate impact (GWP-GHG):	0.03 kg CO ₂ eq./kWh	

System boundary

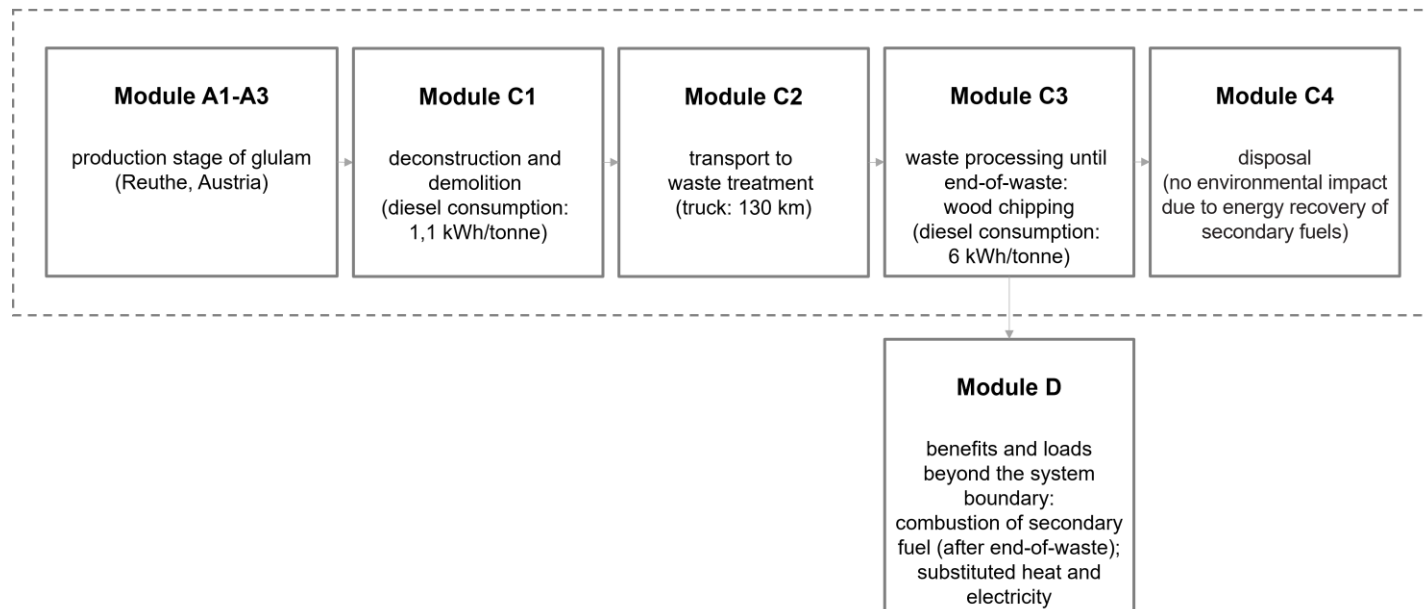
Description of the System boundary	Cradle to gate with modules C1-C4 and module D (A1-A3 + C + D).
Excluded modules	Yes, there is an excluded module, or there are excluded modules
Justification for omission of modules	Due to the selected system boundary, transport to site (A4), construction installation (A5) and the use stage (B1-B7) are not considered in this EPD.

	Product stage			Construction process stage		Use stage							End of life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport to site	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	Europe	Europe	Europe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Europe	Europe	Europe	Europe	Europe
Share of primary data	39%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Description of the process flow diagram

Process flow diagram related images

System boundary



Scenarios

Name of the default scenario	Energy recovery
Description of the default scenario	Energy recovery of the wooden products as secondary combustibles incl. consideration of substituted heat and electricity in module D

Module C: End-of-life

Explanatory name of the default scenario in module C	Energy recovery
Description of the default scenario in module C	Module C1 - deconstruction and demolition: After the removal of other building components overlying the product, the joints can simply be loosened by screwing or sawing and lifted by cranes to the place of removal. Required energy demand is considered in line with PCR 2019:14 version 2.0.0 with a diesel consumption of 1,1 kWh/tonne. The actual energy demand depends on the installation of the products and can therefore vary greatly in the building context. Module C2 - transport to disposal: Module C2 includes the transport to waste treatment. In this case, transport by truck over a transport distance of 130 km is assumed. Module C3 - waste processing: In Module C3, the chipping of wood after the removal of the products is considered. In line with PCR 2019:14 version 2.0.0, a diesel consumption of 6 kWh/tonne is used as scenario. 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 disposal of the products in C4.

Module C information	Value	Unit
Collected separately	465	kg
Energy recovery as secondary fuel	465	kg
Deconstruction, diesel consumption (C1)	1.1	kWh/t
Transport to disposal, by truck (C2)	130	km
Waste processing, diesel consumption (C3)	6	kWh/t

Module D: Beyond product life cycle

Explanatory name of the default scenario in module D	Energy recovery
Description of the default scenario in module D	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. 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 glued-laminated timber product, energy recovery as secondary fuel in a biomass power plant is assumed. As the main sales market for the solid wood 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 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.

Module D information	Value	Unit
Processing rate	100	%
Efficiency of power plant	68	%

ENVIRONMENTAL PERFORMANCE

Mandatory environmental performance indicators according to EN 15804

The following table contains the LCA results for a declared unit of 1 m³ of glued laminated timber produced by Mayr-Melnhof Holz Holding AG (465 kg/m³).

The results are based on the publication 3.1 of the JRC of the European Commission.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

For a comprehensive assessment, it is strongly recommended to consider the results from all the modules. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3). Relying exclusively on Modules A1-A3 may lead to incomplete conclusions.

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO ₂ eq.	-6.38E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.47E-01	7.61E+00	7.59E+02	0.00E+00	-3.56E+02
Climate change - fossil	GWP-fossil	kg CO ₂ eq.	1.16E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.47E-01	7.47E+00	1.35E+00	0.00E+00	-3.54E+02
Climate change - biogenic	GWP-biogenic	kg CO ₂ eq.	-7.55E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.28E-04	1.78E-02	7.57E+02	0.00E+00	-1.75E+00
Climate change - land use and land-use change	GWP-luluc	kg CO ₂ eq.	5.00E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.16E-05	1.26E-01	1.72E-04	0.00E+00	-3.47E-02
Ozone depletion	ODP	kg CFC-11 eq.	6.32E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.21E-14	1.10E-12	1.75E-13	0.00E+00	-3.81E-09
Acidification	AP	mol H ⁺ eq.	7.66E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.26E-03	4.99E-02	6.90E-03	0.00E+00	3.71E-01
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	8.53E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.90E-08	3.19E-05	3.76E-07	0.00E+00	-7.05E-04
Eutrophication aquatic marine	EP-marine	kg N eq.	2.91E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.25E-04	2.45E-02	3.41E-03	0.00E+00	4.70E-02
Eutrophication terrestrial	EP-terrestrial	mol N eq.	3.07E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.85E-03	2.72E-01	3.73E-02	0.00E+00	5.73E-01
Photochemical ozone formation	POCP	kg NMVOC eq.	8.60E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.86E-03	4.86E-02	1.01E-02	0.00E+00	2.26E-01
Depletion of abiotic resources - minerals and metals	ADP-minerals&metals ¹	kg Sb eq.	2.66E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.65E-09	6.51E-07	3.63E-08	0.00E+00	-3.55E-05
Depletion of abiotic resources - fossil fuels	ADP-fossil ¹	MJ, net calorific value	1.84E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.30E+00	9.84E+01	1.80E+01	0.00E+00	-6.47E+03
Water use	WDP ¹	m ³ world eq. deprived	1.59E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.41E-04	1.16E-01	3.50E-03	0.00E+00	-2.07E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption																
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.																
Disclaimer 1	The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator																

Additional mandatory environmental performance indicators

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - GWP-GHG	GWP-GHG ¹	kg CO ₂ eq.	1,19E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,47E-01	7,61E+00	1,35E+00	0,00E+00	-3,56E+02
Acronyms	GWP-GHG = Global warming potential greenhouse gas.																
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.																
Disclaimer 1	The GWP-GHG indicator is termed GWP-I/OBC/GHG in the ILCD+EPD+ data format. The indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO ₂ is set to zero.																

Additional voluntary environmental performance indicators according to EN 15804

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter emissions	PM	Disease incidence	1.17E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.59E-08	2.11E-07	1.41E-07	0.00E+00	1.46E-07
Ionizing radiation - human health	IRP ¹	kBq U235 eq.	1.18E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.79E-04	2.60E-02	4.25E-03	0.00E+00	-9.28E+01
Eco-toxicity - freshwater	ETP-fw ²	CTUe	9.31E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.47E+00	7.31E+01	1.35E+01	0.00E+00	-1.05E+03
Human toxicity - cancer effects	HTP-c ²	CTUh	2.24E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.86E-10	1.48E-09	1.56E-09	0.00E+00	-1.69E-08
Human toxicity - non-cancer effects	HTP-nc ²	CTUh	1.91E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.46E-09	6.63E-08	7.98E-09	0.00E+00	4.53E-07
Land-use related impacts/soil quality	SQP ²	Dimensionless	1.27E+05	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.43E-02	4.84E+01	1.33E-01	0.00E+00	-1.49E+03
Acronyms	PM = Potential incidence of disease due to particulate matter emissions; IRP = Potential human exposure efficiency relative to U235; ETP-fw = Potential comparative toxic unit for ecosystems; HTP-c = Potential comparative toxic unit for humans; HTP-nc = Potential comparative toxic unit for humans; SQP = Potential soil quality index.																
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.																
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.																
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.																

Resource use indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ, net calorific value	3.12E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.49E-02	8.48E+00	7.64E+03	0.00E+00	-2.55E+03
PERM	MJ, net calorific value	7.64E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-7.64E+03	0.00E+00	0.00E+00
PERT	MJ, net calorific value	1.08E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.49E-02	8.48E+00	1.36E-01	0.00E+00	-2.55E+03
PENRE	MJ, net calorific value	1.63E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.30E+00	9.84E+01	1.75E+02	0.00E+00	-6.47E+03
PENRM	MJ, net calorific value	2.50E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-1.57E+02	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	1.88E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.30E+00	9.84E+01	1.80E+01	0.00E+00	-6.47E+03
SM	kg	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, net calorific value	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.64E+03
NRSF	MJ, net calorific value	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E+02
FW	m ³	5.87E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.70E-05	9.44E-03	1.47E-04	0.00E+00	-1.35E+00
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.															
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.															

Waste indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	3.06E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.21E-10	3.77E-09	6.61E-10	0.00E+00	-5.14E-06
NHWD	kg	2.33E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.44E-04	1.61E-02	1.88E-03	0.00E+00	6.57E-02
RWD	kg	6.60E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.41E-06	1.79E-04	2.95E-05	0.00E+00	-5.64E-01
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed.															
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.															

Output flow indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	0.00E+0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	kg	0.00E+0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	kg	0.00E+0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	4.65E+2	0.00E+0	0.00E+0
EEE	MJ, net calorific value	0.00E+0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ, net calorific value	0.00E+0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Acronyms	CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy.															
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.															

VERSION HISTORY

Original version of the EPD.

ABBREVIATIONS

ADPE	abiotic depletion potential for mineral resources (elementary, non-fossil)
ADPF	abiotic depletion potential for fossil resources
AP	acidification potential
CFC11	trichlorfluoromethane
CO ₂	carbon dioxide
CRU	components for re-use
EEE	exported electrical energy
EET	exported thermal energy
EP	eutrophication potential
EPD	environmental product declaration
ETP	potential comparative toxic unit for ecosystems
FW	use of net fresh water
GWP	global warming potential
GWP-GHG	global warming potential greenhouse gas.
HWD	hazardous waste disposed
HTP	potential comparative toxic unit for humans
IRP	potential human exposure efficiency relative to U235
LCA	life cycle assessment
LCA FE	Software for life cycle assessment, LCA for Experts (formerly known as GaBi)
MER	materials for energy recovery
MFR	materials for recycling
MJ	megajoule
MLC	Database for life cycle assessment, Managed LCA Content (formerly known as GaBi)
NHWD	non-hazardous waste disposed
NRSF	use of non-renewable secondary fuels
ODP	ozone depletion potential
PCR	product category rules
PENRE	non-renewable primary energy as energy carrier
PENRM	non-renewable primary energy as material utilization
PENRT	total use of non-renewable primary energy resources
PERE	renewable primary energy as energy carrier
PERM	renewable primary energy resources as material utilization
PERT	total use of renewable primary energy resources
POCP	photochemical ozone creation potential
RSF	renewable secondary fuels
RWD	radioactive waste disposed
Sb	antimony
SM	use of secondary material
SQP	potential soil quality index
WDP	water (user) deprivation potential

Economic and social information

<https://www.mm-holz.com/en/>

REFERENCES

References

EPD International (2025): General Programme Instructions for the International EPD® System. Version 5.0.1, published on 2025-02-27

EPD International (2025): PCR 2019:14 Construction products. Version 2.0.0, published on 2025-04-07

EPD International (2025): PCR 2019:14-c-PCR-006 Being updated - Wood and wood-based products for use in construction (EN 16485). Version 1.0.0, published 2025-04-08

JRC (2019): European Commission-Joint Research Centre, 2019. Environmental Footprint reference package, EF reference package 3.0.

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

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

Rüter, S.; Diederichs, S., 2012: 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.

Valente et al. (2022): Valente A., Kusche O, Ardente F., 2022. Updates on "Guide for EF compliant data sets (Version 2.0)" to reflect the changes in the Environmental Footprint 3.1 reference package.

Standards

EN 14080:2013-08-01, Timber structures - Glued laminated timber and glued solid timber - Requirements.

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

EN 16485:2014, Round and sawn timber. Environmental product declarations. Product category rules for wood and wood-based products for use in construction.

EN 16449:2014, Wood and wood-based products. Calculation of the biogenic carbon content of wood and conversion to carbon dioxide.

ISO 14025:2010-07-01, Environmental labels and declarations Type III environmental declarations Principles and procedures.

ISO 14044:2006, Environmental management. Life Cycle Assessment. Requirements and guidelines.

