

Environmental Product Declaration (EPD) of James Latham Accoya® Cladding Finish Line

Roberts, George; Skinner, Campbell

Published: 30/04/2024

Publisher's PDF, also known as Version of record

[Cyswllt i'r cyhoeddiad / Link to publication](#)

Dyfyniad o'r fersiwn a gyhoeddwyd / Citation for published version (APA):
Roberts, G., & Skinner, C. (2024, Apr 30). Environmental Product Declaration (EPD) of James Latham Accoya® Cladding Finish Line. The International EPD System (IES).

Hawliau Cyffredinol / General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Environmental Product Declaration

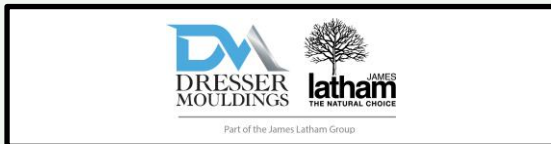


In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

James Latham Accoya® Cladding Finish Line Sansin coated

from

James Latham



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-13618
Publication date:	2024-04-30
Revision date:	2024-07-08
Valid until:	2029-04-30


An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>Construction Products, PCR 2019:14 (v1.3.3), c-PCR-006 (to PCR 2019:14) Wood and wood-based products for use in construction (EN 16485:2014).</i>
PCR review was conducted by: <i>Claudia A. Peña, info@environdec.com</i>
Life Cycle Assessment (LCA)
LCA accountability: George Roberts, Campbell Skinner - BioComposites Centre, Bangor University
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input type="checkbox"/> EPD verification by individual verifier
Third-party verifier: <i>Jane Anderson, ConstructionLCA Ltd,</i> 
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: James Latham

Contact: Ewa Bazydło

Email: ewa.bazydlo@lathams.co.uk

Description of the organisation: James Latham Group is one of the UK and Ireland's largest independent distributors of timber, panel products and decorative surfaces with over 265 years in the timber industry. Operating from 13 branches throughout the UK and Ireland, Lathams work with merchants & distributors, construction professionals, designers, architects and more, enabling the most demanding designs and construction projects to become reality. Functioning as the Group Centre for cladding expertise, Dresser Mouldings became part of the James Latham Group in December 2019. Dresser Mouldings has a wide range of state of the art specialist machining, CNC and coating equipment, allowing for production of a wide range of profiles, surface textures, coatings and finishes.

Product-related or management system-related certifications: FSC® (FSC-C007658; certificate number: INT-COC-002322; INT-CW-002322), ISO 9001 (Holds Multi-Site Certificate No: 8434) and ISO 14001 (Holds Multi-Site Certificate No: 8434).

Name and location of production site(s):

Dresser Mouldings
Station Yard Sawmills
Wood street
Rochdale
OL16 5QN

Product information

Product name: Accoya® Cladding Finish Line Sansin coated.

Product identification: James Latham Accoya® moulded and peripheral profiles Cladding, factory coated with a minimum 1 Base Coat Sansin SDF 0 (zero) Base and 1 coat Sansin SDF 0 (zero) Top Coat.

Product description: James Latham Accoya® Finish Line Cladding Collection combines acetylated New Zealand radiata pine, Sansin coatings and surface treatment technologies to offer fully finished cladding solution.

Solid wood cladding for use on external walls and ceilings

Accoya® Approximate density: average 515 kg / m³

Accoya® Equilibrium moisture content: 3 - 5% at 65% relative humidity, 20 °C

Accoya® durability: Class I (EN 350)

UN CPC code: 314 Boards and panels.

31211: Wood, continuously shaped along any of its edges or faces (including strips and friezes for parquet flooring, not assembled, and beadings and mouldings) of coniferous wood.

Geographical scope: Regarding raw materials in A1 the Accoya® wood is from Holland and the Sansin wood sealer is from Spain.

A2 represents freight lorries from Europe.

A3 represents production in the United Kingdom (UK).
C1-C4 represents waste processing in the UK.
D represents energy recovery in the UK.

LCA information

Functional unit / declared unit: Results are reported for 1 m² of coated Lathams cladding. Each cladding strip is 145mm wide and 15mm thick and fit together as tongue and groove. Material density is 515 kg/m³ with an average wet moisture content of 4%. Weight of 1m² of coated cladding is 7.915 kg.

Following the recommendation of EN 15804 in point 6.3.3.

Reference service life: Due to the additional coating a product reference service life has not been defined.

Time representativeness: All data refers to the year 2022.

Database(s) and LCA software used: Databases: Ecoinvent version 3.8.
LCA software: SimaPro version 9.

Description of system boundaries: Type of EPD: Cradle to gate with modules C1-C4 and module D.

The underlying LCA is based upon the following information and assumptions:

Modules A1-A3: The product stage of the LCA constitute of modules A1 – A3. Module A1 involves the extraction and refinement of raw materials (importing Accoya® wood and Sansin sealer) from the suppliers of Lathams. Transports of the main components from the suppliers are included in module A2. A3 involves the processes of producing the cladding product. The primary energy grid mix used by Lathams is UK residual grid mix. Infrastructure and capital goods of Dresser Mouldings have been excluded from this study.

Modules C1-C4: Manual deconstruction of the cladding is assumed for C1. Transport by lorry with a distance of 50km to the waste facility is assumed for C2. At end-of-life it is assumed the timber is incinerated and used for energy recovery, so oxidation is assumed in C3 with the stored biogenic carbon released back into the atmosphere. No activity in C4 as the timber is used for energy recovery.

Module D: Incineration of wood substituting for gas use to generate electricity.

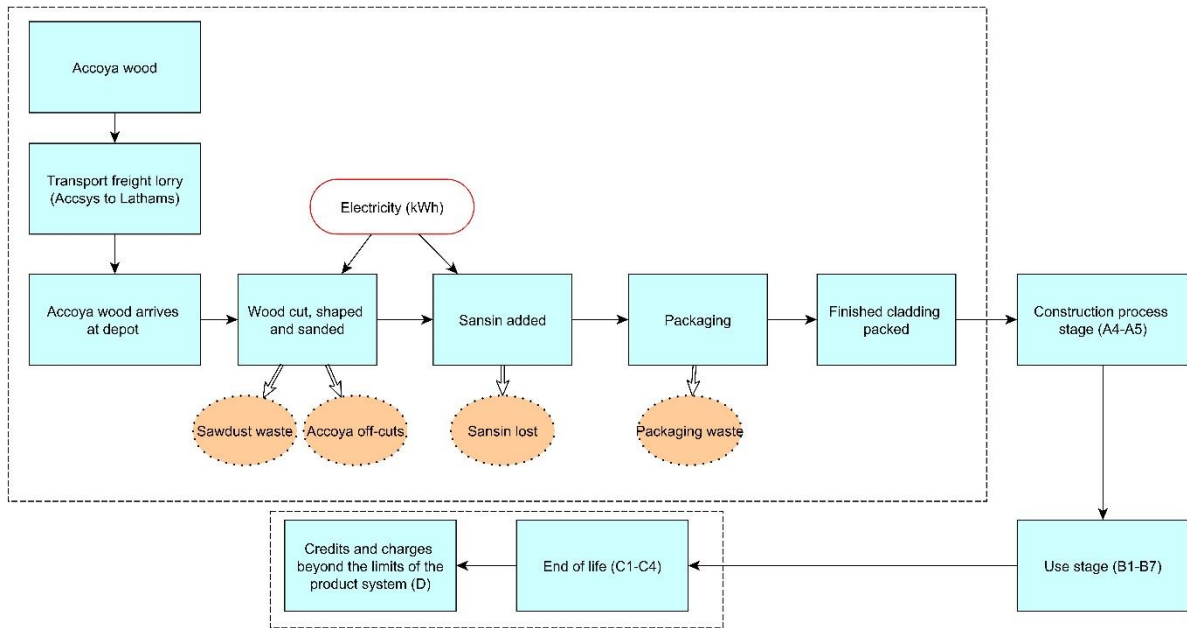
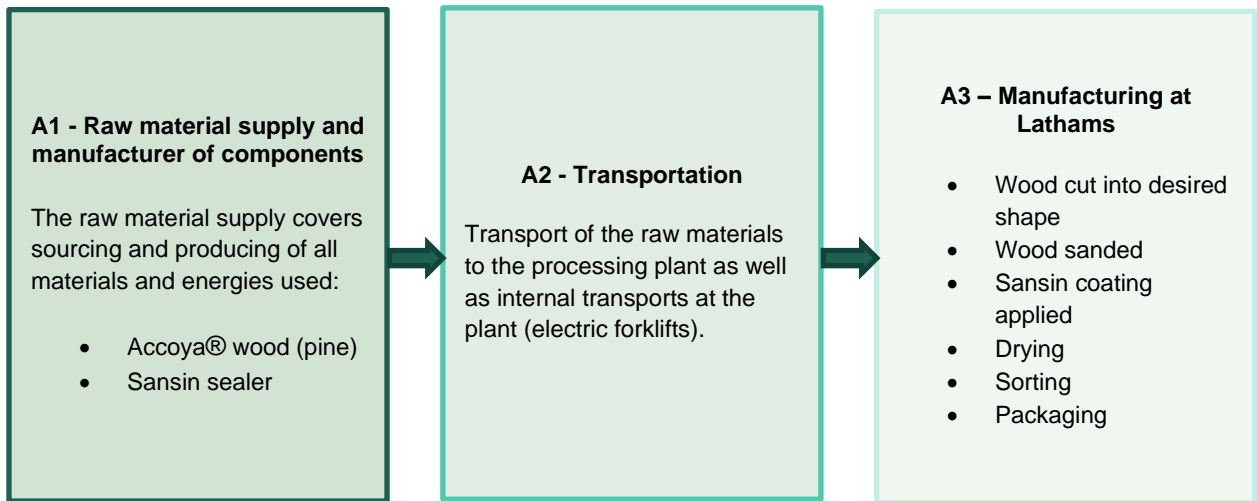


Figure 1: System boundary of the cladding production process. The dotted line shows the cradle-to-grave processes of producing the cladding up to EoL.

System diagram (A1 – A3):



Lathams cladding is manufactured at Dresser Mouldings in the UK. The raw wood material base is the modified sawn wood from Accsys which is manufactured in Holland. The wood originates from New Zealand and is certified as FSC® mix. Once it arrives at Dresser Mouldings the wood is cut and sanded to the desired shape. The wood is then coated with Sansin sealer on either the spray line for large quantities of cladding or put through a vacuum coating line for smaller batches. Once the product is dried it is then packaged ready for distribution. This cladding is durable, dimensionally stable with the performance characteristics of the most durable tropical hardwoods using a softwood alternative.

Background of data

The LCA data from a verified LCA study to EN 15804 for Accoya has been used for module A1.

The LCA software, “SimaPro” was used to model the life cycle and all datasets used in this study after A1 were taken from Ecoinvent 3 software database.

Cut-off rules

Following section 6.3.6. of EN15804:2012+A2:2019 the cut-off criteria has been followed, 99% of the total energy and materials are included and the total neglected input flows for the modules reported on in the LCA are less than 5% of the energy use.

Data quality

The data used are less than 5 years old.

All data obtained for modules A1-A3 was done so through a site visit at Dresser Mouldings and communications with Lathams. All manufacturing information comes from operational data and from measurements, so the quality of data can be described as good. Assumptions have been made around waste processing in modules C1-C4 and energy recovery for module D.

Parameters	Product stage							
	A1: Raw materials	A2: Transportation	A3: Manufacturing	C1: De-construction demolition	C2: Transport	C3: Waste processing	C4: Disposal	D: recovery stage
Data quality	1	1	1	2	2	2	2	2
Scope	X	X	X	X	X	X	X	X

Data quality can be primary (1) or secondary (2).

Scope: X = module is declared in EPD. MND = module not declared (does not indicate zero impact result).

Modules C – D are stated as using secondary data, meaning these scenarios are based on assumptions and generic data.

Allocation

Dresser Mouldings manufacture multiple products so economic allocation has been used to apportion electricity (in module A3) as no separate (i.e. product specific) metering is in place. Allocation of the energy required to produce the cladding has been approximated by an expert judgement. For the sample period between July 2022 and December 2022, the production of Accoya cladding made up 22.85% of production. So, of the total electricity consumption of the site, 22.85% has been allocated to represent the energy required to produce the cladding. This will give the approximated amount of electricity used per 1m² of James Latham Accoya® Cladding Finish Line Sansin coated in the year 2022.

During the stage A3 there is approximately 34.2% of waste wood produced. When shaping and sanding the cladding around 28.5% is turned into sawdust which is sold to a local business. The remaining 5.7% are offcuts from the Accoya® wood and are sold back to Accsys to be re-used in their products. Due to no waste wood, the co-product can be economically allocated in accordance with the EN 15804 2012 +

A2 2019 core rule 6.4.3. 2.. This means that all emissions associated with the production of the co-products (saw dust and off-cuts) are not accounted for in this study and are allocated outside the system boundary. As the majority of revenue (99.55%) stems from the cladding, the difference in revenue from the co-products is extremely high. Meaning 99.55% of the emissions produced in this LCA have been allocated to the cladding and only 0.45% to the co-products.

Energy source – Electricity, medium voltage, residual mix, United Kingdom (GB). Reference year: 2021.

GWP-GHG = 0.434 kg CO2 eq./kWh.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	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	EU 27	EU 27	UK	-	-	-	-	-	-	-	-	-	UK	UK	UK	UK	UK
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Accoya® wood	7.725	0%	97.5%, 3.71 kg C/kg
Sansin wood sealer	0.19	0%	0%
TOTAL	7.915	0%	97.5%
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Polyurethane foam	0.022	0.28%	0
Softwood pallet	0.002	0.03%	0
Polypropylene strapping	0.001	0.01%	0
TOTAL	0.025	0.32%	0

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
N/A	N/A	N/A	N/A

There are no SVHC substances in the product or their amount is negligible.

Wood waste materials arising from the core production are sold as by-products, and the Sansin wood sealer is disposed of by a waste disposal company.

The plastics and softwood pallet waste materials arising from the core production are recycled.

Results of the environmental performance indicators

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.

The use of the results of modules A1-A3 (A1-A5 for services) should not be used without considering the results of module C.

The EN 15804 reference package has been based on version EF 3.0.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2.10E+01	0.00E+00	6.04E-02	7.41E-02	0.00E+00	-2.95E+00
GWP-biogenic	kg CO ₂ eq.	-1.36E+01	0.00E+00	5.60E-05	1.36E+01	0.00E+00	-1.54E-03
GWP-luluc	kg CO ₂ eq.	3.56E-02	0.00E+00	2.96E-05	2.43E-05	0.00E+00	-3.23E-04
GWP-total	kg CO ₂ eq.	7.38E+00	0.00E+00	6.05E-02	1.37E+01	0.00E+00	-2.95E+00
ODP	kg CFC 11 eq.	3.87E-06	0.00E+00	1.31E-09	3.51E-09	0.00E+00	-1.51E-07
AP	mol H ⁺ eq.	1.05E-01	0.00E+00	1.35E-04	2.38E-03	0.00E+00	-6.24E-03
EP-freshwater	kg P eq.	1.15E-03	0.00E+00	4.33E-06	4.64E-05	0.00E+00	-5.76E-04
EP-marine	kg N eq.	2.29E-02	0.00E+00	3.49E-05	1.19E-03	0.00E+00	-1.72E-03
EP-terrestrial	mol N eq.	2.45E-01	0.00E+00	3.56E-04	1.29E-02	0.00E+00	-1.74E-02
POCP	kg NMVOC eq.	7.74E-02	0.00E+00	2.13E-04	3.40E-03	0.00E+00	-5.77E-03
ADP-minerals&metals*	kg Sb eq.	2.33E-04	0.00E+00	1.88E-07	1.71E-07	0.00E+00	-4.06E-06
ADP-fossil*	MJ	4.85E+02	0.00E+00	8.58E-01	7.14E-01	0.00E+00	-6.56E+01
WDP*	m ³	2.59E+01	0.00E+00	3.81E-03	2.01E-02	0.00E+00	-7.80E-02
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						

* Disclaimer: 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 and voluntary impact category indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.10E+01	0.00E+00	6.05E-02	7.41E-02	0.00E+00	-2.95E+00
<i>Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017</i>		ND	ND	ND	ND	ND	ND

Resource use indicators

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	2.55E+02	0.00E+00	2.84E-02	1.16E+02	0.00E+00	-2.15E+00
PERM	MJ	1.15E+02	0.00E+00	0.00E+00	-1.16E+02	0.00E+00	0.00E+00
PERT	MJ	3.70E+02	0.00E+00	2.84E-02	3.32E-02	0.00E+00	-2.15E+00
PENRE	MJ	5.08E+02	0.00E+00	7.16E+00	7.14E-01	0.00E+00	-6.56E+01
PENRM	MJ	6.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	5.08E+02	0.00E+00	7.16E+00	7.14E-01	0.00E+00	-6.56E+01
SM	kg	0.00E+00	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	2.45E+01
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						

Waste indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4.33E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	1.38E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	8.74E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

¹ This 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 CO₂ is set to zero.

Output flow indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	6.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	7.725 E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Other environmental performance indicators

Regarding the ionising radiation, 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.

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Particulate Matter emissions	disease inc.	5.27E-07	0.00E+00	4.77E-09	1.93E-08	0.00E+00	-3.33E-08
Ionizing radiation, human health	kBq U-235 eq	2.02E+00	0.00E+00	1.21E-03	2.06E-03	0.00E+00	-1.97E+00
Eco-toxicity (freshwater)	CTUe	4.40E+02	0.00E+00	4.55E-01	1.01E+00	0.00E+00	-3.51E+00
Human toxicity, cancer effects	CTUh	1.15E-08	0.00E+00	2.67E-11	2.28E-09	0.00E+00	-4.49E-10
Human toxicity, non-cancer effects	CTUh	2.75E-07	0.00E+00	7.68E-10	4.96E-09	0.00E+00	-1.17E-08
Land use related impacts / Soil quality	Pt	7.39E+01	0.00E+00	6.44E-01	2.05E-01	0.00E+00	-9.03E+00

Additional environmental information

Biogenic carbon storage

Biogenic carbon storage during the lifetime of Lathams cladding is calculated according to EN 16449: 2014.

Per 1m² of Lathams cladding coverage = 3.71 kg C stored in the material, equivalent to 13.60 kg CO₂e.

Differences versus previous versions

2024-07-08 Version 2

Environmental performance index results: For GWP-biogenic calculation results, A1-A3 has been balanced.

References

c-PCR-006 (to PCR 2019:14) Wood and wood-based products for use in construction (EN 16485:2014).

General Programme Instructions of the International EPD® System. Version 4.0.

ISO 9001 DIN EN ISO 9001:2015-11, Quality management systems– Requirements.

ISO 14001 DIN EN ISO 14001:2015-09, Environmental management systems - Requirements with guidance for use.

ISO 14025 DIN EN ISO 14025:2011-10, Environmental labels and declarations— Type III environmental declarations— Principles and procedures.

ISO 14040 ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework.

ISO 14044 ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines.

EN 350:2016 Durability of wood and wood-based products – Testing and classification of the durability to biological agents of wood and wood-based materials.

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

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

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

PCR 2019:14. Construction Products. Version 1.3.3.

Sub-PCR to PCR (v2.34), PCR 2012:01-SUB-PCR-E, Wood and Wood-Based Products For Use in Construction (EN 16485:2014).

