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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



ENVIRONMENTAL PRODUCT DECLARATION

CROSS LAMINATED TIMBER (CLT)

GLUE LAMINATED TIMBER (GLT)

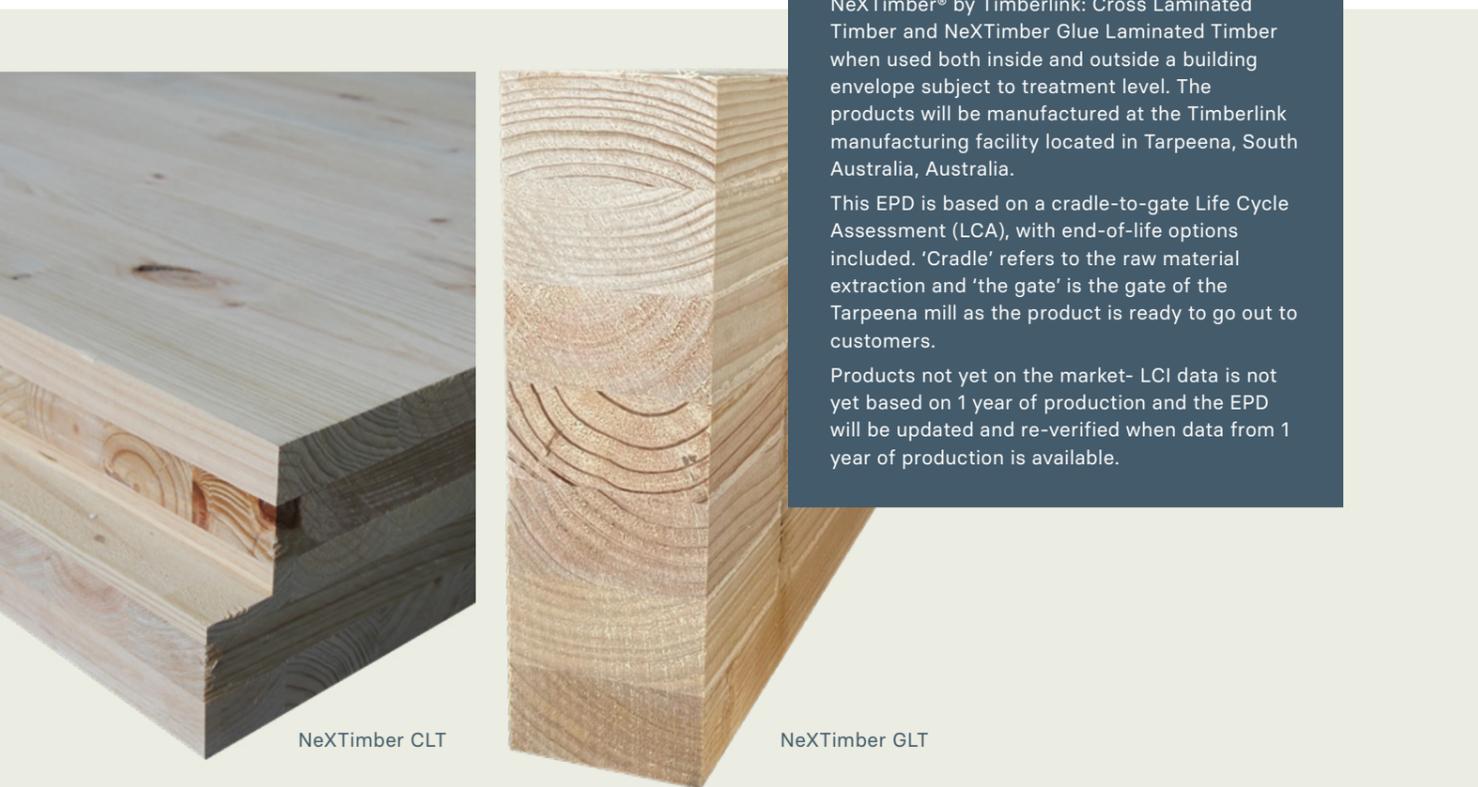


What is an Environmental Product Declaration?

An Environmental Product Declaration (EPD) tells the environmental story of a product over its life cycle in a format that is clear and transparent. It is science-based, independently verified and publicly available. EPDs are often compared to the nutrition labels on food products.

EPDs help manufacturers translate complex sustainability information about their product's environmental footprint into simpler information that governments, companies, industry associations and end consumers can trust to make decisions.

An EPD communicates the environmental impacts at different stages in a product's life cycle. This may include the carbon emitted when it's made, and any emissions that pollute the air, land or waterways during its use.



This EPD covers the environmental impacts of NeXTimber® by Timberlink: Cross Laminated Timber and NeXTimber Glue Laminated Timber when used both inside and outside a building envelope subject to treatment level. The products will be manufactured at the Timberlink manufacturing facility located in Tarpeena, South Australia, Australia.

This EPD is based on a cradle-to-gate Life Cycle Assessment (LCA), with end-of-life options included. 'Cradle' refers to the raw material extraction and 'the gate' is the gate of the Tarpeena mill as the product is ready to go out to customers.

Products not yet on the market- LCI data is not yet based on 1 year of production and the EPD will be updated and re-verified when data from 1 year of production is available.

NeXTimber CLT

NeXTimber GLT

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ABOUT TIMBERLINK

Timberlink® is a leading producer of sustainably grown Australian radiata pine timber products. Timberlink operates two regional large scale timber manufacturing facilities: one in Bell Bay, Tasmania, and the other in Tarpeena, South Australia, directly employing close to 600 people, more than 80% of whom live in regional areas. Timberlink has sales and distribution teams based in Perth, Adelaide, Sydney, Melbourne and Bell Bay (Tas), plus sales and customer service in Blenheim (NZ).

In 2023 Timberlink is expected to commence production and distribution of Cross Laminated Timber (CLT) and Glue Laminated Timber (GLT) under its NeXTimber® brand. These developments unlock higher fibre value by using sawn timber in panelised and beam construction systems.

Timberlink is owned by investment funds managed by New Forests, a global investment manager of nature-based real assets and natural capital strategies, headquartered in Sydney. Founded in 2005, New Forests has more than AUD 9.95 billion in assets under management, across more than 1,100,000 hectares of investments.

Learn more at www.newforests.com.au.



NeXTimber is brought to you by Timberlink. The range will be manufactured on Timberlink's South Australian site from Timberlink timber, sourced from local certified pine plantations.

SUSTAINABILITY

At Timberlink, sustainability is more than a policy. We like to think it is part of our DNA and it is entrenched in our overall purpose – to responsibly manufacture timber to build a more sustainable world.

Timberlink has committed to reduce scope 1 and 2 greenhouse gas emissions by 53% by 2030.

We have made significant investments at our manufacturing facilities over the past few years, with an emphasis on cutting-edge innovation to reduce emissions, waste and inefficiency.

Greater than 95% of our Australian log intake is certified by either the Responsible Wood (RW) or FSC® schemes or both. RW holds mutual recognition status with the international PEFC system. The remainder is controlled through a Due Diligence System.



OUR MANUFACTURING FACILITIES

NeXTimber products will be manufactured at our manufacturing facility in Tarpeena, South Australia, Australia

The majority of log supply to Timberlink's manufacturing facilities is dual certified to both FSC® and PEFC/Responsible Wood from forests owned by New Forests administered investment trusts.



FSC® Certification

Timberlink Australia holds an FSC® chain of custody and controlled wood certificate covering our Australian mills and distribution centres for the production and distribution of sawn timber, woodchips, and all by-product including reject logs, sawdust and charcoal (FSC® C117015). Our products are made of FSC® certified and other controlled material. By choosing Timberlink Australia products, you are supporting responsible management of the world's forests.



Responsible Wood
RW1-31-237

Responsible Wood Certification

Timberlink holds RW Chain of Custody certification at both Australian sites for solid wood products and by-products (including woodchip) covering both our Australian mills, license number 100872. RW holds mutual recognition status with the international PEFC system, enabling Timberlink to market RW certified products to the domestic market and PEFC certified products internationally.



PRODUCTS* COVERED IN THIS EPD

NeXTimber® Cross Laminated Timber

NeXTimber Cross Laminated Timber (CLT) will be made from machine-graded, kiln-dried radiata pine, which is finger jointed, dressed and arranged to form a solid timber panel.

Alternating layers are laid perpendicular to each other, with adhesive applied along the faces and edges of each piece of timber before being cured under pressure to form one solid rectangular billet. Individual building elements are then digitally machined from the billet using Computer Numerically Controlled (CNC) technology.

The cross direction layup of the panels, combined with the digital fabrication, offer a strong, rigid, dimensionally stable and highly accurate building product. It is versatile for designers to specify as roof, floor and wall structures.

NeXTimber® Glue Laminated Timber

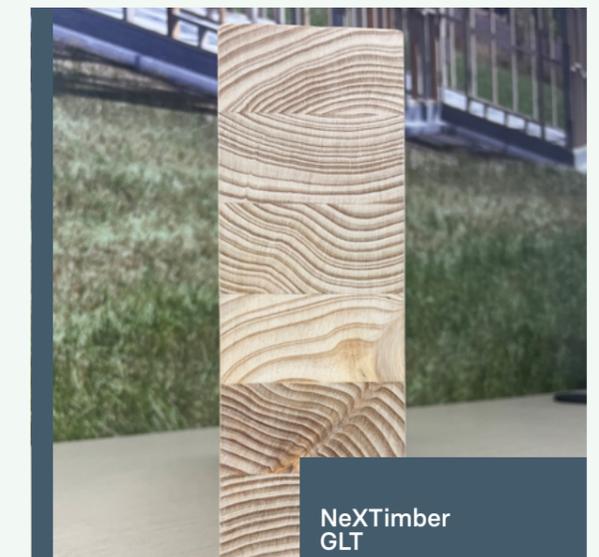
NeXTimber Glue Laminated Timber (GLT) will be an engineered wood product made from finger jointing layers of machine-graded, kiln-dried and dressed radiata pine, laminated together with adhesive and cured under pressure to form one singular element that can be used as a high-performing structural member.

Unlike CLT, the timber's grain runs in one direction, making it well suited for use as beams, columns and portal frame structures.

CLT and GLT come in both treated and untreated versions. Basic manufacturing processes of both NeXTimber CLT and NeXTimber GLT can be found on page 12.



NeXTimber CLT



NeXTimber GLT

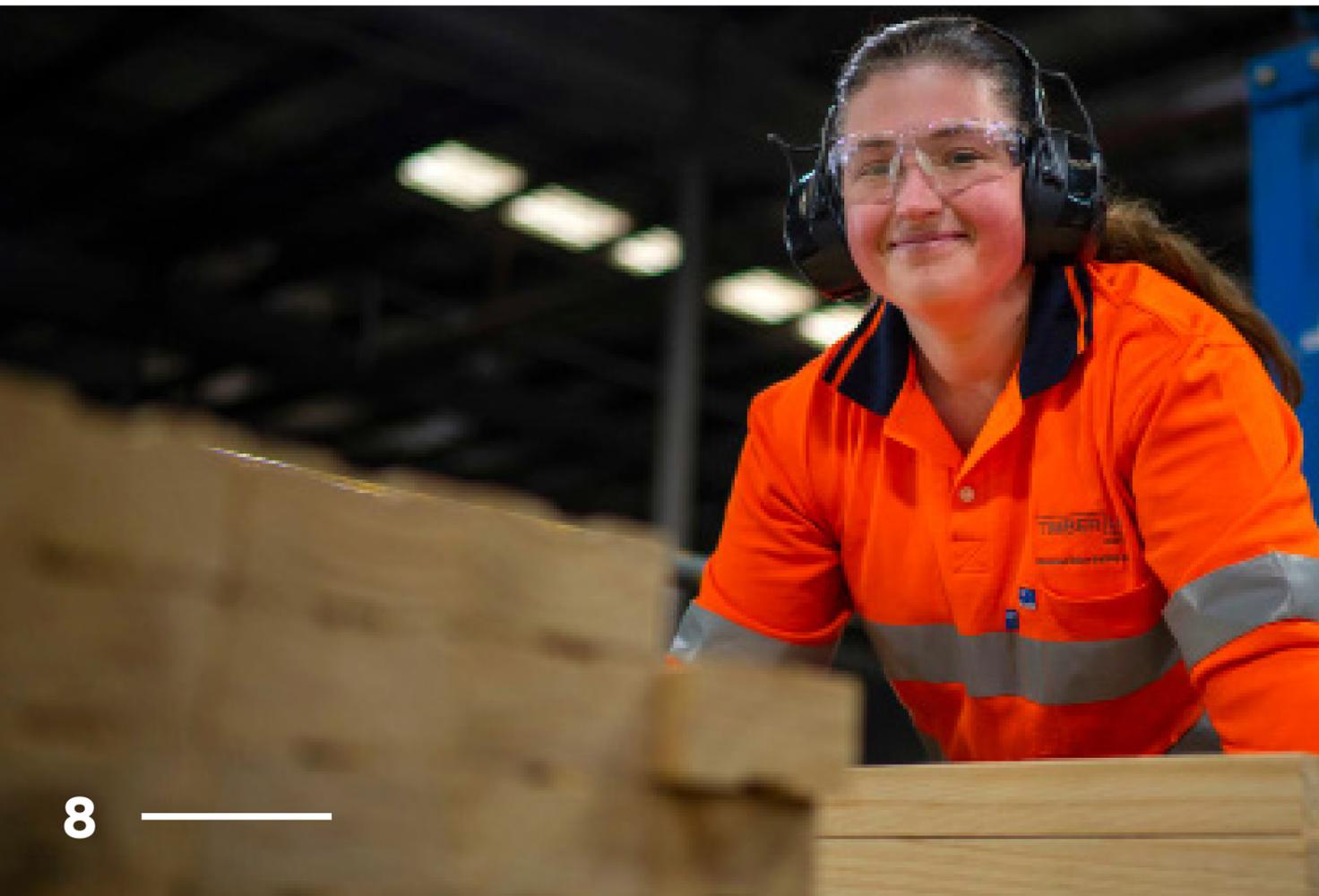
*The products in this EPD are not yet on the market. CLT and GLT products are not yet in production and as such, this EPD contains assumptions based upon modelling which will be updated after 12 months of production. Timberlink has taken all care to ensure that the information in this EPD accurately reflects the CLT and GLT product life-cycles.

HOW TO USE THIS EPD

NeXTimber has developed this product specific EPD to help to showcase the environmental credentials of their wood products. The EPD also provides life cycle data for calculating the impacts of wood products at a building level. These data sets may be used by specifiers and developers to calculate and present the environmental impacts of particular construction projects.

This EPD can allow the represented products to qualify for points under the Green Building Council Australia (GBCA) Green Star rating system.

The following section of this EPD comprises of the Technical Information for the method, assumptions, and description of environmental indicators. Followed by the results from modelling the life cycle assessment of the different products.



TECHNICAL INFORMATION

Declared Unit

One cubic metre of timber, as specified in the table below, packaged and ready for dispatch to the consumer

Table 1. Declared unit

Product Group	Unit	Product
Cross Laminated Timber (CLT) untreated	1 m ³	CLT, planed, kiln-dried softwood, 11.3% moisture content,
Cross Laminated Timber (CLT) treated	1 m ³	CLT, planed, kiln-dried softwood, 11.3% moisture content treated to H3 level
Glue Laminated Timber (GLT) untreated	1 m ³	GLT, planed, kiln-dried softwood, 11.3% moisture content
Glue Laminated Timber (GLT) treated	1 m ³	GLT, planed, kiln-dried softwood, 11.3% moisture content, treated to H3 level

Classification

Table 2 shows the relevant Australian standard and application for Glue Laminated Timber (GLT) and Cross Laminated Timber (CLT).

Table 2. Timber products included in this EPD

Product group	Relevant Australian Standard	Applications
Cross Laminated Timber (CLT)	No specific standard, but the following is most applicable: AS/NZS 1328.1:1998 Glued laminated structural timber - Performance requirements and minimum production requirements (AS/NZS 1328.1:1998)	Structural applications, e.g., walls, floors and roofs
Glue Laminated Timber (GLT)	AS/NZS 1328.1:1998 Glued laminated structural timber - (AS/NZS 1328.1:1998). Performance requirements and minimum production requirements	Structural applications, e.g., walls, floors and roofs

Product composition

All timber products included in this EPD are of the species radiata rine (*Pinus radiata*), grown within Australia in independent sustainably managed plantations and processed by Timberlink.

No products declared within this EPD contain substances exceeding the limits for registration according to the European Chemicals Agency's 'Candidate List of Substances of Very High Concern for authorisation'.

Preservative treatments

CLT and GLT may be manufactured from treated sawn timber (H3 Propiconazole + Tebuconazole LOSP) and EPD results are presented for both untreated and treated products.

System Boundaries

In Life Cycle Assessments (LCA), the system boundary is a line that divides the processes which are included from those which are excluded.

As shown in Table 4 this EPD is 'cradle-to-gate' with modules C1-C4 (end-of-life processing) and module D (recycling potential). The options include end-of-life processing (Modules C3-C4) and the recycling potential (Module D).

Other life cycle stages (Modules A4-A5 and B1-B7) are dependent on particular scenarios and best modelled at the building level, therefore these modules have not been declared.

Table 3. Modules included in the scope of the EPD (X = declared module | ND = module not declared)

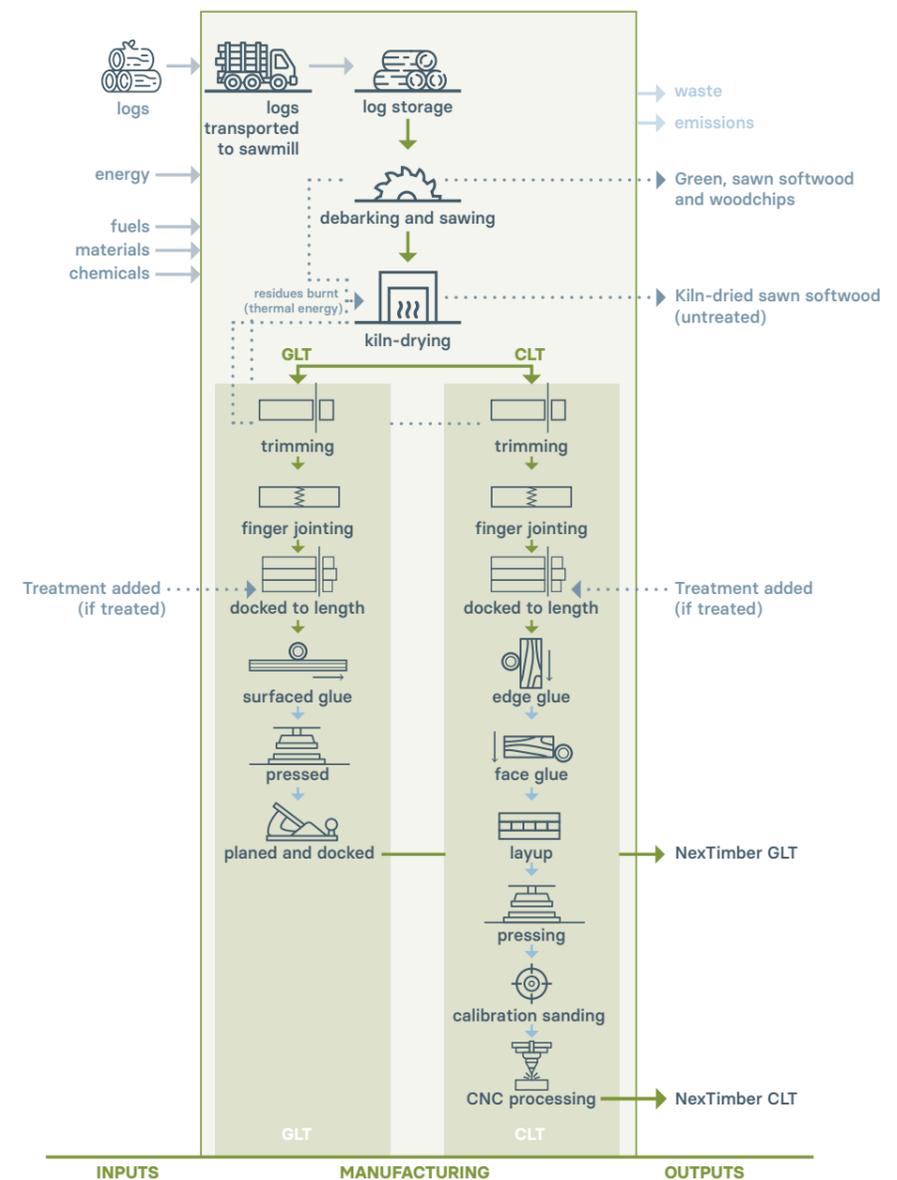
Module	Product stage			Construction process stage		Use stage							End-of-life		Recovery		
	Raw material supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport	Waste processing	Disposal	Future reuse, recycling or energy recovery 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	AU	AU	AU	-	-	-	-	-	-	-	-	-	AU	AU	AU	AU	AU
Specific data	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	Not relevant			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	Not relevant			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Production (Modules A1-A3)

For all timber products in this EPD, the production stage includes the forestry, sawmilling and kiln drying stages. It also includes planing and possible treatment for the applicable products.

Figure 1 shows the basic manufacturing processes for the products included within this EPD.

Figure 1. basic manufacturing processes

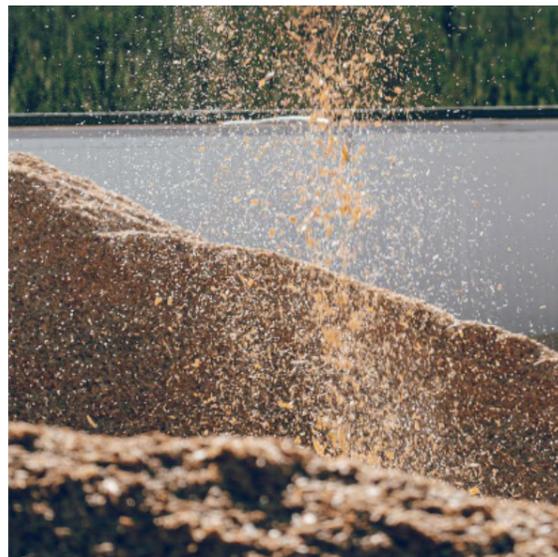


End-of-life

At the end of its useful life, a timber product is removed from the building and may end up recycled, reused, combusted to produce energy, or landfilled. In Australia, the most common end-of-life method is landfill, especially for treated products, which have limitations for recycling and incinerating.

The landfill scenario and three other possible end of life scenarios is described below. Each scenario assumes that 100% of the wood is sent to that scenario. To create an end-of-life mix for a given region or end use, the reader should take a weighted sum of these scenarios. Where no specific data are available, the 'landfill' scenario should be used.

Under EN 15804+A2, the carbon sequestration of timber has a net neutral impact over the whole life cycle because all sequestered carbon is released at the end-of-life stage. This means that assumptions of the decomposition of wood products and various end-of-life scenarios all have the same effect in terms of biogenic carbon.



Landfill

Emissions from landfill are dependent on the Degradable Organic Carbon fraction (DOCf).

The DOCf = 0.1% for radiata pine. This is based on bioreactor laboratory research by Wang et al. (2011) for *Pinus radiata*. The impacts associated with the landfill are declared in module C4. All landfill gas that is combusted for energy recovery (module C4) is assumed to occur in a power plant with an electrical conversion efficiency of 36% (Australian Government 2014, p. 189) and the resulting electricity receives a credit for offsetting average electricity from the Australian grid (module D) in line with EN 16485:2014 (Section 6.3.4.5).

The landfill scenario assumes the following for carbon emissions:

- Of the carbon in the wood that breaks down in landfill, 50% is methane and 50% is carbon dioxide (Australian Government 2016, Table 43).
- All carbon dioxide is released directly to the atmosphere.
- 43% of the methane is captured based on landfill gas capture in Australian landfills (Australian Government, 2021).
- Of this, one quarter (10.8% of the total) is flared, and three quarters (32.3% of the total) is used for energy recovery (Carre, 2011).
- Of the 57% of methane that is not captured, 10% (5.7% of the total) is oxidised (Australian Government, 2020, Table 43) and 90% (51.3%) is released to the atmosphere.
- In summary, for every kilogram of carbon converted to landfill gas, 74.4% is released as carbon dioxide and 25.6% is released as methane.

In accordance with EN 15804+A2, any remaining biogenic carbon not degraded (99.9% of the carbon in the wood) is modelled as an emission of biogenic CO₂ to the air. Refer to the Additional Environmental Information section for information on permanent storage of biogenic carbon in radiata pine in landfill.

Energy recovery

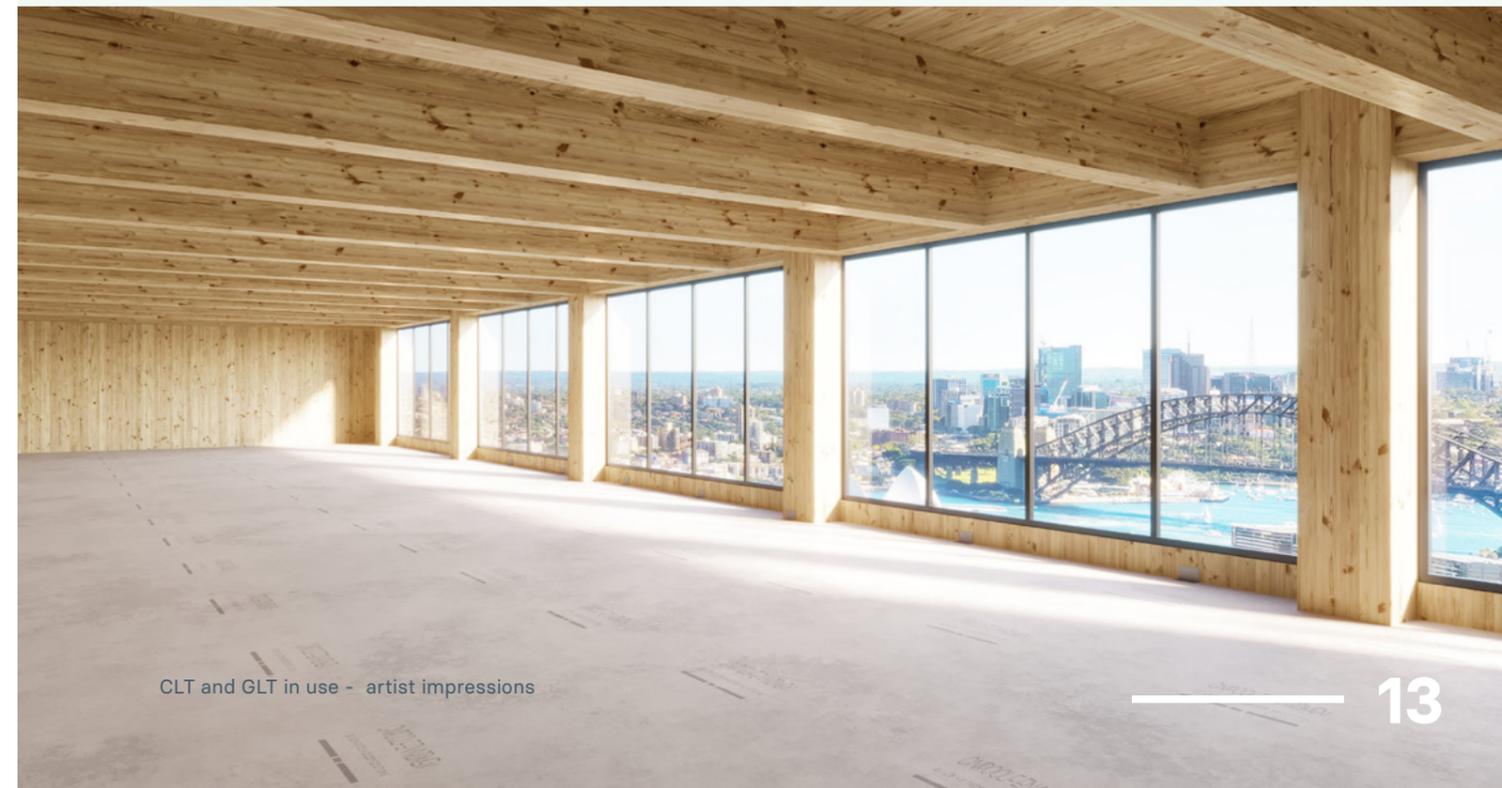
Untreated products may be used for energy recovery. This scenario includes shredding (module C3) and combustion with the recovered thermal energy assumed to replace thermal energy from natural gas (module D) in line with EN 16485:2014 (Section 6.3.4.5). Note that other options may also be in use within Australia, including replacement of coal, replacement of electricity, and replacement of both electricity and thermal energy (via co-generation).

Recycling

Untreated CLT/GLT may be recycled in many different ways. This scenario considers shredding and effectively downcycling into wood chips. Wood waste is chipped (module C3) and assigned credits relative to the avoided production of virgin woodchips as a co-product from sawmilling (module D). In line with the reuse scenario, the CO₂ sequestered, and energy content of the wood are assumed to leave the system boundary at C3 so that future product systems can also claim these without double-counting (EN 16485:2014, Section 6.3.4.2).

Reuse

The product is assumed to be removed from a building manually and reused with no further processing (i.e. direct reuse). Transport and wastage are excluded and only one reuse cycle is considered. The second life is assumed to be the same (or very similar) to the first, meaning that a credit is given for production of 1 m³ of timber in module D. The CO₂ sequestered, and energy content of the wood are assumed to leave the system boundary at module C3 so that future product systems can also claim these without double-counting in line with EN 16485:2014 (Section 6.3.4.2). Any further processing, waste or transport would need to be modelled and included separately.



CLT and GLT in use - artist impressions

LIFE CYCLE INVENTORY (LCI) AND ASSUMPTIONS

Energy

Thermal energy and transport fuels have been modelled using the Australian average (see Sphera, 2021 for documentation).

Electricity is assumed to be from the South Australia Grid Mix as detailed in the GaBi 2021 databases. It is made up of heavy fuel oil (0.1%), natural gas (51.2%), wind (39.5%) with 9.2% imported from Victoria. The emission factor for the South Australian grid for the GWP-GHG indicator is 0.597 kg CO₂e/kWh.

Forestry

Modelling of carbon flows in the forest has been performed in line with Australia's Greenhouse Gas Inventory (MfE, 2021).

Forestry is modelled as being in a steady-state, meaning that – on average – all harvested trees are replanted and that soil carbon stocks remain constant over time at the national level.

Biodegradation of forest litter and forest residues are modelled as being aerobic and therefore carbon neutral as carbon dioxide sequestered from the air during tree growth is later released back to the air as carbon dioxide.

Allocation

For refinery products, allocation is applied by mass and net calorific value. Inventories for electricity and thermal energy generation include allocation by economic value for some by-products (e.g. gypsum, boiler ash and fly ash). Allocation by energy is applied for co-generation of heat and power.

Co-products

These include shavings. As the difference in economic value of the co-products is high (>25% as per EN 15804, Section 6.4.3.2), allocation by economic value has been applied.

Primary data

The data for Sawn timber inputs to CLT and GLT were collected from the Tarpeena site. Sawn timber process data has been collected from July 2021 -30 June 2022, which was also used in the non-sibling product EPD for Timberlink Structural Softwood Timber.

The GLT and CLT plant isn't in production yet. Conservative inputs and outputs were calculated for a year's production for the manufacture of CLT and GLT (based on the specific design specifications of the plant). This data will be reviewed and updated when data for a full year is available.

Cut-off criteria

Environmental impacts relating to personnel, infrastructure, and production equipment not directly consumed in the process are excluded from the system boundary as per the PCR (EPD International, 2019, Section 7.5.4). All other reported data were incorporated and modelled using the best available life cycle inventory data.

Representatives

Geographical

All primary and secondary data were collected specific to the countries or regions under study. Where country-specific or region-specific data were unavailable, proxy data were used. Geographical representativeness is considered to be high.

Temporal

Primary data for forestry, sawmilling, kiln-drying, planing, finger-jointing, packaging and treatment was collected for the 12 month period from July 2021 -30 June 2022. All secondary data comes from the GaBi 2021 databases and are representative of the years 2015-2020.

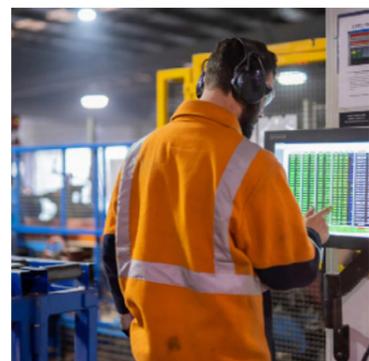
Long-term emissions (>100 years) are not taken into consideration in the impact estimate. Waste to landfill is modelled assuming a 100-year time horizon.

Technological

All primary and secondary data were modelled to be specific to the technologies or technology mixes under study. Where technology-specific data were unavailable, proxy data were used. Technological representativeness is considered to be high.

OTHER ENVIRONMENTAL INFORMATION

When timber is landfilled any carbon not degraded can be expected to remain stored in the wood indefinitely under anaerobic conditions (Wang 2011 and Ximenes et al 2019). For CLT this would result in a reduction of the GWP (biogenic) and GWP (total) for module C4 for the "landfill (typical)" scenario of 829 kg CO₂ eq so that the module C4 total GWP (biogenic) is 47 kg CO₂ eq. For GLT this would result in a reduction of the GWP (biogenic) of 830 kg CO₂ eq and a module C4 total GWP biogenic of 46 kgCO₂ eq.



RESULTS FOR 1m³ OF NEXTIMBER CLT (UNTREATED)



Environmental impact indicators

Table 4. Environmental impact (EN15804+A2) covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production CLT	Decon-struction	Transport to EOL	Landfill (typical)		Energy recovery		Recycling		Reuse	
			A1-A3	C1	C2	C4	D	C3	D	C3	D	C3	D
Global warming potential	GWP	kg CO ₂ eq	-576	0.341	1.74	932	-0.146	878	-603	773	-24.9	873	-297
Global warming potential (fossil)	GWPf	kg CO ₂ eq	253	0.341	1.66	56.2	-0.146	5.49	-605	-70.5	-24.8	0	-253
Global warming potential (biogenic)	GWPb	kg CO ₂ eq	-829	-3.49E-04	0.0735	876	-4.49E-05	873	1.76	843	-0.115	873	-44.0
Global warming potential (land use change)	GWPluc	kg CO ₂ eq	0.0196	6.87E-06	2.61E-05	0.0405	-2.89E-06	1.60E-04	-0.00786	-0.00645	-4.61E-04	0	-0.0196
Depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 eq	1.29E-11	5.02E-17	1.95E-16	1.39E-13	-6.24E-16	7.94E-16	-1.33E-14	-3.53E-12	-8.63E-14	0	-1.29E-11
Acidification potential - terrestrial and freshwater	AP	Mol H+ eq	1.49	0.00171	0.00510	0.195	-3.32E-04	0.0484	-0.0776	-0.723	-0.0628	0	-1.49
Eutrophication potential - freshwater	EPfw	kg P eq	3.36E-04	5.61E-08	3.04E-07	3.75E-05	-3.81E-09	9.22E-07	-1.05E-05	-6.14E-05	-2.44E-05	0	-3.36E-04
Eutrophication potential - marine	EPm	kg N eq	0.910	8.12E-04	0.00245	0.0550	-1.33E-04	0.0235	-0.122	-0.484	-0.0266	0	-0.910
Eutrophication potential - terrestrial	EPt	Mol N eq	720	0.00890	0.0270	0.602	-0.00146	0.258	-1.34	-3.52	-0.291	0	-720
Photochemical ozone formation potential	POFP	kg NMVOC eq	4.00	0.00227	0.00474	0.158	-3.59E-04	0.0651	-0.165	-2.23	-0.243	0	-4.00
Abiotic depletion potential - minerals & metals*	ADPmm	kg Sb eq	1.27E-04	5.27E-09	2.81E-08	5.43E-06	-2.92E-08	8.37E-08	-7.12E-05	-7.13E-05	-4.19E-06	0	-1.27E-04
Abiotic depletion potential - fossil fuels*	ADPf	MJ	3,300	4.53	22.9	805	-2.17	71.5	-10,400	-729	-344	0	-3,300
Water scarcity*	WDP	m ³ world eq	64.4	0.00223	0.0134	-0.905	-0.0378	0.0354	-0.501	-22.0	-4.91	0	-64.4

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Resource use indicators

Table 5. Resource use indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production CLT	Decon-struction	Transport to EOL	Landfill (typical)		Energy recovery		Recycling		Reuse	
			A1-A3	C1	C2	C4	D	C3	D	C3	D	C3	D
Renewable primary energy as energy carrier	PERE	MJ	3,280	0.0221	0.0978	81.6	-1.04	0.356	-4.11	-1,730	-144	0	-3,280
Renewable primary energy resources as material utilisation	PERM	MJ	8,970	0	0	0	0	-8,970	0	-8,970	0	-8,970	0
Total use of renewable primary energy resources	PERT	MJ	12,200	0.0221	0.0978	81.6	-1.04	-8,970	-4.11	-10,700	-144	-8,970	-3,280
Non-renewable primary energy as energy carrier	PENRE	MJ	3,230	4.53	22.9	805	-2.17	71.5	-10,400	-730	-344	0	-3,230
Non-renewable primary energy as material utilisation	PENRM	MJ	73.1	0	0	0	0	-73.1	0	-73.1	0	-73.1	0
Total use of non-renewable primary energy resources	PENRT	MJ	3,300	4.53	22.9	805	-2.17	-1.64	-10,400	-803	-344	-73.1	-3,230
Use of secondary material	SM	kg	0	0	0	0	0	0	0	0	530	0	530
Use of renewable secondary fuels	RSF	MJ	0	0	0	0	0	0	8,970	0	0	0	0
Use of non-renewable secondary fuels	NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water	FW	m ³	1.27	4.39E-05	2.01E-04	0.0623	-5.28E-04	7.00E-04	-0.0152	-0.533	-0.0595	0	-1.27

RESULTS FOR 1m³ OF NEXTIMBER CLT (UNTREATED)



Waste material and output flow indicators

Table 6. Waste material and output flow indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production CLT	Decon-struction	Transport to EOL	Landfill (typical)		Energy recovery		Recycling		Reuse	
			A1-A3	C1	C2	C4	D	C3	D	C3	D	C3	D
Hazardous waste disposed	HWD	kg	1.11E-06	1.63E-11	6.91E-11	8.05E-08	-1.54E-10	6.39E-08	-7.71E-07	-5.49E-07	-2.28E-08	0	-1.11E-06
Non-hazardous waste disposed	NHWD	kg	33.4	1.08E-04	3.64E-04	531	-4.89E-04	0.00172	24.8	-22.8	-0.114	0	-33.4
Radioactive waste disposed	RWD	kg	0.00614	6.24E-07	5.38E-07	0.00421	-3.37E-07	9.91E-06	-7.29E-04	-0.00158	-5.60E-05	0	-0.00614
Components for re-use	CRU	kg	0	0	0	0	0	0	0	0	0	530	-530
Materials for recycling	MFR	kg	0	0	0	0	0	0	0	530	0	0	0
Materials for energy recovery	MER	kg	0	0	0	0	0	530	0	0	0	0	0
Exported electrical energy	EEE	MJ	0	0	0	0.859	0	0	0	0	0	0	0
Exported thermal energy	EET	MJ	0	0	0	0	0	0	0	0	0	0	0

Additional environmental impact indicators

Table 7. Additional environmental indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production CLT	Decon-struction	Transport to EOL	Landfill (typical)		Energy recovery		Recycling		Reuse	
			A1-A3	C1	C2	C4	D	C3	D	C3	D	C3	D
IPCC AR5 GWP (excluding biogenic carbon)	GWP-GHG	kg CO ₂ eq	262	0.340	1.66	59.5	-0.145	5.46	-608	-78.4	-78.4	0	-262
Respiratory inorganics	PM	Disease incidence	1.95E-05	1.97E-08	2.66E-08	1.52E-06	-2.93E-09	1.15E-06	1.91E-05	-1.05E-05	-1.05E-05	0	-1.95E-05
Ionizing radiation - human health [#]	IR	kBq U235 eq	0.617	7.32E-05	6.02E-05	0.390	-3.21E-05	0.00117	-0.0889	-0.168	-0.168	0	-0.617
Ecotoxicity freshwater [^]	ETf	CTUe	1,240	1.73	6.14	405	-0.721	27.3	-3,870	-277	-277	0	-1,240
Human toxicity, cancer [^]	HTc	CTUh	1.38E-07	2.95E-11	1.04E-10	2.99E-08	-4.07E-11	3.55E-09	-1.84E-08	-5.82E-08	-5.82E-08	0	-1.38E-07
Human toxicity, non-canc. [^]	HTnc	CTUh	2.13E-05	1.52E-09	5.78E-09	2.89E-06	-6.96E-10	2.88E-08	3.45E-06	-1.26E-05	-1.26E-05	0	-2.13E-05
Land use [^]	LU	Dimensionless	5,360	0.0116	0.0477	45.4	-0.00474	0.217	-7.24	-16.3	-16.3	0	-5,360

[#]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.

[^]The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

RESULTS FOR 1m³ OF NEXTIMBER CLT (UNTREATED)



Biogenic carbon content

Table 8. Biogenic carbon content covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production CLT	Decon-struction	Transport to EOL	Landfill (typical)		Energy recovery		Recycling		Reuse	
			A1-A3	C1	C2	C4	D	C3	D	C3	D	C3	D
Biogenic carbon content - product	BCC-prod	kg	236	0	0	0	0	0	0	0	0	0	-238
Biogenic carbon content - packaging	BCC-pack	kg	3.01	0	0	0	0	0	0	0	0	0	-2.25

Environmental impact (EN15804+A1) indicators

Table 9. Environmental impact (EN15804+A1) indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production CLT	Decon-struction	Transport to EOL	Landfill (typical)		Energy recovery		Recycling		Reuse	
			A1-A3	C1	C2	C4	D	C3	D	C3	D	C3	D
Global warming potential (total)	GWP	kg CO ₂ eq	-615	0.336	1.72	55.7	-0.142	878	-594	796	-22.7	873	-258
Depletion potential of the stratospheric ozone layer	ODP	kg CFC-11 eq	2.27E-11	6.70E-17	2.60E-16	1.85E-13	-8.32E-16	1.06E-15	-1.77E-14	-6.54E-12	-1.15E-13	0	-2.27E-11
Acidification potential of land and water	AP	kg SO ₂ eq	1.06	0.00120	0.00352	0.153	-2.43E-04	0.0336	-0.0149	-0.511	-0.0453	0	-1.06
Eutrophication potential	EP	kg (PO ₄) ³⁻ eq	0.338	2.72E-04	8.28E-04	0.0190	-4.48E-05	0.00789	-0.0415	-0.183	-0.00911	0	-0.338
Photochemical ozone creation potential	POCP	kg Ethene eq	0.858	1.13E-04	-0.00136	0.00982	-1.90E-05	0.00295	0.0970	-0.424	-0.156	0	-0.858
Abiotic depletion potential – elements	ADPe*	kg Sb eq	1.27E-04	5.28E-09	2.81E-08	5.45E-06	-2.92E-08	8.38E-08	-7.12E-05	-7.13E-05	-4.19E-06	0	-1.27E-04
Abiotic depletion potential – fossil fuels	ADPf*	MJ	3,280	4.52	22.9	793	-2.17	71.4	-10,400	-724	-344	0	-3,280

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.



RESULTS FOR 1m³ OF NEXTIMBER CLT (TREATED)

treated to H3 level



Environmental impact indicators

Table 10. Environmental impact (EN15804+A2) covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			CLT - H3	struction	to EOL
			A1-A3	C1	C2
Global warming potential	GWP	kg CO ₂ eq	-515	0.341	1.74
Global warming potential (fossil)	GWPf	kg CO ₂ eq	314	0.341	1.66
Global warming potential (biogenic)	GWPb	kg CO ₂ eq	-829	-3.49E-04	0.0735
Global warming potential (land use change)	GWP _{luc}	kg CO ₂ eq	2.81E-02	6.87E-06	2.61E-05
Depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 eq	1.33E-11	5.02E-17	1.95E-16
Acidification potential - terrestrial and freshwater	AP	Mol H ⁺ eq	1.63	0.00171	0.00510
Eutrophication potential - freshwater	EP _{fw}	kg P eq	3.92E-04	5.61E-08	3.04E-07
Eutrophication potential - marine	EP _m	kg N eq	0.94	8.12E-04	0.00245
Eutrophication potential - terrestrial	EP _t	Mol N eq	7.57	0.00890	0.0270
Photochemical ozone formation potential	POFP	kg NMVOC eq	15.30	0.00227	0.00474
Abiotic depletion potential – minerals & metals*	ADP _{mm}	kg Sb eq	3.15E-04	5.27E-09	2.81E-08
Abiotic depletion potential – fossil fuels*	ADP _f	MJ	5380	4.53	22.9
Water scarcity*	WDP	m ³ world eq	75.6	0.00223	0.0134

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Resource use indicators

Table 11. Resource use indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			CLT - H3	struction	to EOL
			A1-A3	C1	C2
Renewable primary energy as energy carrier	PERE	MJ	3317	0.0221	0.0978
Renewable primary energy resources as material utilisation	PERM	MJ	8970	0	0
Total use of renewable primary energy resources	PERT	MJ	12237	0.0221	0.0978
Non-renewable primary energy as energy carrier	PENRE	MJ	5310	4.53	22.9
Non-renewable primary energy as material utilisation	PENRM	MJ	73	0	0
Total use of non-renewable primary energy resources	PENRT	MJ	5380	4.53	22.9
Use of secondary material	SM	kg	0	0	0
Use of renewable secondary fuels	RSF	MJ	0	0	0
Use of non-renewable secondary fuels	NRSF	MJ	0	0	0
Use of net fresh water	FW	m ³	1.50	4.39E-05	2.01E-04

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
932	-0.146					873	-351
56.2	-0.146					0	-308
876	-4.49E-05					873	-43.2
0.0405	-2.89E-06					0	-0.0218
1.39E-13	-6.24E-16					0	-1.01E-11
0.195	-3.32E-04					0	-1.63
3.75E-05	-3.81E-09					0	-2.64E-04
0.0550	-1.33E-04					0	-0.954
0.602	-0.00146					0	-7.81
0.158	-3.59E-04					0	-4.11
5.43E-06	-2.92E-08					0	-1.37E-04
805	-2.17					0	-4,190
-0.905	-0.0378					0	-76.1

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
81.6	-1.04					0	-3,630
0	0					-8,970	0
81.6	-1.04					-8,970	-3,630
805	-2.17					0	-4,150
0	0					-73.1	0
805	-2.17					-73.1	-4,150
0	0					0	530
0	0					0	0
0	0					0	0
0.0623	-5.28E-04					0	-1.43

RESULTS FOR 1m³ OF NEXTIMBER CLT (TREATED)

treated to H3 level



Waste material and output flow indicators

Table 12. Waste material and output flow indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			CLT - H3	struction	to EOL
			A1-A3	C1	C2
Hazardous waste disposed	HWD	kg	1.22E-06	1.63E-11	6.91E-11
Non-hazardous waste disposed	NHWD	kg	3.39E+01	1.08E-04	3.64E-04
Radioactive waste disposed	RWD	kg	1.08E-02	6.24E-07	5.38E-07
Components for re-use	CRU	kg	0	0	0
Materials for recycling	MFR	kg	0	0	0
Materials for energy recovery	MER	kg	0	0	0
Exported electrical energy	EEE	MJ	0	0	0
Exported thermal energy	EET	MJ	0	0	0

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
8.05E-08	-1.54E-10					0	-1.13E-06
531	-4.89E-04					0	-32.9
0.00421	-3.37E-07					0	-0.00663
0	0					530	-530
0	0					0	-0.0418
0	0					0	0
0.859	0					0	0
0	0					0	0

Additional environmental impact indicators

Table 13. Additional environmental indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			CLT - H3	struction	to EOL
			A1-A3	C1	C2
IPCC AR5 GWP (excluding biogenic carbon)	GWP-GHG	kg CO ₂ eq	323	0.340	1.66
Respiratory inorganics	PM	Disease incidence	2.09E-05	1.97E-08	2.66E-08
Ionizing radiation - human health	IR	kBq U235 eq	1.23E+00	7.32E-05	6.02E-05
Ecotoxicity freshwater	ETf	CTUe	2370	1.73	6.14
Human toxicity, cancer	HTc	CTUh	8.11E-06	2.95E-11	1.04E-10
Human toxicity, non-canc.	HTnc	CTUh	2.71E-05	1.52E-09	5.78E-09
Land use	LU	Dimensionless	5381	0.0116	0.0477

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
59.5	-0.145					0	-316
1.52E-06	-2.93E-09					0	-2.03E-05
0.390	-3.21E-05					0	-0.674
405	-0.721					0	-1,530
2.99E-08	-4.07E-11					0	-1.62E-07
2.89E-06	-6.96E-10					0	-2.12E-05
45.4	-0.00474					0	-5,260

*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.

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

RESULTS FOR 1m³ OF NEXTIMBER CLT (TREATED)

treated to H3 level



Biogenic carbon content

Table 14. Biogenic carbon content covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			CLT - H3	struction	to EOL
			A1-A3	C1	C2
Biogenic carbon content - product	BCC-prod	kg	238	0	0
Biogenic carbon content - packaging	BCC-pack	kg	2.25	0	0

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
0	0					0	-238
0	0					0	-2.25

Environmental impact (EN15804+A1) indicators

Table 15. Environmental impact (EN15804+A1) indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			CLT - H3	struction	to EOL
			A1-A3	C1	C2
Global warming potential (total)	GWP	kg CO ₂ eq	-557	0.336	1.72
Depletion potential of the stratospheric ozone layer	ODP	kg CFC-11 eq	2.34E-11	6.70E-17	2.60E-16
Acidification potential of land and water	AP	kg SO ₂ eq	1.17	0.00120	0.00352
Eutrophication potential	EP	kg (PO ₄) ³⁻ eq	3.51E-01	2.72E-04	8.28E-04
Photochemical ozone creation potential	POCP	kg Ethene eq	7.53	1.13E-04	-0.00136
Abiotic depletion potential – elements	ADPe*	kg Sb eq	3.15E-04	5.28E-09	2.81E-08
Abiotic depletion potential – fossil fuels	ADPf*	MJ	5340	4.52	22.9

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
55.7	-0.142					873	-311
1.85E-13	-8.32E-16					0	-1.78E-11
0.153	-2.43E-04					0	-1.16
0.0190	-4.48E-05					0	-0.352
0.00982	-1.90E-05					0	-0.852
5.45E-06	-2.92E-08					0	-1.37E-04
793	-2.17					0	-4,170

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.



RESULTS FOR 1m³ OF NEXTIMBER GLT (UNTREATED)



Environmental impact indicators

Table 16. Environmental impact (EN15804+A2) covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT	Decon-struction	Transport to EOL
			A1-A3	C1	C2
Global warming potential	GWP	kg CO ₂ eq	-522	0.341	1.74
Global warming potential (fossil)	GWPf	kg CO ₂ eq	308	0.341	1.66
Global warming potential (biogenic)	GWPb	kg CO ₂ eq	-830	-3.49E-04	0.0735
Global warming potential (land use change)	GWPluc	kg CO ₂ eq	0.0218	6.87E-06	2.61E-05
Depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 eq	1.01E-11	5.02E-17	1.95E-16
Acidification potential - terrestrial and freshwater	AP	Mol H+ eq	1.63	0.00171	0.00510
Eutrophication potential - freshwater	EPfw	kg P eq	2.64E-04	5.61E-08	3.04E-07
Eutrophication potential - marine	EPm	kg N eq	0.954	8.12E-04	0.00245
Eutrophication potential - terrestrial	EPt	Mol N eq	7.81	0.00890	0.0270
Photochemical ozone formation potential	POFP	kg NMVOC eq	4.11	0.00227	0.00474
Abiotic depletion potential – minerals & metals*	ADPmm	kg Sb eq	1.37E-04	5.27E-09	2.81E-08
Abiotic depletion potential – fossil fuels*	ADPf	MJ	4,190	4.53	22.9
Water scarcity*	WDP	m ³ world eq	76.1	0.00223	0.0134

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Resource use indicators

Table 17. Resource use indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT	Decon-struction	Transport to EOL
			A1-A3	C1	C2
Renewable primary energy as energy carrier	PERE	MJ	3,630	0.0221	0.0978
Renewable primary energy resources as material utilisation	PERM	MJ	8,970	0	0
Total use of renewable primary energy resources	PERT	MJ	12,600	0.0221	0.0978
Non-renewable primary energy as energy carrier	PENRE	MJ	4,150	4.53	22.9
Non-renewable primary energy as material utilisation	PENRM	MJ	43.8	0	0
Total use of non-renewable primary energy resources	PENRT	MJ	4,190	4.53	22.9
Use of secondary material	SM	kg	0	0	0
Use of renewable secondary fuels	RSF	MJ	0	0	0
Use of non-renewable secondary fuels	NRSF	MJ	0	0	0
Use of net fresh water	FW	m ³	1.43	4.39E-05	2.01E-04

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
932	-0.146	878	-603	773	-24.9	873	-351
56.2	-0.146	5.49	-605	-70.5	-24.8	0	-308
876	-4.49E-05	873	1.76	843	-0.115	873	-43.2
0.0405	-2.89E-06	1.60E-04	-0.00786	-0.00645	-4.61E-04	0	-0.0218
1.39E-13	-6.24E-16	7.94E-16	-1.33E-14	-3.53E-12	-8.63E-14	0	-1.01E-11
0.195	-3.32E-04	0.0484	-0.0776	-0.723	-0.0628	0	-1.63
3.75E-05	-3.81E-09	9.22E-07	-1.05E-05	-6.14E-05	-2.44E-05	0	-2.64E-04
0.0550	-1.33E-04	0.0235	-0.122	-0.484	-0.0266	0	-0.954
0.602	-0.00146	0.258	-1.34	-3.52	-0.291	0	-7.81
0.158	-3.59E-04	0.0651	-0.165	-2.23	-0.243	0	-4.11
5.43E-06	-2.92E-08	8.37E-08	-7.12E-05	-7.13E-05	-4.19E-06	0	-1.37E-04
805	-2.17	71.5	-10,400	-729	-344	0	-4,190
-0.905	-0.0378	0.0354	-0.501	-22.0	-4.91	0	-76.1

RESULTS FOR 1m³ OF NEXTIMBER GLT (UNTREATED)



Waste material and output flow indicators

Table 18. Waste material and output flow indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT	Decon-struction	Transport to EOL
			A1-A3	C1	C2
Hazardous waste disposed	HWD	kg	1.13E-06	1.63E-11	6.91E-11
Non-hazardous waste disposed	NHWD	kg	32.9	1.08E-04	3.64E-04
Radioactive waste disposed	RWD	kg	0.00663	6.24E-07	5.38E-07
Components for re-use	CRU	kg	0	0	0
Materials for recycling	MFR	kg	0.0418	0	0
Materials for energy recovery	MER	kg	0	0	0
Exported electrical energy	EEE	MJ	0	0	0
Exported thermal energy	EET	MJ	0	0	0

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
8.05E-08	-1.54E-10	6.39E-08	-7.71E-07	-5.49E-07	-2.28E-08	0	-1.13E-06
531	-4.89E-04	0.00172	24.8	-22.8	-0.114	0	-32.9
0.00421	-3.37E-07	9.91E-06	-7.29E-04	-0.00158	-5.60E-05	0	-0.00663
0	0	0	0	0	0	530	-530
0	0	0	0	530	0	0	-0.0418
0	0	530	0	0	0	0	0
0.859	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Additional environmental impact indicators

Table 19. Additional environmental indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT	Decon-struction	Transport to EOL
			A1-A3	C1	C2
IPCC AR5 GWP (excluding biogenic carbon)	GWP-GHG	kg CO ₂ eq	316	0.340	1.66
Respiratory inorganics	PM	Disease incidence	2.03E-05	1.97E-08	2.66E-08
Ionizing radiation - human health [#]	IR	kBq U235 eq	0.674	7.32E-05	6.02E-05
Ecotoxicity freshwater [^]	ETf	CTUe	1,530	1.73	6.14
Human toxicity, cancer [^]	HTc	CTUh	1.62E-07	2.95E-11	1.04E-10
Human toxicity, non-canc. [^]	HTnc	CTUh	2.12E-05	1.52E-09	5.78E-09
Land use [^]	LU	Dimensionless	5,260	0.0116	0.0477

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
59.5	-0.145	5.46	-608	-78.4	-23.1	0	-316
1.52E-06	-2.93E-09	1.15E-06	1.91E-05	-1.05E-05	-4.63E-07	0	-2.03E-05
0.390	-3.21E-05	0.00117	-0.0889	-0.168	-0.00569	0	-0.674
405	-0.721	27.3	-3,870	-277	-125	0	-1,530
2.99E-08	-4.07E-11	3.55E-09	-1.84E-08	-5.82E-08	-2.50E-08	0	-1.62E-07
2.89E-06	-6.96E-10	2.88E-08	3.45E-06	-1.26E-05	-3.72E-06	0	-2.12E-05
45.4	-0.00474	0.217	-7.24	-16.3	-0.810	0	-5,260

[#]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.

[^]The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

RESULTS FOR 1m³ OF NEXTIMBER GLT (UNTREATED)



Environmental impact (EN15804+A1) indicators

Table 20. Environmental impact (EN15804+A1) indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			GLT	struction	to EOL
			A1-A3	C1	C2
Global warming potential (total)	GWP	kg CO ₂ eq	-562	0.336	1.72
Depletion potential of the stratospheric ozone layer	ODP	kg CFC-11 eq	1.78E-11	6.70E-17	2.60E-16
Acidification potential of land and water	AP	kg SO ₂ eq	1.16	0.00120	0.00352
Eutrophication potential	EP	kg (PO ₄) ³⁻ eq	0.352	2.72E-04	8.28E-04
Photochemical ozone creation potential	POCP	kg Ethene eq	0.852	1.13E-04	-0.00136
Abiotic depletion potential – elements	ADPe*	kg Sb eq	1.37E-04	5.28E-09	2.81E-08
Abiotic depletion potential – fossil fuels	ADPf*	MJ	4,170	4.52	22.9

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
55.7	-0.142	878	-594	796	-22.7	873	-311
1.85E-13	-8.32E-16	1.06E-15	-1.77E-14	-6.54E-12	-1.15E-13	0	-1.78E-11
0.153	-2.43E-04	0.0336	-0.0149	-0.511	-0.0453	0	-1.16
0.0190	-4.48E-05	0.00789	-0.0415	-0.183	-0.00911	0	-0.352
0.00982	-1.90E-05	0.00295	0.0970	-0.424	-0.156	0	-0.852
5.45E-06	-2.92E-08	8.38E-08	-7.12E-05	-7.13E-05	-4.19E-06	0	-1.37E-04
793	-2.17	71.4	-10,400	-724	-344	0	-4,170

Biogenic carbon content

Table 21. Biogenic carbon content covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			GLT	struction	to EOL
			A1-A3	C1	C2
Biogenic carbon content - product	BCC-prod	kg	236	0	0
Biogenic carbon content - packaging	BCC-pack	kg	3.01	0	0

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
0	0	0	0	0	0	0	-238
0	0	0	0	0	0	0	-2.25



RESULTS FOR 1m³ OF NEXTIMBER GLT (TREATED)

treated to H3 level



Environmental impact indicators

Table 22. Environmental impact (EN15804+A2) covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			GLT - H3	struction	to EOL
			A1-A3	C1	C2
Global warming potential	GWP	kg CO ₂ eq	-461	0.341	1.74
Global warming potential (fossil)	GWPf	kg CO ₂ eq	369	0.341	1.66
Global warming potential (biogenic)	GWPb	kg CO ₂ eq	-830	-3.49E-04	0.0735
Global warming potential (land use change)	GWP _{luc}	kg CO ₂ eq	3.03E-02	6.87E-06	2.61E-05
Depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 eq	1.05E-11	5.02E-17	1.95E-16
Acidification potential - terrestrial and freshwater	AP	Mol H ⁺ eq	1.77	0.00171	0.00510
Eutrophication potential - freshwater	EP _{fw}	kg P eq	3.20E-04	5.61E-08	3.04E-07
Eutrophication potential - marine	EP _m	kg N eq	0.99	8.12E-04	0.00245
Eutrophication potential - terrestrial	EP _t	Mol N eq	8.18	0.00890	0.0270
Photochemical ozone formation potential	POFP	kg NMVOC eq	15.41	0.00227	0.00474
Abiotic depletion potential – minerals & metals*	ADP _{mm}	kg Sb eq	3.25E-04	5.27E-09	2.81E-08
Abiotic depletion potential – fossil fuels*	ADP _f	MJ	6270	4.53	22.9
Water scarcity*	WDP	m ³ world eq	87.3	0.00223	0.0134

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Resource use indicators

Table 23. Resource use indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production	Decon-	Transport
			GLT - H3	struction	to EOL
			A1-A3	C1	C2
Renewable primary energy as energy carrier	PERE	MJ	3667	0.0221	0.0978
Renewable primary energy resources as material utilisation	PERM	MJ	8970	0	0
Total use of renewable primary energy resources	PERT	MJ	12637	0.0221	0.0978
Non-renewable primary energy as energy carrier	PENRE	MJ	6230	4.53	22.9
Non-renewable primary energy as material utilisation	PENRM	MJ	44	0	0
Total use of non-renewable primary energy resources	PENRT	MJ	6270	4.53	22.9
Use of secondary material	SM	kg	0	0	0
Use of renewable secondary fuels	RSF	MJ	0	0	0
Use of non-renewable secondary fuels	NRSF	MJ	0	0	0
Use of net fresh water	FW	m ³	1.66	4.39E-05	2.01E-04

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
932	-0.146					873	-351
56.2	-0.146					0	-308
876	-4.49E-05					873	-43.2
0.0405	-2.89E-06					0	-0.0218
1.39E-13	-6.24E-16					0	-1.01E-11
0.195	-3.32E-04					0	-1.63
3.75E-05	-3.81E-09					0	-2.64E-04
0.0550	-1.33E-04					0	-0.954
0.602	-0.00146					0	-7.81
0.158	-3.59E-04					0	-4.11
5.43E-06	-2.92E-08					0	-1.37E-04
805	-2.17					0	-4,190
-0.905	-0.0378					0	-76.1

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
81.6	-1.04					0	-3,630
0	0					-8,970	0
81.6	-1.04					-8,970	-3,630
805	-2.17					0	-4,150
0	0					-43.8	0
805	-2.17					-43.8	-4,150
0	0					0	530
0	0					0	0
0	0					0	0
0.0623	-5.28E-04					0	-1.43

RESULTS FOR 1m³ OF NEXTIMBER GLT (TREATED)

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Waste material and output flow indicators

Table 24. Waste material and output flow indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT - H3	Decon-struction	Transport to EOL
			A1-A3	C1	C2
Hazardous waste disposed	HWD	kg	1.24E-06	1.63E-11	6.91E-11
Non-hazardous waste disposed	NHWD	kg	3.34E+01	1.08E-04	3.64E-04
Radioactive waste disposed	RWD	kg	1.13E-02	6.24E-07	5.38E-07
Components for re-use	CRU	kg	0	0	0
Materials for recycling	MFR	kg	0	0	0
Materials for energy recovery	MER	kg	0	0	0
Exported electrical energy	EEE	MJ	0	0	0
Exported thermal energy	EET	MJ	0	0	0

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
8.05E-08	-1.54E-10					0	-1.13E-06
531	-4.89E-04					0	-32.9
0.00421	-3.37E-07					0	-0.00663
0	0					530	-530
0	0					0	-0.0418
0	0					0	0
0.859	0					0	0
0	0					0	0

Additional environmental impact indicators

Table 25. Additional environmental indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT - H3	Decon-struction	Transport to EOL
			A1-A3	C1	C2
IPCC AR5 GWP (excluding biogenic carbon)	GWP-GHG	kg CO ₂ eq	377	0.340	1.66
Respiratory inorganics	PM	Disease incidence	2.17E-05	1.97E-08	2.66E-08
Ionizing radiation - human health	IR	kBq U235 eq	1.29	7.32E-05	6.02E-05
Ecotoxicity freshwater	ETf	CTUe	2.66E+03	1.73	6.14
Human toxicity, cancer	HTc	CTUh	8.13E-06	2.95E-11	1.04E-10
Human toxicity, non-canc.	HTnc	CTUh	2.70E-05	1.52E-09	5.78E-09
Land use	LU	Dimensionless	5281	0.0116	0.0477

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
59.5	-0.145					0	-316
1.52E-06	-2.93E-09					0	-2.03E-05
0.390	-3.21E-05					0	-0.674
405	-0.721					0	-1,530
2.99E-08	-4.07E-11					0	-1.62E-07
2.89E-06	-6.96E-10					0	-2.12E-05
45.4	-0.00474					0	-5,260

*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.

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

RESULTS FOR 1m³ OF NEXTIMBER GLT (TREATED)

treated to H3 level



Environmental impact (EN15804+A1) indicators

Table 26. Environmental impact (EN15804+A1) indicators covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT	Decon-struction	Transport to EOL
			A1-A3	C1	C2
Global warming potential (total)	GWP	kg CO ₂ eq	-5.04E+02	0.336	1.72
Depletion potential of the stratospheric ozone layer	ODP	kg CFC-11 eq	1.85E-11	6.70E-17	2.60E-16
Acidification potential of land and water	AP	kg SO ₂ eq	1.27	0.00120	0.00352
Eutrophication potential	EP	kg (PO ₄) ³⁻ eq	3.65E-01	2.72E-04	8.28E-04
Photochemical ozone creation potential	POCP	kg Ethene eq	7.52	1.13E-04	-0.00136
Abiotic depletion potential – elements	ADPe*	kg Sb eq	3.25E-04	5.28E-09	2.81E-08
Abiotic depletion potential – fossil fuels	ADPf*	MJ	6230.00	4.52	22.9

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Biogenic carbon content

Table 27. Biogenic carbon content covering modules A1-3, C1-4 and D

Indicator	Abbr	Unit	Production GLT - H3	Decon-struction	Transport to EOL
			A1-A3	C1	C2
Biogenic carbon content - product	BCC-prod	kg	238	0	0
Biogenic carbon content - packaging	BCC-pack	kg	2.25	0	0

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
55.7	-0.142					873	-311
1.85E-13	-8.32E-16					0	-1.78E-11
0.153	-2.43E-04					0	-1.16
0.0190	-4.48E-05					0	-0.352
0.00982	-1.90E-05					0	-0.852
5.45E-06	-2.92E-08					0	-1.37E-04
793	-2.17					0	-4,170

Treated wood products can not be used for energy recovery and recycling

Landfill (typical)		Energy recovery		Recycling		Reuse	
C4	D	C3	D	C3	D	C3	D
0	0					0	-238
0	0					0	-2.25



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PROGRAMME-RELATED INFORMATION AND VERIFICATION

Declaration owner	Timberlink Australia Pty Ltd Web: www.nexttimber.com.au Email: info@nexttimber.com.au Post: Caribbean Park Level 2/37 Dalmore Drive Scoresby VIC 3179, Australia	
Geographical scope:	Australia	
Reference year	1 July 2021 to 30 June 2022	
EPD produced by	thinkstep Ltd Web: thinkstep-anz.com Email: anz@thinkstep.com Post: thinkstep Ltd. 11 Rawhiti Road, Pukerua Bay, 5026 Wellington, New Zealand	
EPD programme operator:	EPD International AB Web: https://www.environdec.com Email: info@environdec.com Post: Box 210 60, SE-100 31 Stockholm, Sweden	
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PCR	Product Category Rule(PCR) 2019:14 Construction products v1.11, EPD International 2021-02-05	
PCR review conducted by:	The Technical Committee of the International EPD® System Claudia A. Peña, University of Concepción, Chile info@environdec.com	
Independent verification of the declaration and data, according to ISO 14025:	<input type="checkbox"/> EPD process certification (Internal) <input checked="" type="checkbox"/> EPD verification (External)	
Third party verifier:	Andrew D. Moore Life Cycle Logic Pty. Ltd. Web: lifecyclelogic.com.au Email: Andrew@lifecyclelogic.com.au Post: PO Box 571 Fremantle WA 6959 Australia	
Approved by:	EPD Australasia Limited	
Procedure for follow-up of data during EPD validity involved third-party verifier	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Version history:	V1.0: Original EPD V 1.1. April 2024: Treated GLT results updated to use of LOSP treated timber inputs from Tarpeena. Treated CLT product added.	

An Environmental Product Declaration, or EPD, is a standardised and verified way of quantifying the environmental impacts of a product based on a consistent set of rules known as a PCR (Product Category Rules).

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