



Cross Laminated Timber (CLT)



Sustainable Construction Services Pty Ltd (SCS) supplies and installs Cross Laminated Timber (CLT) and Glue Laminated Timber (Glulam) products across Australia. SCS has an extensive network of manufacturers and suppliers across Europe in order to supply the latest and highest-quality products.



CLT and Glulam is becoming an increasingly popular and exciting product on the Australian market. CLT and Glulam construction methods combine all of the advantages of solid structures such as sound insulation, thermal insulation, fire protection and structural integrity with the added ecological benefit of utilising wood as a sustainable raw material. Some of the main features of CLT and Glulam can be seen below.

Prefabrication: *short construction times, high degree of prefabrication, simple systems*

Structural stability: *high dimensional stability*

Lightweight: *reduced footing requirements, minimal labour required on-site for installation*

More Space: *relatively small component thicknesses are possible, thinner walls without compromising on thermal performance*

Permeable: *acts as a vapour barrier, eliminates need for additional wall wraps, dampen peak indoor humidity, resulting in comfortable balanced room climate*

Wood mass: *comfortable living environment; heat storage in winter, insulation in summer*

Visual quality: *pleasantly warm wood surfaces, nature in architecture*

SCS Cross Laminated Timber (CLT) Products

Our CLT products are high-quality, solid wood, multi-layered products manufactured in Austria. The solid CLT construction combines all of the advantages of solid structures, such as sound insulation, fire protection, solid construction, value retention, etc., with the ecological benefits of wood as a sustainable raw material.



Engineering Solutions

Our experienced team provides CLT engineering services. We have technically experienced in-house staff and a wide network of engineering consultants that we can engage in order to deliver your CLT solutions. We provide you with comprehensive advice and sound services throughout the whole process. Our qualified engineers and construction specialists can provide you with support throughout the whole process, from initial design to completion. Our main services include:

- Products and application specialising in the field of construction products
- Structural engineering and physical characteristics
- Fire engineering and data
- Individual project consulting
- Thermal and acoustic ratings
- Energy reports
- Advice on construction techniques, sealing and connection materials
- Construction details and connection details
- Application to Passive House principles
- 3D planning and CAD drawing

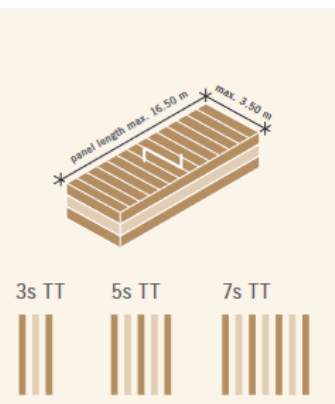
Description

CLT is offered in 3 standard build-ups. Upon request, special surfaces and panel build-ups are possible, depending on the availability of the raw lamellas and technical feasibility.

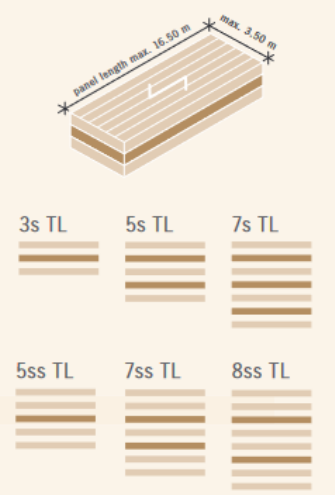
Maximum Dimension*: Length 16.50 m / Width 3.50 m / Thickness 0.50 m

*Maximum dimension may be limited by the transportation solution available

	Panel Type		Panel structure / Thickness of lamellas [mm]									
Covering layer in the transverse panel direction TT	KLH	60 mm	3s	TT	20	20	20					
	KLH	70 mm	3s	TT	20	30	20					
	KLH	80 mm	3s	TT	30	20	30					
	KLH	90 mm	3s	TT	30	30	30					
	KLH	100 mm	3s	TT	30	40	30					
	KLH	110 mm	3s	TT	40	30	40					
	KLH	120 mm	3s	TT	40	40	40					
	KLH	100 mm	5s	TT	20	20	20	20	20			
	KLH	110 mm	5s	TT	20	20	30	20	20			
	KLH	120 mm	5s	TT	30	20	20	20	30			
	KLH	130 mm	5s	TT	30	20	30	20	30			
	KLH	140 mm	5s	TT	30	20	40	20	30			
	KLH	150 mm	5s	TT	30	30	30	30	30			
	KLH	160 mm	5s	TT	40	20	40	20	40			



	Panel Type		Panel structure / Thickness of lamellas [mm]									
Covering layer in the longitudinal panel direction TL	KLH	60 mm	3s	TL	20	20	20					
	KLH	70 mm	3s	TL	20	30	20					
	KLH	80 mm	3s	TL	30	20	30					
	KLH	90 mm	3s	TL	30	30	30					
	KLH	100 mm	3s	TL	40	20	40					
	KLH	110 mm	3s	TL	40	30	40					
	KLH	120 mm	3s	TL	40	40	40					
	KLH	100 mm	5s	TL	20	20	20	20	20			
	KLH	110 mm	5s	TL	20	20	30	20	20			
	KLH	120 mm	5s	TL	30	20	20	20	30			
	KLH	130 mm	5s	TL	30	20	30	20	30			
	KLH	140 mm	5s	TL	40	20	20	20	40			
	KLH	150 mm	5s	TL	40	20	30	20	40			
	KLH	160 mm	5s	TL	40	20	40	20	40			
	KLH	170 mm	5s	TL	40	30	30	30	40			
	KLH	180 mm	5s	TL	40	30	40	30	40			
	KLH	190 mm	5s	TL	40	40	30	40	40			
	KLH	200 mm	5s	TL	40	40	40	40	40			
	KLH	160 mm	5ss	TL	30+30	40	30+30					
	KLH	180 mm	7s	TL	20	40	20	20	20	40	20	
	KLH	200 mm	7s	TL	20	40	20	40	20	40	20	
	KLH	220 mm	7s	TL	30	40	30	20	30	40	30	
	KLH	240 mm	7s	TL	30	40	30	40	30	40	30	
	KLH	180 mm	7ss	TL	30+30	20	20	20	30+30			
	KLH	200 mm	7ss	TL	30+30	20	40	20	30+30			
	KLH	220 mm	7ss	TL	40+40	20	20	20	40+40			
	KLH	240 mm	7ss	TL	40+40	20	40	20	40+40			
	KLH	260 mm	7ss	TL	40+40	30	40	30	40+40			
	KLH	280 mm	7ss	TL	40+40	40	40	40	40+40			
	KLH	300 mm	8ss	TL	40+40	30	40+40	30	40+40			
	KLH	320 mm	8ss	TL	40+40	40	40+40	40	40+40			

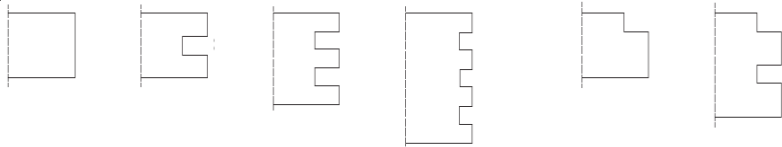


Surface Finish

CLT is available in three different surface qualities, which can be combined as required to all panel types.

	Domestic Visible	Industrial Visible	Non-Visible
Surface Finish	High Quality Finish: Fully sanded (one or double sided) also one side brushed	Medium Quality Finish: Fully sanded (one or double sided)	Low Quality Finish: Equalised (planed or sanded)
Application Area	Visible components e.g., living areas where the CLT will remain exposed	Visible components that do not demand a high-quality finish e.g., industrial applications or car ports/garage	Pure structural components, typically covered by panelling such as cladding, plasterboard etc.

Technical Details

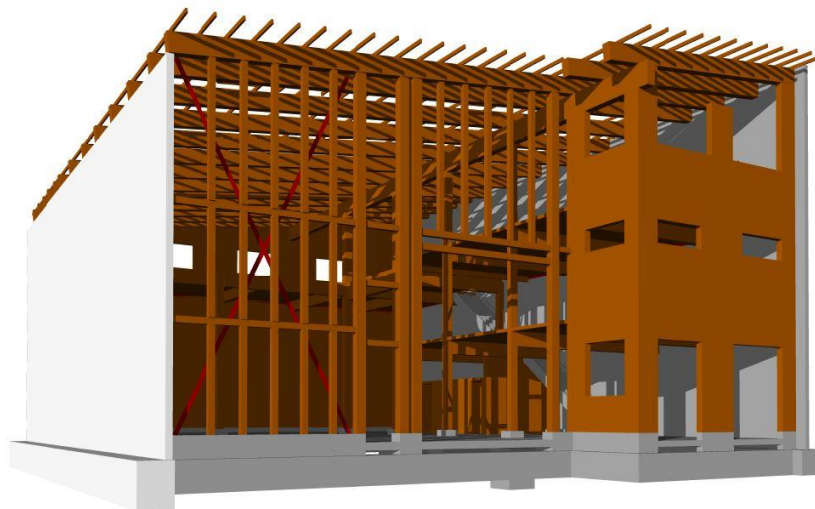
Product	Cross Laminated Timber (CLT)
Application	Structural elements for walls, floors and roofs
Durability	Service classes 1 and 2 according to EN 1995-1-1
Wood Species	Spruce (other species available upon special request)
Panel Build-Up	3-ply, 5-ply & 7-ply (additional layers available upon special request)
Lamellae	Thickness 20 to 45 mm, technically dried, quality sorted and finger jointed
Strength Class	C24 according to EN 388
Adhesive	Formaldehyde-free PUR adhesive, approved for load-bearing and non-load-bearing components indoors and outdoors according to EN 15425
Laminating Pressure	At least 0.6 N/mm ²
Moisture Content	12% (+/- 2%) on delivery
Standard Widths	2.45 / 2.50 / 2.73 / 2.95 / 3.10 / 3.20 / 3.30 / 3.40 / 3.50 m
Surface Quality	Non-Visible / Industrial Visible / Domestic Visible
Weight	5.5 kN/m ³ 500 kg/m ³
Moisture Movement	In panel plane 0.02% per % change in wood moisture content Perpendicular to panel plane 0.24% per % change in wood moisture content
Thermal Conductivity	$\lambda = 0.12 \text{ W/(m}\cdot\text{K)}$ according to EN ISO 10456
Heat Storage Capacity	$c_p = 1600 \text{ J/(kg}\cdot\text{K)}$ according to EN ISO 10456
Vapour Resistance	$\mu = 300$ (dry) to 46 (wet) according to EN ISO 12572
Air Tightness	If sealed appropriately (e.g., butt joints, penetrations etc.), CLT can be used as airtight layers (Class 4 according to EN 12207)
Reaction to Fire	Euro class D-s2, d0
Resistance to Fire	Fire analysis parameters acc. to ETA - 06/0138
Joining Edges	

Design and Installation Services

SCS has extensive experience in the use and application of CLT and Glulam products. SCS can provide support and services through all stages of the project, including:

- Initial design and planning
- Engineering design and certification
- Material specification
- Wall, floor, ceiling and roof build up
- Drafting services
- Pricing
- Supply of products, accessories and connections
- Transport and customs clearance
- Installation
- Connection details and sealing
- Commissioning

Our experienced team at SCS can provide support services for any component of the work and will provide you with advice relating to finishes, for example, surface quality recommendations, paint types, or treatments. SCS can also provide information and details for connections (e.g., fixings, screws, brackets, etc.) and proper sealing for both acoustic and thermal insulation.



The actual installation process of CLT and Glulam is extremely efficient and straightforward. Engineered wood products are a lightweight material choice compared to concrete panels and masonry construction, resulting in simplified installation and minimal slab and footing requirements. Sophisticated manufacturing processes make a high level of prefabrication possible.

CNC (Computerized Numerical Control) technology, allows openings and penetrations to be cut in factory to the highest level of precision. The natural workability of timber also allows for these penetrations to be easily made onsite and for very straight-forward connections. Minimal manpower is required on-site, greatly reducing the labour cost of the project. Most CLT and Glulam projects only require 2 carpenters and 1 crane operator on-site to handle the installation of the building envelope.