

# CLT<sub>PLUS</sub>

CROSS LAMINATED TIMBER  
BY THEURL

## SPECIAL SOLUTIONS FOR CLTPLUS



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Energy-efficient, durable, recyclable, highly resilient, CO<sub>2</sub>-neutral and solid – CLTPLUS is not only a really innovative building material of the future, but can be used almost universally. Rigid and dimensionally stable CLTPLUS ceiling elements are ideal when dealing with large spans and low component heights. The high degree of prefabrication guarantees rapid construction progress that can be planned in detail. In addition to a pleasant room climate, the impressive quality of the visible wood also creates an aesthetical-

ly pleasing look, which, thanks to its “warm” appearance, allows room temperature to be reduced thus saving energy. This applies to private homes as well as to multi-storey apartment buildings and commercial buildings, kindergartens and schools. The THEURL Joinery Service means individual solutions can be implemented easily for installation levels or stair recesses, as well as cable and pipe ducts.



## THE CLTPLUS FACTOR

- 01 A self-adhesive membrane, which ensures effective protection against moisture.
- 02 Ribbed ceilings allow for large spans, which also allow materials to be saved.
- 03 Large column grid and flexible floor slabs with TS3 for maximum flexibility when using floor space.
- 04 The XFIX connection ensures a perfect hold.
- 05 Efficient timber connector system for quickly assembling prefabricated cross-laminated timber elements
- 06 Floors can also be easily connected vertically via stairs.
- 07 Digital services with TIM, LRO (loading space optimisation) and four CAD programmes.





# 01

## MOISTURE PROTECTION FOR CLTPLUS CEILING ELEMENTS

### EXPLANATION

Visible ceiling elements in particular require special attention during production, transport and assembly. A specially designed, self-adhesive membrane ensures effective moisture protection on the construction site. The membrane is fully bonded to the CLTPLUS ceiling elements in the factory.

### SCOPE OF APPLICATION

The membrane is water-repellent, so it is mainly used where CLTPLUS ceiling elements require weather protection.

### CHARACTERISTICS

Upon request, this can be applied in the factory with an overlap on the components being protected and is available in widths of 390, 780 and 1,560 millimetres.

### ADVANTAGES

- + Rainproof and diffusable
- + Fully pre-assembled in the factory
- + Robust and abrasion-resistant
- + Transparent and non-slip





# 02



## LARGE SPANS THANKS TO RIBBED CEILINGS

### EXPLANATION

When planning spans of more than six metres, ribbed ceilings are a sensible and economical solution. Attributes such as excellent strength, enormous stability and high load-bearing capacity combined with low weight make the use of this type of ceiling so attractive. Further advantages lie in the individual design options, maximum structural performance and particularly low material consumption. In concrete terms, glued laminated timber and cross-laminated timber are connected to each other using screw press bonding.

### SCOPE OF APPLICATION

The technology is used wherever CLT-PLUS ceiling elements with large spans are installed – for example in schools and kindergartens, in commercial buildings and multi-storey residential buildings.

### CHARACTERISTICS

The flexible dimensions of up to 3.5 by 16 metres with low panel thicknesses open up a wide range of possibilities for designers and guarantee maximum safety.\*

### ADVANTAGES

- + Effective and economical
- + High load capacity with large spans
- + High degree of prefabrication
- + Quick and easy assembly



\*Dimensioning of the ribbed panels is as per ÖNORM B1995-1-1 Annex L.11.5, certification conforms to Certificate A as per 1052:10:2012, Table 2.





## LARGE SUPPORT GRID AND FLEXIBLE CEILINGS WITH TS3

### EXPLANATION

Entirely in keeping with futuristic timber construction, our key TS3 connection technology permits skeleton structures without support beams, whose aesthetic is marked by slim, point-supported panels of arbitrary size, thanks to front-side joint filling. Generous support grids and flexible ceilings can be created without pressure and without additional fasteners.

### SCOPE OF APPLICATION

This process facilitates outstanding architectural timber solutions, especially for large-scale timber construction with support spacing of up to eight-by-eight metres.

### CHARACTERISTICS

The TS3 connection consists of a two-component polyurethane resin cast, which is partly made from renewable raw materials.

### ADVANTAGES

- + 8 x 8 support grid
- + Theurl is a licensed TS3 partner
- + TS3 pre-treatment: joint casting performed in the factory
- + High quality of living



# 04



## X-FIX: CONNECTOR FOR CLTPLUS CEILING ELEMENTS

### EXPLANATION

Point-shaped, self-clamping, dovetail-shaped – the innovative X-fix timber-to-timber connector joins cross-laminated timber ceilings and walls with shear and tensile strength.

### SCOPE OF APPLICATION

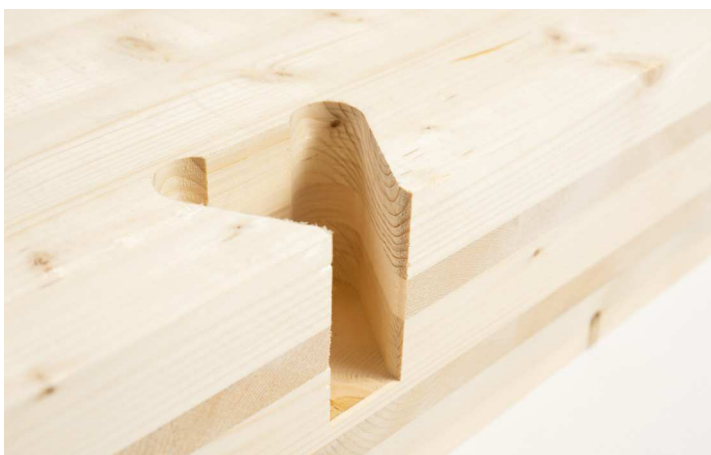
When the X-FIX connector is hammered in place, the CLTPLUS solid timber elements pull together tightly and lock under friction. This supports quick assembly so that the shiplap with the folding board can also be replaced.

### CHARACTERISTICS

Assembly involves inserting the first part into the prefabricated recess, followed by the second part and then fixing them in place by hammering.

### ADVANTAGES

- + Timber connection without metal
- + Resilient and removable timber-timber connection
- + Factory pre-milling
- + Simple on-site connection





05



## HCW TIMBER CONNECTOR SYSTEM

### EXPLANATION

Efficient timber connector system for quickly assembling prefabricated cross-laminated timber elements.

### APPLICATION AREA

Coming with drillings and screwed in from the factory, HCW connectors speed up and simplify assembling and fastening cross-laminated timber walls. The connector can be used between wood to wood, and wood to concrete.

### FEATURES

High tensile and shear load-bearing capacities allow greater freedom in construction and permit static anchoring the timber elements, while ensuring the most precise positioning and leveling.

### ADVANTAGES

- + Continuous digital work processes, even on the construction site
- + High degree of prefabrication due to factory pre-assembly
- + Maximum productivity on the construction site
- + High quality of workmanship





# 06



## TIMBER, UP AND DOWN

### EXPLANATION

CLTPLUS makes a convincing argument, especially in the construction of single flights of stairs: It is possible to directly connect two floors as a solid timber element without the need for an intermediate platform. The stairs are manufactured individually, tailored to the project, in the Joinery Service Centre according to the customer's specifications, and steps or lifting systems can also be produced according to structural and static requirements. The result is a ready-to-install staircase that also features impressive aesthetics, as well as design, thanks to the option of Visible Quality for the underside of the staircase.

### SCOPE OF APPLICATION

Another special highlight: The CLTPLUS staircase is easy to assemble and can be used to connect floors together even during the construction phase, which eliminates the need for an expensive, temporary staircase.

### CHARACTERISTICS

In general, you can choose between Visible, Industry Plus and Industry Quality for single-flight CLTPLUS staircases. Format, construction and length are always individually tailored to the project.\*

### ADVANTAGES

- + Rapid assembly on-site
- + Lifting systems can be used as required
- + Underside in Visible Quality optional
- + Connection of floors during construction phase



\*Static and constructive assessment of the component, however, is not performed by THEURL.

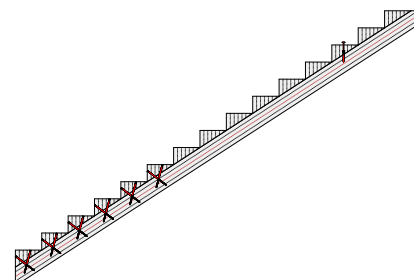


### STAIRS combined from CLTPLUS and BSH wedges

On request, we produce ready-made kits from CLT stair flights with glulam wedges attached. The wedges are installed by means of screw press bonding according to static requirements.

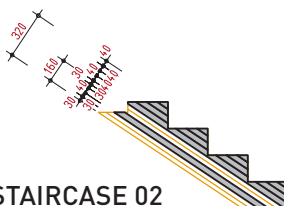
### CHARACTERISTICS

- Stair flight made of CLTPLUS
- Tread thickness according to static requirements
- BSH wedges
- Variable height/ width
- Lifting system variable



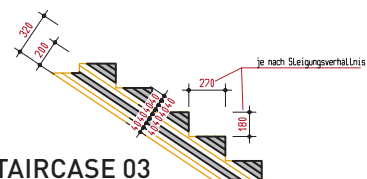
CLTPLUS STAIRCASE 01

- 280 mm, to 4 m
- Construction: CLTPLUS 280 L7 A2 for staircase construction
- L40-C40-L40-C40-C40-C40
- 120 mm static cross-section as per ETA 20/0843
- 160 mm doubling up for step formation C-transverse layers



CLTPLUS STAIRCASE 02

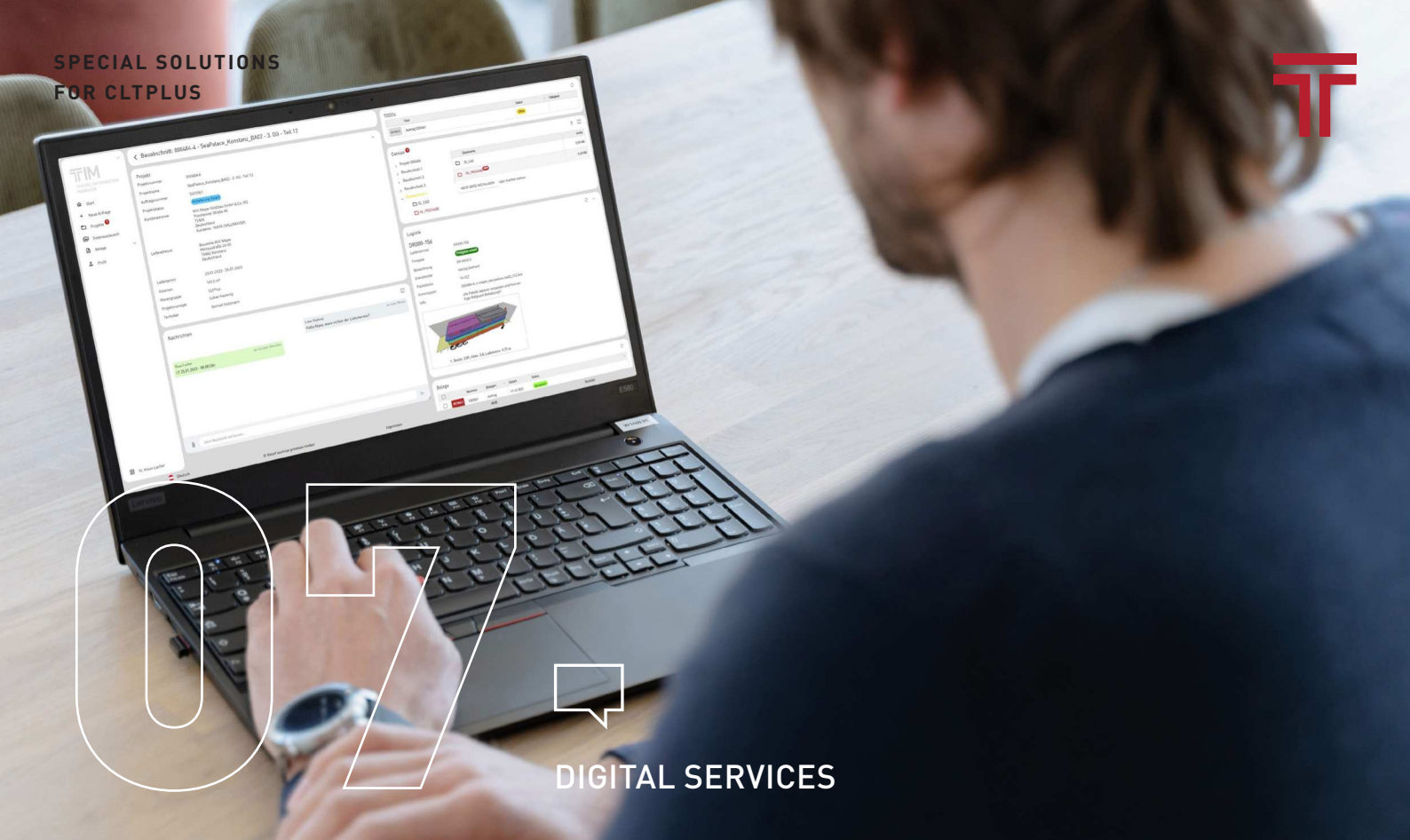
- 320 mm, to 5 m
- Construction: CLTPLUS 320 L9 for staircase construction
- L30\*2-C40-L30\*2-C40-C40-C40-C40
- 160 mm static support cross-section as per ETA 20/0843
- 160 mm doubling up for step formation C-transverse layers
- Underside in Industry Plus and Visible Quality upon request
- Minimum order quantity: 2.25 x 8 m



CLTPLUS STAIRCASE 03

- 320 mm R90 up to 6 m
- Construction: CLTPLUS 32 L8\*2 for staircase construction
- L40\*2-C40-L40\*2-C40\*3
- 200 mm static cross-section as per ETA
- (Warning! 4<sup>th</sup> longitudinally cut)
- Suitable for long and shallow flights of stairs





## DIGITAL SERVICES

### EXPLANATION

How can fine tuning between the customer, timber construction technology, production and logistics be optimised? Where can we find unused potential in data exchange and the planning process? And how can you actually determine which solid timber elements are needed and when? The future belongs to timber construction, but the innovative digital solutions from THEURL already offer the answer to all these pressing questions.

### FOUR CAD PROGRAMMES

THEURL is the only industrial partner that can create joinery plans for CLTPLUS and glued laminated timber in all four common CAD programmes such as SEMA, Dietrich's, cadwork and hsbcad. Whether it's a private family home or a major project – projects of all categories are processed on a digital twin, which contains detailed information on each individual component.

### TIM – THEURL INFORMATION MANAGER

TIM allows customers to not only keep an eye on their project status at all times, the application also enables secure and uniform data exchange of all plans and documents. Extensive and large amounts of data from a wide variety of sources can therefore be exchanged. As the interface between THEURL and its customers, TIM provides the perfect service platform.

### PERFECT PLANNING FOR LOGISTICS

Precisely planned loading of every individual element is essential for all construction site deliveries. This is the only way to adhere meticulously to tight construction schedules. Specially developed loading space optimisation allows the individual components to be loaded onto the truck in the correct order. This saves a lot of time on-site.

DISCOVER HUGE  
ADVANTAGES AND  
SAVE TIME WITH TIM.  
REGISTER NOW!



**TIM**  
THEURL INFORMATION  
MANAGER



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Want to know more about our CLTPLUS product and special solutions? We are waiting to hear from you.

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